

Aerator Model: \_\_\_\_\_

Horsepower: \_\_\_\_\_ Voltage: \_\_\_\_\_ Phase: \_\_\_\_\_

Cord Gauge: \_\_\_\_\_ Length: \_\_\_\_\_

Unit Serial Number: \_\_\_\_\_

Panel Serial Number: \_\_\_\_\_

Options: \_\_\_\_\_



Rain Bird® Corporation  
6991 East Southpoint Road  
Tucson, AZ 85706  
[www.rainbird.com](http://www.rainbird.com)



**Lake Management Aerator**  
LM10 Through LM30 Series 60 Hz  
Owner's Manual







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## Aerator Equipment

Unpack and inspect your Rain Bird® 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.

## Electrical/PCC Installation

This weather resistant NEMA 3R Power Control Center (PCC) comes complete with a 24 hour on/off timer, magnetic contactor with overload relay, surge arrester, 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 Rain Bird Power Control Center. Rain Bird recommends that **electrical work be done by a qualified, licensed electrician**. Make sure that all electrical work conforms with local, state and national electrical codes.



**NOTE:** Rain Bird 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 Rain Bird Power Control Center as close to the pond as possible.



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

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

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

**CAUTION:** Rain Bird recommends that the PCC not be mounted in direct sunlight when installed outdoors.



- B. Your Rain Bird Power Control Center can be mounted indoors or outdoors.
1. When mounting outdoors Rain Bird 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. Bring the incoming power into the panel on the opposite side of where the aerator cable is to exit.
- D. Attach incoming power to the top of the disconnect. Rain Bird recommends that all exterior incoming power cable and exterior aerator cable be encased in conduit.
- E. Attach aerator power cable to the contact points on the overload relay in the Power Control Center. Make sure to always use Rain Bird approved (Otterbine labeled) aerator cable. If Rain Bird approved 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. For single phase, do not connect red wire.



**WARNING:** All Rain Bird submersible aeration systems must be installed in conformance with all local, state and national electrical codes. Rain Bird 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.**

**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 supplied phase converter is not used.

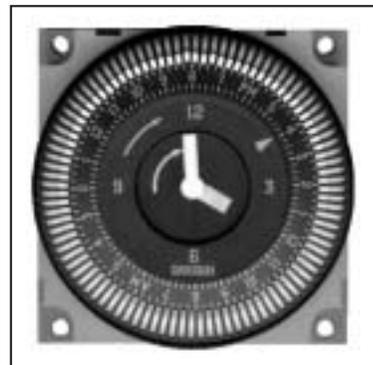


Earth Ground Symbol (used in PCC)

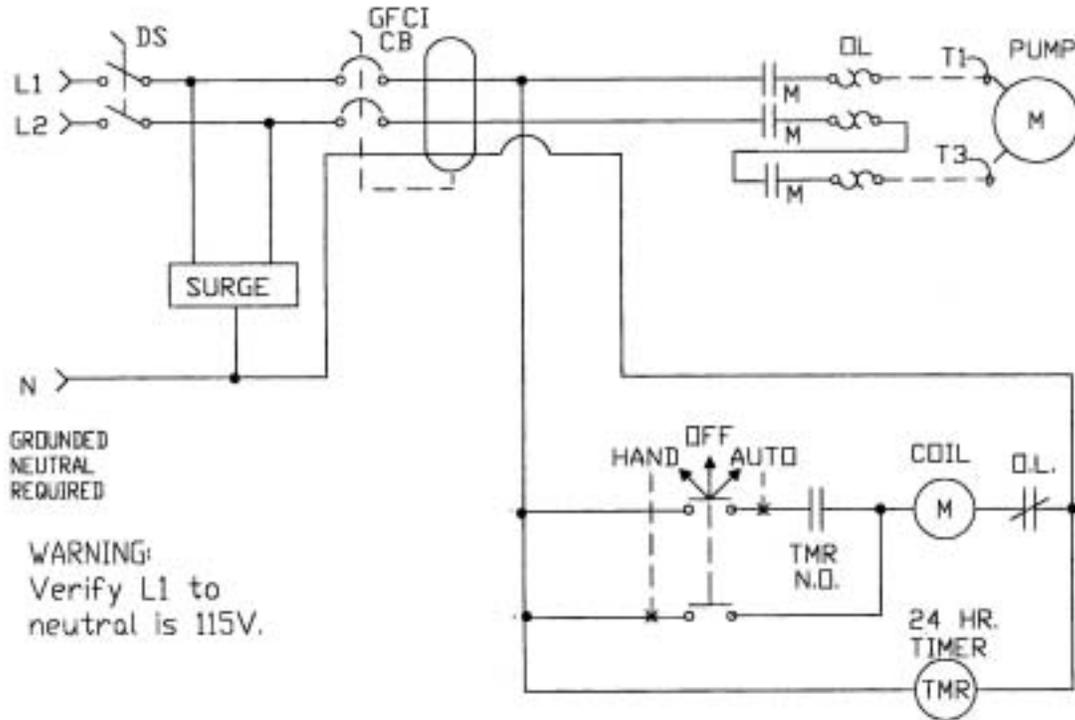
## Timer Operation

### Setting Timer

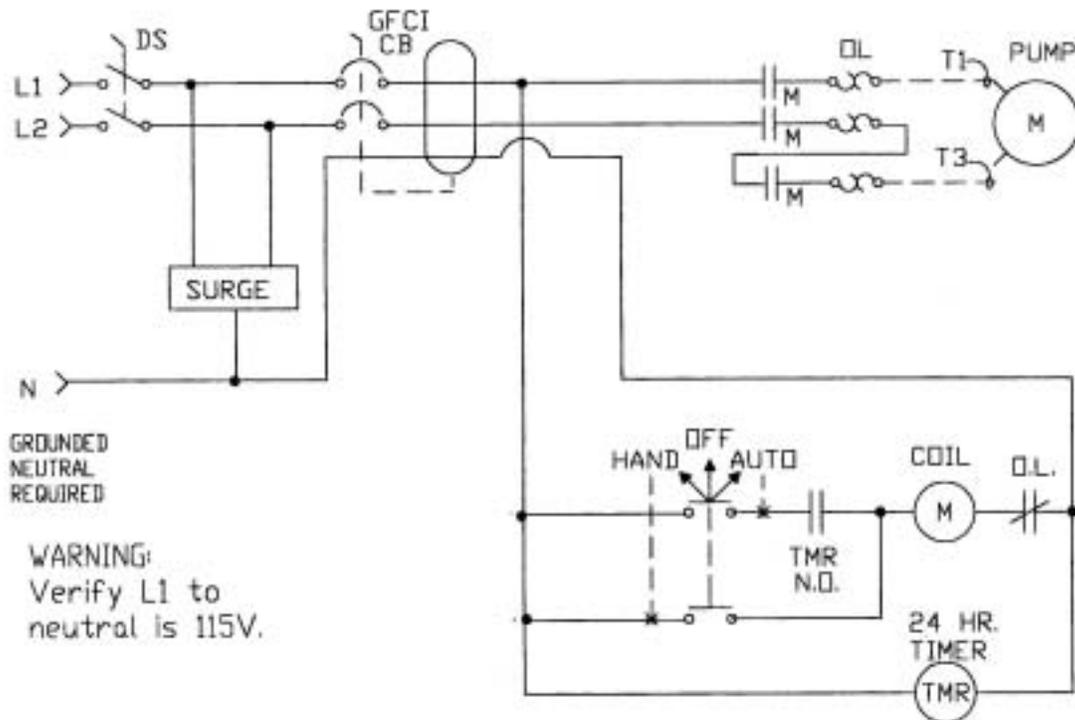
1. Push in (towards center) all of the tripper pins on the timer dial.
2. Pull out all of the tripper pins on the dial that are between the times you want the unit to run. Example: If you want the unit on from 7:00 AM - 5:00 PM, you would then pull out all of the tripper pins between those times. When 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.



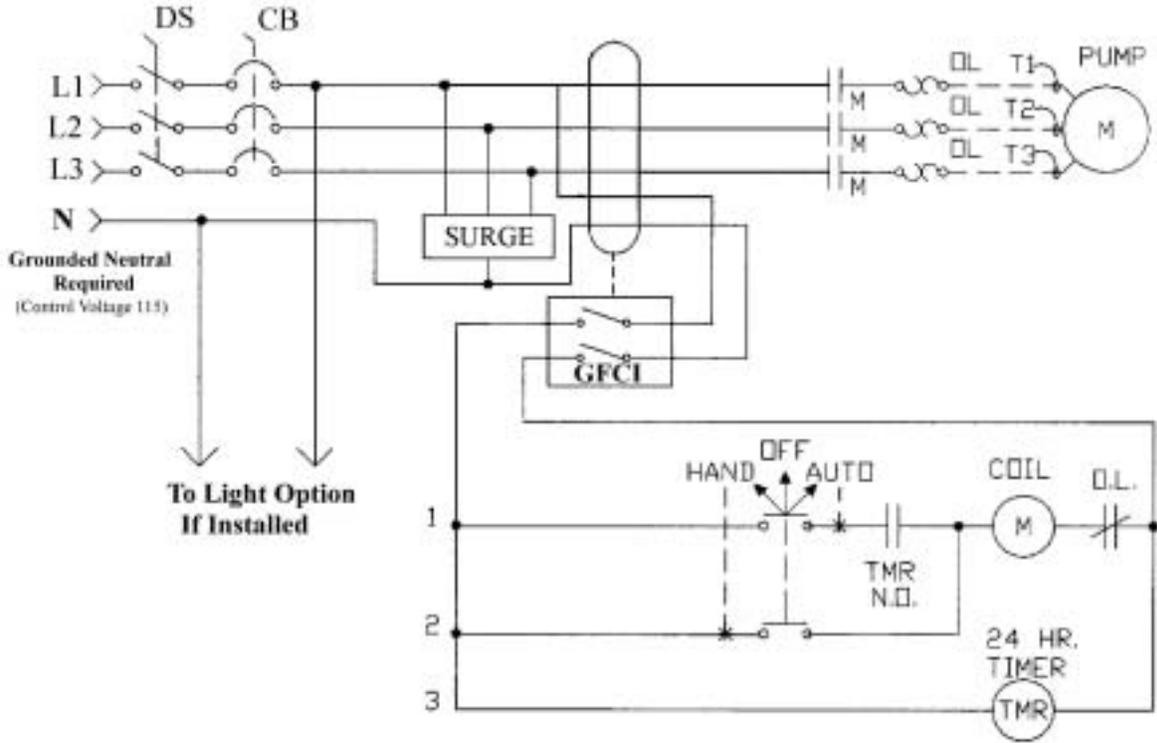
## 115 Volt 1 Phase 60 Hertz Schematic



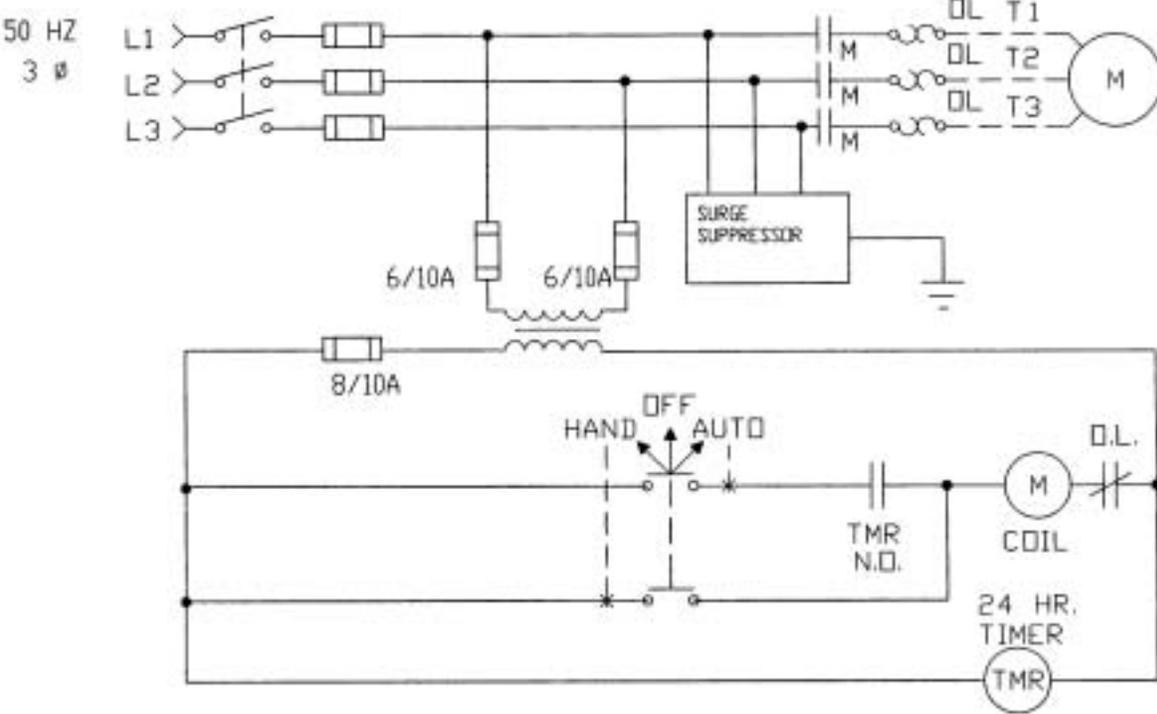
## 208/230 Volt 1 Phase 60 Hertz Schematic



## 208-230 Volt 3 Phase 60 Hertz Schematic



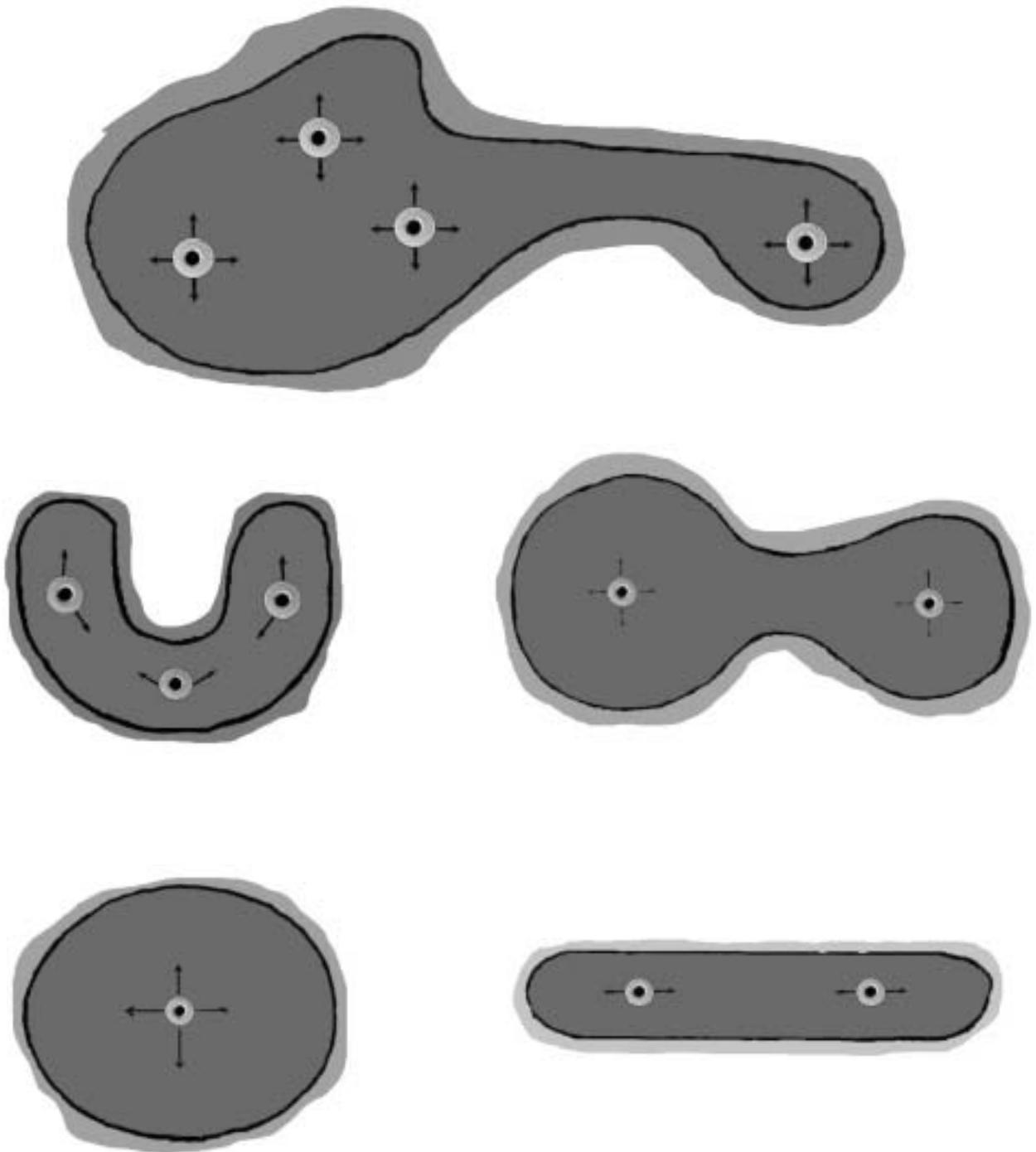
## 460 Volt 3 Phase 60 Hertz Schematic





### ***Aerator Placement***

Placement is crucial to how quickly and efficiently your Rain Bird aerator is able to clean your pond. The following diagram shows the most common ponds and the most effective aerator placement in these ponds.



## Physical Installation

Prior to installation please measure your water depth. All 1-5 HP Rain Bird Lake Management Aerators require at least 40" (1 meter) of water to run properly. If the water is too shallow, dig out a portion of the pond bottom directly under the aerator. If high waves or large fluctuations in water depth occur, it may be necessary to allow for more than the required 40" (1 meter).

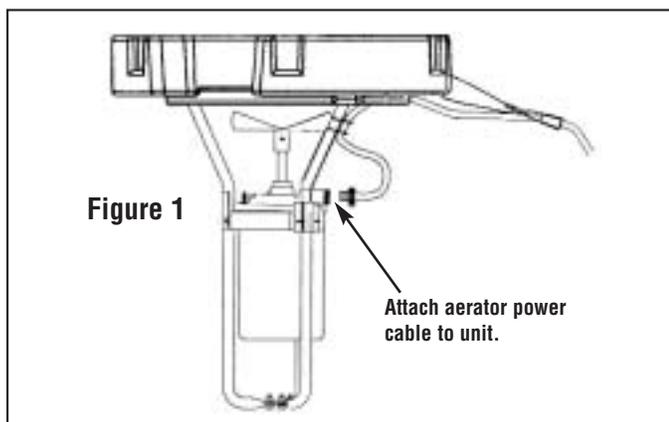


Figure 1

- A. Attach your Rain Bird power cable to the aerator. Align the pigtail connector on the cable up to the pin configuration on the bulkhead on the aerator. **Hand tighten** the coupling nut onto the bulkhead connector. **Do not over tighten — over tightening will cause a fracture in the connector and could lead to a short circuit** — see Figure 1.



**NOTE:** You will notice a small amount of silicon compound on the female end of the aerator connector. This compound has been applied during assembly and is needed in order to make proper seal between the two connectors. **Do not remove compound!** When servicing the aerator make sure to re-apply compound. (part# 48-0001)



**CAUTION:** Keep hands clear of the impeller when trying to start the aerator!

**ATTENTION: BARDER**  
**VOS MAINS A DISTANCE**  
**DE LA TURBINE PORSQUE**  
**VOUS ESSAYEZ DE**  
**DEMARRER P'AERATEUR**

- B. 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 voltage variations are not within the range on the following chart, do not operate the unit!**

60 Hz	Minimum	Maximum
115	109	127
208-230	197	242
380	380*	400
415	400	436

2. With the aerator on dry land, attach the power cable to the aerator and power supply.
3. Turn the handle mechanism on the exterior of the Power control center to the "ON" position.



**\*WARNING:** A minimum of 380 Volts must be attained or the proper step-up transformer must be specified and installed.



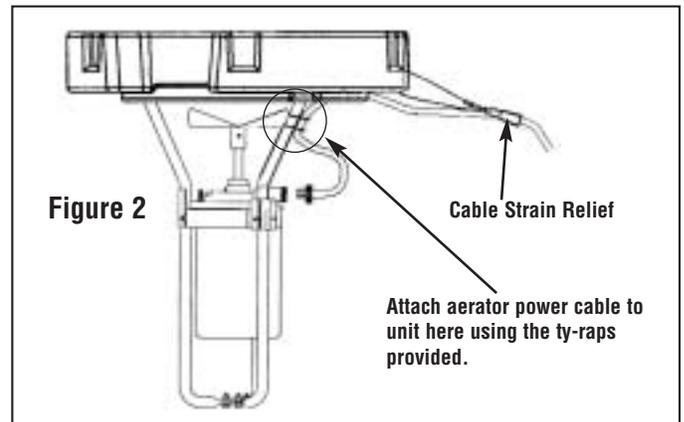
4. Energize the unit by turning the “Hand, Off/Auto” switch to the “Hand” position. Run unit 2 minutes to break in seals. **Do not run unit for more than 2 minutes — motor damage can occur.** Check for **counter clockwise** rotation at this time.
5. If Steps 1-4 are successful, you are ready to install the unit in the water. Proceed with following instructions.

**CAUTION:** Rain Bird aerators are designed to run in a **counter clockwise direction** and **current unbalance between the legs on three phase units should not exceed 5%**. Steps “L-M” on page 10 determine current unbalance.

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*ATTENTION: les aerateurs Rain Bird® sont designes pour fonctionner dans le sens contraire des aiguilles d'une montre et tout desequilibre entre chacune des phases de l'alimentation ne doit pas dépasser 5% voir “L-M” page 10 pour determiner le desequilibre.*

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- C. Install the cable strain relief device. Pass the wire hoop through one of the holes in the float and around the aerator power cable. Re-attach the cable strain relief — see Figure 2.
- D. Attach your aerator power cable to one of the support arms with the ty-raps provided. In corrosive, brackish and salt water applications use two ty-raps to attach your power cable to the support arm — see Figure 2.

There are two different methods of securing your aerator, anchoring and mooring. Rain Bird suggests mooring as it will be easier to install and service the aerator. On the next page you will find instructions for mooring the aerator; if you prefer to anchor your aerator, please see “**Anchoring Your Aerator.**”

### **MOORING YOUR AERATOR:**

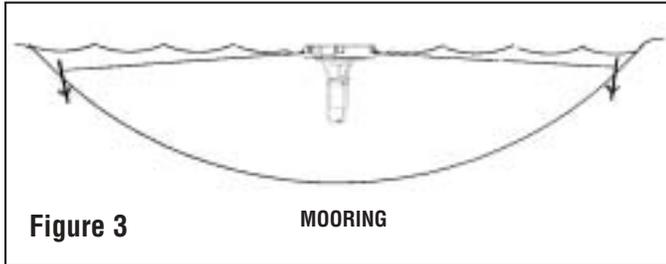
- A. Proceed to page 8, follow steps E-K.

### **ANCHORING YOUR AERATOR:**

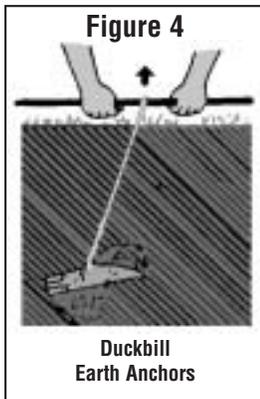
- A. Proceed to page 9, follow steps E-K.

## Mooring the aerator

An illustration showing how to moor an aerator is given in Figure 3.



- E. You will need the following items in order to moor your Rain Bird aerator.
1. Use all brass and stainless steel hardware in the installation of your Rain Bird aerator.
  2. Rain Bird recommends using 1/4" (0.63 cm) or 1/2" (1.25 cm) polypropylene rope or stainless steel cable for your mooring lines.
  3. At the mooring points themselves you will need a wooden stake, 1/2" (1.25 cm) of rebar or a "duckbill" type earth anchor — see Figure 4.



"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.

- F. Choose a suitable location for your Rain Bird aerator. See the aerator location chart on page 5 to determine the best aerator location for the most efficient and effective aeration.
- G. Secure your first mooring point. If you are using a stake or 1/2" (1.25 cm) 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 unnoticeable as it will be hidden two feet beneath the surface of the water.
- H. Attach the mooring lines to the holes in the float. Use a strong, tight knot as it will secure the Rain Bird aerator in its place.
- I. Launch your aerator into the water. Walk one mooring line around to the other side of the pond.
- J. Pull your Rain Bird aerator into your previously chosen location.
- K. Put in the other anchor or stake. Tie down your Rain Bird aerator leaving enough slack in your lines to allow the aerator to turn 90° or 1/4 turn. The slack in the lines will allow for proper start up, wave action and fluctuations in the water level. Proceed to step L (page 10).

## Anchoring an aerator

An illustration showing how to anchor an aerator is given in Figure 5.

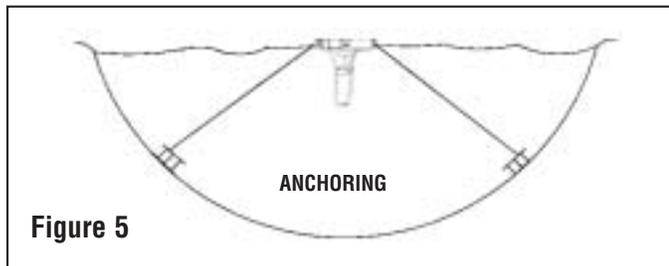


Figure 5

E. You will need the following items to anchor your Rain Bird aerator:

1. Use all stainless steel and brass hardware in the installation of your Rain Bird aerator.
2. Rain Bird recommends using 1/4" (0.63 cm) or 1/2" (1.25 cm) polypropylene rope or stainless steel cable for your anchoring lines.
3. Two 60-80 pound anchors (two 27-36 kilo anchors).
4. Small boat.

F. Choose a suitable location for your Rain Bird aerator. See aerator location chart on page 5 so that you can place your aerator in the best location for the most efficient and effective aeration.

G. Launch your aerator into the water upside down, with the motor housing sticking up into the air. Take a piece of rope and pass it through one of the holes on the float.

H. In a small boat tow the aerator into your previously chosen location.

I. Determine where to locate the anchors. Where the anchors are located will vary depending on the depth of your pond. See the chart below to determine the best location for your anchors.

MAXIMUM DEPTH		DISTANCE BETWEEN ANCHORS	
Feet	Meters	Feet	Meters
5'	1.5m	11'	3.4m
6'	1.8m	15'	4.6m
7'	2.1m	20'	6.1m
8'	2.4m	30'	9.1m
9'	2.7m	40'	12.0m
10'	3.0m	55'	16.7m
11'	3.3m	70'	21.2m
12'	3.6m	85'	26.8m
13'	3.9m	100'	30.3m
14'	4.2m	120'	36.4m
15'	4.6m	140'	42.4m

J. Drop in the first anchor line. Place your aerator in the desired location and securely tie the anchor line to one of the holes on the outside edge of the float.

K. Drop in the second anchor line. Securely tie the anchor line to the hole on the outside edge of the float which is directly opposite of the first anchor line that was tied onto the float. Make sure the unit can rotate 90° or 1/4 turn. The slack in the anchoring lines will allow for proper start up, wave action and fluctuations in the water level. Flip the unit over. Proceed to step L (page 10).

- L. Energize your unit.
- M. 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 number, and cable length and size on the sticker inside the power control panel. Go to step N.

**3 PHASE UNITS:**

1. Check the direction of the 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. Establish the correct motor rotation by running in both directions. Change rotation by exchanging any two of the three motor leads. The rotation that gives the lowest current readings is always correct. **Failure to do the above may cause the motor to fail within one week of running time. Motor failure due to reversed polarity will not be covered under warranty.**
3. Check current readings in amps on each leg using the three possible hook-ups. Rotate the motor leads across the starter in the same direction to avoid motor reversal.

**EXAMPLE:**



4. Calculate the percent of current unbalance:
  - A. Add the three line amp values together.
  - B. Divide the sum by three, yielding current average.
  - C. Pick the amp value that is furthest from the average current (either high or low).
  - D. Determine the difference between this amp value (line C) and the average (line B).
  - E. Divide this difference (line D) by the average (line B).
  - F. 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 rotating leads, locate source of unbalance and 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 hook-ups 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 and running amperage, power control center serial number, and cable length and size on the sticker inside the power control panel.** Proceed to step N.
- N. If GFCI or EPD is installed, have the electrician test the device for proper operation.
- O. Lock your enclosure with a padlock to prevent any type of vandalism. Set the “hand-off-auto” switch located on the outside of your Power Control Center to the HAND or AUTO position. The HAND position on the switch will let your aerator run continuously. The AUTO position on the switch will allow the timer inside your aerator to operate the unit. See page 2 for timer operating instructions. Your aerator should be running at this point and installation is complete.



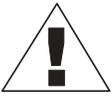
**CAUTION:** The aerator should be allowed to run continuously for 12 hours after installation. This will allow the aerator to properly “break-in.”

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**ATTENTION:** *l'aerateur doit etre permisi de fonctionner continuellement pendant 12 heures apres l'installation. Cel permettra a l'aerateur d'etre proprement rode.*

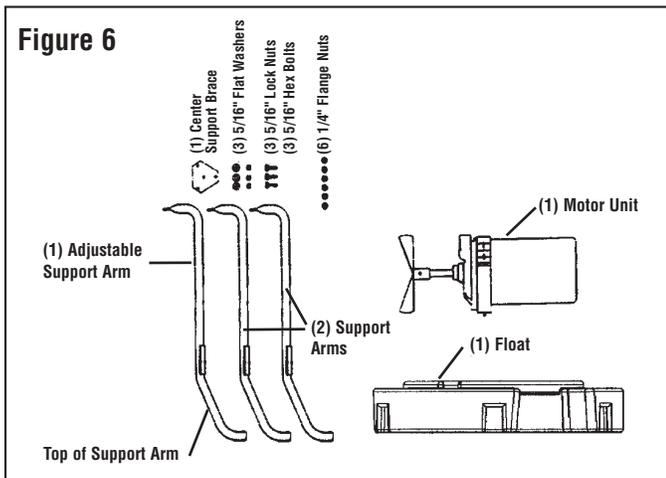
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## General Assembly Instructions



**NOTE:** If your aerator was received unassembled, proceed with the following instructions. **Failure to complete assembly as directed could result in damage to the unit.**

- A. Check that all of the materials have been received. Verify that you have all the materials shown in Figure 6, plus the desired pumping system.

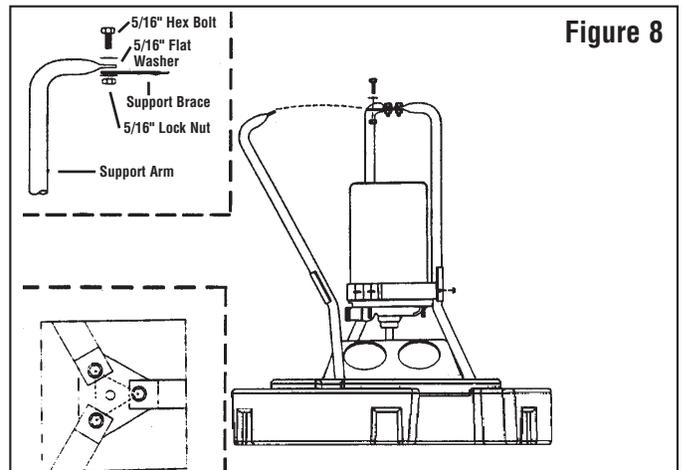
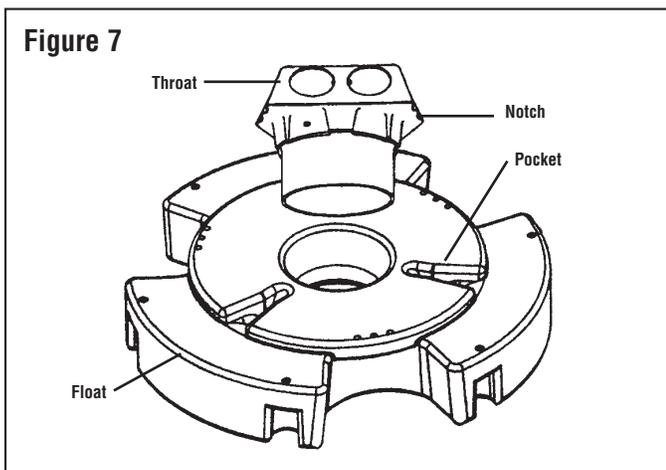


- B. Proceed to the proper assembly section depending on the model of your aerator.

### Assembly for LM11 Series Units

- A. Installing the LM11 Series throat — see Figure 7.

1. Lay the aerator float down as shown in Figure 7. Insert the LM11 Series throat into the float, aligning the notches of the throat with the pockets of the float. Press the throat firmly into place.



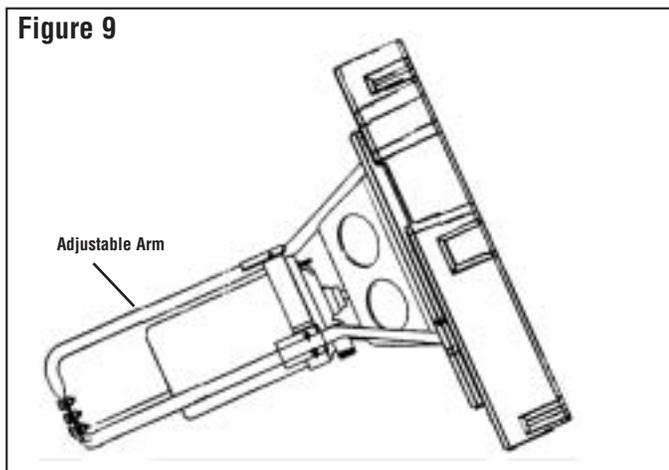
- B. Attaching support arms — see Figure 8.

1. Insert the top of the adjustable support arms into one of the pockets of the float. Repeat for the two standard arms.
2. Holding the power unit securely, insert the motor shaft through the bottom of the throat and bring the support arms up to the power unit.
3. Insert the studs of the brass ring into the second set of holes down from the top of the support arm (float end).
4. Apply two 1/4" flange nuts to each of the support arms and "snug" down the nuts to hold the arms to the brass ring. **(Do not over tighten, adjustment may be required later.)**
5. Attach the bottom of the support arms to the support arm brace with one 5/16" lock nut, one 5/16" flat washer and one 5/16" hex bolt for each of the three arms.



**NOTE:** When the support arms are assembled correctly, a perfect triangle should form where they come together at the support arm brace. Torque the 5/16" bolts to 15-17 ft/lbs.

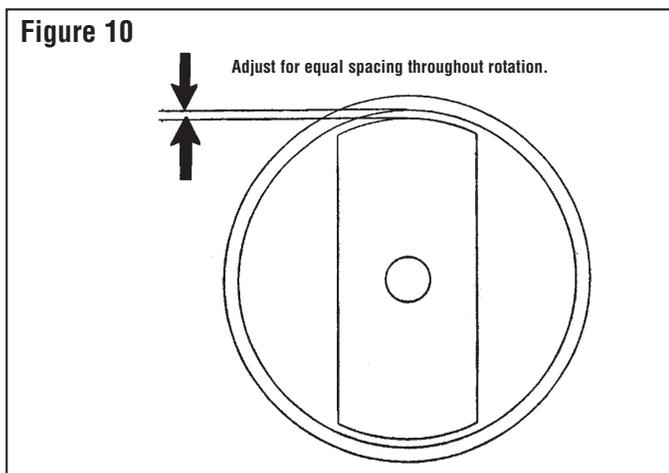
**Figure 9**



C. Aligning impeller in throat assembly — see Figure 9 & 10.

1. Turn the unit on its side so that the adjustable arm is up. See Figure 9. Place the impeller on the shaft and rotate the impeller one complete turn. Verify equal distance between the end of the impeller and the inner wall of the throat throughout rotation. See Figure 10.

**Figure 10**



2. If adjustment is required, loosen flange nuts on adjustable arm and slide power unit up or down to center impeller.



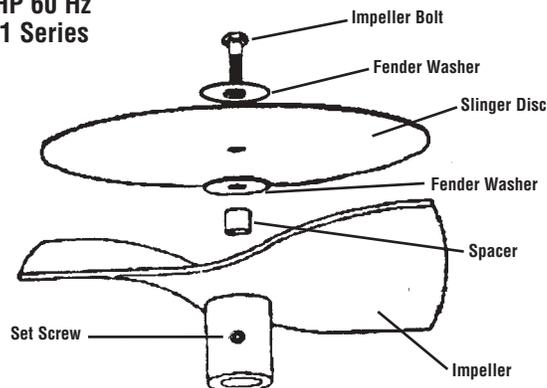
**NOTE:** If required move the adjustable arm to an alternate position in the float and repeat steps 1 and 2.



**NOTE:** If the impeller strikes the throat in any area, damage will result.

3. Tighten all nuts on mounting ring, starting with flange nuts on adjustable arm. Torque to 10-12 ft/lbs.

**1-5 HP 60 Hz  
LM11 Series**



**Figure 11**

D. Attaching impeller — see Figure 11.

1. Install the impeller onto the motor shaft.
2. Turn the impeller until the set screw is flush against the middle of the flat part of the motor shaft. Using a hex key driver, tighten the set screw.



**NOTE:** Use a drop of removable locktight on the impeller bolt.

3. Place a fender washer, slinger disc, fender washer and spacer on the impeller bolt. Install the bolt/slinger assembly on the impeller and torque the bolt to 35 ft/lbs.

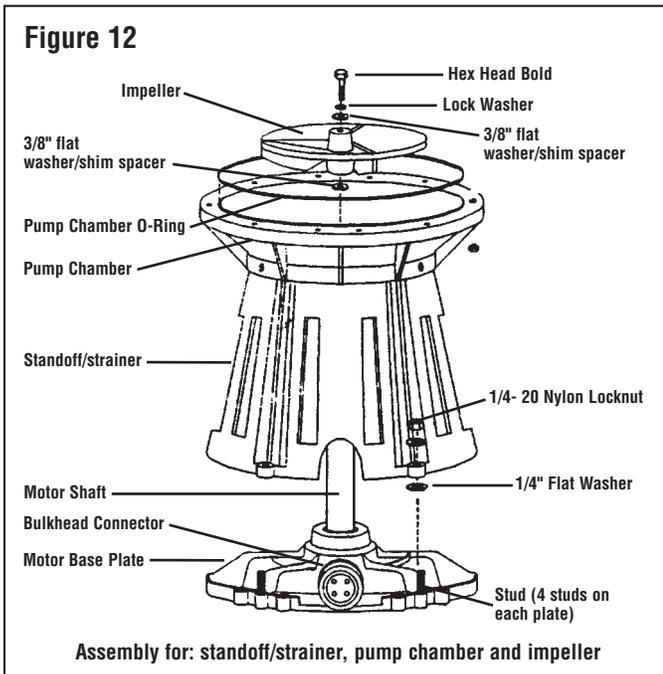


**NOTE:** The impeller assembly must be installed as illustrated. Placing components in the improper order will affect spray pattern.

## Assembly for LM10 Series, LM20 Series and LM30 Series

A. Installing standoff/strainer, pump chamber and impeller — see Figure 12.

1. Place a 1/4" flat washer over each of four studs on the motor base plate.

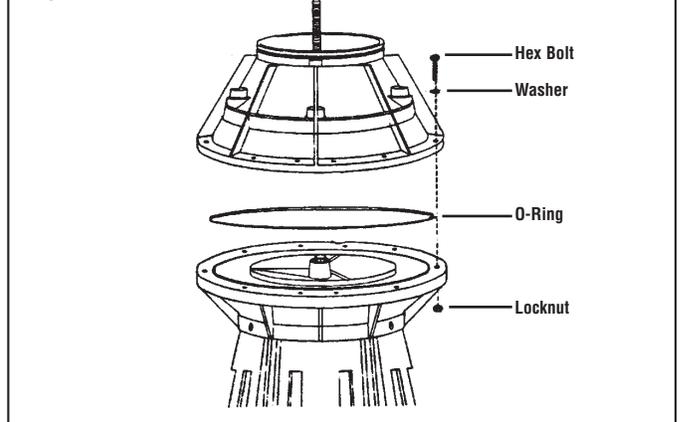


2. Install the pump chamber/standoff strainer assembly onto the motor base plate with four additional 1/4" flat washers and four 1/4" nylon locknuts.

**CAUTION:** Do not over tighten.

3. Install the impeller onto the motor shaft and secure using the hex head bolt, lock washer and 3/8" flat washer.
4. Turn the impeller by hand. If the impeller rubs or hits bottom, remove the impeller and place a shim spacer on the end of the motor shaft and reattach the impeller. Turn the impeller by hand again. If the impeller rubs, remove the impeller and add another shim. Reattach impeller. If there is still a clearance problem, please contact your Rain Bird distributor.

**Figure 13**



B. Installing diffuser housing and manifold assembly — see Figure 13.

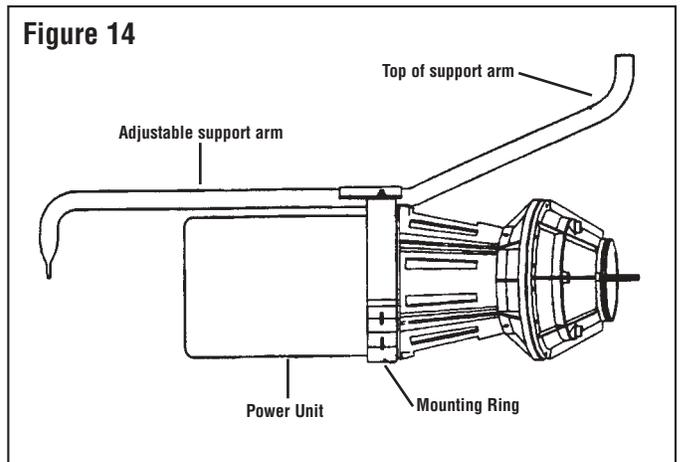
1. Insert the "O-Ring" into the groove on the pump chamber.
2. Install the manifold assembly onto the pump chamber and secure using eight #10 flat washers, eight hex bolts and eight nylon locknuts.



**NOTE:** The manifold has been pre-assembled at the factory with a volute located inside the manifold.

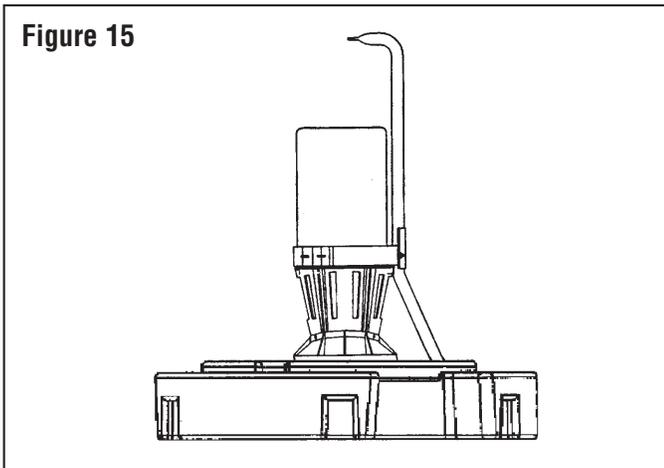
C. Installing adjustable support arm — see Figure 14.

1. Attach the adjustable support arm to the mounting ring using two 1/4" flange nuts. Torque nuts to 10-12 ft/lbs.

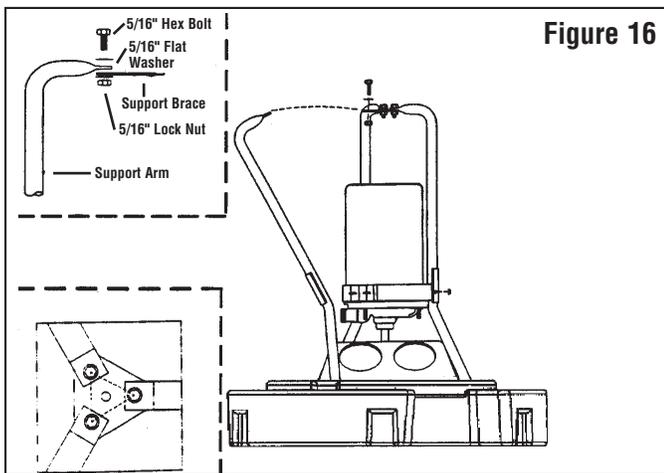


**NOTE:** Use the second set of holes down from the top of the support arm when assembling the support arms to the motor unit. Center the mounting ring's bolts in the middle of the slots.

D. Placing motor unit in float — see Figure 15.



1. Place the float on a flat surface with the top side down.
2. Insert the top of the support arm, which is attached to the motor unit into one of the pockets in the float. At this point, the support arm/motor assembly should be able to stand upright in the float without being held.



E. Installing remaining support arms — see Figure 16.

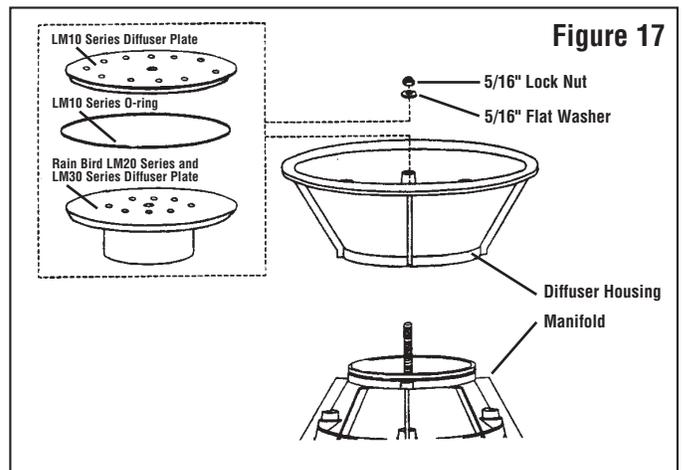
1. Insert the top of the second and third support arms into the pockets of the float.
2. Attach each of these arms to the mounting ring with two 1/4" flange nuts. Use the second set of holes down from the top of the support arm. Torque nuts to 10-12 ft/lbs.

3. Connect the bottom of the support arms to the support arm brace with one 5/16" lock nut, one 5/16" flat washer and one 5/16" hex bolt for each of the three arms.



**NOTE:** When the support arms are assembled correctly, a perfect triangle should form where they come together at the support arm brace. Torque the 5/16" bolts to 15-17 ft/lbs.

F. Installing diffuser housing — see Figure 17.



1. Turn the unit right side up or on its side.



**NOTE:** If installing a LM10 Series diffuser plate, verify a "O-ring" is pressed onto the plate before installing. If not, install one at this time.

2. Position the diffuser housing on top of the manifold, aligning the notch of the diffuser housing with the slot in the manifold.



**NOTE:** The diffuser housing is secured by the diffuser plate.

3. Line the diffuser plate up with the center stud of the manifold and secure it using one 5/16" flat washer and one 5/16" nylon locknut.

**CAUTION:** Do not over tighten. The plate must be flat, not bowed.



### 65W Low Voltage Lighting System—Specifications

This Lighting System uses 12 volt, 65W MR16 Type Bulbs, corrosion resistant thermoplastic light housings and stainless steel mounting brackets. The 65W Low Voltage Lighting System has a transformer mounted in a junction box which is installed on the unit. This allows for longer cable runs since the 12 volts is transformed at the unit. The controls consist of overcurrent protection, GFCI and 24 hour timer (controls are an option with 50 Hz systems).

<b>Lights per set</b> .....	3
<b>Total Wattage*</b> .....	195
<b>Total Candlepower*</b> .....	1200
<b>Line Voltage Volts/HZ/Amps*</b> .....	115/60/1.7
<b>Max Cable Run (ft)**</b> .....	.850

\*12 Volt, 20 watt, 40 degree spread MR16 Type Bulbs (700 Candlepower each)

\*\*This is for reference purposes only and may vary depending on actual voltage at the site.

**WARNING:** The 65W light must be fully submerged underwater during operation in order to dissipate the heat properly. Failure to do this may result in damage to the light and voids the Warranty.

### Electrical Installation—65W Low Voltage Light Set

A. Connect the light power cable to the terminal block in the power control center.

**CAUTION:** Light controls supplied contain GFCI (RCD) protection; if you have purchased your system without a factory control system, the use of a GFCI (RCD) is **required**.

B. After all electrical connections have been made, place the aerator with the lights in the water and apply power. Position cable to prevent any possible damage. If adjustment of any light fixture is required, disconnect power and adjust light fixture.

C. In the power control center, adjust the light timer to operate the lights as desired.



**NOTE:** The light controls go through the auxiliary contact of the motor starter. Therefore, the lights can only come on if the unit is running. If the light controls are in a separate enclosure the auxiliary contact will be shipped loose with it. It must be installed onto the motor starter and connected to the auxiliary contact terminal block in the light control PCC with 12 awg wire. The auxiliary contact should only be bypassed for service by placing a jumper across the auxiliary contact terminal block in the light control PCC.

#### MAINTENANCE:

Your light set is designed for years of dependable service. Periodically clean the glass lens of any debris and check the cords for any damage.

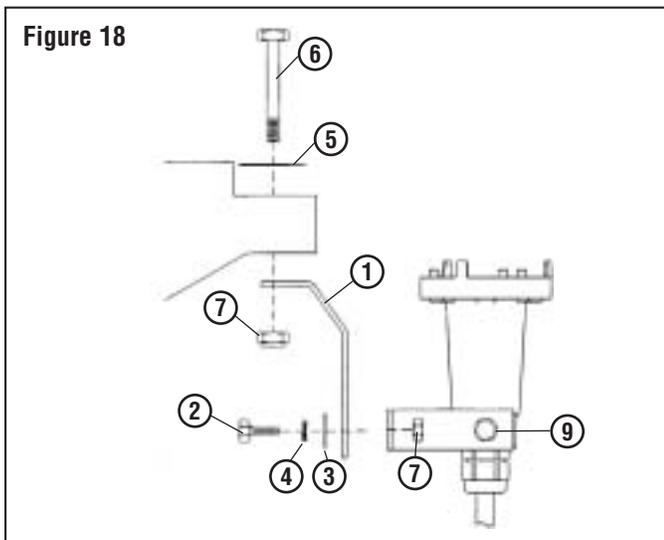
## Low Voltage Light Mounting Instructions on a Lake Management Aerator

### Light Fixtures

- A. Refer to Figure 18 and table to right. Check that all hardware and parts are included with each kit.
- B. The Lake Management Aerator float has three 1/2" holes in each light pocket of the float. The light fixtures are designed to be mounted in any of these holes. Each fixture is mounted with the bracket on the underside of the float. Secure each bracket (Item #1) to the float using items 5, 6 and 7. Install it with the float between the flat washer and bracket. Snug nut, overtightening will crush the float.
- C. The "L" brackets will already be mounted to the light fixtures at the factory. Mount each light fixture to a bracket using items 2, 3, 4 and 7 as shown in Figure 18. For 65W lights, adjust each fixture by loosening the bolt (Item #2) and sliding it in the slot of the bracket so that the light is fully submerged underwater during operation to prevent overheating (as close to the surface of the water as possible in order to maximize light output). It may be necessary to move the light to the other slot depending on the HP of the unit.
- D. Secure (strain relief) all of the cords with the ty-raps provided, especially the main power cord to the unit.

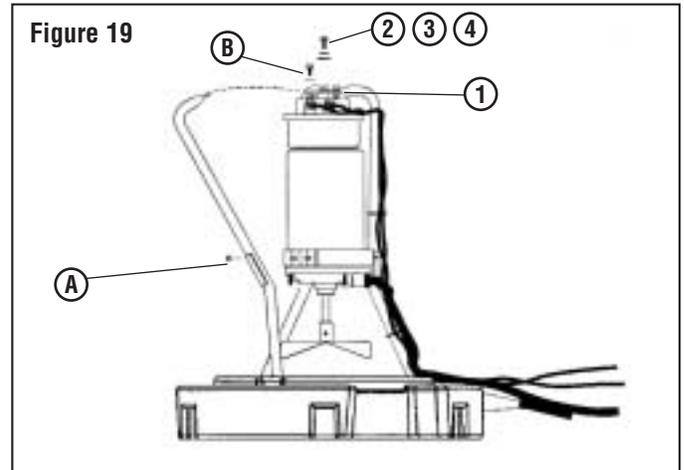
Item No	Description	Qty per Light	Part #
1	S/S Light Bracket	1	40-0100
2	1/4"-20 x 5/8 S/S Hex Bolt	2	24-0017
3	1/4" S/S Flat Washer	1	927-000
4	1/4" S/S External Star Washer	3	28-0013
5	1/4" S/S Fender Washer	1	28-0001
6	1/4" 20 x 2-3/4" S/S Hex Bolt	2	FR103
7	1/4" 20 S/S Nylon Locknut	2	C2-112
8	Ty-Rap (not shown)	2	GP5008
9	S/S "L" Light Bracket	1	40-105

\* Light Mounting Hardware Kit, P/N 12-0086;  
Bracket/Hardware Kit, P/N 12-0098



## Junction Box Installation

- 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" 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 19)
- 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 M6x 12 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 spacer, and tighten to the center threaded hole of the junction box.



Item No	Description	Qty	Part #
1*	Plastic Junction Box Spacer	1	41-0134
2*	M6 x 30 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



**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).

## Light Bulb Replacement

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

- A. Physically disconnect the power from the unit and the light set. Allow lights to cool to avoid skin burns.
- B. Remove the light fixture(s) from the float and from the water. Dry excess water off of the light fixture.
- C. Remove the light ring from the housing by twisting it counter-clockwise and lifting it off.
- D. Remove the glass lens and “O-Ring.”
- E. Remove the bulb by pulling it straight out of the socket.
- F. Install the new bulb by pushing it straight into the socket. Verify that the new bulb is the same wattage as the old bulb.



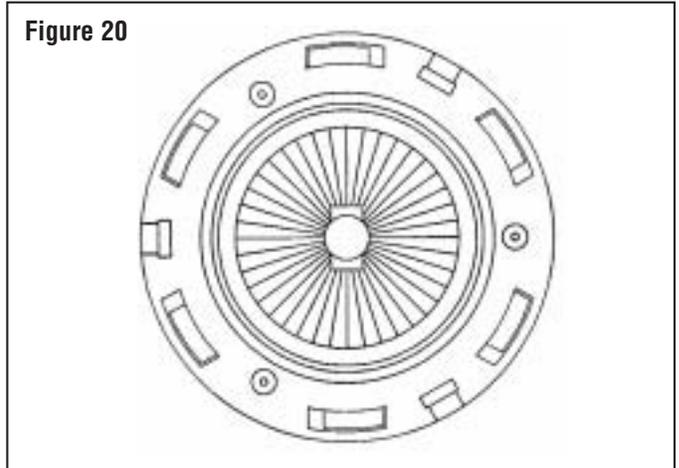
**NOTE:** The socket will be damaged if the bulb is not pulled out and pushed in straight. When installing or inspecting the bulb do not touch the inside of the reflector or the bulb itself with bare hands. This may cause premature failure or shorten bulb life.

- G. Reinstall the glass lens and the “O-Ring” onto the top of the housing. Place the light ring on top of the housing so it rests in the tabs and twist it clockwise until it snaps into place.



**NOTE:** If the light ring is on the housing properly, there will be approximately a 1/8" gap to the right of each tab on the housing when looking from the top—see Figure 20. If this gap is not present, the light ring is not on properly and needs to be twisted more clockwise.

Figure 20



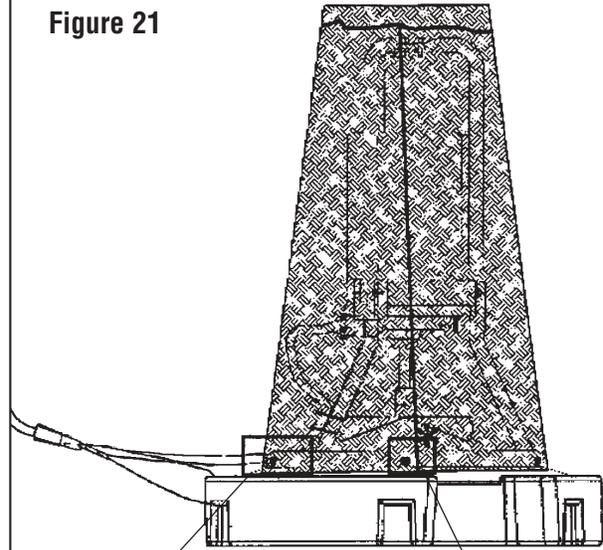
- H. Reinstall the light fixture(s) to the float.
- I. Reconnect power to the unit and the light set. Reset timers if necessary.

## Screen Installation

All Rain Bird aerators can be made available with either a 1/4" or 1/2" screen which helps to keep debris away from the aerator intakes and, therefore, decreases the probability of your Rain Bird aerator clogging. The screen is not standard equipment with the Rain Bird Aerator LM11 Series.

- A. Pull screen over motor unit and support arms until it reaches the first ridge on the float — see Figure 21.
- B. Make sure the cord(s) are running through the cord trough where the float arms fit into the float (choose one cord trough for all of your cables — see Figure 21). Pull approximately two inches of the screen past the mounting ring. This is to insure that all of the cord troughs are adequately covered.
- C. Fasten the screen to the float with the washers and screws provided. Fasten one screw and one washer on both sides of each cord trough — see Figure 21.
- D. Screw the remaining screws and washers through the screen into float between the cord troughs — three places — see Figure 21.

Figure 21



(1) Cord troughs are located on the float where the support arm meets the float. Fasten one screw and one washer on both sides of each cord trough (use six screws and six washers).

(2) Place a washer and screw between each cord trough (three screws and three washers).



## Trouble Shooting Guide

SYMPTOM	POSSIBLE CAUSE	CORRECTION
1) Small spray pattern (Spray drops gradually, i.e. minutes or hours)	Clogged intake Clogged screen Loose impeller	Remove debris Remove debris Tighten impeller bolt
2) Cavitation or low spray pattern (Spray drops suddenly, less than one second)	Low line voltage  Check for air bubbles surfacing around float  Debris between slinger and impeller	Check voltage at power control center and at aerator. Make sure the unit is within the specified voltage range.  Make sure mooring and anchoring lines are securely tightened.  Remove debris
3) Motor will not start	Breaker/fuse has tripped  Loose or broken terminals  Low voltage  Defective power cable  GFCI device has tripped	Check circuit breaker or fuse, reset and/or replace, if necessary. Check voltage.  Look for loose or broken terminals.  Measure power to starter. Check acceptable maximum cable length (see table of contents).  Check cable. If defective, call distributor.  Reset and test GFCI device. If device trips again call elec./dist.

To insure proper operation of the Rain Bird aerator it **must** have the **full proper voltage**.

If actual voltage does not fall within the chart listed at right, consult the factory before installing the aerator.

Rated	Minimum	Maximum
115V	109V	127V
208-230V	197V	250V
460V	437V	495V



## Technical Specifications for RB Lake Management Aerators – 60 Hz English Measure

Model	HP	Volts	Phase	Motor RPM	Full Load in Amps	Spray Height in Feet		Spray Width in Feet		Minimum Operating Depth in Inches	Shipping Weight in Lbs*		
LM10	1	115	1 ph	1725	13.4	10 - 12		4		40	205		
	1	230	1 ph	1725	6.8	10 - 12		4		40	205		
	2	230	1 ph	1725	12.0	16 - 18		4		40	205		
	3	230	1 ph	1725	13.7	20 - 21		4		40	210		
	3	230	3 ph	1725	8.0	20 - 21		4		40	210		
	3	460	3 ph	1725	4.0	20 - 21		4		40	210		
	5	230	3 ph	1725	14.4	23 - 24		4		40	215		
	5	460	3 ph	1725	7.2	23 - 24		4		40	215		
LM11	1	115	1 ph	1725	13.4	4		15		40	205		
	1	230	1 ph	1725	6.8	4		15		40	205		
	2	230	1 ph	1725	11.0	6		25		40	205		
	3	230	1 ph	1725	12.8	7		30		40	210		
	3	230	3 ph	1725	7.9	7		30		40	210		
	3	460	3 ph	1725	4.0	7		30		40	210		
	5	230	3 ph	1725	14.0	8		35		40	215		
	5	460	3 ph	1725	7.2	8		35		40	215		
LM20	1	115	1 ph	1725	13.4	O/S		I/S		40	205		
						H	W	H	W				
	1	230	1 ph	1725	6.8	4	12	8	3	40	205		
	2	230	1 ph	1725	12.5	6	19	12	3	40	205		
	3	230	1 ph	1725	14.3	8	23	16	3	40	210		
	3	230	3 ph	1725	8.5	8	23	16	3	40	210		
	3	460	3 ph	1725	4.3	8	23	16	3	40	210		
	5	230	3 ph	1725	14.8	9	26	18	3	40	215		
5	460	3 ph	1725	7.4	9	26	18	3	40	215			
LM30	1	115	1 ph	1725	13.4	O/S		Middle		I/S		40	205
						H	W	H	W	H	W		
	1	230	1 ph	1725	6.8	3	11	5	7	8	1.5	40	205
	2	230	1 ph	1725	12.3	4	15	7	10	12	1.5	40	210
	3	230	1 ph	1725	14.0	6	18	8	11	15	1.5	40	210
	3	230	3 ph	1725	8.2	6	18	8	11	15	1.5	40	210
	3	460	3 ph	1725	4.1	6	18	8	11	15	1.5	40	210
	5	230	3 ph	1725	14.0	7	24	10	12	16	1.5	40	215
5	460	3 ph	1725	7.0	7	24	10	12	16	1.5	40	215	

\*Shipping weight includes unit, 50'/15.24 m cable and power control center.

RPM = Revolutions Per Minute    HP = Horsepower  
 ph = Phase    Lbs. = Pounds



**Note:** Deduct 15% from the spray pattern when operating on 50 Hz power.

I/S = inner spray pattern    O/S = outer spray pattern



## Maximum Cable Lengths

60 Hz –1 and 3 phase units

Hertz & Phase	Horsepower	Voltage	Max Cable #12 (m)	Max Cable #10 (m)	Max Cable #12 (ft)	Max Cable #10 (ft)
60 Hz 1 Ph	1 HP	115	35 m	55 m	110'	175'
	1 HP	230	130 m	205 m	430'	680'
	2 HP	230	60 m	120 m	250'	395'
	3 HP	230	75 m	110 m	225'	355'
60 Hz 3 Ph	3 HP	230	128 m	205 m	420'	670'
	3 HP	460	515 m	790 m	1700'	2600'
	5 HP	230	75 m	115 m	240'	380'
	5 HP	460	290 m	465 m	960'	1525'

### **Maintenance**

Your Rain Bird aerator 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 and connector. These may cause oil leaks and/or electrical shorts. Inspect and clean the pumping chamber components.
- B. **After every three running seasons**, a simple oil change is necessary to keep your unit running smoothly. Please contact your local Rain Bird distributor to order a maintenance kit.

When a unit is properly cared for, it will give you years of trouble free service. If a problem does arise, please contact your Rain Bird distributor or the factory directly at 1-800-984-2255 option 4.



## Winterization

If you live in a region of the country that experiences long periods of cold weather, you may want to take your aerator out of the water. Rain Bird strongly suggests that you take the following three units out of the water:

- LM10 Series
- LM20 Series
- LM30 Series

These models are especially prone to freezing in. If an aerator becomes frozen-in, there is a possibility of motor damage. **Damage caused to the motor due to freezing will not be covered under warranty.**

The LM11 Series pumps a higher volume of water and the spray pattern will not freeze as easily. These units will freeze in if the weather stays severe for a long enough period of time. You can decrease the chance of freezing in if you run these units 24 hours a day during long periods of extremely cold weather.

## WARNING:

- Aerators located in or near swimming pools, garden ponds and similar locations must be equipped with Ground Fault Circuit Interrupter. Please see your local Rain Bird distributor for price and availability.
- 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 an authorized Rain Bird distributor.

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*• Les aerateurs situes a courte distance ou proche de piscines, etangs de jardin et semblable endriots doivent etre equipes avec un interrupteur avec control de defaut. S'il vous plait voyez votre d'istributeur d'Rain Bird local pour priz et desponibilitee.*

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*• La gamme de temperature permet pour cet equipement est de -12 a 40C/10 a 104F.*

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*• Si la corde electrique est abimee, elle doit etre remplacee par une corde special ou assemblage disponible d' par un centre de service de vente autorise par Rain Bird/Rain Bird, Inc.*

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*• L'eau pourrait devenir legerement pollue dans le tres rure cas oul'huile fuirait.*

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## WARRANTY

Rain Bird® Lake Management Aerators are included in the Rain Bird Professional Customer Satisfaction policy. For additional warranty information, please contact your Rain Bird distributor.

