



Rain Bird® Algae Control System™ (ACS) Owner's Manual



120-Volt AC Model:	210-240-Volt AC Model:		24-Volt AC Model:	24-Volt DC Model:
RBACS400	RBACS400-EU	RBACS400-UK	RBACS400-24-AC	RBACS400-24-DC
RBACS500	RBACS500-EU	RBACS500-UK	RBACS500-24-AC	RBACS500-24-DC
RBACS600	RBACS600-EU	RBACS600-UK	RBACS600-24-AC	RBACS600-24-DC

IMPORTANT SAFETY INSTRUCTIONS

READ, UNDERSTAND, FOLLOW AND SAVE THESE INSTRUCTIONS

Operation, assembly details, parts listing, maintenance guidelines, troubleshooting hints and warranty information

WARNING

DO NOT operate device out of the water. This will result in the deforming of transducer head and will void your warranty.

Table of Contents

Introduction 2

Important Safety Instructions 2

Getting Started

Parts and Assembly 3

Placement - How To Determine Where To Place The Device 4

Installation

Unlined Pond - Stakes or Poles Method 5

Lined Ponds - Cement Blocks Method 6

Lined Pond - Sled Mount Method 7

Operations and Maintenance

What To Expect 8

Easy-To-Read Indicator Lights 8

Maintenance Guide 9

Troubleshooting 10

Technical Specifications 10

Rain Bird's Professional Customer Satisfaction Policy 11

Contact Information 12

Date Purchased: _____

Serial Number: _____

Place of Purchase: _____

Address: _____

Introduction

Congratulations. You have purchased an environmentally-safe algae control system. Your Rain Bird® device uses state-of-the-art ultrasonic technology to kill algae without harming other aquatic life such as plants or fish. Please read and follow all of the instructions in this manual.

If you have any questions concerning your Rain Bird device, call us at 520-741-6100. Thank you.

Important Safety Information

READ AND FOLLOW ALL INSTRUCTIONS

WHEN USING ELECTRICAL PRODUCTS, BASIC PRECAUTION SHOULD ALWAYS BE PRACTICED INCLUDING THE FOLLOWING:

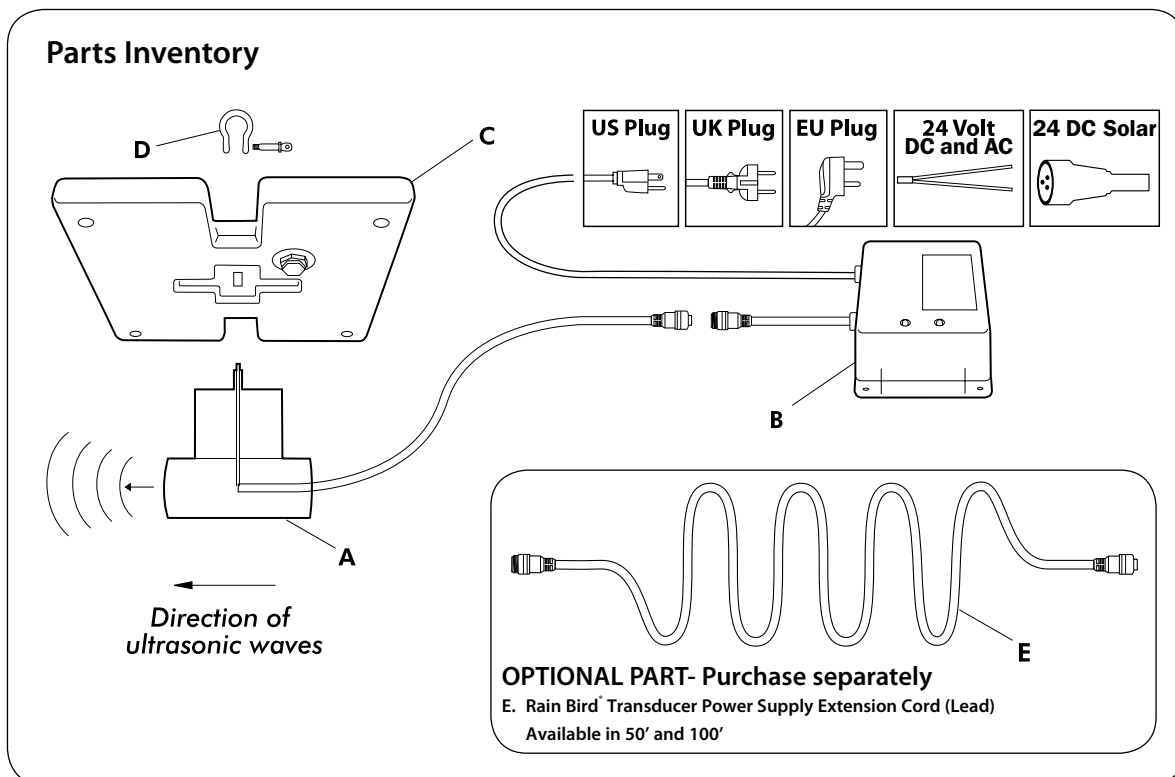
1. **READ AND FOLLOW ALL SAFETY INSTRUCTIONS.**
2. Read and follow all instructions that are on the product or provided with the product.
3. Do not use an extension cord.
4. Reference the National Electrical Code, ANSI/NFPA 70, for the installation of wiring and clearances from power and lighting conductors.
5. Installation work and electrical wiring must be done by qualified person(s) in accordance with all applicable codes and standards, including fire-rate construction.
6. Do not install power supply or use within 10 feet of a pool.
7. Do not use in a bathroom.
8. **WARNING**—Risk of Electric Shock. When used outdoors, install only to a covered Class A GFCI protected receptacle that is weatherproof with the power unit connected to the receptacle. If one is not provided, contact a qualified electrician for proper installation. Ensure that the power unit and cord do not interfere with completely closing the receptacle cover.
9. **WARNING**—Risk of Fire. Installation involves special wiring methods to run wiring through a building structure. Consult a qualified electrician.
10. **WARNING**—DO NOT operate device out of the water. This will result in the deforming of transducer head and will void your warranty.
11. **WARNING**—To reduce the risk of injury, DO NOT allow children to play with this device or any of its parts.
12. **WARNING**—Locate the cord where it will not be damaged by lawn mowers, hedge clippers, propellers, and other equipment. If electric power to the power supply has to run underground to a pond or lake, an armored cable should be used for this supply and run in a conduit under the ground to minimize the risk of damage. Always check with your local regulations.
13. **WARNING**—To reduce the risk of electric shock, replace damaged cords (leads) immediately. Use a qualified electrician to replace the cords (leads).
14. **WARNING**—Risk of Injury. May cause tissue damage. DO NOT place the transducer against your skin or body while the device is operating.

SAVE THESE INSTRUCTIONS - This manual contains important safety and operating instructions for power units.

Getting Started

Parts

- A. Rain Bird® Transducer Unit (**Note:** Direction of ultrasonic waves)
- B. Rain Bird® Power Supply Box
- C. Rain Bird® Float Unit
- D. Rain Bird® Float Shackle



Assembly

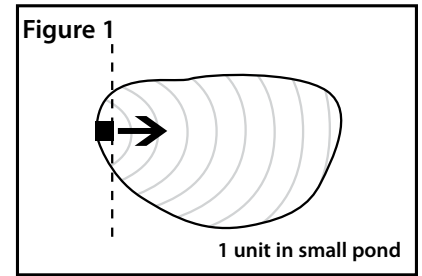
1. Position the **Float Unit (C)** with the white nut facing down and attach it to the **Transducer Unit (A)** with the **Float Shackle (D)**.
2. Mount the Power Supply Box to any convenient flat surface by using screws through the four mounting holes in the corners of the box. Attach the cord (lead) from the **Transducer Unit (A)** to the cord (lead) from the **Power Supply Box (B)** making sure the waterproof connection is securely fastened by completely tightening each flange.
3. If you are using an optional **Transducer Power Supply Extension Cord (Lead) (E)**, attach it to the cord (lead) from the **Power Supply Box (B)** and the cord (lead) from the **Transducer Unit (A)** making sure all waterproof connections are securely fastened by completely tightening each flange.
4. **DO NOT CONNECT** (plug in) the **Power Supply Box (B)** to the power source* until the **Transducer Unit (A)** is in the water as this will result in the deforming of the transducer head and will void your warranty.

*If using 24-volt DC power model with batteries see separate instruction booklet.

Placement

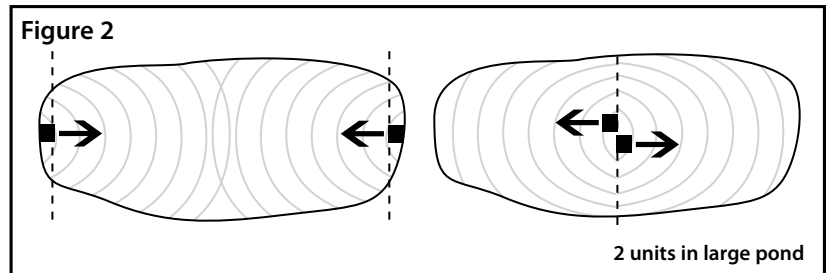
How To Determine Where To Place The Device

The Rain Bird® Algae Control device emits directional ultrasonic waves that “fan out” at approximately 180° from the front of the transducer (See Figure 1). It is important to install your device to provide the optimal exposure of the ultrasonic waves to the body of water you are treating. You should position the unit in a minimum of 2' of water, close to the edge of the water to minimize the area behind the unit that will not receive the ultrasonic waves.

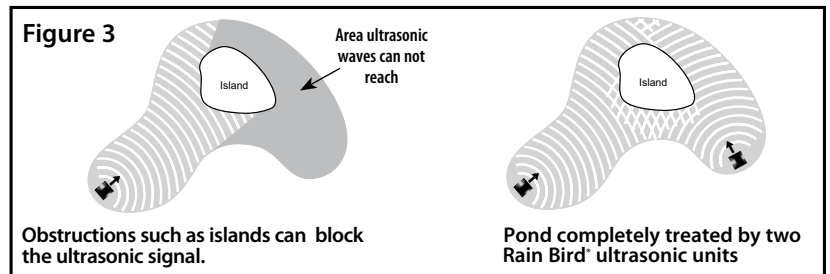


Large installations and certain shapes of ponds or lakes may require installation of more than one device.

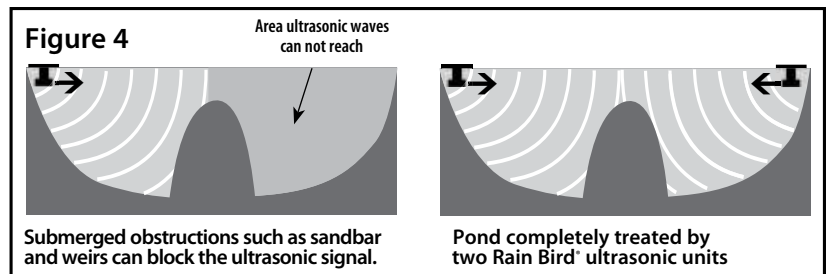
Multiple devices can be installed at opposite sides of a lake or pond or attached together pointing in different directions, depending on your site requirements (See Figure 2).



The Rain Bird device, like all ultrasonic devices, is a “line of sight” technology. Ultrasonic sound waves will not go around corners or navigate around islands that may be in your body of water. Ultrasonic sound waves reflect or bounce off of hard surroundings, such as concrete, rip-rap, and large rocks, islands, as well as submerged obstructions such as sandbars and weirs. Even thick weeds can block or degrade the signal strength. (See Figures 3 and 4).

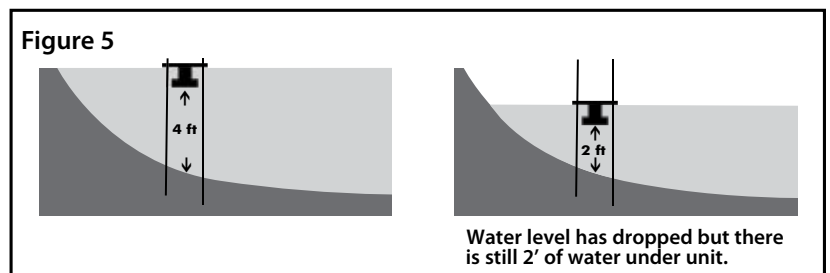


Make sure that the placement of the device takes into account any potential reductions in the water level. You must have a minimum of 2' of water at all times. (See Figure 5)



Need help?

For FREE placement assistance, please contact your Rain Bird dealer or Rain Bird Customer Service at 520-741-6100. Make sure that you have a site-plan which includes accurate dimensions, the shape configurations of your water body, and identifies and locates any submerged obstructions on your plans.



Installation

There are several different ways to install your Rain Bird® unit in the water depending on conditions. In an unlined pond you can use the Stakes or Poles Method. You can also mount the unit to a dock or floating raft. In a lined pond you can use the Cement Blocks Method to position the unit or use the Sled Mount Method (purchase kit from Rain Bird).

Note: *If your pond has a steep slope or is unsafe for you to wade out in it, a small boat or a raft may be needed.*

Unlined Ponds - Stakes or Poles Method

Materials Needed: poles or stakes, hammer

1. Place the stakes in the water. A minimum of 2' of water is required at all times. Use the float to judge the spacing of your stakes.



2. Place the unit in the water on the stakes, leaving the cable unconnected on the shore line. It is important to make sure that the float can go up and down with the water level. Make sure flat end of the transducer head (not the side with the cord) faces out.



3. Now that the unit is in the water* you may plug the Rain Bird power supply into the GFCI outlet.



*** It is EXTREMELY important you do not connect to power source before you put it in the water as this can result in damage to the transducer head and will void your warranty.**



Installation

Lined Ponds - Cement Blocks Method

This method works in locations where there will not be changes in depth of water. This method is designed to use the cement (or cinder) blocks as weight to anchor the unit in place and keep it pointed in the right direction, secured with four knots.

Materials Needed: waterproof rope (polypropylene),
2 cement blocks

1. Cut two ropes based on your water depth and loop each one twice around each cement block.
2. Place the cement blocks in the water with the minimum of 2' of depth and then place the device into the water. Use the ropes to secure it to the cement blocks by tying the ropes to the 4 corners of the float. Make sure flat end of the transducer head (not the side with the cord) faces out.
3. Once the ropes have been secured to the four corners of the float, reposition the blocks (if needed) to tighten up the ropes and make sure the unit is pointed in the right direction.
4. Now that the unit is in the water* you may plug the Rain Bird® power supply into the GFCI outlet.

* It is **EXTREMELY** important you do not connect to power source before you put it in the water as this can result in damage to the transducer head and will void your warranty.



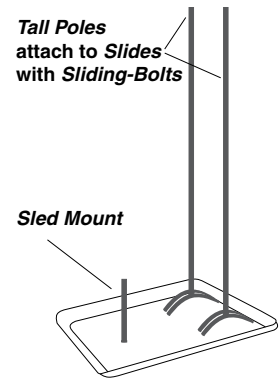
Installation continued

Lined Ponds - Sled Mount Method

For installing your Rain Bird® unit in a lined pond or lake, especially one with a fluctuating water level, we recommend using the Rain Bird Sled Mount Kit. It is simple to assemble and install, and will make it easier to access your device during periodic routine maintenance.

Included in the Sled Mount Kit: one stainless steel sled base; two stainless steel mounting poles; and two brass sliding-bolts.

Addition Materials Needed: waterproof rope, lubricant (such as petroleum jelly), cement block, short stake and a hammer



1. First, apply lubricant to the threads, slide bolts, and the channels of the four slides and then loosely install the mounting poles to the sled base using the sliding-bolts.
2. Attach a waterproof rope to the sled base in the hole and anchor it to the shore (above the high water mark and above the liner) with a stake. The rope will allow you to position the unit the proper distance from the shore and prevent the sled from sliding down the slope of the pond. The rope is also helpful when you need to retrieve the unit from the water for periodic cleaning.
3. In shallow water, place a cement block on the sled mount to provide weight (place over the mounting pole) and slide the sled assembly into the water to the proper location.
4. Adjust angle of the poles to vertical positions by turning the poles counter clockwise (a half turn) only to loosen them (just enough to allow you to set the angle. **Note:** Be careful not to turn the poles too far while loosening to prevent the sliding-bolts from falling off.) Once the poles are set vertically, tighten the poles by turning them clockwise.
5. Slide the Rain Bird unit onto the poles, facing the correct direction. Make sure flat end of the transducer head (not the side with the cord) faces out.
6. Adjust the anchoring rope to make sure there is no slack in the line to prevent the unit from sliding down the pond's slope.
7. Now that the unit is in the water* you may plug the Rain Bird power supply into the GFCI outlet.



*** It is EXTREMELY important you do not connect to power source before you put it in the water as this can result in damage to the transducer head and will void your warranty.**

Operations and Maintenance

To operate effectively, the Rain Bird® Algae Control System must be on 24-hours-a-day continuously emitting algae-killing ultrasonic waves.

What To Expect

You will begin to see results from within a few days to three weeks, depending on the type of algae and how much algae was established in your water site. In addition, while certain algae will sink to the bottom when killed, some forms turn brown and float on the surface in mats of dead algae. If this occurs, **you should then remove it from the water.** Secondary blooms may occur due to the sunlight that can now reach the algae spores on the bottom that previously had not received sufficient sunlight to grow. Leave your device in the water and it will control the secondary bloom as well. This kill/bloom sequence may repeat two or three times as the “reservoir” of spores is exhausted. After that, the water should stay clear. Occasionally, after major rain events, you may experience algae blooms caused by large amounts of algae spores being washed into your water site. Depending on the amount of algae in the bloom, it can take a couple of days to a week for the Rain Bird Algae Control System to bring the algae under control and clear the water.

Easy-To-Read Indicator Lights

The Rain Bird ACS device has two lights on the power supply box. The solid “ON” green light indicates that the Power Supply is receiving electricity. The blinking green light indicates that your transducer is connected properly to the Power Supply and receiving power to produce the ultrasonic waves. This indicator light requires positive feedback from the transducer in the water and shows you that the Rain Bird device is working properly. It will blink every other second on average.



Check that the power supply lights are lit

Blinking Green Light = Transducer is receiving power to generate ultrasonic waves.

Solid Green Light = Power Supply is receiving electricity.

Operations and Maintenance continued

Maintenance Guide

It is important to keep the transducer head clean and free of algae or other scum buildup. We recommend that at least every 30 days you unplug your Rain Bird® device from the power source, take it out of the water, wipe the face of the transducer off, put it back into the water and plug it back in. In most applications, once a month cleanings are sufficient, however, in a new installation you should check your unit(s) after the first two weeks to see if more frequent cleanings are necessary. Failure to keep the face clean will interfere with the ultrasonic waves and result in reduced effectiveness of the device.

1. Unplug the Rain Bird power supply* from the Class A GFCI electrical outlet.

* It is **EXTREMELY IMPORTANT** you do not remove the Rain Bird transducer from the water before you unplug it from the electric outlet, as this can result in damage to the transducer head and will void your warranty.



2. Once you have unplugged the power supply, retrieve the unit from water.



3. Wipe the transducer head with a soft sponge or cloth, removing dirt and build-up. In some cases with tough organic material or calcium deposits, it may be necessary to use vinegar to clean the head. Do not use abrasive cleaners that would scratch the head.



Dirty Head



Dirty Head



Clean Head

4. Place unit back in the water facing the correct direction. Make sure flat end of the transducer head (not the side with the cord) faces out.



5. Once the unit is placed back in the water you may connect the Rain Bird® power supply back into the power source.



Troubleshooting

Check the following guide for possible cause of a problem before contacting Rain Bird® for service assistance.

Symptom	Causes	Solution
Both indicator lights are off	Electric power failure	Test and turn on power to grounded (earthed) power supply. (For power models install only to a Class A GFCI receptacle or equivalent.)
	Damaged power cord or damaged power supply box	Unplug and inspect for damage. Replace if necessary.
Both indicator lights are off (battery powered unit)	Dead Battery	Test, recharge and if necessary replace batteries.
Ultrasonic operation power indicator light is not blinking, but solid green light indicator is on	Bad connection to transducer or unit Damaged transducer or power unit	Unplug, inspect cord (lead) attached to transducer. Clean and reconnect.
Algae is not dying	Dirt or debris on the face of the transducer may be interfering with the ultrasonic waves	Clean the face of the transducer regularly (read Maintenance Guide)

Technical Specifications

EPA Est. 074929-MA-001

Models	Power Input		UL Approved Power Supply	NSF Certification	Range*	Coverage*
RBACS400	US 120V AC, 60 Hz, 60 W	EU/UK 240V AC, 50 Hz, 60 W	RBAC-PSUP RBAC-PSUPR	NSF/ANSI 61 & 372	400 ft/121.92 m	up to 2 acres
RBACS400AC	US 24V AC, 1 Amps Max**	EU/UK 24V AC, 1 Amps Max	—	NSF/ANSI 61 & 372	400 ft/121.92 m	
RBACS400DC	US 24V DC, 1 Amps Max***	EU/UK 24V DC, 1 Amps Max	—	NSF/ANSI 61 & 372	400 ft/121.92 m	
RBACS500	US 120V AC, 60 Hz, 60 W	EU/UK 240V AC, 50 Hz, 60 W	RBAC-PSUP RBAC-PSUPR	NSF/ANSI 61 & 372	500 ft/154 m	up to 6 acres
RBACS500AC	US 24V AC, 1 Amps Max**	EU/UK 24V AC, 1 Amps Max	—	NSF/ANSI 61 & 372	500 ft/154 m	
RBACS500DC	US 24V DC, 1 Amps Max***	EU/UK 24V DC, 1 Amps Max	—	NSF/ANSI 61 & 372	500 ft/154 m	
RBACS600	US 120V AC, 60 Hz, 60 W	EU/UK 240V AC, 50 Hz, 60 W	RBAC-PSUP RBAC-PSUPR	NSF/ANSI 61 & 372	600 ft/182 m	up to 8 acres
RBACS600AC	US 24V AC, 1 Amps Max**	EU/UK 24V AC, 1 Amps Max	—	NSF/ANSI 61 & 372	600 ft/182 m	
RBACS500DC	US 24V DC, 1 Amps Max***	EU/UK 24V DC, 1 Amps Max	—	NSF/ANSI 61 & 372	600 ft/182 m	

* Range and coverage depends on location and conditions.

** 24 volt AC units are compatible with any 24 volt AC low voltage lighting or irrigation power source.

*** 24 Volt DC units are compatible with any 24 volt DC power source.

Solar Power System, which includes two batteries, may be purchased separately from Rain Bird

Rain Bird's Professional Customer Satisfaction Policy

Rain Bird will repair or replace at no charge any Rain Bird professional product that fails in normal use within the warranty period stated below. You must return it to the dealer or distributor where you bought it. Product failures due to acts of God including without limitation, lightning and flooding, are not covered by this warranty. This commitment to repair or replace is our sole and total warranty.

Implied Warranties of Merchantability and Fitness, if Applicable, are Limited to One Year from the Date of Sale.

We will not, under any circumstances be liable for incidental or consequential damages, no matter how they occur.

Golf Products

Golf Rotors: DR, DH, DS, ESR, EAGLE™ Series and EAGLE IC™ Series, Rain Bird Series and Rain Bird IC™ Golf rotors - 3 years.

Additionally, any DR, DH, DS, EAGLE™ Series and EAGLE IC™ Series, Rain Bird Series and Rain Bird IC™ Golf Rotor sold and installed in conjunction with a Rain Bird Swing Joint - 5 years. Proof of concurrent installation is required.

Swing Joints – 5 years

Brass And Plastic Valves: EFB and PE-B Remote Control Valves, and Brass

Quick Coupling Valves and Keys – 3 years

Filtration system controllers – 3 years

LINK™ Radios – 3 years

TSM-3 SDI12 Soil Sensor (ISS) – 5-years

Algae Control System (ACS) – ACS400, ACS500, ACS600 – 3 years

Note: DO NOT operate device out of the water. This will result in the deforming of transducer head and will void your warranty.

Hose Reels – 2 years

All other golf products – 1 year

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This algae control system employs a:



Certified to NSF/ANSI
61 & 372

Rain Bird power supply for outdoor use.

EPA Est. 074929-MA-001



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The Intelligent Use of Water™
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