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# Lake Bed Aeration

## *Installation and Owner's Manual*

120 V/240 V 60 Hz North American Model

220-240 V 50 Hz European/Australian Model

### Aeration Expectations

- Stabilize and improve oxygen levels from the surface of water body to the bottom.
- Consistent temperature from the surface of the water body to the bottom.
- Reduction of bottom oxygen-depleting muck and foul odors.
- An increased area for healthy, aerobic bacteria growth.
- Elimination of oxygen-related fish kills.

### Safety First

Please read these instructions before using this aeration system. Failure to follow the recommendations in this manual will void the manufacturer's warranty and may result in personal injury or death.

**An improper electrical connection to the lake bed aerator system and grounding conductor can result in electrical shock, injury, or death. For maximum safety, it is highly recommended that a Ground Fault Circuit Interrupter (GFCI) protected circuit is used for the power supply.**

**Always** connect the aeration compressor cabinet to a properly grounded outlet. If your outlet is questionable, have it checked by a qualified electrician. The 120 V cabinets have a ground fault interrupter (GFCI) outlet.

Use of an aeration system in a water body during freezing conditions may cause large holes in the ice. The ice around these areas is extremely thin. Injury or death may result if people fall through the ice in these locations. Aqua Control strongly recommends that these areas and the associated dangers be clearly posted in multiple locations around the body of water. The owner will assume **all** responsibility for using the Aqua Control aeration system during the winter months.

### Warning

- Install the compressor cabinet at a safe distance from flooding and out of standing water areas.
- Keep the compressor cabinet at a safe distance from direct contact with irrigation or sprinkler heads.
- Unplug the electrical cord from the outlet prior to any maintenance.
- Do not attempt any unspecified activity that is not listed in this manual or directly requested by an authorized Aqua Control representative or distributor.
- Do not operate the aeration system if unusual noises or odors are detected. Disconnect the power cord from outlet and contact your distributor to correct any problems.
- This appliance is not intended for use by young children or infirm persons unless they have been adequately supervised by a responsible person to ensure that they can use the appliance safely. Children should be supervised to ensure that they do not play with the appliance.
- Refer to these directions as needed in order to ensure the safe operation of the system.
- Failure to follow these instructions will void the warranty and could result in injury or death.

## Maintenance Safety

Only use parts that are supplied or approved by Aqua Control. Use of other parts may result in poor performance that could create a hazardous situation and will void the warranty.

If the supply cord is damaged, it must be replaced by the manufacturer, its service agent, or a similarly qualified person in order to avoid a hazard.

Unplug the system and refer servicing to a qualified electrician for any of the following conditions:

- When compressor fan, outlet, or other electrical components need service.
- If the cabinet is producing unusual noises or odors.
- After any accidental flooding prior to start-up.

## Ground Instructions

This product must be grounded. In the event of an electrical short circuit, grounding reduces the risk of electric shock by providing an escape wire for the electric current. This product is equipped with a cord having a grounding wire with an appropriate grounding plug. The plug must be plugged into an outlet that is properly installed and grounded in accordance with all local codes and ordinances.

**WARNING**—Improper installation of the grounding plug can result in electric shock. When repair or replacement of the cord or plug is required, do not connect the grounding wire to either flat blade terminal. The wire with insulation having an outer surface that is green with or without yellow strips is the grounding wire.

Check with a qualified electrician or service person when the grounding instructions are not completely understood or when in doubt as to whether the product is properly grounded. Do not modify the plug provided. If it does not fit the outlet, have the proper outlet installed by a qualified electrician. Only connect the product to an outlet having the same configuration as the plug. Do not use an adapter with this product.

## Initial Inspection

### Open and Inspect Product Immediately Upon Receiving Your Order

#### Product Damaged in Delivery

The Aqua Control Aeration System was properly packed and accepted by the freight carrier for shipment. It is their responsibility to deliver the system in perfect condition.

#### Apparent Damage or Loss

If upon delivery, the equipment or container indicates “Damage in Transit,” such goods should be refused until the freight company’s agent has noted such damage on the freight bill. A copy of this bill should be given to you, noting the nature and extent of the damage. If any part of the shipment is lost in transit, have that shortage noted on the freight bill by the shipping agent.

#### Concealed Damage

If damage is discovered that was not apparent upon delivery, notify the freight company immediately to inspect the damaged equipment. The inspector should provide a “Concealed Bad Order” report. Inspections must be requested within seven days of delivery. Do not move damaged goods from the original point of delivery. Retain all original packaging/containers for inspection. File a “Full Value Replacement” claim against the freight company.

## Systems Materials List

Upon receipt, inspect to ensure that all of the components are included. If your aeration system has experienced damage from shipping, promptly report the damage to the delivery company. Verify that you have received the following equipment:

- Compressor(s): Located inside the cabinet. The compressor is 115 V or 230 V single phase and includes a power cord with a three-pronged plug that should be plugged into a Class A GFCI receptacle box.
- Airpod Diffuser Base: Flexible membrane tube or disc diffuser(s) are mounted on their own base that is weighted at the factory for easy sinking and installation.

- **AnchorLine Self-Weighted Air Supply Tubing:** Used to supply air from the shore-mounted compressor to the diffuser pad(s), it runs along the pond or lake bottom and can be buried or left exposed. Made of a high-density PVC composite, it is compatible with included insert fittings and common PVC glue. Heavy wall thickness provides protection from punctures or kinking.
- **Remote Manifold (Optional):** Used when the LBA compressor is located long distances from the water's edge. This remote manifold allows a single 1"–1½" underground line to feed up to 6 AirPod diffusers.
- Heavy duty polymer base (AirPro only)

## Installation Tools and Materials

For quick, easy, and professional installations, the following tools and materials are required:

- Thin, nylon rope (length needs to be twice the depth of the pond)
- Utility razor knife
- Flat head screwdriver
- Shovel (if self-weighted tubing is buried prior to entering the pond)

## Compressor/Cabinet Installation

- Find a location for the cabinet that is near the pond and out of the flood zone.
- Remove the cabinet from the shipping container and place on desired location.

## Airpod Diffuser Assembly

The diffuser comes partially assembled for you. You will need to complete the following steps:

- Hand-tighten all fittings, do not over-tighten
- Screw in 6" riser tubes
- Screw on four membrane diffuser tubes (or two membrane disc diffusers) to the 6" riser tubes

## Airpod Diffuser Placement

**IMPORTANT**—Correct placement of the diffuser is critical. The ability of the aeration system to affect your pond/lake is dependent upon the position of the diffuser. It should be as close to the deepest portion of the pond. It is not recommended for the self-weighted tubing to be attached to the compressor prior to installing all of the tubing for each diffuser. Attaching to the tubing to the compressor and then placing the tubing in the pond may place excessive stress on the compressor and the connectors.

1. Uncoil the roll of self-weighted tubing along the shoreline of your pond. Make sure the tubing has no twists, kinks, or tangles. For lengths exceeding 100 ft. (30 m), multiple rolls of tubing must be connected with the factory supplied, double-ended hose barbs and clamps. In some installs, it may be preferable to unroll only one roll of tubing at a time and place additional rolls in a boat.
2. Anchor one end of the tubing to a location near the compressor. Do not attach tubing to the compressor at this time.
3. Attach each roll of tubing using the double-ended hose barbs and clamps until the diffuser placement site has been reached. If necessary, plug the end of the tubing to avoid water entering the tubing and attach a float to the end of the tubing for ease of locating to continue installation (*plugs not included*).
4. Once all of the rolls of self-weighted tubing are installed, attached the tubing to the hose barb on the diffuser.
5. Locate the two holes at the end of the diffuser opposite the check valve/hose barb assembly. Thread rope through these two holes and center the rope. This rope will be used to lower each diffuser to the pond bottom. **The minimum rope length must be twice the depth of the water.** Hold both ends of the rope and lower the diffuser to the bottom, keeping the top of the diffuser (where the membranes are located) upright. When the diffuser is positioned on the pond bottom, release one end of the rope and pull the rope up.
6. Repeat steps 1-5 for each diffuser.
7. Once the diffusers are placed on the bottom of the pond/lake, attach the anchored end of the self-weighted tubing to the compressor.
8. You may test each diffuser individually upon installation. At least two valves at the compressor cabinet should be

at least partially open to ensure that excessive pressure is not sent to the diffuser being tested. This could result in damage to the tube membranes.

9. The tubing may be buried in a trench and/or cover with rocks or dirt. For winter operation in freezing conditions, the self-weighted tubing on the shore must be buried below the frost line and the exposed compressor hose must be insulated with hot water heater pipe insulation. If the self-weighted tubing is not buried below the frost line, it must run downhill without any drips. Atmospheric air contains water and as it compresses during winter, it will enter the exposed tubing. If there are and dips in the line, the water will pool and eventually freeze, blocking the air supply line completely.

## System Start-Up Procedure

The purpose of the Lake Bed Aeration System is to circulate the pond's entire water column. This circulation will increase and maintain oxygen levels and eliminate drastic temperature fluctuations. The efficiency of the AirEco/AirPro can initially create problems if the following start-up procedure is not followed. Improper start-up may result in an unintentional fish kill.

- Day 1: Turn on the system and operate for 15 minutes.
- Day 2: Turn on the system and operate for 30 minutes.
- Day 3: Turn on the system and operate for 1 hour.
- Day 4: Turn on the system and operate for 2 hours.
- Day 5: Turn on the system and operate for 4 hours.
- Day 6: Turn on the system and operate for 8 hours.
- Day 7: Turn on the system and operate for 16 hours.
- Day 8: Turn on the system and let it run continuously.
- If a strong odor emanates from the body of water, turn unit off immediately and wait 24 hours before starting the procedure again, this time in five minute increments.

## Winter Operation and Precautions

The AirEco/AirPro System is designed to operate year-round. However, certain precautions will need to be taken during the winter months.

**DANGER—If you choose to operate your aeration system through the winter, be sure to follow these instructions for safe and proper operation:**

- Operating in freezing conditions on an ice-covered pond may cause large open water areas to remain at the aeration sites. In addition, the ice thickness around these open areas will be much thinner than the ice over the remainder of the water body. Injury or fatality may result from people, snowmobiles, etc. falling through the ice. Aqua Control strongly recommends that this danger of thin ice around the aeration area be clearly posted in several areas. Owner assumes all responsibility for operating aeration systems during winter months.
- To prevent the risk of cooling the entire water column, the diffuser(s) should be moved to a shallower portion of the water body (typically one-half of the depth of the original placement) and operated there until spring thaw. Moving the diffuser to shallower water allows warmer water to remain in the lower regions of the pond and prevent the water from becoming too cold for fish.
- The self-weighted tubing on shore must be buried below the frost line or insulated. Refer to #9 in the "Airpod Diffuser Placement" section for more information.

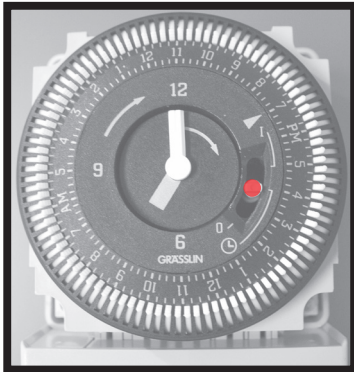
**If you choose to turn off the system for the winter:**

- Simply unplug the system. No other equipment preparation is required.
- Before restarting the system in the spring, check th airlines for possible ice blockage. If this occurs, pour one cup of denatured alcohol into each line to melt the ice. Allow the air from the compressor to push through the line until heat generated by the compressor melts the remaining ice.
- It will be necessary to follow the "System Start-Up Procedure" (see above) to prevent a possible fish kill.

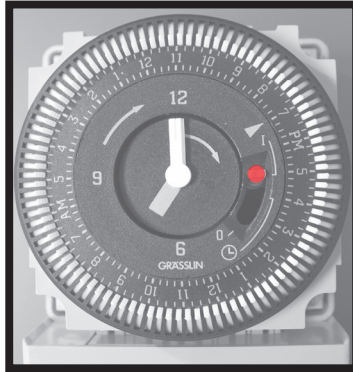
## Timer Setting (*AirPro models only*)

Remove the clear cover by pulling it straight out from the timer. Review the following instructions for proper operation.

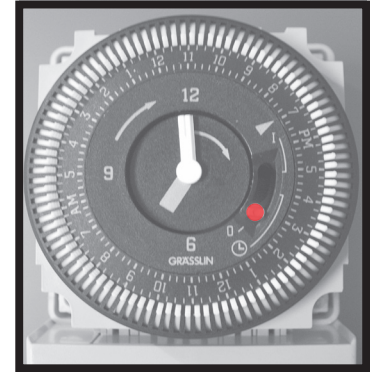
There are three positions for the power switch:



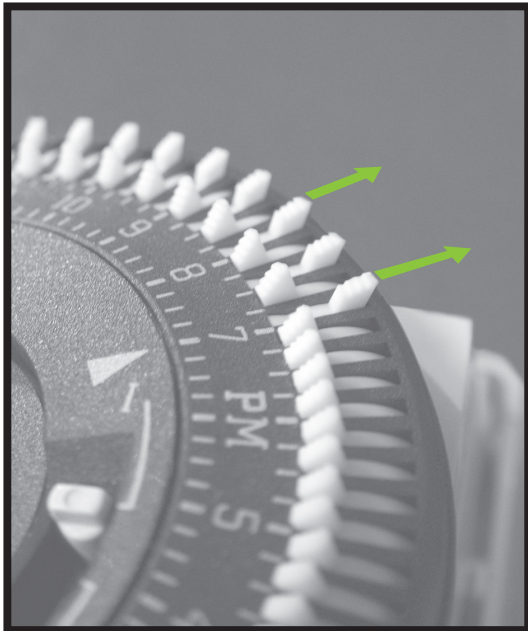
Use timer settings mode



Always on position



Off position



The time switch is set by pushing the captive trippers to the outer rings position in (green) the Lake Bed Aerator will be turned on for that period. Each tripper represents 15 minutes. When they are on the inner position the Lake Bed Aerator will not turn on during these positions.



Turn the minute hand (shown in red) clockwise until the current time is aligned with the triangle (shown in green) on the inner dial. The hour and the minute dial will show exactly the current time. Snap the clear cover back onto the timer.

## Maintenance and Troubleshooting

Keep the cabinet air inlets and outlets free of debris and weed growth for proper ventilation.

### If the system does not power on:

Press and reset the GFCI electrical receptacle located inside the cabinet. For AirPro models with timers: if the compressor(s) still won't turn on, check that the timer is set correctly. If the timer is correctly set and the compressor(s) still won't operate, flip up the white manual override toggle located near the center-right on the timer. If it still won't power on, contact your distributor or the factory for further assistance.

**Note:** Before performing any of the following maintenance or troubleshooting, unplug the system from any power outlet.

If the size or appearance of the surface aeration has decreased from initial installation, perform one or more of the following:

### **Air Filter Maintenance**

To remove the filter from the compressor: press down on the filter cap, rotate clockwise, and then pull the cap off. Inspect the filter element. Replace the elements if needed. It is recommended to replace the filter elements every three months. After installing new elements, replace the filter cap and power up the unit.

### **Check Diffusers for Material Buildup or Damage**

The diffusers located on the airpod may have been damaged (wildlife and fishing hooks are the most common contributors to damage) or blocked by material buildup (after a long period of inactivity). Remove the airpod and inspect the membranes, making sure there are no rips or holes. Replace the membranes as needed.

### **Maintenance Kit**

Maintenance kits are available by contacting your distributor or Aqua Control. Under optimal operating conditions, this step should be performed every two years.

### **Capacitor**

Use a capacitor tester to verify the capacitor. The rating is printed on the side of the capacitor.

### **Additional Questions**

If you have further questions regarding the operation of your lake bed aerator, please contact your distributor.

You may also contact Aqua Control for sales, technical support, or general questions by calling (800) 377-0019 or emailing [customerservice@aquaccontrol.com](mailto:customerservice@aquaccontrol.com).