



# Atlantic<sup>®</sup>

## Product Manual



## TYPHOON POND & LAKE PRODUCTS

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[www.ATLANTICWATERGARDENS.com](http://www.ATLANTICWATERGARDENS.com)

## Introduction

Thank you for selecting an Atlantic Typhoon Pond and Lake Aeration System. Please refer to this manual for proper operation and maintenance procedures, to keep your system performing at peak efficiency.

To avoid an accident do not use the Typhoon Aeration System in any way other than as described in this manual. Please note that the manufacturer cannot be held responsible for any accidents arising because the product was not used as prescribed.

## Prior to Operation and Installation

Before the aeration system is installed, perform the following checks:

- Inspect the aeration cabinet, cords and components for any damage that may have occurred during shipping.
- Check the model number to make sure it is the product that was ordered and verify that all components have been received.

## Caution

- DO NOT operate this product under any conditions other than those for which it is specified. Failure to observe these precautions can lead to electrical shock, product failure or other problems.
- Follow all electrical codes when installing the Typhoon Aeration Cabinet.
- Power supply must be within 110-120 volt range and 60 Hz.
- Never use an extension cord with this product. The Typhoon compressor must be plugged directly into an electrical outlet.
- The aeration cabinet is weather-proof, not water-proof. Do not submerge the cabinet. The cabinet must be installed in a level, well-drained area, above water level.
- The aeration cabinet must be installed on a gravel base or concrete pad within four feet of the power source.

**CAUTION: THE TYPHOON AERATION CABINET IS TO BE USED IN A CIRCUIT PROTECTED BY A GROUND FAULT CIRCUIT INTERRUPTER (GFCI).**

**WARNING: RISK OF ELECTRIC SHOCK - THIS PRODUCT IS SUPPLIED WITH A GROUNDING CONDUCTOR AND GROUNDING-TYPE ATTACHMENT PLUG. TO REDUCE THE RISK OF ELECTRIC SHOCK, BE CERTAIN THAT IT IS CONNECTED ONLY TO A PROPERLY GROUNDED RECEPTACLE PROTECTED BY A GROUND FAULT CIRCUIT INTERRUPTER (GFCI).**

## Electrical Safety

- Electrical wiring should be installed by a qualified electrician in accordance with all applicable safety regulations. Incorrect wiring can cause compressor failure, electrical shock or fire.
- Typhoon Aeration Cabinets must operate on a designated, 110/120 volt circuit.
- Typhoon Aeration Cabinets must be protected by a Ground Fault Circuit Interrupter (GFCI).
- Typhoon Aeration Cabinets must be plugged into a properly grounded, three-pronged outlet.

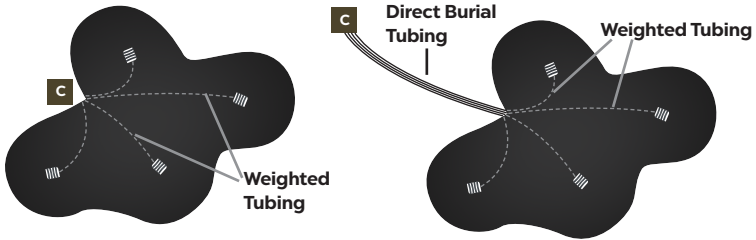
## Safety Instructions

- Do not lift, lower or handle the aeration cabinet by pulling on the electrical cord. Avoid twisting or bending cord excessively, and make sure cord does not rub against any structure that may abrade or damage it.
- Always turn off power or unplug the aeration cabinet and allow the compressor to cool prior to performing any service or maintenance.

## Cabinet Layout

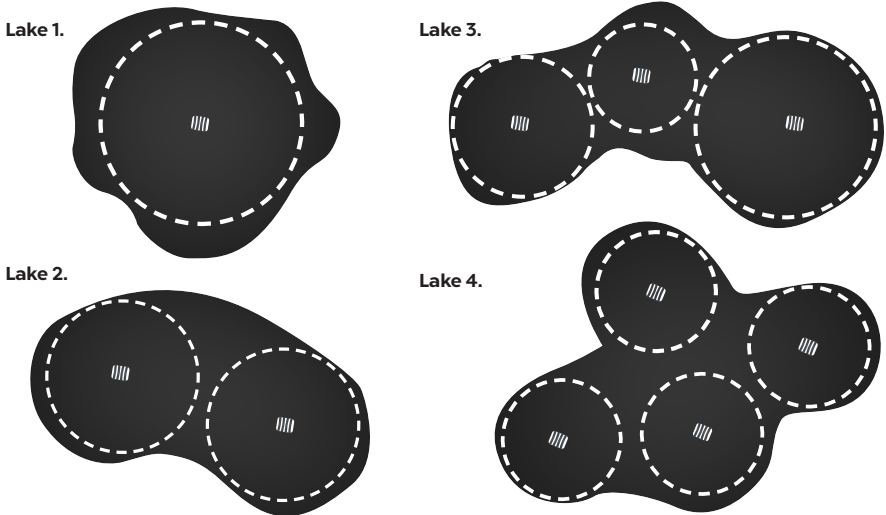
Determine the optimal location for your Typhoon Aeration Cabinet. The compressor must be plugged directly into an outlet, protected by a Ground Fault Circuit Interrupter (GFCI), with a minimum 15 amp dedicated circuit breaker. The location of an existing electrical connection will often determine the most cost-effective location of the cabinet. If the electrical service is already in place near the water, then weighted tubing to the diffusers may be run directly from the cabinet, saving the cost of trenching from a remote location. Care must be taken to protect the system from flooding. Also, the sound of the compressor may carry across the water.

If the closest service is far from the body of water, providing electricity to the water's edge can be prohibitively expensive. It may be advantageous to locate the cabinet remotely, then trench and run direct burial tubing to the water feature, one line per diffuser, transitioning to weighted tubing at the water's edge. Direct Burial Tubing can be run up to 300 feet without appreciable air loss. In addition to saving the cost of a lake-side electrical installation, the sound of the compressor may also be less noticeable.



## Diffuser Layout

The shape of the water feature affects proper circulation. Circular bodies of water lend themselves to effective circulation, often with just a single diffuser in the center. Long, narrow or convoluted shapes will require multiple diffusers, usually one in each isolated area, and consequently greater volumes of air. All four lakes below have the same area, but their different layouts require a different number of diffusers.



## Installation

### Cabinet Installation

The cabinet should be placed on a solid base of concrete or compacted gravel, at an elevation that will avoid flooding and water damage. Because the cord and air lines exit at the bottom of the cabinet, a 4" x 8" trench should be provided under the holes where the tubing exits the cabinet to allow the cord and lines to exit without crimping.

### Diffuser Installation

To prepare the diffusers for placement in the water, remove the rubber fill plug and fill the diffuser with coarse sand or gravel (4-6lbs for each shallow water diffuser and 8-10lbs for the deep water diffuser). Replace the fill plug. Remove the strain relief clamp, slide the 3/8" weighted tubing onto the barbed fitting on the diffuser and secure with the included hose clamps. Replace and tighten the strain relief to firmly clamp the tubing in place. Place the diffuser on the bank where the weighted tubing will enter the water, and carefully unroll the tubing to eliminate any spiraling. If possible, unroll it in the opposite direction of the path you wish it to take underwater, to serve as a visual guide during diffuser placement. Allowing the tubing to warm up in the sun will make it more pliable and easier to deploy.

### Diffuser Deployment

For deployment by boat, bring the craft to the bank where the weighted tubing will enter the water and set the diffuser in the boat. Pull the tubing out behind you in a straight line until you reach the intended placement site. With the air compressor running, lower the diffuser into the water using a cord run through the weep hole in the top of the diffuser.

For deployment from shore without a boat, feed a short length of line through the vent holes at the top of the diffuser to create a loop. Slip a length of line at least twice as long as the water feature is wide through the loop. With the Diffuser on the shore and the Weighted Tubing attached, hold both ends of the line and walk to the opposite side of the pond. Pull on both ends of the line simultaneously to drag the Diffuser to the desired location and let it sink. Pull one end of the line to remove and retrieve it from the loop or leave the line tethered for future maintenance.

### Placement Tips

The further below the water surface the diffuser is set, the more water the rising bubbles will be able to circulate, so it is a good idea to place the diffusers as deep as possible. Determine depth by sounding with a weighted rope or depth finder on a boat. Refer to the charts below for depth/area coverage and place the diffusers accordingly.

In natural or earth bottomed ponds and lakes, where snags or heavy vegetation might make it difficult to deploy or remove the equipment for maintenance, you may wish to clear a path across the bottom by dragging a cinder block attached to a stout rope from one side to the other. Multiple passes may be required to clear the bottom of debris or snags.

**WARNING – DO NOT USE THIS METHOD** to clear a path in water features with a synthetic liner, to avoid causing costly damage.

## Tubing Connections for Systems at the Water's Edge

### Shallow Water Systems

The sections of blue outlet tubing provided inside of the cabinet will be used to connect the manifold to the tubing that connects to the diffuser. Make sure there is room under the cabinet to feed the blue tubing down through the holes in the base of the cabinet, just under the manifold. Attach the tubing to the manifold by pushing it into the corresponding push-lock valve.

The push-lock by  $\frac{3}{8}$ " insert fittings come pre-assembled. Insert the blue tubing coming out of the cabinet into the push-lock side of the tubing. Find the  $\frac{1}{2}$ " male thread x  $\frac{3}{8}$ " insert fitting and the  $\frac{1}{2}$ " female thread x push lock. Use Teflon tape or thread sealant on the male threads and screw the two fittings together. The push lock side of the fitting will go onto the blue tubing coming out of the cabinet.

Once the diffuser has been deployed, trim the weighted tubing to the desired length and place two hose clamps on the tubing. Connect to the  $\frac{3}{8}$ " barbed fitting on the blue outlet tubing exiting the bottom of the aeration cabinet and secure with the hose clamps.

## Deep Water Systems

The blue outlet tubing comes pre-attached to the manifold. Using a Phillips screwdriver, loosen the two screws that attach the manifold to the Cabinet. Lifting the manifold, run the tubing through the corresponding holes in the base of the Cabinet. Reattach the manifold to the Cabinet.

The push-lock by  $\frac{3}{8}$ " insert fittings come pre-assembled. Insert the blue tubing coming out of the cabinet into the push-lock side of the tubing. Find the  $\frac{1}{2}$ " male thread x  $\frac{3}{8}$ " insert fitting and the  $\frac{1}{2}$ " female thread x push lock. Use Teflon tape or thread sealant on the male threads and screw the two fittings together. The push lock side of the fitting will go onto the blue tubing coming out of the cabinet.

Once the diffuser has been deployed, trim the weighted tubing to the desired length and place two hose clamps on the tubing. Connect to the  $\frac{3}{8}$ " barbed fitting on the blue outlet tubing exiting the bottom of the aeration cabinet and secure with the hose clamps.

## For Remotely Located Systems

When the application calls for using Direct Burial Tubing from the water's edge to the Cabinet location, disassemble the push-lock x  $\frac{3}{8}$ " insert fitting. Replace the  $\frac{3}{8}$ " insert fitting with the  $\frac{1}{2}$ " push-lock x male thread fitting that is included with the Direct Burial Tubing, using Teflon tape or thread sealant on the male threads. Attach the blue tubing to the Direct Burial Tubing using the push-locks. Bury the Direct Burial Tubing to the water's edge. Take the  $\frac{3}{8}$ " insert fitting that was removed and attach it to the  $\frac{1}{2}$ " push-lock x female threaded fitting included with the Direct Burial Tubing, using Teflon tape or thread sealant on the male threads. Once the diffuser has been deployed, trim the Weighted Tubing to the desired length and place one hose clamp on the Weighted Tubing. Connect the Weighted Tubing to the  $\frac{3}{8}$ " barbed fitting on the Direct Burial Tubing and secure with the hose clamp.

## Operation

**IMPORTANT! DO NOT RUN YOUR AERATION SYSTEM 24 HOURS A DAY IMMEDIATELY AFTER INSTALL. PLEASE READ BELOW BEFORE OPERATING.**

Larger bodies of water, especially those in greatest need of aeration, are often stratified, with cooler water at the bottom and much warmer water at the surface. Because of the different density of cool and warm water, a physical barrier called a thermocline forms, blocking circulation and the passage of gasses between the two layers. The deeper cooler water, cut off from the air, becomes deoxygenated and begins to accumulate toxic methane and sulfur dioxide. If a significant amount of this lifeless, toxic water is mixed into the rest too quickly, total oxygen levels plummet, the water fouls, and everything in the water suffers. These "turnovers" can kill everything in a pond.

Aeration eliminates the threat of turnover by keeping the water constantly in motion, however, **starting the system up too quickly can actually cause turnover.** In order to avoid mixing too much oxygen-poor water into the water column too quickly, **aeration systems must be started up slowly. Run the aeration system for only 15 minutes the first day, 30 minutes the next, one hour the third day, doubling the time every day for the first week of operation, to avoid turnover.** After the first week the system can be run 24 hours a day.



**Note:** Bear in mind that the tremendous circulation that will develop slowly over the next weeks or months will bring sediments and nutrients up from the bottom, potentially triggering massive algae blooms. In order to avoid the continuation of the blooms as dead algae simply decay and add their nutrients back into the water, it is critical to start a beneficial bacterial program that will remove nitrogen from the system as a gas, eventually cleaning and clearing the water and even removing organic sludge completely.

Atlantic Water Gardens offers a complete line of highly concentrated bacterial formulations. Pond Clarifier and Pond Clarifier +TM consume sludge, clear water, reduce odors and improve water quality. Use Sludge Remover to remove organic deposits and build up where people enter the water. Pond Dye is the safe, easy to use way to shade out unwanted vegetation.

## Maintenance and Inspection

Regular maintenance and inspections are recommended to verify that the system is operating properly. If any abnormal conditions are noticed, refer to the section on Troubleshooting and take corrective measures immediately. Always unplug the aeration cabinet and allow the compressor to cool prior to performing any service or maintenance.

**Monthly** – Inspect/clean the air inlet filter on the rear of the cabinet. Adequate air flow is imperative to maintain proper operating temperatures. Pull and release the pressure relief valve to verify that it is operating correctly (deep water aeration cabinets only).

**Every 3 months** – Clean or replace the compressor intake filter. Allow the filter to dry thoroughly before returning to operation. Replace if needed.

**Every 6 months** – Purge the diffusers. Turn off the flow adjusters one at a time until only one is open, sending the total air flow to one diffuser. Allow to run for several minutes and repeat for each diffuser.

**Every 12 – 24 months** – Install a compressor refresh kit to ensure optimal performance. Piston seals are a wearable items and lose efficiency over time. The duration between servicing will vary depending on the installation.

## Winterization

The Typhoon Aeration Cabinet is weatherproof, and does not need winterization. Operating the aeration system during the winter months will maintain a hole in the ice around the diffusers, facilitating the diffusion of oxygen into the water and diffusing toxic gases out. However, aeration will also affect the thickness of the ice in the surrounding areas, possibly creating hazardous and dangerous conditions for anyone on the ice. Owners assume all liability when operating Typhoon Aeration Systems in the winter months.

## Warranty

Typhoon Aeration Cabinets and Compressors carry a two-year limited warranty. Typhoon Aeration Diffusers and weighted tubing carries a five-year limited warranty. This limited warranty is extended solely to the original purchaser commencing from the date of original purchase receipt and is void if any of the following apply:

- The aeration cabinet was not run on a dedicated circuit.
- Any cord has been cut or altered.
- The aeration cabinet has been misused or abused.
- Serial number tag has been removed.

## Warranty Claims

In case of warranty claims, contact the place of purchase to return/exchange defective components. Warranty claims must be accompanied by the original receipt.

## Troubleshooting Guide

Always unplug the aeration cabinet and allow the compressor to cool prior to performing any service or maintenance. Failure to observe this precaution can result in a serious accident. Before servicing, carefully read through this instruction booklet. If the problem persists, contact your dealer.

Problem	Possible Cause	Possible Solution
Pump and fan will not start	Power is off	Turn power on/Test or reset GFCI outlet
	Power failure	Check power supply or contact local power company
	Power cord is not connected	Connect power cord
	Voltage drop / Overload	Check/Replace the GFCI (Ground Fault Circuit Interrupter)
Pump stops after starting	Pump is overheating	Check that the fan is running
	Air inlet filter is blocked	Clean or replace the inlet filter
	Power/Current overload	Check or replace GFCI
Diminished air flow	Dirty air inlet filter	Clean or replace inlet air filter
	Dirty compressor air filter	Clean or replace air filter
	Valve has been moved	Check the valve setting
	Piston seals are worn	See Maintenance section



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