



# **Vertical Fountain Owner's Manual**

**2HP | 3HP | 5HP**

**Installation • Maintenance  
Troubleshooting • Operation**

**2100 NW 33rd St • Pompano Beach, FL 33069**

**1.844.432.4303**

[vertexaquaticsolutions.com](http://vertexaquaticsolutions.com) • [info@vertexaquaticsolutions.com](mailto:info@vertexaquaticsolutions.com)

**Hours of Operation**

**M – F: 8am – 5pm EST**

## Delivery Of Shipment

Your fountain system was properly packaged, secured and accepted by the freight carrier prior to shipping. It is their responsibility to deliver the shipment without damage.

### Apparent Damage or Loss:

Upon delivery, if the equipment or container indicates **DAMAGE IN TRANSIT**, such goods should be refused or not accepted until the carrier's agent has noted such on the freight bill. A copy will be given to you, noting the extent and nature of the damage. If any part of the fountain shipment is **LOST IN TRANSIT**, have the shortage noted on the freight bill by carrier's agent.

### Concealed Damage or Loss:

If damage or loss is discovered that was not apparent upon delivery, notify the carrier immediately to inspect equipment. The inspector will be required to provide a "**CONCEALED BAD ORDER**" report. Inspections must occur within 15 days of original receipt. Do not move damaged goods from original point of delivery. Retain all original packaging and containers for inspection. File a "**FULL VALUE REPLACEMENT**" claim against the freight carrier.

## Fountain Pallet and Crate Contents

- Fountain flotation, pump/motor assembly
- Intake screen
- Electrical cables
- Optional light fixtures
- Fountain display nozzle(s)
- Fountain control panel

## Table Of Contents

- 2 Tools/Materials for Installation
- 3 Voltage and Phase Confirmation
- 3 Safety Notices
- 3 Operation Overview
- 4 System Components
- 5 Control Panel Installation
- 6 Fountain Installation
- 8 Routine Maintenance
- 10 Winterization
- 11 Troubleshooting Chart
- 12 Warranty Information

## Installation Tools and Materials

- ¼" ratchet and socket
- ¼" wrench
- Razor knife
- Hammer
- Rope for anchoring
- Zip Ties

### To secure fountain in place

- Anchoring: 2 weights - minimum 5lbs. each
- Mooring: 2 stakes and 2 weights - irrigation donuts or bricks work well.



## Pre-Installation Voltage and Phase Confirmation

It is **ESSENTIAL** to confirm that the incoming site voltage and phase match the specifications of the fountain system. Vertex fountain systems **DO NOT** operate or utilize dual voltage motors; failure to correct voltage and/or phase issues prior to fountain installation **WILL IMMEDIATELY** void the warranty. Contact Vertex directly for assistance if corrections need to be made. Use accepted safety practices to prohibit personal injury or damaged equipment.

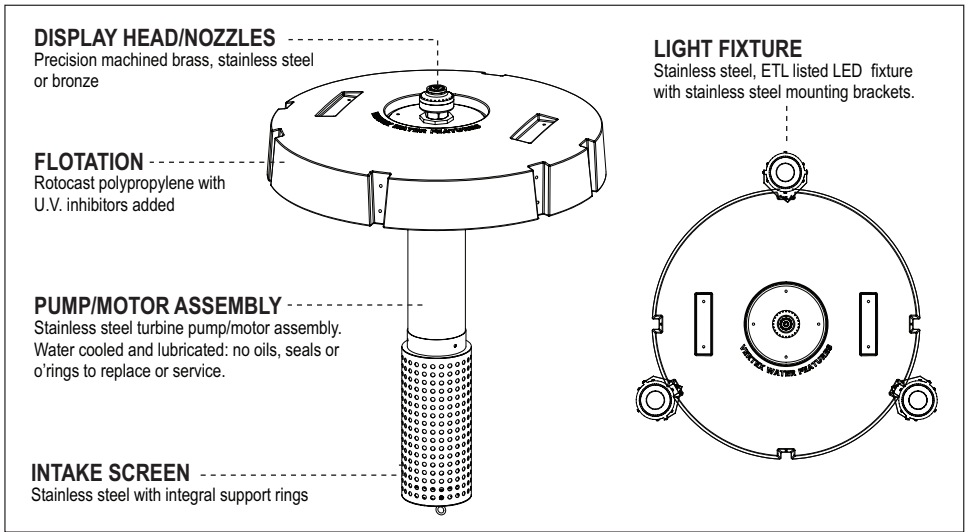


## Safety Notices - WARNING

- Work should be performed by qualified, authorized personnel. Contact Vertex technical support with ANY questions involving installation or operation.
- Use personal flotation devices, protective clothing, gloves and eye protection.
- Disconnect all electrical power & exercise "lock out /tag out" procedures on fountain control panel before performing ANY work or service. Assume all circuits are energized until checked with electrical metering device.
- Never come in contact with the "in water" of floating portion of the system (pump, float, intake screen, lights, cables, etc.) when unit is in operation.
- Do not stand or sit on float.
- Use discretion when lifting any Vertex fountain. Use heavy equipment (lull, crane, backhoe, etc.) when needed to prevent injury.
- All shore electrical work must be performed by licensed electrician and conform to National Electrical Code (NEC) 682, in addition to local codes.
- Control panel must be above any possible flood level
- Panel should only be accessible to authorized personnel.
- Due to threat of electrical shock, fountain should NEVER be located in areas where swimming or other activities occur.
- Post signs instructing public to stay out of water and away from fountain equipment
- Before operation, entire fountain system, including GFCI circuits, must be tested and approved by licensed electrician.

**Contact Vertex Aquatic Solutions technical support with ANY questions or concerns involving installation or operation.**

# "Typical" Fountain System Overview



Your Vertex Aquatic Solutions fountain system has four primary components: the floating fountain, the optional lighting package, the submersible power cables and the control panel.

**NOTE:** Vertex pumps and submersible lights must be under water to run.

## I. Fountain System Components

The owner must choose the proper location and maintain the fountain to have the best performance and longest service life. If not properly maintained you may experience system failure and loss of warranty.

### System Location

- There must be sufficient clearance from bottom of intake screen to lake bottom. Low water conditions often occur in the summer, so make sure the area chosen has minimum depth year round. Failure can damage screen and allow intake of sediments, damaging the pump/motor assembly. Water depth changes
  - 2HP minimum operating depth - 6 feet
  - 3HP minimum operating depth - 6 feet
  - 5HP minimum operating depth - 6 feet
- Avoid areas with vegetation and or debris (trash, foreign objects, etc.) that can clog vital portions of the intake system, causing high amperage draw and motor burnout.

### System Maintenance

Fountain system requires periodic brushing/cleaning of intake screen, light lenses (if equipped), display nozzle and flotation assembly. See complete instructions under "Routine Maintenance" on page 8.

## II. Control Panel

The fountain control panel is UL Listed, pre-wired and ready for installation by a **licensed electrician**. Installation must meet NEC (National Electrical Code) 682, in addition to any local codes/restrictions. Consult local AHJ (Authority Having Jurisdiction) for codes in your area.

### Panel Location

- Must be in accordance with NEC 682, in addition to local codes
- To reduce chance of voltage drop and/or nuisance tripping, panel should be located as close to fountain as possible, but NOT in a place that would make it accessible from the water or a boat
- Ideal location is out of direct sunlight to minimize operating temperatures; if not possible, install panel facing North or East to minimize buildup of heat during hottest time of day
- Vertex recommends installation in a protected area designated with warnings/signage indicating “**DANGER: HIGH VOLTAGE**” or similar to discourage unauthorized personnel

### Control Panel Installation | Scope of Work - Electrician



**WARNING - Hire a qualified licensed electrician to do all work on control panel**

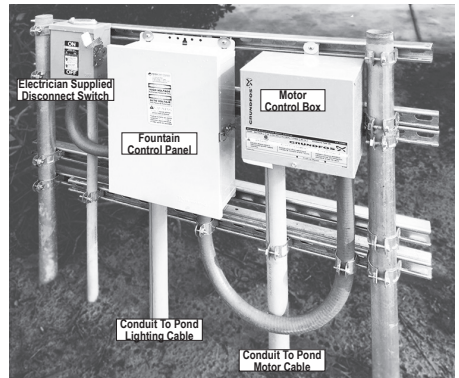
- Electrical Schematic/labels can be found inside panel
- Mount NEMA 3R panel enclosure in accordance with NEC 682 in addition to any other codes and/or restrictions.
- Trench and bury sufficiently sized conduit(s) from fountain panel to water's edge, extending conduit(s) far enough into water to ensure no submersible cable is exposed should low water conditions arise.
- Bring incoming power from power source into fountain panel. Incoming voltage must match specifications of panel or failure will result, damaging the system and voiding warranty.
- Pull submersible cable(s) from fountain through conduit to control panel and perform final connection
- Control panel must be above any possible flood level.
- Panel should be accessible only to authorized personnel.
- Before operation, a licensed electrician must test and approve entire fountain system.

The electrician should contact Vertex at **1.844.432.4303** with any questions they have about control panel installation.

**NOTE:** Do not operate fountain and lights until installation has been completed and lights are fully submerged. Operating light(s) out of water will result in damage to bulb(s) and lens(es), voiding the warranty.

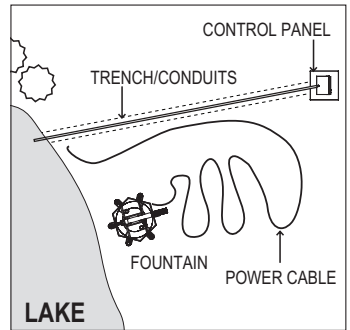
**NOTE:** Connect only 120V to light(s) – higher voltage will result in immediate damage/failure of bulb(s).

Typical Installation (230VOLT 1 phase) with lights

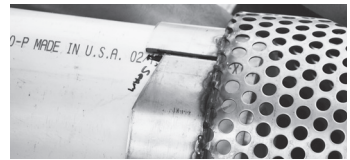


### III. Fountain Installation

1. Place fountain, lighting package, intake screen, polypropylene rope, weights and tools into boat.
2. Unspool motor and light cables along the shoreline with the ends being close to each other.
3. Pull the motor cable and light cable through conduit.
4. Tie off or terminate the cable at the panel so that the cable doesn't pull out while you are pulling out the fountain from shore.



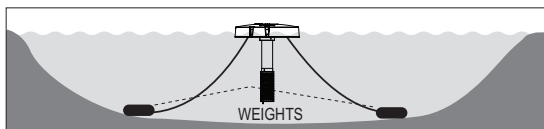
5. Install intake screen to pump/motor induction tube:
  - Remove (3) bolts and washers on induction tube. The tube has a marking to align intake screen bolt holes with the drilled holes on the induction tube.
  - Fasten screen to tube using the bolts and washers.
6. Begin pulling the fountain to the place chosen for the location - make sure the water is at least 6 ft. deep before doing final install procedures. The cable will begin to drag from shore into the water.
7. When you have reached the chosen location, remove the bolts and washers from the float that will secure the light brackets.
8. Install optional LED lighting package - **You may do this prior to putting fountain in water.**
  - Remove equipped bolts / washers from float.
  - Secure lights and lighting brackets to float, tighten.
9. Locate (2) stainless steel eye-bolts on float.
10. Attach polypropylene mooring/anchor lines (not included) securely to each eye-bolt (to be used in subsequent steps to pull the unit into final position: **NEVER** pull on or place tension on the submersible power cables).
11. Place fountain into water.
12. Thread display nozzle on to discharge pipe.
  - Do not use pipe dope or glue, use Teflon tape only.
  - Take special care to avoid cross-threading.
  - Do not over tighten - it can damage the discharge pipe threading.
13. Adjust fountain location if needed to ensure a minimum of 6 feet of water at all times
  - Tow unit into place with boat, or pull into place from opposite bank using anchoring/ mooring rope. **DO NOT USE SUBMERSIBLE CABLE(S) TO TOW OR PULL UNIT.**
  - Allow submersible cables to be gently pulled from lake bank into water as unit is being towed paying close attention to avoid obstructions that may snag or damage cable(s).
  - Leave enough cable to ensure it drops to lake bottom and accounts for any future rise in water level. Failure will result in fountain being "pulled" back toward shore.
  - With unit in its final location, securing the fountain can be achieved by either anchoring or mooring methods. Each has pros/cons and should be determined based on individual site conditions before the installation begins.



	PROS	CONS
<b>ANCHORING</b>	Less access - allows for greater protection from unauthorized personnel (vandalism). Less chance for snagging - by fish hooks, boat propellers, etc.	Less access - necessitates use of boat to perform maintenance of fountain.
<b>MOORING</b>	Easier access - depending on size of unit and lake, possible to pull fountain to water's edge for maintenance.	Easier access - allows greater access by unauthorized personnel. More chance for snagging - fish hooks, boat propellers, etc.

## Anchoring Method

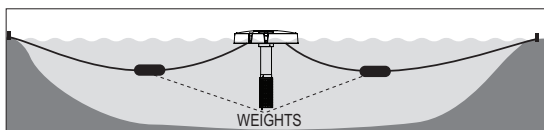
1. Secure anchor lines to fountain eye-bolts using black polypropylene rope (not included, minimum 3/8" diameter).
2. All lines should be same/equal distance from the fountain in the center and each other.
3. Length of lines should be twice depth of lake at fountain's final location (Example: if lake depth is 10', each line should be 20').
4. Secure anchoring with weight of at least 5 lbs. to each anchor line.



**NOTE:** Allow sufficient slack in anchor lines to accommodate water level fluctuations, but NOT enough slack that unit can rotate/spin more than 1/4 turn (when in operation, unit will naturally attempt to rotate; which can result in twisted and, damaged power cables).

## Mooring Method

1. The fountain may be moored to bank instead of anchoring it to the lake bottom.
2. Mooring may be advantageous on small ponds with smaller sized fountains and where vandalism does not pose a threat.
3. Secure mooring lines to fountain eye-bolts using black polypropylene rope (not included, minimum 3/8" diameter).
4. Line lengths should be sufficient to allow securing just inside water's edge.
5. Drive rebar stakes into bottom at edge of lake, secure lines.
6. To prevent mooring lines from floating on surface, secure concrete irrigation donuts or brick to lines at midway point.
7. Vertex suggests marking mooring stakes for easier location in the future.

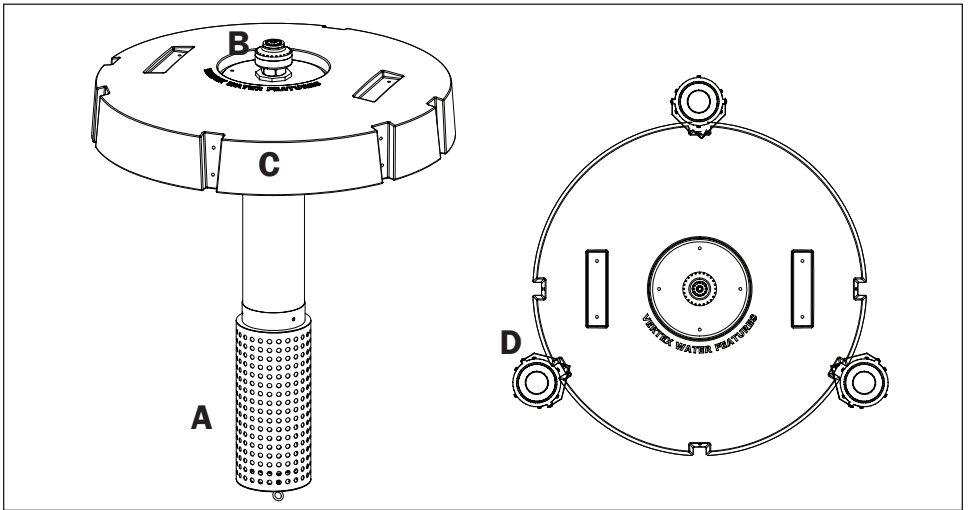


## IV. Initial Start-up

Initial system start-up should be performed by licensed electrician after ALL electrical systems have been thoroughly checked and approved:

- Make sure all terminal connections in the control panel are tight
- Check incoming power for correct voltage and phase
- Make sure all breakers are on
- Start unit only after all personnel are out of water
- Upon start-up, take amperage readings to ensure unit is running within normal operating range (see information on side door of control panel)
- If not able to confirm visually, check optional lighting is operating by taking amperage reading of lighting circuit
- Set pump and lighting (if equipped) time clocks to desired hours of operation
- Secure/lock fountain control panel

## V. Routine Fountain Maintenance



Owner accepts responsibility for required scheduled maintenance needed to ensure fountain system functions at optimum performance and within original operational ranges. Failure to perform scheduled maintenance can and will void manufacturer's warranty.

Routine and scheduled maintenance is vital to ensure long life and optimum performance of fountain. There are no lubricants to change, seals to replace or O-rings to fail. The only needed maintenance is periodic cleaning/brushing of key fountain components.

Frequency of maintenance is dependent on individual site/lake conditions. Inspect fountain system no more than 2 months after original installation to assess anticipated cleaning frequency needed.



- Shut fountain system off
- Always perform necessary lock out/tag out procedures prior to performing any service on the fountain
- For safety, always wear coast guard approved personal flotation devices when working in or around water

## **Key Fountain Components to be Maintained**

### **A - Pump intake screen**

Use heavy wire brush to remove algae and other debris. If needed, attach brush to long handle to ensure complete cleaning.

- Screen maintenance is VITAL to proper flow for optimum display characteristics and to maintain operating temperature (and amperage draw) of pump and motor system.
- Failure in keeping intake free of debris or other obstructions is the #1 cause of premature system failure.

### **B - Display Nozzle(s)**

Use heavy wire brush (pipe cleaner if necessary, on smaller jets)

- Promotes original display characteristics
- Insures optimum flow of pumping system, maintaining ideal operating temperature and amperage ranges

### **C - Flotation Assembly**

Use heavy wire brush to remove algae and other debris

- Excessive build-up of aquatic growth can make removal during winter conditions much harder and time consuming.

### **D - Optional Lighting**

Use stiff plastic brush to protect against scratching tempered glass lenses

- Cleaning will ensure the brightest illumination and protect against damage
- Excessive buildup can increase lens temperature and lead to cracking, allowing water intrusion into light fixture

### **E - Control Panel**

- Inspect panel for signs of water intrusion and/or corrosion
- Inspect for signs of insects or other small animals. Infestation can cause damage to electrical components: shorting/arching, electrical fire, etc.
- Check time clock settings to ensure proper hours of operation

## VI. Winterize Fountain System

Vertex fountains must be removed from water prior to freezing weather conditions. Failure to do so will result in damage to pump/motor system and void the warranty.

**WARNING: Do not sink fountain system below ice level in lieu of removal from water.** Certain fountain components are not UL Rated for increased water pressure and may fail.

- Turn off/disconnect all power entering control panel
- Perform necessary lock out/tag out procedures
- Have a licensed electrician disconnect submersible cables coming into control panel
- To protect against moisture intrusion, seal bare cable ends with a liquid vinyl product  
Suggested:
  - Loctite® Color Guard Rubber Protectant
  - Rust-O-Leum® Grip & Guard
- Disconnect anchoring/mooring lines
- Remove fountain display nozzle
- Remove any optional lighting fixtures and mounting brackets
- Bring fountain to shore
  - **Recommended:** Slowly and carefully pull fountain into boat and take to shore
  - Optional: tow unit as close to shore as possible without unit touching bottom of lake where conduits/cable enter water
    - DO NOT PULL OR TOW BY POWER CABLES
    - Secure lifting straps or chains to fountain framework taking care to avoid any PVC plumbing
    - Guard against cables catching on any bottom obstructions
    - Gently lift unit from water with heavy equipment (crane, backhoe, etc.)
- Remove intake screen
- Store unit in location protected from freezing conditions
- For reinstallation, follow instructions contained in pages 6-7

## VII. Troubleshooting Guidelines

Symptom	Action to Take
Pump does not run	Check that all breakers and time clocks are set and on.
	Single phase motor: check overload relay resets on motor control box. Three phase motor: check ground fault module, reset button and contractor motor overload reset button.
	Check service disconnect and main breaker in electrical line feeding fountain panel.
	If GFCI breakers trip again or if none of the above solve the problem, then the trouble is internal to the motor or power cable. Contact authorized Vertex Dealer or Vertex Aquatic Solutions directly.
Pump runs but shuts down after short period of time	Check intake screen for blockage and clean as needed.
	If screen is clean and problem persists, call an electrician or pump repair person.
None of the lights come on	Check that all breakers and time clocks are set and turned on.
	Check lenses for debris and sediment buildup.
	Check service disconnect and main breaker in electrical line feeding fountain panel.
	If GFCI breakers trip again or if none of the above solve the problem, then the trouble is internal to the fixture or power cable. Contact Vertex or authorized Vertex Dealer.
One or more lights come on, but not all	Check lenses for debris and sediment buildup.
	Check and replace burned out bulbs and/or gaskets.
	Contact Vertex.
Erratic or uneven pattern from fountain display head	Observe fountain on a calm day. Be certain wind is not at fault.
	Check intake screen for obstruction and clean as needed.
	Clean fountain head orifices.
	If problem persists, it may be due to line voltage.
Fountain Display	Observe fountain on a calm day. Be certain wind is not at fault.
	Check intake screen for obstructions and clean as needed.
Fountain changes location.	Check for an anchor that has broken loose and resecure.
	Remove excess slack in anchor lines.

## VI. Product Warranty

Vertex Aquatic Solutions, a Rentokil Company will make sole determination if parts are defective and subject to warranty repair or replacement. If inspection indicates failure due to lack of required maintenance, failure to maintain adequate water depths or failure to maintain specified voltage, warranty shall be voided.

- "In water" fountain components (pump, motor, flotation, framework, nozzles, submersible cables, etc.): 4 years from original date of receipt
- Lighting fixtures (excluding bulbs): 2 years from original date of receipt
- Control panel: 1 year from original date of receipt

Warranty period on all warranty work is equal to the remaining time period of the original new equipment warranty.

### Exceptions

- Damage due to freezing conditions are not a manufacturer defect and will not be considered for warranty. See included "Winter Precautions" on page 10
- Foreign objects and/or debris within the fountain pump/motor assembly do not constitute defect and are thus not covered under warranty
- Vertex fountains are not warranted for use in salt and/or brackish water conditions

### Warranty will also be void if

- Fountain is dismantled
- Unauthorized repair has been performed
- Factory-supplied components or control panel has been altered

Vertex liability shall be limited solely to replacement or repair. Vertex is not liable for any consequential damages nor for any loss, damages or expenses directly or indirectly arising in connection with the purchase or use of the products.

**Warranty claims must be made to an Authorized Vertex Dealer or to  
Vertex Aquatic Solutions at 1.844.432.4303**



[vertexaquaticsolutions.com](http://vertexaquaticsolutions.com) • [info@vertexaquaticsolutions.com](mailto:info@vertexaquaticsolutions.com)

**Hours of Operation: M – F: 8am – 5pm EST**