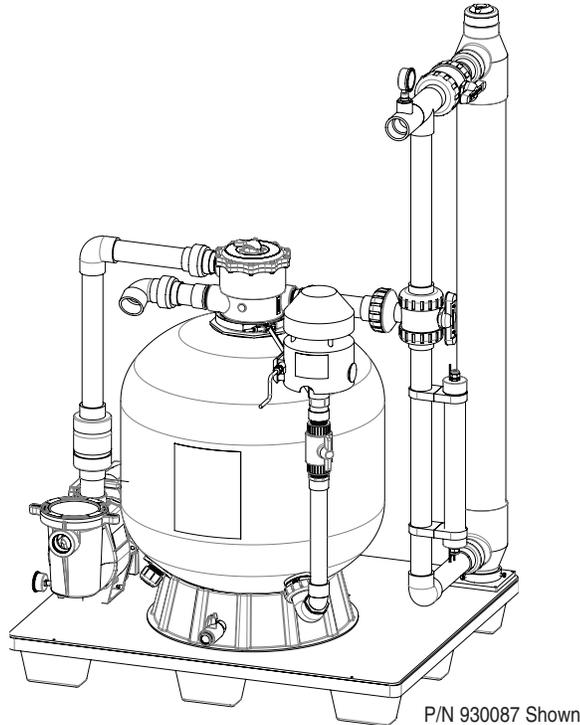




AQUATIC ECO-SYSTEMS®

BEAD FILTER SYSTEM



P/N 930087 Shown

OPERATION AND MAINTENANCE GUIDE

IMPORTANT SAFETY INSTRUCTIONS
READ AND FOLLOW ALL INSTRUCTIONS
SAVE THESE INSTRUCTIONS

Part No. _____ Serial Number _____ Date Purchased _____

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Safety Messages

Safety is important to us. We have included safety messages throughout this manual and for your protection. Please read and follow all directions.

A safety message has a safety alert symbol followed by an explanation of what the hazard is, what can happen and what you should do to avoid injury. This is the safety alert symbol:



The safety alert symbol and "WARNING" or "CAUTION" will precede all safety messages:



WARNING

You can be killed or seriously injured if you don't follow instructions.

- Do not pump flammable or explosive gases or use in an atmosphere that contains such gases.
- Protect all surrounding items from exhaust air. This exhaust air can become very hot.
- Corrosive gases and particulate material will damage the unit. Water vapor, oil-based contaminants or other liquids must be filtered out.
- Do not flush with kerosene or other combustible solvents.



WARNING: ELECTRICAL SHOCK HAZARD

Disconnect electrical power at the circuit breaker or fuse box before installing this product. Install where it will not come into contact with water or other liquids and where it will be weather protected. Electrically ground this product. Failure to follow these instructions can result in death, fire or electrical shock.

Safety Information

This equipment is a high voltage device operating in a damp or wet environment. While best safety practices and procedures have been incorporated into the design, the operator must determine that he or she is competent to operate and thoroughly understand the operation of this equipment prior to use.

There are two main sources of danger inherent to this system:

1. Electrical Shock

This system is operated by alternating current high voltage. It is equipped with circuit breakers and/or fuses to protect the machinery and circuits from damage in the event of a short circuit. **USE EXTREME CAUTION. SERIOUS INJURY OR DEATH CAN RESULT FROM CONTACT WITH BARE ELECTRICAL WIRES. IF YOU ARE NOT FAMILIAR WITH HIGH VOLTAGE CIRCUITS, CALL AN ELECTRICIAN.** Always follow approved tag out/lock out procedures.

2. Rotating Machinery

The pumps in the system are rotating impeller type. While the normal operation does not present any hazard, conditions can exist which increase the likelihood of injury. Following these rules can minimize the risk of injury:

- Always shut the pump off before removing the basket strainer or servicing the pump.
- Never operate the pump with the impeller exposed.

Guidelines for Product Use

- Operate at 32-104°F (0-40°C).
- Protect unit from dirt, foreign material and moisture.

System Information

Unpacking

Upon arrival inspect the entire filter system. Call Pentair Aquatic Eco-Systems immediately if any damage is evident or suspected. When dry, check all unions to make sure they are secure, have not shifted in shipping, and the o-rings or gaskets are in place. This is a good time to take apart a three-port valve to see how it works from the inside. The system will shift during shipping so align the filters with the plumbing being squared.

Installation

1. Set on level surface.
2. Hook up to water source using the same diameter pipe. Try to use as direct (straight) plumbing as possible. Elbows increase the resistance thus decreasing the flow rate. Using flexible PVC works well but use large radius curves to prevent restrictions.
3. Have a certified electrician hardwire the pump according to local codes.
4. When possible, allow enough headroom to remove/replace UV lamps and quartz sleeves without removing the UV unit. If necessary, removing the UV unit can be accomplished using the bypass plumbing and unions used to connect the UV filter body.
5. Connect drain lines to cartridge and chemical media bodies to aid in cartridge/chemical media replacement.
6. Plumb waste and drain lines.
7. Install the UV Quartz sleeve, lamp, and electrical connection.
8. For safety, keep a two to three inch separation from the motor to avoid heating the plumbing or water.
9. Install pressure gauges and bleed valves on filters.

System Overview

Pump

The pump is a high head pump capable of pumping to high head pressures. It has a priming pot/strainer basket to prevent the largest of particles from entering the system and must be periodically checked to remove any debris. Long term occlusion will decrease the flow rate of the system. Immediately after the pump, a check valve is installed to prevent water from flowing backwards when the pump is shut off. This will limit the amount of water lost if the pump is removed.



WARNING: Do not operate the pump at a higher GPM than the rating of the system. Failure to maintain an appropriate flow rate may damage the filters and lead to premature system failure.

Pump Throttling

For systems that do NOT include the Sparus™ Pump with Constant Flow Technology, a throttling valve will be provided directly above the pump. It is important to monitor water pressure across the system and use information provided by the pump curves to determine system flow.

It is likely that during initial startup system back pressure (flow restriction) will be low, and system flow will exceed what the system is rated for. In this instance throttling the valve to find the proper flow rate will be required.

Filter

These systems are supplied with Sweetwater® Bead Filters. These filters have been specifically sized to match the requirements of the system and the flow rate of the pump. The bead filter housing is constructed of extra thick polyethylene for strength and durability. Bead filter media is included, and replacement media can be purchased separately. The bead filter tanks feature a sight glass to visually monitor the clarity of water returning to your pond as well as a clear pipe to monitor waste discharge during the backwash cycle to make sure the bead filter media is cleaning properly.

The bead filter should be backwashed on a regular basis to ensure proper filtration and nitrification. Refer to the instruction manual included with the filter, or the label of the vessel for filter backwash procedure.

Ultraviolet Sterilizer

The High Output Ultraviolet Sterilizers dose the water that passes through the unit with ultraviolet light that disrupts the DNA of the organisms. This does not kill the organisms but the destruction of the DNA eliminates the organisms' ability to reproduce, thus decreasing the organisms' density in the water column. The dosage rate depends on the wattage of the unit. The sterilizer reduces microorganisms through ultraviolet light.

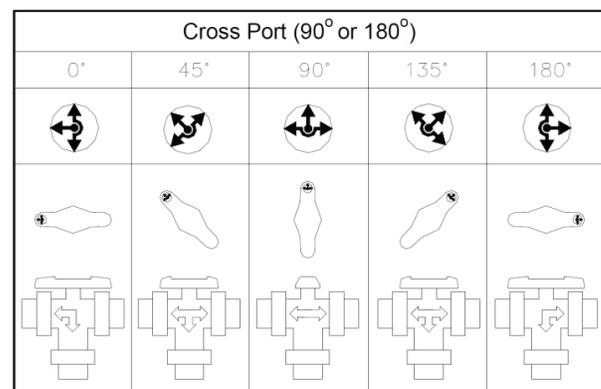
EPA EST. No.091668-FL-001

The lamp should be replaced annually to achieve the stated UV dosage. Also, twice a year, the quartz sleeve should be removed and examined for mineral buildup. You can wipe the quartz sleeve with vinegar to remove the mineral buildup. Replace quartz sleeve and check o-rings for crack, replace if necessary.

Cycling Water Flow

The filtration system will require occasional maintenance and will require bypassing components so that filters, media, or other filtration components may be accessed. To avoid damaging the filtration system it is important to open and close valves slowly, and to ensure valves are opened in a sequence that would prevent dead heading the pump.

The filtration system utilizes a series of multi-port valves to direct flow. The figure to the right is a diagram that will help anticipate proper flow.



Replacement Parts

UV Sterilizer Replacement Part Numbers			
System Flow	Lamp (Yearly)	Quartz Sleeve	Seal Kits
40 GPM	FL-2997-IP	FL-QZ176-IP	20375-2
60 GPM	FL-2998-IP	FL-QZ165	20375-2
100 GPM	FL-2999	FL-QZ167	20375-2

Limited Warranty

Pentair Aquatic Eco-Systems, Inc. (PAES) warrants that upon completion of the services or at the time of delivery, as the case may be, and for a period of twelve (12) months thereafter: (i) professional services, if any, will be performed in a good and workmanlike manner in accordance with generally acceptable industry standards, and (ii) products specifically manufactured by PAES, except for filters, chemicals and consumables (which shall not be warranted) shall be free from all material defects in materials and workmanship. With respect to the professional services warranty, Buyer's sole and exclusive remedy for PAES' breach of the warranty shall be for PAES to re-perform the services at PAES' sole cost and expense. With respect to the PAES manufactured product warranty, if the PAES manufactured product shall prove to be defective in material or workmanship under normal intended usage and maintenance during the warranty period, upon examination by PAES or its authorized representative, then PAES shall repair or replace, at its sole option, such defective products at its own expense; provided, however, that the Purchaser shall be required to ship each such defective product, freight prepaid, to PAES' designated facility. The warranty on products and/or components not manufactured by PAES is limited to the warranty, if any, provided by the original manufacturer of said product or component which can be passed onto Buyer. PAES DISCLAIMS ALL OTHER WARRANTIES, WHETHER EXPRESS OR IMPLIED OR STATUTORY, INCLUDING BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

This Warranty does not extend to any products that have been subjected to:

1. Damage caused by careless handling, improper repackaging, or shipping.
2. Damage due to misapplication, misuse, abuse or failure to properly operate the product.
3. Damage caused by improper installation or storage.
4. Damage due to unauthorized product modifications or repairs.
5. Damage caused by negligence, or failure to properly maintain products.
6. Accidental damage, fire, acts of God, or other circumstances outside the control of PAES.



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