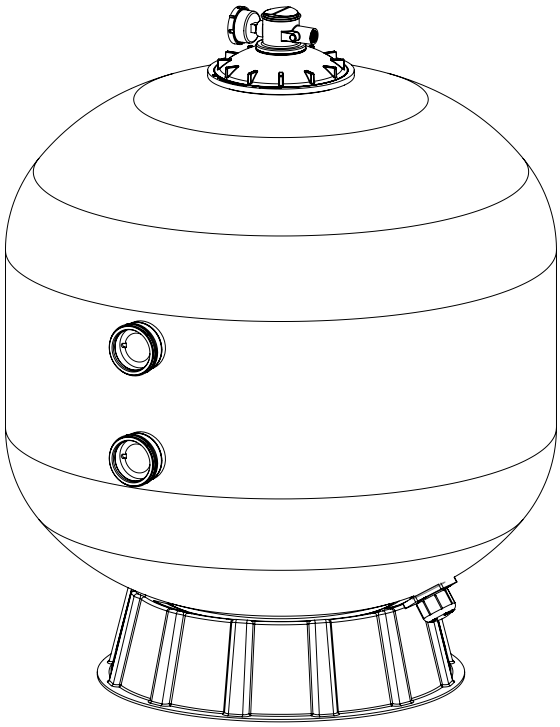
PENTAIR

AQUATIC ECO-SYSTEMS™

ARIAS™ 8000

FIBERGLASS AQUACULTURE SAND FILTER

MODELS: A8000-100, A8000-140



INSTALLATION AND USER'S GUIDE

IMPORTANT SAFETY INSTRUCTIONS

READ AND FOLLOW ALL INSTRUCTIONS

SAVE THESE INSTRUCTIONS

CUSTOMER SERVICE / TECHNICAL SUPPORT

If you have questions about ordering Pentair Aquatic Eco-Systems, Inc., replacement parts and products, please contact:

Customer Service
8 AM to 7 PM — Eastern and Pacific Times

US

Phone: (877) 347-4788

FAX: (407) 886-6787

International

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Web site

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P/N 151037 Rev. A 4/8/13

IMPORTANT WARNING AND SAFETY INSTRUCTIONS

Important Notice:

This guide provides installation and operation instructions for this product. Consult Pentair with any questions regarding this equipment.

Attention Installer: This guide contains important information about the installation, operation and safe use of this product. This information should be given to the owner and/or operator of this equipment after installation or left on or near the filter.

Attention User: This manual contains important information that will help you in operating and maintaining this filter. Please retain it for future reference.

READ AND FOLLOW ALL INSTRUCTIONS
SAVE THESE INSTRUCTIONS

This is the safety alert symbol. When you see this symbol on your system or in this manual, look for one of the following signal words and be alert to the potential for personal injury.

⚠DANGER Warns about hazards that can cause death, serious personal injury, or major property damage if ignored.

⚠CAUTION Warns about hazards that may cause death, serious personal injury, or major property damage if ignored.

⚠CAUTION Warns about hazards that may or can cause minor personal injury or property damage if ignored.

NOTE indicates special instructions not related to hazards.

Carefully read and follow all safety instructions in this manual and on equipment. Keep safety labels in good condition; replace if missing or damaged.

⚠CAUTION Before installing this product, read and follow all warning notices and instructions which are included. Failure to follow safety warnings and instructions can result in severe injury, death, or property damage. Call US: (877) 347-4788 - INT: (407) 886-3939 for additional free copies of these instructions.

Consumer Information and Safety

This filter is designed and manufactured to provide many years of safe and reliable service when installed, operated and maintained according to the information in this manual and the installation codes referred to in later sections. Throughout the manual, safety warnings and cautions are identified by the "⚠" symbol. Be sure to read and comply with all of the warnings and cautions.

⚠CAUTION Do not operate the filter until you have read and understand clearly all the operating instructions and warning messages for all equipment that is a part of the circulating system. The following instructions are intended as a guide for initially operating the filter in a general installation, however each installation may have unique conditions where the starting procedure could be different. Failure to follow all operating instructions and warning messages can result in severe injury, death, or property damage.

⚠CAUTION Do not permit children to use or operate this filter.

⚠CAUTION **FILTER OPERATES UNDER HIGH PRESSURE.**

When any part of the circulating system, (e.g., clamp, pump, filter, valve(s), etc.), is serviced, air can enter the system and become pressurized. Pressurized air can cause the lid to separate which can result in severe injury, death, or property damage.

To avoid this potential hazard, follow these instructions:

1. Before repositioning valve(s) and before beginning the assembly, disassembly, or adjustment of the clamp or any other service of the circulating system: (A) Turn the pump **OFF** and **shut OFF** any automatic controls to ensure the system is NOT inadvertently started during the servicing; (B) open the manual air relief valve; (C) stand clear of the filter; (D) wait until all pressure is relieved.
2. Whenever installing the filter clamp **FOLLOW THE FILTER CLAMP INSTALLATION INSTRUCTIONS EXACTLY**.
3. Once service on the circulating system is complete **FOLLOW SYSTEM RESTART INSTRUCTIONS EXACTLY**.
4. Maintain circulation system properly. Replace worn or damaged parts immediately, (e.g., clamp, pressure gauge, valve(s), o-rings, etc).
5. Be sure that the filter is properly mounted and positioned according to instructions provided.

⚠CAUTION

Due to the potential risk that can be involved it is recommended that the pressure test be kept to the minimum time required by the local code. Do not allow people to work around the system when the circulation system is under pressure test. Post appropriate warning signs and establish a barrier around the pressurized equipment. If the equipment is located in an equipment room, lock the door and post a warning sign.

Never attempt to adjust any closures or lids or attempt to remove or tighten bolts when the system is pressurized. These actions can result in a separation or failure of system components. This instantaneous release of energy can cause components to be accelerated to high velocities and to travel far distances. These components could cause severe personal injury or death if they were to strike a person.

⚠CAUTION

Never exceed the maximum operating pressure of the system components. Exceeding these limits could result in a component failing under pressure. This instantaneous release of energy can cause the closure to separate and could cause severe personal injury or death if they were to strike a person.

⚠CAUTION

RISK OF ELECTRICAL SHOCK OR ELECTROCUTION. This filter must be installed by a qualified service professional in accordance with the current National Electrical Code and all applicable local codes and ordinances. Always disconnect power to the equipment at the circuit breaker before servicing any of the equipment. Ensure that the disconnected circuit is locked out or properly tagged so that it cannot be switched on while you are working on the equipment. Failure to do so could result in serious injury or death to serviceman, pool users or others due to electric shock. Position the filter and the air relief valve to safely direct water drainage and purged air or water. Water discharged from an improperly positioned filter or valve can create an electrical hazard that can cause severe personal injury as well as damage property.

IMPORTANT WARNING AND SAFETY INSTRUCTIONS

⚠CAUTION This filter is intended for use in aquaculture installations ONLY. Do not use with any type of swimming pool, hot tub, or spa.

⚠DANGER **SERIOUS BODILY INJURY OR DEATH CAN RESULT IF THIS FILTER IS NOT INSTALLED AND USED CORRECTLY.**

⚠DANGER **INSTALLERS, OPERATORS AND OWNERS MUST READ THESE WARNINGS AND ALL INSTRUCTIONS BEFORE USING THIS FILTER.**

⚠DANGER **HAZARDOUS PRESSURE: STAND CLEAR OF PUMP AND FILTER DURING START UP**

Circulation systems operate under high pressure. When any part of the circulating system (i.e. locking ring, pump, filter, valves, etc.) is serviced, air can enter the system and become pressurized. Pressurized air can cause the pump housing cover filter lid and valves to violently separate which can result in severe personal injury or death. Filter tank lid and strainer cover must be properly secured to prevent violent separation. Stand clear of all circulation system equipment when turning on or starting up pump.

Before servicing equipment, make note of the filter pressure. Be sure that all controls are set to ensure the system cannot inadvertently start during service. Turn off all power to the pump. **IMPORTANT: Place filter manual air relief valve in the open position and wait for all pressure in the system to be relieved.**

Before starting the system, fully open the manual air relief valve and place all system valves in the "open" position to allow water to flow freely from the tank and back to the tank. Stand clear of all equipment and start the pump.

IMPORTANT: Do not close filter manual air relief valve until all pressure has been discharged from the valve and a steady stream of water appears. Observe filter pressure gauge and be sure it is not higher than the pre-service condition.

For Installation of Electrical Controls at Equipment Pad (ON/OFF Switches, Timers and Automation Load Center)

⚠CAUTION

Install all electrical controls at equipment pad, such as on/off switches, timers, and control systems, etc. to allow the operation (startup, shut-down, or servicing) of any pump or filter so the user does not place any portion of his/her body over or near the pump strainer lid, filter lid or valve closures.

This installation should allow the user enough space to stand clear of the filter and pump during system start-up, shut down or servicing of the system filter.

⚠CAUTION The following information should be read carefully since it outlines the proper manner of care and operation for your filter system. As a result of following these instructions and taking the necessary preventative care, you can expect maximum efficiency and life from your filtration system.

General Installation Information

The following information should be read carefully since it outlines the proper manner of care and operation for your filter system.

You can expect maximum efficiency and life from your filtration system by following these instructions and taking
the necessary preventative care.

- Have a trained professional perform all pressure tests.
- Do not connect the system to a high pressure or city water system.
- Trapped air in the system can create a hazardous condition. BE SURE to purge all air from the system before operating or testing equipment.
- DO NOT pressure test with compressed air!
- Piping must conform to local/state plumbing and sanitary codes.
- Support piping independently to prevent strains on filter or valve.
- Fittings restrict flow; for best efficiency, use the fewest possible fittings.
- A check valve installed ahead of the filter inlet will prevent contaminants from draining back into the system.
- A check valve installed between the filter and heater will prevent hot water from backing up into the filter and deforming the internal components.
- All wiring, grounding and bonding of associated equipment must meet current local and/or National Electrical Code standards.

Only a qualified plumbing professional should install this filter. Refer to the "Important Warning and Safety Instructions on pages iii-iv for installation and safety information.

SAVE THESE INSTRUCTIONS

Section 1
Installation

Note: **Before installing this product, read and follow all warning notices and instructions in this manual.**

Installing the Arias™ 8000 Fiberglass Sand Filter

Only a qualified service person should install the Arias™ 8000 Fiberglass Sand Filter. This filter is designed and intended to filter water.

Introduction

The following general information describes how to install the Arias™ 8000 Fiberglass Sand Filter. This filter operates under pressure and if assembled improperly or operated with air in the water circulation system, the top closure can separate and result in an accident causing property damage or serious bodily injury. A warning label has been affixed to the top of the filter and should not be removed. Keep safety labels in good condition and replace if missing or illegible.

How your Filter works

Your high rate sand filter is designed to operate for years with a minimum of maintenance and when installed, operated and maintained in accordance with these instructions, it will provide years of trouble free operation.

Dirt is collected in the filter as the water flows through the control valve at the side of the filter and is directed into the top bulkhead. Dirty water flows into the diffuser at the top of the tank and is directed downward into the top surface of the filter sand bed. The dirt is collected in the sand bed and the clean water flows through the laterals and lower piping at the bottom of the filter up into the lower bulkhead. The flow then goes into the control valve at the side of the filter. Clean water is returned through the piping system into the system.

The pressure will rise and the flow to the system will be lowered as the dirt is collected in the filter. Eventually, the filter will become so plugged with dirt that it will be necessary to perform the backwash procedure. It is important to know when to backwash the filter. Backwashing is discussed further under the subsequent sections of this guide.

Please note that a filter removes suspended matter and does not sanitize the water. The water must be sanitized and the water must be chemically or mechanically balanced for clear water. Your filtration system should be designed to meet your local current code.

Clear water is the result of proper filtration as well as proper water chemistry. Water chemistry is a specialized area and you should consult your local service specialist for specific details.

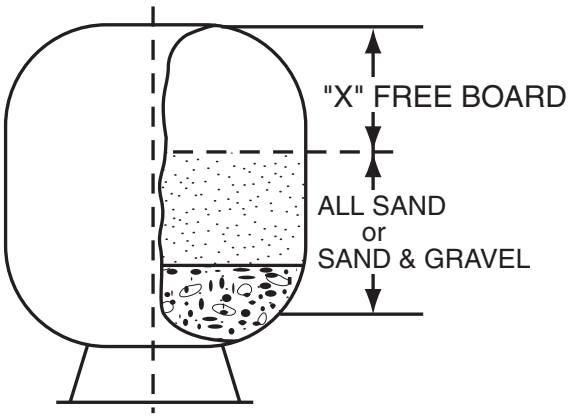
⚠ **WARNING** — Filters should never be tested or subjected to air or gas under pressure. All gases are compressible and under pressure create a danger. Severe bodily injury or property damage could occur if the filter is subjected to air or gas pressure.

1. Check carton for any evidence of damage due to rough handling in shipment. If carton or any filter components are damaged, notify the freight carrier immediately.
2. Carefully remove the accessory package and the filter tank from the carton.
3. Mount the filter on a permanent slab, preferably concrete poured in a form or on a platform constructed of concrete block or brick. DO NOT use sand to level the filter or for the pump mounting, as it will wash away.
4. Provide space and lighting for routine maintenance access. Do not mount electrical controls over the filter. One needs to be able to stand clear of the filter when starting the pump. Minimum space requirements may be found on the large nameplate on the filter.
5. Position filter so that the port locations are in the desired final positions. Follow valve installation procedures.
6. If you have a Multiport Valve, assemble the valve to the tank, being sure the o-ring on the valve fittings are in place and are clean. Use a lubricant, applied lightly, such as silicone grease on o-rings and o-ring grooves prior to assembly.
7. If you have a two position slide valve, align the valve with the tank so that the handle is toward the top of the tank, push valve into ports and turn the valve nuts snugly on the tank fittings. It is not necessary to cinch the valve nuts to the tank fitting beyond hand tightness.
8. The shipping straps used to support the A8000-100 and A8000-140 multi-diffuser should be removed before loading sand and gravel in the filter.
8. Sand specifications – be certain the proper sand is used as described in Table 1. Before pouring the sand into the filter, look inside and check the lower under-drain for broken or loose laterals (or fingers), which may have been accidentally damaged by rough handling during shipment. Replace any broken parts if necessary.

NOTE: The free board distance is the most important variable and should be maintained. Sand density will vary and therefore sand amount is given as a reference.

Table 1.

MODEL	FREE BOARD "X"	ALL SAND* (POUNDS)	FILTER MEDIA† (POUNDS)	
			PEA GRAVEL ‡	SAND
A8000-100	11 1/4"	600	150	450
A8000-140	13 1/2"	925	275	650



‡ Pea Gravel to be 1/4" to 1/8" diameter.
* Sand to be No. 20 standard silica (uniformity coefficient not greater than 1.75) .018-.020 in diameter particle size.

⚠**WARNING** — Failure to position the Automatic Air Vent inside of the Closure will allow excessive trapped air to accumulate in the filter. Trapped air and the closure not properly closed can cause the closure to separate and could cause severe bodily injury and/or property damage.

10. Fill the tank about half full of water. Pour pea gravel first (if used) and then the sand into the top of the filter at a slow rate so that the impact of the filter media does not damage the laterals. See Table 2 for the proper amounts of sand and gravel. Fill the filter to the proper level to maintain freeboard, as shown in Table 2. Be certain the automatic air vent is protruding into the top of the closure as indicated below in Figure 1. Ensure that the automatic air vent is in the center of the filter closure. Wash away all sand around the threaded opening at the top of the tank.

⚠**WARNING —For Threaded Closures**

Use care when installing closure. The closure should turn freely in the filter, if resistance to closure insertion is felt, then slowly remove the closure by turning counter-clockwise. The starting thread of the tank and closure must engage properly in order to secure the closure. *Do not cross-thread closure.*

Failure to install the closure properly can cause the closure to separate and could cause severe bodily injury and/or property damage.

11. Assemble the pressure gauge and bleeder valve to the closure lid. Clean the lid o-ring and lubricate with silicone grease lubricant. Place the closure lid on the filter and tighten, making certain the air vent is up inside the dome of the closure.
12. With the plastic wrench, provided with the filter, tighten the closure as tight as possible using two hands on the wrench handles. As a minimum, the closure must be hand tight + 1/4 turn.
13. Assemble piping and pipe fittings to pump and valve. All piping must conform to local and state plumbing and sanitary needs.
14. Use sealant compounds on all male connections of pipe and fittings. Use only pipe compounds suited for plastic pipe. Support pipe to prevent strains on filter, pump or valve.
15. Long piping runs and elbows restrict flow. For best efficiency, use the fewest possible number of fittings, and large diameter pipe (at least 2”).

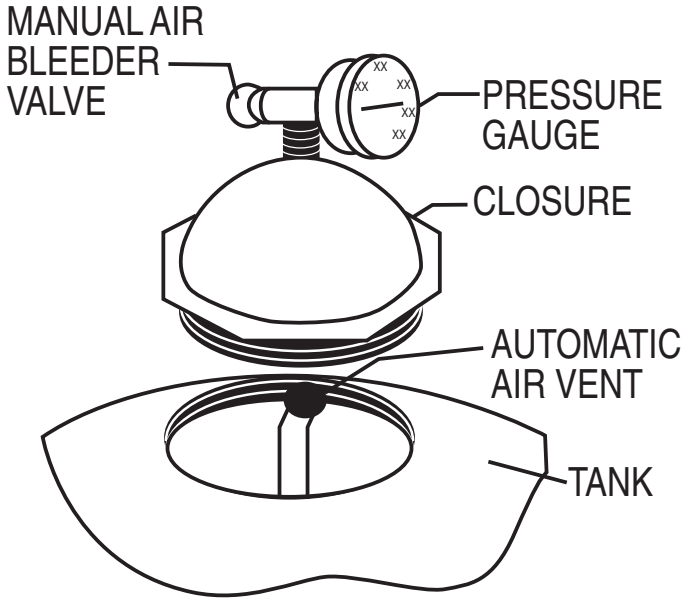


Figure 1.

⚠ **CAUTION** —Operating at excessive vacuum levels can cause the tank to crack and could cause property damage.

17. When installing backwash lines, it is recommended that a vacuum breaker be installed on installations where the backwash line length exceeds 40 ft. or the backwash line discharges more than 10 ft. lower than the surface of the water. Alternately a vacuum break pit should be provided.
18. A check valve is recommended between the filter and heater to prevent hot water "back-up" which will damage the filter and valve.
19. The maximum operating pressure of the unit is 75 pounds per square inch (psi). Never operate this filter above these pressures or attach a pump to this filter that has more than 75 psi shut off pressure Arias™ 8000 filter only.
20. A positive shut off valve is not recommended at the outlet of the filtering system. If the system is ever run with such a valve closed, the internal air relief system becomes inoperative and a filter separation situation could exist. Additionally, running the system with no flow will seriously damage the equipment.
21. Never store chemicals within 10 ft. of the filter. Chemicals should always be stored in a cool, dry well ventilated area.

Initial Start-up

1. On a new system, clean the system before filling the system with water. Excessive dirt and large particles can cause damage to the pump and filter.
2. Ensure the backwash line is open so that water is free to come from the system and flow out the backwash line. Set the valve position as follows:
   a. If using a Multiport valve, set valve to backwash position.
3. Check pump strainer pot to be sure it is full of water.

⚠ **WARNING** — Air entering the filter and the tank closure not installed properly can cause the closure to separate and could cause severe bodily injury and/or property damage.

4. Check closure on filter for tightness.
5. Open the manual air bleeder on the filter closure. Stand clear of the filter and start the pump allowing it to prime.
6. Close the air bleeder on the closure when all the air is removed from the filter and a steady stream of water emerges.

NOTE: Filter media is typically pre-washed and should not require extensive backwashing. However, the shipping process may cause excessive abrasion which could require an extended backwash cycle at initial start-up; continue to backwash until the backwash water is as clear as the system water.

⚠ **CAUTION** — To prevent equipment damage and possible injury, always turn the pump off before changing the valve position.

7. Stop the pump. Set the valve position as follows:
   a. If using a Multiport valve, set the valve to the filter position.
   b. If using the Two Position Slide Valve, raise the handle to filter position and engage valve lock by twisting handle.
8. Ensure all suction and return lines are open so that water is free to come from the system and return to the system.
9. Open the manual air bleeder on the filter closure. Stand clear of the filter and start the pump.
10. Close the air bleeder on the filter closure when all the air is removed from the filter and a steady stream of water emerges.
11. The filter has now started its filtering cycle. You should ensure that water is returning to the system and take note of the operating pressure when the filter is clean.

Section 2
Maintenance

This section describes how to maintain your Arias™ 8000 Fiberglass Sand Filter.

Filter Care

The filter is a very important part of the system equipment and installation. Follow these suggestions for long trouble-free operations:

1. To clean the exterior of the filter of dust and dirt, wash with a mild detergent and water then hose off. Do not use solvents.
2. If internal maintenance is required on media, sand may be removed by removing the sand drain from the bottom of the filter and flushing with a garden hose.
3. If after a number of years, the filter tank appears foggy in color or rough in texture, the tank surface can be painted. We recommend the use of a Quick Dry Spray Enamel. **Do NOT paint the valve.**

⚠ **WARNING** — Always visually inspect filter components during normal servicing to ensure structural safety. Replace any item which is cracked, deformed or otherwise visually defective. Defective filter components can allow the filter top or attachments to separate and could cause severe bodily injury or property damage.

4. The filter closure on your filter was manufactured with high quality corrosion resistant materials. This part should be carefully inspected whenever servicing your filter. If excessive leakage is noted coming from the closure/tank interface, the closure and o-ring should be carefully inspected and replaced if any signs of deterioration exist.
5. Your filter is a pressure vessel and should never be serviced while under pressure. Always relieve tank pressure and open air bleeder on the filter closure before attempting to service your filter.
6. When restarting your filter, always open the manual air bleeder on the filter closure and stand clear of the filter.

Cleaning Frequency

1. The filter on a new system should be backwashed, and cleaned after approximately 48 hours of operation to clean out plaster dust and/or construction debris.
2. There are three different ways to identify when the filter needs backwashing.
   a. The most accurate indicator on a system with a flow meter is to backwash when the flow decreases 30% from the original (clean filter) flow. For example, if the original flow was 60 GPM, the filter should be backwashed when the flow is reduced by about 20 GPM (or 30%) to 40 GPM.
   b. The most commonly used but less accurate indicator is to backwash when the filter gauge reading increases 10 PSI over the initial (clean filter) reading.
3. It is important not to backwash the filter solely on a timed basis such as every three days. It is also important to note that backwashing too frequently actually causes poor filtration. Factors like weather conditions, heavy rains, dust or pollen, and water temperature all affect the frequency of backwash. As you use your system, you will become aware of these influences.
4. If at any time the starting pressure after backwashing the filter indicates 4 to 6 PSI higher than normal starting pressure, it is time to perform a chemical cleaning procedure.

Filter Backwash Procedure

⚠ **WARNING** —To prevent equipment damage and possible injury, always turn off pump before changing valve positions.

1. Stop the pump.
2. Ensure that the suction and backwash lines are open so that water is free to come from the system and flow out the backwash line. Set control valve position as follows:
   a. If using a Multiport Valve, set valve to backwash position.
   b. If using a Two Position Slide Valve, push handle down to backwash position and engage lock by twisting handle.
3. **Stand clear of the filter** and start pump.
4. Backwash filter for approximately 3 to 5 minutes or until backwash water is clean.
5. Stop the pump.
   a. If using a Multiport Valve, set valve to rinse position and continue with remaining steps.
   b. If using a Two Position Slide Valve, skip to step 8.
6. **Stand clear of the filter** and start pump.
7. Rinse filter for approximately 30 seconds.
8. Stop the pump and set valve as follows:
   a. If using a Multiport Valve, set valve to filter position.
   b. If using a Two Position Slide Valve, raise handle to filter position and engage valve lock by twisting handle.
9. Be sure the return line is open so that water may freely flow from the system back to the system.
10. Open manual air bleeder on the filter closure. Stand clear of filter and start pump.
11. Close manual air bleeder of the closure when all the air is removed and a steady stream of water emerges from the bleeder.
12. The filter has now started its filtering cycle. You should ensure that water is returning to the system and take note of the filter pressure.
13. The filter pressure, in the above Step 12, should not exceed the pressure originally observed on the filter when it was initially started. If after backwashing, the pressure is 4 to 6 PSI above the start condition, it will be necessary to chemically clean the sand bed.

Chemical Cleaning Procedure

1. It is recommended that an approved cleaner be used. Please contact your local chemical supplier or retail store for the proper cleaner.

   These cleaners will remove oils, scale and rust from the sand bed in one cleaning operation.
2. Mix a solution following the manufacturers instructions on the label.
3. Backwash the filter as outlined on page 6.
4. If the filter is below water level, shut off the pump and close appropriate valving to prevent draining the system.
5. Shut off pump, open filter drain and let filter drain. Place valve in backwash position.
6. After filter has drained, close filter drain and remove the pump strainer pot lid.
7. Ensure that the backwash lines are open.
8. Turn the pump on and slowly pour the cleaning solution into the pump strainer with the pump running.
9. Continue adding solution until the sand bed is saturated with cleaning solution. Replace lid on pump.
10. Shut off the pump and leave filter in backwash position. Allow filter to stand overnight (12 hours).
11. Replace the pump lid and follow backwash procedures on page 6.
12. Do not allow the cleaning solution to get into the system.

Winterizing your Filter

1. In areas that have freezing winter temperatures, protect the equipment by backwashing the filter.
2. After backwashing, shut the pump off, open the manual air bleeder on the closure and adjust the valve as follow:
   a. On the Multiport Valves, move the handle of the valve to the Winterize Position (*).
   b. On the Two Position Slide Valve, if possible, remove the valve piston assembly; clean, lubricate and store in a dry location for the winter.

***NOTE:** The Multiport valve should be left in the winterize position during shutdown season so the valve diverter has no pressure on the rubber seal.

3. Remove the 1½" drain plug cap. The filter will drain very slowly, and therefore, it is recommended that the drain plug be left out.
4. Drain all appropriate system piping.
5. It is not recommended to cover the equipment with a tarpaulin or plastic sheet to inhibit deterioration from weather. Do **NOT** wrap pump motor with plastic.

Section 3
Troubleshooting

Use the following troubleshooting information to resolve possible problems with your Arias™ 8000 Filter.

⚠ WARNING — THIS FILTER OPERATES UNDER HIGH PRESSURE

When any part of the circulating system, (e.g., closure, pump, filter, valve(s), etc.), is serviced, air can enter the system and become pressurized. Pressurized air can cause the top closure to separate which can result in severe injury, death, or property damage. To avoid this potential hazard, follow these instructions:

1. If you are not familiar with your water filtering system and/or heater:
   a. **Do NOT** attempt to adjust or service without consulting a qualified service technician.
   b. Read this entire Installation and User's Guide before attempting to use, service or adjust the water filtering system or heater.
2. Before repositioning valve(s) and before beginning the assembly, disassembly, or any other service of the circulating system: (A) Turn the pump **OFF** and **shut OFF** any automatic controls to ensure the system is NOT inadvertently started during the servicing; (B) open the manual air bleeder valve; (C) stand clear of filter; (D) wait until all pressure is relieved.
3. Whenever installing the filter closure **FOLLOW THE FILTER CLOSURE WARNINGS EXACTLY**.
4. Once service on the circulating system is complete **FOLLOW INITIAL START-UP INSTRUCTIONS EXACTLY**.
5. Maintain circulation system properly. Replace worn or damaged parts immediately, (e.g., closure, pressure gauge, valve(s), o-rings, etc).
6. Be sure that the filter is properly mounted and positioned according to instructions provided.

Note: Turn off power to unit before to attempting service or repair.

Filter Problems and Corrective Actions

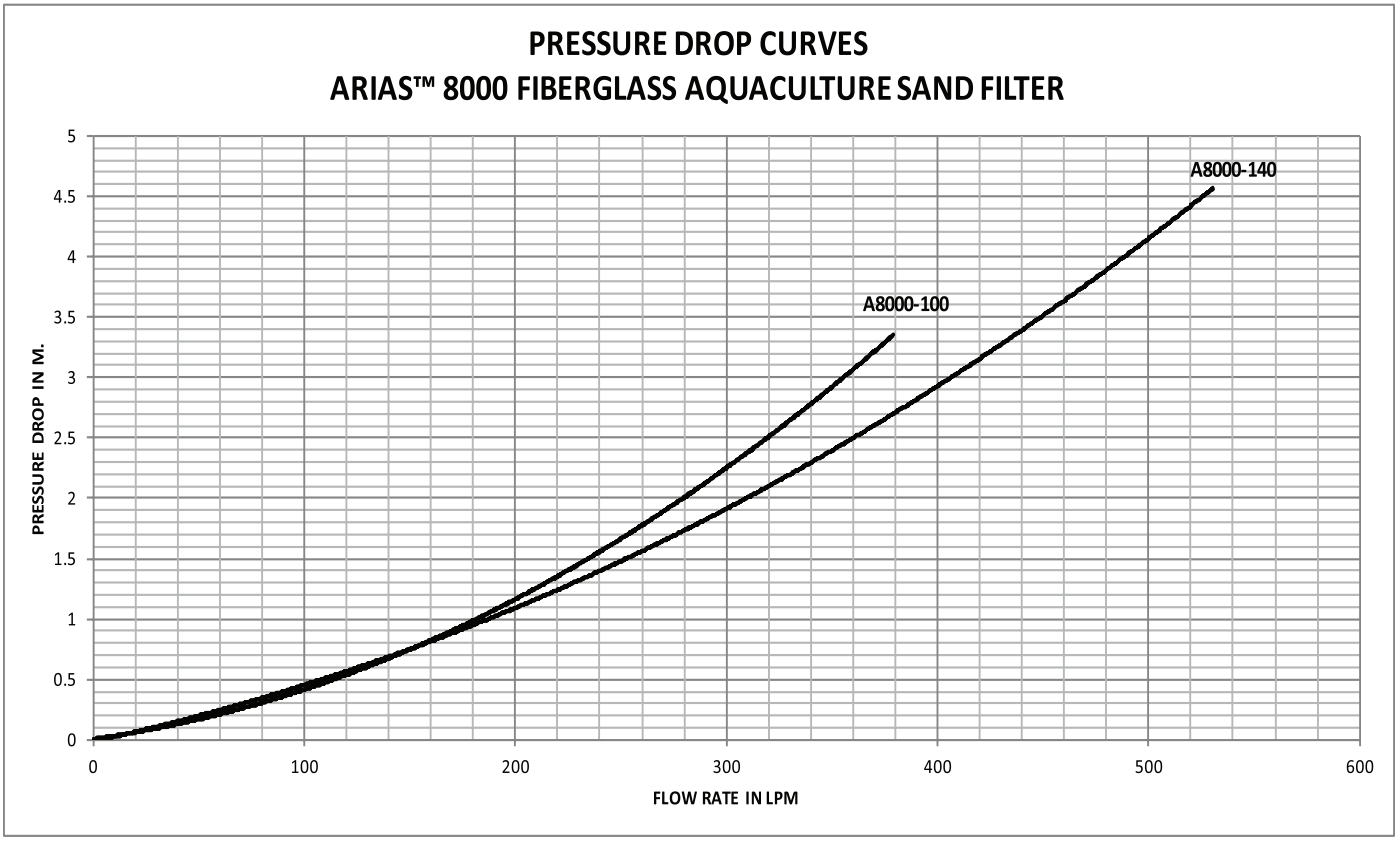
PROBLEM	CAUSE	REMEDY
Water not sufficiently clean	1. Water chemistry not adequate to inhibit algae growth.	Maintain water chemistry or consult service technician.
	2. Too frequent a backwash cycle.	Allow pressure to build to 10 psi above clean filter condition before backwashing.
	3. Improper amount or wrong sand size.	Check sand bed Freeboard and sand size or consult a service technician.
	4. Inadequate turnover rate.	Run system for longer time or consult dealer or service technician.
High filter pressure	1. Insufficient backwashing.	Backwash until effluent runs clear.
	2. Sand bed plugged with mineral deposits.	Chemically clean filter.
	3. Partially closed valve.	Open valve or remove obstruction in return line.
Short cycles	1. Improper backwash.	Backwash until effluent runs clear.
	2. Water chemistry not adequate to inhibit algae growth.	Maintain water chemistry or consult service technician.
	3. Plugged sand bed.	Manually remove top 1" surface of media, replace with new sand and chemically clean entire media as described in the Chemical Cleaning Procedure.
	4. Flow rate too high.	Restrict flow to capacity of filter.

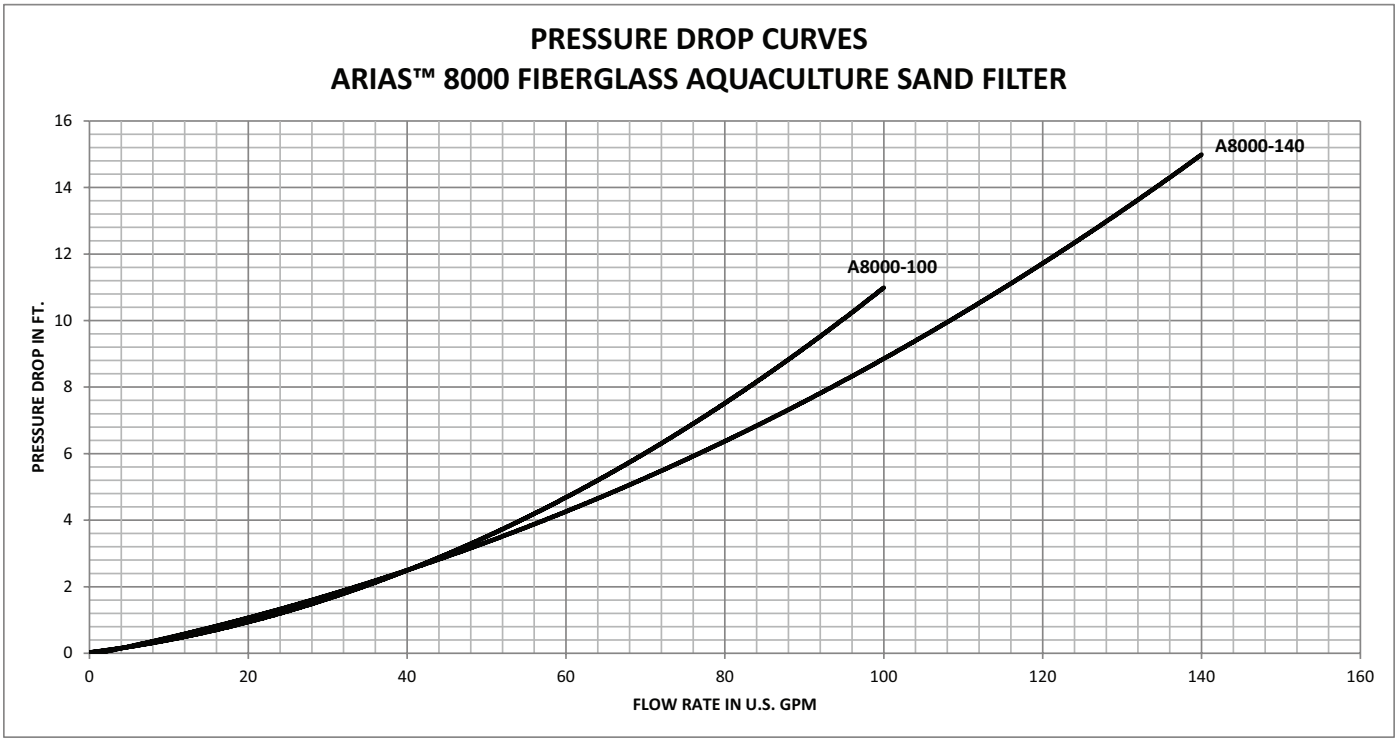
Filter Problems and Corrective Actions (Continued)

PROBLEM	CAUSE	REMEDY
Return flow to system diminished, low filter pressure	1. Obstruction in pump hair and lint strainer.	Clean basket in pump strainer.
	2. Obstruction in pump.	Disassemble and clean pump.
	3. Obstruction in suction line to pump.	Remove obstruction in lines. Open valves in suction line.
Sand returning to system	1. Broken under drain lateral.	Replace broken or damaged laterals.
Sand loss to waste	1. Backwash rate too high.	Reduce backwash flow rate.
	2. Improper sand size.	Change to proper sand.
	3. Air strainer is damaged or missing.	Replace damage components.
Leak at closure	1. Improperly tightened closure.	Shut off pump, relieve tank pressure, open air bleeder, tighten closure properly.
	2. Dirt or contamination on sealing surface.	Shut off pump, relieve tank pressure, open air bleeder, remove closure and clean all sealing surfaces. Reassemble closure properly.
	3. Damaged part.	Same as above except replace damaged o-ring, closure, tank or any combination of parts as required.
Leak at bulkhead	1. Improper tightened bulkhead assembly.	Shut off pump, relieve tank pressure, open air bleeder, remove closure and remove sand to access leaking bulkhead on the A8000-100 and A8000-140. Hold the 2" bulkhead and tighten the 2" internal locknut.
	2. Dirt or contamination on sealing surfaces.	Shut off pump, relieve tank pressure, open air bleeder, remove closure and remove sand to access leaking bulkhead. Remove attached tank internals and remove bulkhead assembly Clean all mating surfaces and seals. Replace the bulkhead assembly, being careful to assemble properly. Tighten assembly as indicated above.
	3. Damaged part.	Same as above except replace damaged part or combination of parts.

Section 4
Technical Data

Pressure Drop Curve, US and Metric, for the Arias™ 8000-100 and 140 Sand Filters



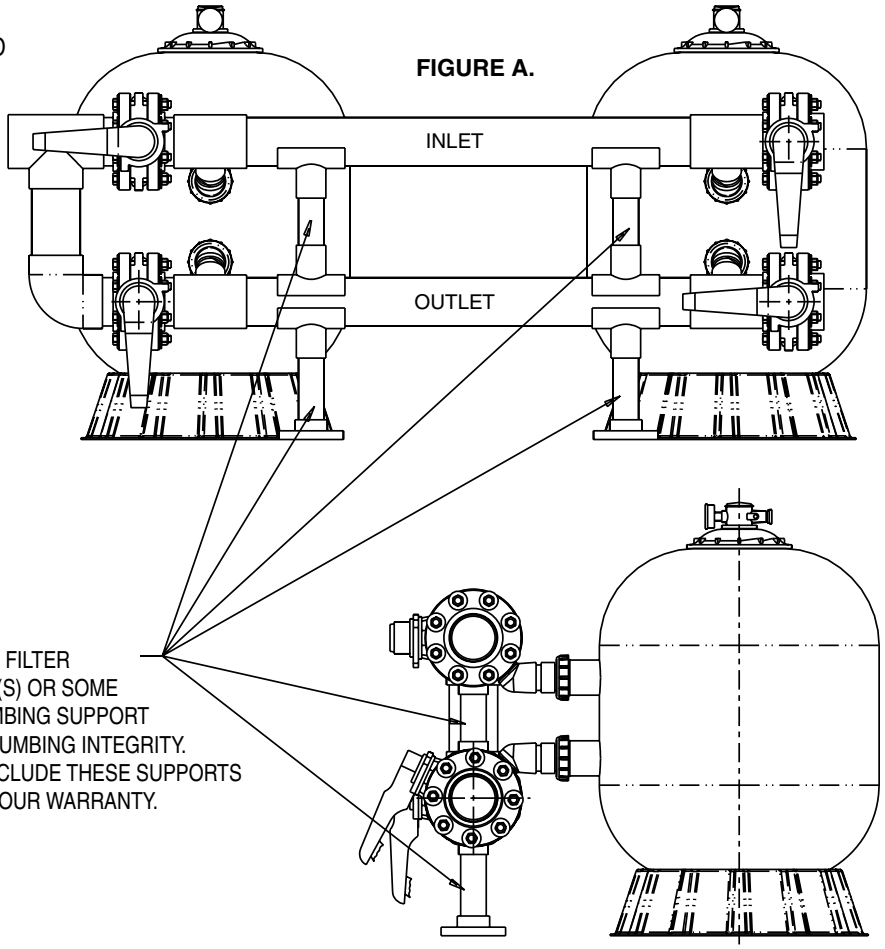


Arias™ 8000-100 and 140 FIBERGLASS SAND FILTER (A8000-100 and A8000-140)

Installing Multiple Filters with Tandem Filter Piping Kits

CAUTION: WHEN MULITPLE FILTERS ARE INSTALLED, WE HIGHLY RECOMMEND THE USE OF A TANDEM FILTER PIPING KIT. THESE KITS INCLUDE PLUMBING SUPPORTS (BETWEEN INLET AND OUTLET PIPING AND BETWEEN OUTLET PIPING AND FLOOR) TO ASSURE INTEGRITY OF THE INSTALLATION. SEE FIGURE A.

FIGURE A.



CAUTION: USE A TANDEM FILTER PLUMBING KIT(S) OR SOME SORT OF PLUMBING SUPPORT TO ASSURE PLUMBING INTEGRITY. FAILURE TO INCLUDE THESE SUPPORTS COULD VOID YOUR WARRANTY.

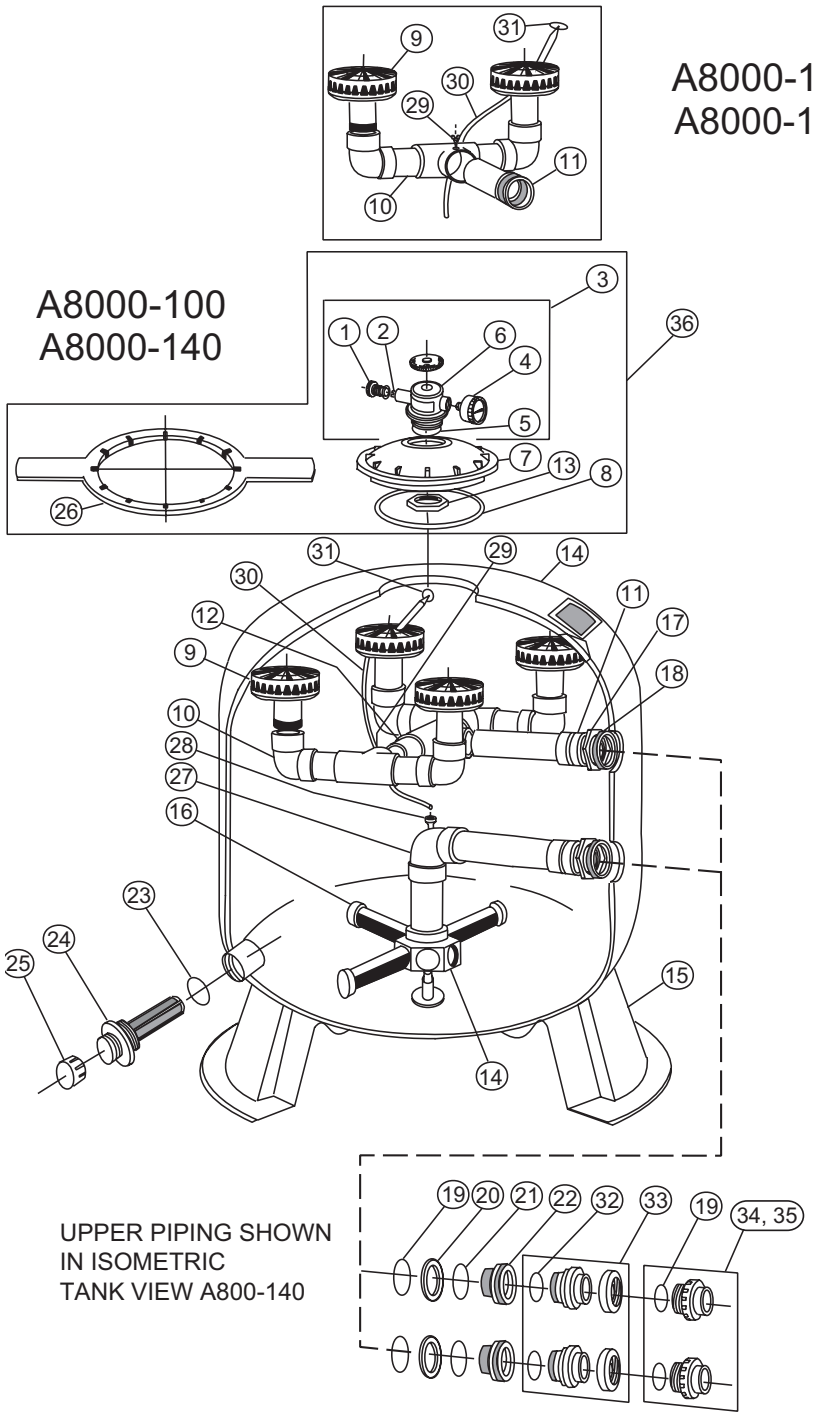
Section 5

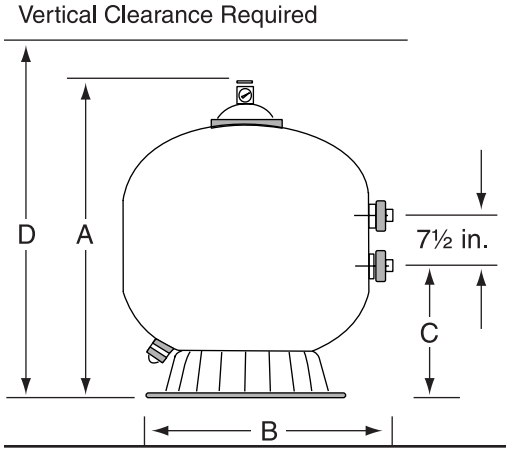
Replacement Parts

Arias™ 8000-100 and 140 FIBERGLASS SAND FILTER (A8000-100 and A8000-140)

Item No.	Part Number	Description
1	273512	Air bleeder w/ o-ring
2	273513	O-ring air bleeder screw
3	273564	Manual air relief body assy.
4	155050	Pressure gauge
5	274494	O-ring 3/16 in. X 2-5/8 in. i.d..
6	273564	Valve body machined
7	154575	Closure 8½ in. buttress
8	152509	Square ring 8½ in.
9	154599	Diffuser A8000-100, A8000-140
10	156355	Piping assy. upper A8000-100, A8000-140
11	156344	Piping assy. upper inlet A8000-100, A8000-140
12	156354	Piping connecting assy. upper A8000-140
13	154412	Nut 2 in. internal
14	154453	Hub lateral A8000-100, A8000-140
15	154596	Foot 24 in. dia. A8000-100, A8000-140
16	152202	Lateral 9 1/8 in. A8000-100, 8 req.
16	154540	Lateral 12 in. A8000-140, 8 req.
17	154412	Locknut 2 in. internal
18	154416	Spacer 2 in. internal
19	154492	O-ring 2 in. bulkhead
20	154408	Spacer 2 in. external
21	154538	Gasket 2 in. bulkhead
22	154405	Bulkhead 2 in.
23	274494	O-ring 3/16 in. X 2 5/8 in. i.d.
	154407	Tape ft. mounting
24	152220	2 in. sand drain
25	154871	Cap thd. 1½ in.
26	154527	Wrench 8½ in. closure
26	151608	Wrench 8½ in. aluminum
27	154807	Piping assy. lower A8000-100
27	154489	Piping assy. lower A8000-140
28	150036	Connector air relief tube
29	273071	Screw #14 18-8 A8000-100
30	150041	Tube air relief A8000-100
30	150042	Tube air relief A8000-140
31	150035	Strainer air relief
32	274494	O-ring valve adptr.
33	271096	1½ in. & 2 in. slip adptr. kit for inst. w/o valve (pair)
34	271092	2 in. thd. adptr. kit for inst. w/o valve (pair)
35	271094	1½ in. thd. adptr. kit for inst. w/o valve (pair)
36	154856	Kit closure 8½ in. btr. THD. - Blk.

Arias™ 8000-100 and 140 FIBERGLASS SAND FILTER Illustrated Replacement Parts





MODEL	A DIM.	B DIM.	C DIM.	D DIM.
A8000-100	39 ¾ in.	30½ in.	16 ¼ in.	41 ¾ in.
A8000-140	45 ¼ in.	36½ in.	18 ¾ in.	47 ¼ in.

Notes

Notes

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