The Leaders in Reverse Osmosis

1000 GPD Marlin Reverse Osmosis

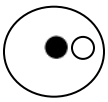
Instruction & Owner's Manual

AQUAFX INSTALLATION INSTRUCTIONS

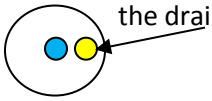
Congratulations on your new AquaFX water treatment system from Aqua Engineering & Equipment, Inc. We hope your system brings you and your pets many years of service and fresh clean water. There are a few basic steps we wanted to inform you about when it comes to the installation and maintenance of your water treatment system. If you should have any difficulties or questions, do not hesitate to contact us and we will be happy to help you any way we can.

We strongly recommend to hooking your Commercial RO unit to a softened water supply.

Your system was built to order, and it is ready to hook up to a water supply with the appropriate adapters included. AquaFX, Inc. pressure tests all systems prior to shipping, so your RO membrane will be installed, The only other work you need to complete is hooking the unit up to a supply and drain line.

1) Unpack your unit completely.
2) Inspect for any damage or broken parts as a result of shipping.
3) Locate and connect the supply side of the equipment.  The center Port will be plugged, the side port is ready for the supply tube, the **Black** 3/8" tubing.

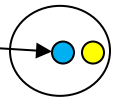
4) Then connect your specified adaptor, if it has not already been done.

5) Locate and connect the **Yellow** drain line to the other end of the membrane housing, there is a ball valve (flow restrictor) installed. The correct port for  the drain is the port to the side, not the center port.

Place the other end in an appropriate area to accept drain water.

6) Now connect the **BLUE** product water line by inserting the white tube insert  into the blue tube.

Now using the nut, attach that end to the ASO  to only port is available, tighten nut. Take the other end of blue tube and insert it into the remaining open port on the membrane housing.

Center port 

7) Now allow the system to run for approximately 15 minutes to flush completely. Please check systems for leaks, **parts can come lose during shipping!**

These instructions cover the most common set up configurations. If you ordered different colored tubing or filter cartridge housings, you may not be able to follow these instructions completely. All AquaFX systems come with a **3 year limited warranty**. Please contact us if you have problems with your unit. Customer is responsible for filter and membrane changes and associated costs. AquaFX carries a complete line of parts and accessories for all of our systems. Thank you for your business!

When using Chloramine Blasters you MUST Rinse them before using them; by disconnecting the feed to the membrane and running water through them until the water runs clear, this is a good idea for all carbons.

This is not A High Pressure Filter, NOT to be used where water pressures exceed 60 PSI

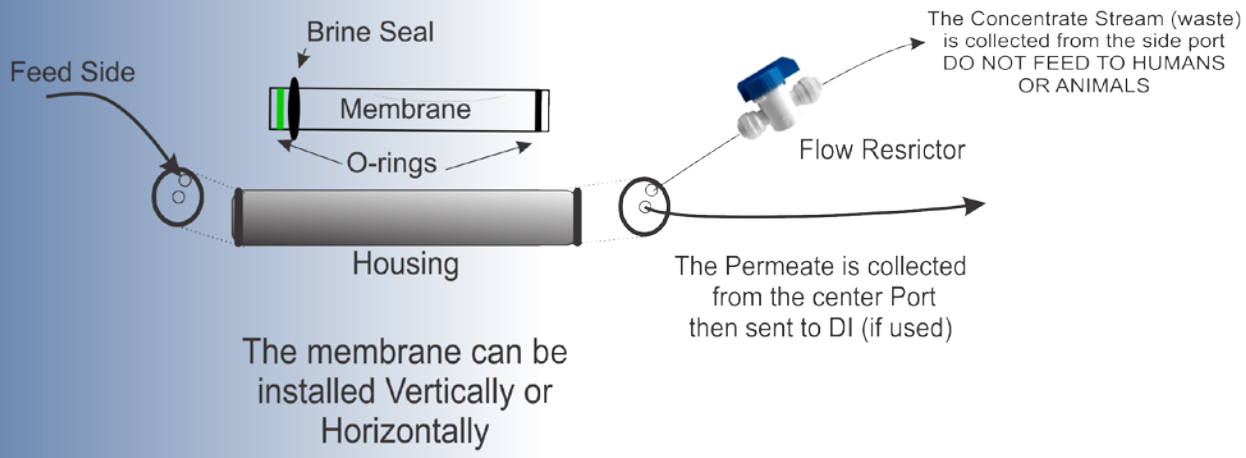
Filter Change Sheet and Normal Operation

Note: Filters are referenced in the order in which they appear in the system.

1. **Sediment Filter:** is first in line; it removes particles that can be physically filtered out. An example of a particle that is removed is sand. This filter's life depends on the amount of particles in your water. The best gauge of this filter's life is pressure drop. When you see a 5PSI drop, you should change this filter. Discoloration is also a sign that the filter is loaded and therefore it is time to replace it.
2. **Carbon Block Filter**: This filter effectively reduces VOC's (Volatile Organic Compounds) Water that is considered safe by the Federal Safe Water Drinking Standards should only be used. If you have water with a known containment, you need to treat it according. The only cost effective way to predict filter life is by estimating the gallons. (unless carbon is being used for a know containment, then testing is essential) The carbon block will filter 3,750 gal @ 1.0 GPM of 2ppm Chlorine (Cl_2). ***Do not exclude drain water from this calculation, as it has been carbons treated.***
3. **Reverse Osmosis Membrane**: This is the first component in the RO system that reduces Dissolved Solids; a common example of dissolved solids can be salt or sugar. A TDS meter is the best way to determine if your membrane is operating properly. A properly operating membrane will give you a TDS reduction of at least 90%. EXAMPLE: Raw water TDS is 100ppm, after the membrane it should be 10ppm or less. Membranes can fail by Clogging or Scaling, causing little or no water to be produced. Membranes will also fail from contact with chlorine, which can result in higher production of "Membrane Permeate". At this point the water quality will be very poor. So changing the carbon filter on time is essential. Hot water will also ruin a membrane (>95 Deg. F). If your membrane produces significantly more than it is rated for, that is an indication that something is wrong.
4. **Deionization Filter (DI)**: The DI filter is the last filter inline. This filter consists of 2 resins. One is charged with Hydrogen (H+) and the other a Hydroxide ion (OH-). As water passes over these resins, the remaining "salts" (or ions) exchange out and only H+ and OH- are released into the stream. Due to the quality of resin used, the water you get will be, literally as pure as possible. The resin is a color indicating resin; it will slowly change from a dark purple/blue/black to a rust red/orange color. As this filter nears the end of its useful life you may experience "break though". Keep this in mind, depending on the water quality needed. For applications demanding 18 Mega-Ohm water, 2 DI's are STRONGLY recommended. As the first DI filter becomes exhausted, replace it with other

   DI already installed in the system downstream. You can then proceed to install the brand-new (not installed yet) DI Filter in the last canister. This assures the water quality you desire.

Commercial Membrane Installation and Replacement Guide



The membrane can be installed Vertically or Horizontally

Feed Side of Membrane Housing

- Insert membrane into housing, making careful to note, which side has the brine seal. The use of a non-petroleum based lubricant is acceptable, if needed.
- Insert Plug into center hole on brine seal side.
- Thread Tefloned fitting in to Off-Center hole This will be where the Feed Water is introduced to the membrane
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Product Side of Membrane Housing

- Thread the 2 remaining fittings in the "bottom" cap.
- Insert tube into the off-center fitting, this will be the drain, run tubing to your drain line NOW. Then cut this line and insert the ball valve provided. See diagram above. This valve will need to be adjusted on occasion, so place in an accessible spot, but not where it will be accidentally re-adjusted. Open this valve 1/2 way for now.
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- The Product water (good water) will come out through the center fitting, attach the tube now.
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- Start running water through SLOWLY, turn up the volume SLOWLY, until you are at full volume, do this over a 45 to 60 second period.
- Run the first few gallons of the Product water to drain to clean the membrane.
- Then slowly adjust the valve until you have a 1 to 1 ratio of product to water**
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- ** in order to have a 1 to 1 ratio you must feed this membrane with softened water, for other hard water or any other water high in TDS you must waste at 2 parts waste to 1 part product water

A Division of Aqua Engineering & Equipment, Inc.
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Trouble shooting guide to assist with the determination of Problems

Problem	Solution
●High TDS after membrane	Clogged Pre-filters. Causing Pressure Drop. Insufficient pressure will yield poor TDS rejection from RO membranes. Change Pre-Filters.
●Low incoming water pressure.	Incoming water pressure must be above 40 PSI, Add a booster pump if below 40psi. Make sure Pre-Filters are not clogged causing low pressure.
●Reverse Osmosis membrane has exhausted/failed.	Average Membrane life is 2 to 3 years. Most common cause for membrane failure is insufficient pre-filter maintenance. AquaFX Carbons are rated for 3,750 gal @ 1.0 GPM of 2ppm Chlorine. Do not exclude drain water from this capacity, as it is treated water. Very high TDS (>550ppm) may also yield premature failure.
●No water to drain.	Flow Restrictor is clogged, Replace Drain Flow Restrictor. (rare) Check to see if water is turned on.
●All water is going out of the drain	With no back pressure, most of the water will exit out of the drain. Make sure External Flow restrictor is present.
●Very little/slow water production	Reference units flow rate vs. actual production. Slow flow from RO is normal. Cold water, low pressure and high contaminant levels will contribute to decreasing the rate of water production. Heating water, increasing pressure or additional pre-filtration will help to counteract these adverse affects.
●Drain Water Continues After Product line is full	The most common cause of a 'continuing drain' is a pressure leak on the product side of the RO. If the pressure cannot build, the ASO will not close. Check ASO with a ball valve right after RO. Close Ball valve then wait 1-3 minutes. If drain continues, replace Automatic Shut-Off Valve. If it stops, have the customer, find then stop pressure leak. If a float valve is being used, it is more than likely the culprit.
●The incoming feed water TDS has increased.	An increase in feed water TDS will also give an increase in Product Water TDS. R.O. (Dolphin) Users will see this rise in TDS. RO/DI (Barracuda, Mako, Great White) Users will not see this rise, but the DI will exhaust faster than normal.
● DI is exhausting very fast	R.O. Membranes are manufactured with a preservative on them, if your initial startup allows the membrane to 'rinse' into the DI; there will be some immediate exhaustion, followed by normal exhaustion. Chloramines Vs Chlorine – If the customers water is disinfected with Chloramines (NH2CL) the compound will still be present post RO. For R.O. (Dolphin) users, they may wish to purchase DI to remove the compound. There will also be other methods discussed for during training. RO/DI (Barracuda, Mako, Great White) users will have the compound removed by the DI. This will tax the DI, Chloramines appears in several forms, so the decreased life would depend on the strain of Chloramine. (mono, di or tri)

Limited

3 Year Warranty

Hydroponics & Home Water Treatment Systems

To be of exceptional quality, hereby warrants equipment to its first purchaser at retail as follows;

This warranty covers filter cartridge housings, fittings and tubing and all components. Filter replacements including sediment cartridges, carbon block cartridges, DI cartridges and Reverse Osmosis membranes are the responsibility of the consumer.

This warranty begins at the time of product registration, and must be registered within 10 days of the date of purchase. This warranty does not require replacement of the entire unit. The defective part (s) (or the entire unit) will either be repaired or replaced with new Parts

This warranty is void if the equipment is not installed and operated according to instructions. It does not apply to damage caused by abuse, accident, neglect,
Freezing or other abnormal conditions beyond the companies control.
Canisters need to be replaced every 3 years. Unit should not be left unattended.

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Trouble Shooting Guide

Cloudy or milky colored water:

Bad Membrane
Replace Membrane and sanitize when below 75% rejection
Water Supply has a high oxygen content
System is still new

Water does not taste or smell right

Bad Membrane — Replace membrane when 75% rejection and sanitize
Filters have expired. - Replace filters.
©Should replace every 6 to 12 months.
System needs sanitizing

Low Water Output

Incoming water pressure is below 40 PSI,
Increase pressure to 40 psi
Bad check valve, Replace check valve, Open valve.
Filters clogged — Replace filters
Kinked tube — Unkink tube — If damaged, replace tube

Notes

Installation Date_____
Initial Pressure _____PSIG

Initial TDS _____

1ST Scheduled Filter Change_____
1St Actual Filter Change_____

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