



The Leaders in Reverse Osmosis



6 Stage Octopus RO/DI

# Instruction & Owners Manual

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

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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

## Octopus Installation Instructions

Congratulations on your acquisition of the Octopus water treatment system from Aqua Engineering & Equipment. We hope your system brings you many years of service and Ultra Pure, Fresh, Clean water. There are a few basic steps we wanted to inform you about when it comes to installation and maintenance of your water treatment system. If you should have any difficulties or questions, please do not hesitate to contact us, we would be happy to help you in any way we can. Your system was **custom built to order**, and it is now ready to be installed after you follow a few easy steps. Please follow the steps below closely.

- 1) Unpack your unit completely. Inspect for any damage or broken parts as a result of shipping.
  - 2) Unscrew the cap from the right side of the white horizontal canister(s) (RO Membrane Housing), Remove the **BLUE** RO Membrane from the clear plastic wrapper and insert the **BLUE** RO Membrane in the white horizontal membrane housing, double O Ring end first. Repeat for each RO membrane if you have multiple membranes on your RO system.  
**\*DO NOT REMOVE ANY OF THE WRAPPING FROM THE RO MEMBRANE ITSELF ONLY REMOVE THE RO MEMBRANE FROM THE CLEAR PLASTIC PROTECTIVE BAG\***
  - 3) Locate and connect the supply side of the equipment. This will be the right side as you face the system. Only feed the unit from the **COLD** water supply, **DO NOT USE HOT WATER** as this will melt your membrane. Connect the (1/4") **BLACK** tubing to the water supply type you have specified. (IE The Feed adaptor)
  - 4) Locate the **Yellow** drain line, and install on the open T coming off of the **Yellow** flush loop on the drain exit of the unit. Then place opposite end of the tube in an appropriate area for drainage when the unit is operating
  - 5) Connect the **BLUE** (1/4") product line that is provided in to the black High Pressure switch that has a 2" length of Blue tube attached. Plug the opposite end of the pressure switch into the left most canister for your treated water, When installing a RO, Octopus" (Not RO/DI) your High Pressure Switch will be installed and you will simply just plug your product line into the High pressure switch. You can now hook up the opposite end of the **BLUE** line to an external float or other method of flow control (like a ball valve)
  - 6) Once installed, slowly turn on the water and check for leaks. Then proceed to plug in the power chord provided to an electrical outlet. The controller will begin its operations (discussed in detail below) It is recommended for RO/DI Octopus" that you remove the DI from its canister and allow the unit to run for an initial 15 minutes, (skip to step 7 at this point to create RO product water, if you don't restrict the „T" valve you will not see any product water!) both RO and RO/DI Octopus" should discard both the product and the drain water for the 15 minutes (assuming you have removed your DI). You can then reinstall the DI into its original position. The reason for this exercise is to prevent the DI from premature exhaustion from the RO membranes initial manufacturers preservative, Sodium Meta Bisulfate.
  - 7) **IMPORTANT STEP** Locate the **Yellow** drain line flush loop again on the top of the loop is a „T" flow restrictor. This valve will be mostly open as you see it, slowly close (restrict) the valve until either:
    - a) 80 psi is reached on the pressure gauge **\*Or\***
    - b) The 1:1 waste water ratio is reached.
- The system should not be run at any pressure exceeding 80 psi. If the unit is run at any pressure exceeding 80 psi, this will void all manufacturers" warranties.
- 8) You can now hook your unit into an Aqua Engineering & Equipment Float Valve or other type of external control, and begin making pure water!

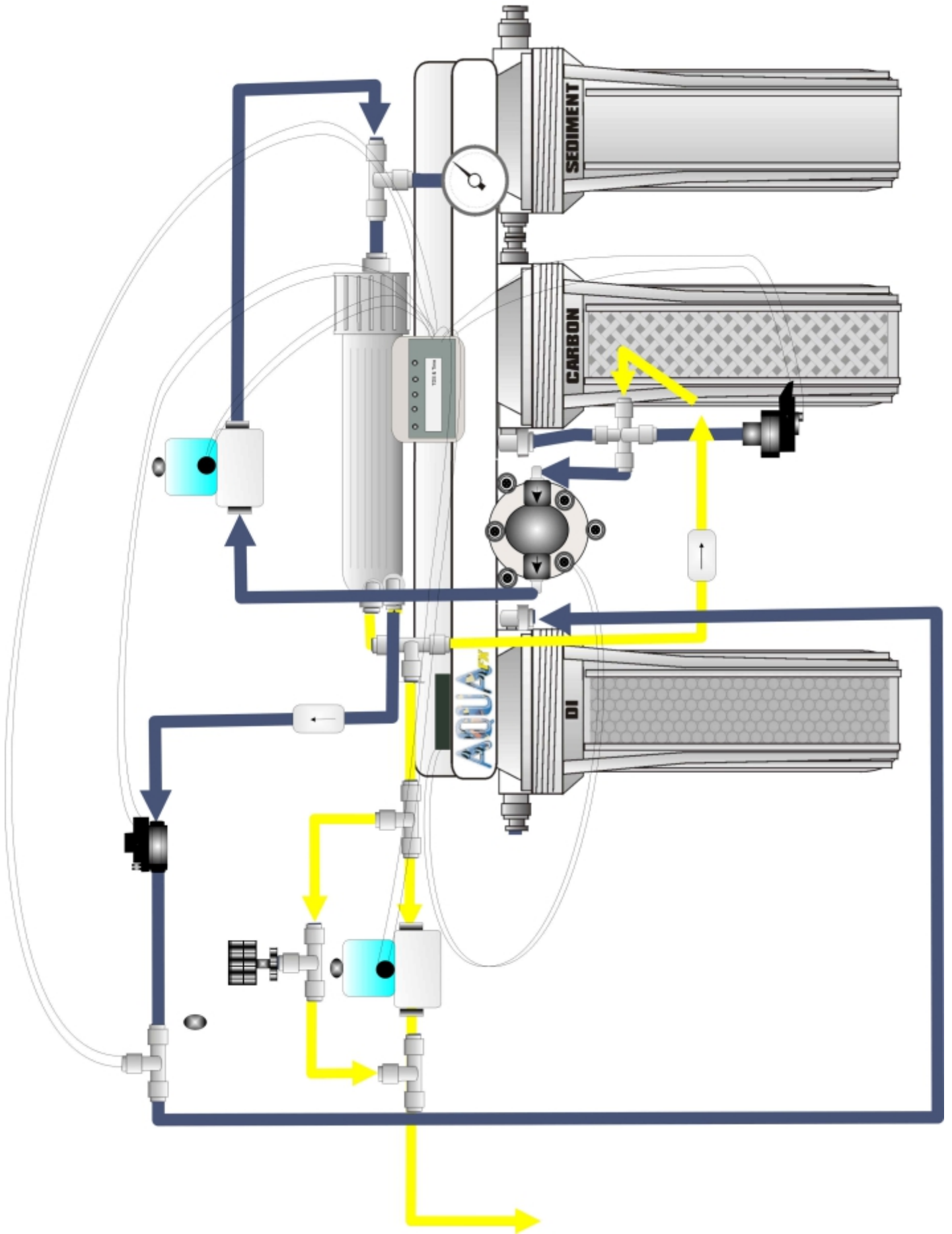
These instructions cover the most common set up configurations. If you ordered different colored tubing or filter cartridge housings, you may not be able to follow these instructions completely. All AquaFX systems come with a **3 year limited warranty**. Please contact us if you have questions or problems with your unit. The 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 at [www.aquariumwaterfilters.com](http://www.aquariumwaterfilters.com) or at **1877-256-3467**, Thank you!

## Octopus Microprocessor Controller Protocol:

As discussed in the above steps there are a few steps you will want to take before starting your Octopus Reverse Osmosis Unit. Discussed below are the steps the microprocessor will take after you have started to filter water. Allow for the system to pressurize, check for any leaks. After 10 seconds of the feed being turned on, plug the AC plug (power chord) into your 110v outlet. The controller will be behaving as described below after the power is connected. **You will want to begin restricting the “T” flow restrictor after the initial Membrane flush to achieve your 80 psi, or 1:1 waste water ratio. (Whichever happens first!)**

- 1) a) Power on  $\implies$  Unit will countdown for 10 seconds and make sure the feed pressure is present  
b) If Source Light flashes  $\implies$  This is an indication that the feed pressure is either too low or not present, Check that water supply is turned on.  
c) When the Source Light is on,  $\implies$  This tells us that the feed pressure is ok, and now the unit will automatically flush itself for 30 seconds.  
(This countdown is constantly monitored, such that if pressure is lost the Auto Flush will stop) This is where you will begin to restrict the „T“ flow restrictor. **SEE STEP 7 ON SYSTEM INSTALLATION.**
- 2) a) Auto flush finishes  $\implies$  “Aqua EE” Controller will check both „Low“ and „High“ pressure switches to assure pump can run safely.  
b) Again if feed pressure is lost  $\implies$  the Source Light will flash  
c) If pressure is ok the Octopus will begin will produce clean water automatically.
- 3) When product line is full (via float valve or external shut off valve) the Unit will light up the “Full” light and begin to flush the RO membrane again.
- 4) TDS Reading- The Octopus controller will display the water quality in parts per million (ppm) in a 099ppm range. If the TDS exceeds 99ppm, the display will flash 099P.
- 5) The “Octopus” controller will close the incoming solenoid until the High Pressure switch has been activated for 10 or more seconds. This is to eliminate any false triggering of the shut off.

If at any time the feed pressure is cut, than the unit will blink the source light until positive feed pressure is reapplied.



## Trouble Shooting Guide

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 (NH <sub>2</sub> CL) 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)

# Aqua Engineering & Equipment, Inc.

## Returned Goods Policy

### Damaged Merchandise:

Aqua Engineering & Equipment, Inc. cannot be held liable for damage to or loss of a shipment by any carrier. Claims for damaged products, suspected damages, container shortages, or pilferage within the container on delivery must be noted on the delivery receipt. The carrier's claims representative should then be notified immediately.

### Returned Goods:

Aqua Engineering & Equipment, Inc. cannot assume responsibility for the error of others. Merchandise ordered incorrectly cannot be returned without written authorization. Please contact the Shipping/Receiving department for a Return Materials Authorization (RMA) number. Special /Custom orders or items cannot be returned. Material must be new and in marketable condition. We reserve the right to levy a restocking fee on all goods. We will assume all responsibility for our own errors at no charge to the customer.

Shipping & Receiving  
Phone: 407.599.2123  
Fax: 407.599.2124

### Cancellation or Order Changes:

Orders are processed as they are received. Internet and phone orders must cancel within 24 hours of order time. Any orders which require custom materials or components (i.e. custom tanks, brackets, electrical components) cannot be cancelled once special material has been ordered and/or production has begun.

## Accessories

**Drinking water kit:** Turn your RO/DI system into a drinking and cooking water purifier for your home. Better than bottled water because you control the process.

**Handheld TDS Meters:** The only true way to check the performance of your system. Check the TDS to detect early membrane exhaustion. Checking the water after the DI cartridge will give you added peace of mind that your reef/salt water system is receiving the quality of water you need.

**RO/DI Water Storage Tanks:** These tanks are used by many of our customers to store water or to save up sufficient water to begin a new tank. They can be equipped with automatic shutoff valves to reduce waste water.

**Membrane Flush Kits:** Flush kits are used to extend the life of the membrane by rinsing debris that accumulate over time.

**Piggy Bank Membrane system:** Add a membrane to your existing system to approximately double your output! Conditions Permitting, call us for an assessment

**Storage Tank(s):** Many times storage of water is needed or just desired. 40 gallon or larger food grade tanks are available to automatically top off. We can design tanks to your needs!

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