TritonRO | DI200™

User Manual

HydroLogic™
PURIFICATION SYSTEMS

Description

The **Triton**™ line of aquarium specific water filtration systems, designed by **Hydro-Logic Purification Systems**™, are built with one goal in mind: to deliver the highest quality, professional grade products, incorporating earth friendly designs and components. We strive to offer the tools for the serious aquarist needed to maintain the healthiest and most vibrant aquariums possible. *Pure water's not magic. It's logic.*

Table of Contents:

TritonRO | DI**200**™

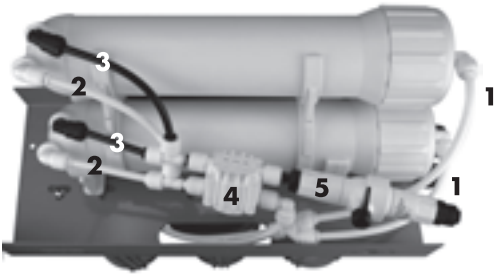
TritonRO | DI**200**™ Unit Includes:

3-stage Reverse Osmosis Water Filter

1. **Stage 1** - 1 Micron Poly-Spun Sediment Pre-Filter
2. **Stage 2** - 5 Micron Green Coconut Carbon VOC Block Pre-Filter
3. **Stage 3** - 100 GPD Reverse Osmosis Membrane
4. **Stage 4** - Mixed Bed De-Ionization Cartridge
5. Inlet Pressure Gauge Assembly
6. 6 feet white 1/4" inlet tubing, 6 feet black 1/4" waste water tubing, 6 feet blue 1/4" purified water tubing
7. Garden Hose Connector w/ 1/4" Quick Connect
8. Inline Shut-Off Valve w/ 1/4" Quick Connect
9. Double-Ended Filter and Membrane Housing Wrench

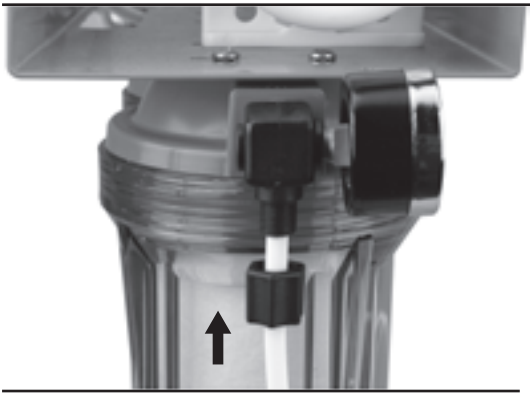
TritonRO | DI200™ Setup

Connections:



1. Pre-filters to Membrane Line
2. Membran Permeate Water Line (White)
3. Waste Water Line (Black)
4. Automatic Shut-off Valve
5. Flow Restrictor/Flush Valve *(for waste water)*

Initial Setup:



Begin by removing the black compression nut on the source/inlet fitting on the pressure gauge. Slide the nut over the white 1/4" inlet line. Push white line up into the fitting with FIRM PRESSURE. It is very important that the white line is pushed as far as possible into the fitting and that it doesn't slide back out while the nut is threaded back onto the pressure gauge fitting. Use a tool, such as a crescent wrench, to tighten nut firmly. Once the system is ready to produce water, it is recommended that you turn the included shut off valve on the product water line to the off position to pressurize the system and ensure that the tube/fitting/nut is assembled properly and that there are no leaks

TritonRO | DI200™ Setup (cont)

After you have connected the white line to the pressure gauge fitting you can connect the included garden hose adapter to the other end. The garden hose adapter can be threaded onto a hose, a hose bib, or laundry sink. There are many other types of inlet connections available to hook up to your existing plumbing (inquire at your dealer or through Hydro-Logic). Connect waste water line (black) to the outlet of the flush valve/flow restrictor. The waste water flow path has all black collets and/or fittings to help you easily trace the path of waste water and simplify plumbing.

Connect the purified water line (blue) to the outlet fitting with the blue collet on the De-Ionization stage on the front of the unit.

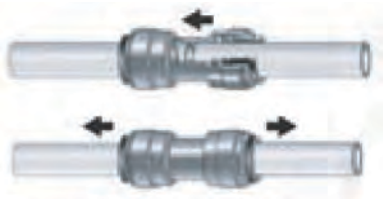
At this point you are ready to turn on your source water. Turn the source water on slowly unit you see water coming out the purified water line (blue). Once you see water you can open up the source water all the way. Flush the system for 30-45 minutes before using the water in your aquarium.

Note: It may take several hours for the pH and PPM's of the purified water to stabilize.

Push In/QuickConnect Fittings

Connecting Push-In Fittings:

Push tube firmly into the fitting, all the way to tube stop. The collet *(gripper)* has stainless steel teeth which hold the tube firmly in position whilst the 'O' Ring provides a permanent leak proof seal. Pull tubing to check for security. It is good practice to test the system prior to leaving site and/or before use.



Dis-connecting Push-In Fittings:

Ensure system is depressurized before removing fittings. Push in the collet evenly against the face of the fitting. With the collet held in this position the tube can be removed by simply pulling. You can use a collet release tool *(available from your dealer)* or small crescent wrench. If the tube has been removed several times you may see score marks on the ends. This can lead to leaks so cut the end off the tubing totally square with a sharp blade using care.

Operation of the Flow Restrictor/Flush Valve

Your Triton RO/DI filtration unit is equipped with a fitting that acts as both a flow restrictor and a flush valve. The Triton-RO/DI100 comes with a 500 ml/m valve and the Triton-RO/DI200 comes with a 1000 ml/m valve. The valves come installed from the factory in the **"closed"** position.

The **"closed"** position allows the valve to operate as a flow restrictor which is the normal operating position.

When you want to **"flush"** the membrane you have to turn the valve so it is inline with the fitting.

While in the flush position the valve is designed to clean any accumulated debris off the membrane by allowing the incoming water to go full flow through the waste line. The flush position flushes debris from the input side of the membrane to help maintain normal flow rates. By "unclogging" the input side, the necessity to replace the membrane due to loss of water flow, will be drastically prolonged. The RO membrane is a semi-permeable membrane, and as such can clog just like any other filtration membrane. Removing debris lowers the rate or prevents altogether the lodging of debris in the membrane, prolonging its lifespan. We recommend you flush the membrane for 5-10 minutes after every 3-5 uses. If you really want to extend the life of the membrane even further, then flush after every use.

Filter Changes / Maintenance

Pre-Filter and De-Ionization Cartridge Replacement:

It is essential that you change your pre-filters and De-Ionization (DI) filter regularly. You can find each filters capacity on the inside cover. The green carbon filter need to be change at least every 2,000 gallons of purified water produced. Going past the carbon filter's useful life will allow chlorine to contact the membrane and will degrade the membrane's life rapidly.

The sediment filter should be changed at least every time the green carbon filter is changed or more often if source water has higher levels of sediment and dirt. Dirt can become imbedded in the sediment filter and cause water production to slow down.

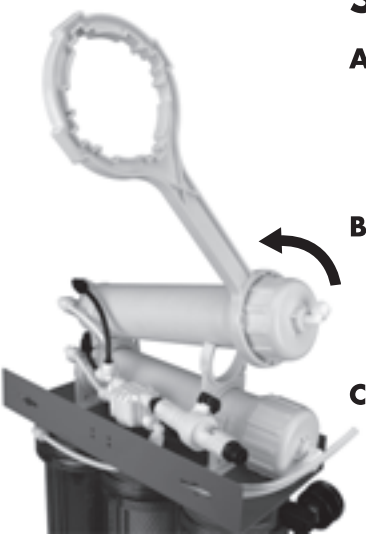
The de-ionization filter has a special blend of DI resins that polish the reverse osmosis purified water and remove any last trace of Total Dissolved Solids. Once the resin is saturated it will turn color from a dark blue to a light brown. When this happens it is time to change the DI cartridge. *(Refer to table on inside front cover for more info.)*

Use the large end of the included filter wrench to loosen the clear filter housings to change the pre-filters and the DI cartridge. Be careful not to over tighten housing after replacing the filters. Hand tightening is all that is needed in most cases

The Reverse Osmosis membranes have a useful life of 6 months to 2 years depending on how high your source water's PPM's are and how much water you produce. If your water is highly contaminated, then you may need to change the membranes more often. If your water is relatively clean and you keep up with your pre-filter changes they may last you two years +. The only way to truly know when to change your membranes is to test the RO and source/inlet water and see what percentage of the inlet water's PPM the **TritonRO**|DI**200**™ is filtering out. You should see at least a 94% of the inlet PPM's being removed.

Filter Changes / Maintenance (cont.)

Changing the RO Membrane:



STEP 1:

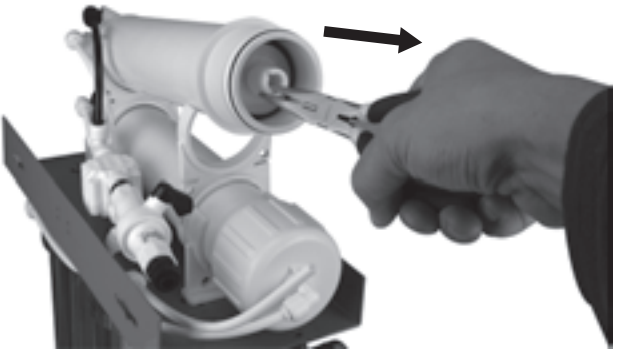
A) Remove the white 1/4" tubing from the fitting on the membrane housing cap. Follow the directions on page 5 for quick connect fitting operation.

B) Next, pull the cap end of the membrane housing straight up to release it from the clips. It may take a bit if force to release membrane housing

C) Hold the body of the RO membrane housing while using the wrench to loosen the cap

STEP 2:

The RO membrane can now be removed from the housing with needle nose pliers. Hold the body of the membrane housing and pull membrane straight out. There may be a good seal so use a little even force to pull it out. Discard membrane. Repeat these steps for second membrane.



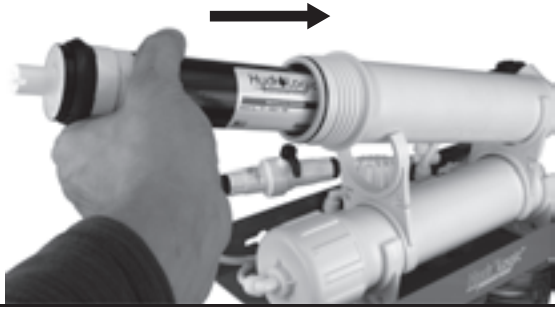
Changing the RO Membrane (cont.)

STEP 3:

Before installing the new membrane you should lubricate *(with silicone grease or water)* the black rubber gasket that is closest to the end that you held with the pliers. This will help it seat better and to come out easier. Push the membrane back into the housing with the end that has the two black o-rings going in first. Push firmly until it bottoms out and can't go in further. Then thread the cap back on tight, re-connect the white 1/4" tubing.

STEP 4:

Change membrane in 2nd membrane housing. Flush system for 30 to 45 minutes before using.



Important Information on Reverse Osmosis Filters

Reverse Osmosis is the most efficient and cost effective way to remove the majority of all contaminants from your water. The key component of the system is the RO membrane that is tightly wrapped sheets of a semi-permeable material. Under pressure the membrane allows pure H2O to pass through it and rejects, or flushes away, most impurities down the drain. That is why all RO systems have a certain amount of wastewater. The ratio of waste water is determined by the flow restrictor/flush valve , temperature, inlet pressure and inlet TDS. The **TritonRO**|DI**200**™ is designed to have a ratio of 2 parts waste to 1 product, which is on average 50% more efficient than similar RO filters.

The flow of purified water is determined by the rating of the membrane, inlet pressure, inlet temperature, and inlet PPM's. The **TritonRO**|DI**200**™ has the capacity to produce 100 gallons per day, with inlet water at 77º F, 60 PSI, 500 PPM. You will notice in colder areas or in the winter, when water temperatures are lower, that the flow rate can be slower. If your inlet pressure is less than 60 psi, you may experience less than the rated 100 GPD flow rate. A minimum of 40 psi is required to properly operate the system. The higher the inlet pressure, the better the flow. A booster pump are available a an option in case of low pressure.

Inlet water that is very high in total PPM's or very hard with calcium or magnesium may shorten the life of the membrane and/or cause slower flow rates. The RO membranes included with the filter can handle water up to 1000 PPM and with a hardness of 170 PPM or 10 grains of hardness per gallon. Note that this is considered both very contaminated and very hard water and may shorten the life of the membrane. At these levels of contamination and hardness, and especially beyond, you may consider pre-treatment in the form of a water softener or other equipment.

All RO systems exhibit "TDS creep". The first few ounces of RO water produced are higher in PPM than after the system has run a few minutes. Take any PPM readings a full five minutes after turning the system on to assure accuracy.

Options

Booster Pump

For low inlet pressure under 40 PSI. Boosts pressure to 70+ PSI, giving faster flowrates. Simply connects onto the source/inlet line.

Float Valve

Fill any tank or reservoir unattended. Can be installed in lid or siedwall of tank.

NO MORE FLOODS!

KDF85/Catalytic Upgrade filter

Reduces chloramines, chlorine, iron and sulfur. Great for well or city water users.

UV Sterilizer Kit

Kills 100% of all bacteria and viruses. Ensures the safest water.

Pressure Regulator

For high inlet pressure. Limits pressure to below 85 PSI. Simply connects onto the source/inlet line.

Extra tubing and a wide selection of fittings and feed valves are available to customize your setup.

Special note on chloramines:

Chloramines are a disinfecting agent that is being added by some cities to the water supply in place of, or in addition to, chlorine. They are a much more stable form of chlorine and do not dissipate from letting the water sit out. They can cause the same damage to RO membranes as does chlorine. Manufacturers of carbon block filters, such as the one that comes standard with the **Triton**™, do not make specific claims for chloramines removal. If you are sure your water supply contains chloramines, you can remove the majority of them by upgrading the standard carbon filter to our **KDF85/catalytic carbon filter**. It is a direct replacement and can treat twice as much water as the standard carbon filter. Inquire at your dealer.

Component Specifications

Sediment Filter - 1 Micron

Melt-Blown Technology Ensures High Performance

Melt-blowing technology is used to manufacture all our sediment filters. This process has long been regarded as the leading technology for fabricating sediment filters. Our melt-blown sediment filters feature a graded density that uses the entire depth of the filter to trap sediment, translating into high dirt-holding capacity.

Melt blown polypropylene cartridges offer a self supporting thermally fused filter media that requires no separate center support tube. No adhesives, binding agents or anti-static agents are used.

Green Coconut Carbon VOC Filter

Hydro-Logic is proud to introduce the first Carbon Block to use NSF61 listed Greencarbon. This high performance coconut shell carbon is manufactured using a patented process that significantly reduces harmful greenhouse gas emissions.

These carbon blocks are made using coconut shell greencarbon having more micro-pores compared to other types of carbon and a unique binder system delivering a product with superior absorption capacity and kinetic dynamics.

This combination of high performance carbon, unique binders, and proprietary manufacturing processes delivers exceptionally low pressure drop, high dirt holding capacity, and excellent contaminant reduction.

Features and Benefits

- 5 micron nominal filtration
- Reduces volatile organic compounds
- No release of carbon fines
- Exceptionally low pressure drop
- Meets NSF61 standards
- Performance validated by WQA
- NSF certified for material safety
- Industry leading performance

NOTE: Use only with micro biologically safe and adequately disinfected water. Do not use with water of any unknown origin or water quality.

Component Specifications (cont)

RO Membrane:

TritonRO|DI**200**™ TF Membrane Elements are recognized as one of the industry's most reliable and highest performing membrane elements that deliver consistent performance and quality. Advanced membrane technology and manufacturing processes allow these elements to deliver consistent results.

- 96% – 99% PPM Rejection
- Improved System Performance
- Superior Quality and Cost Savings
- Individually Tested and Sanitized
- Made in the U.S.A.

Operating Limits:

- MEMBRANE TYPE: Thin Film Composite
- MAXIMUM OPERATING TEMPERATURE: 110°F (43°C)
- MAXIMUM OPERATING PRESSURE: 125 PSI
- MAXIMUM FEED FLOW RATE: 1 GPM
- PH RANGE, CONTINUOUS OPERATION: 3 - 11
- MAXIMUM FEED WATER TURBIDITY: 1 NTU
- MAXIMUM FEED SILT DENSITY INDEX (SDI): 5 SDI
- CHLORINE TOLERANCE: <0 PPM

RO flow and PPM rejection based on the following test condition s: 550 PPM Treated Tap Water, 77°F (25°C), 15% Permeate Recovery, 6.5 – 7.0 pH Range, and 60 PSI of applied pressure. Data taken after 30 minutes of operation. Maximum pressure drop for each element is 10 PSI. Minimum PPM rejection is 96%. RO flow for individual elementsmay vary +/- 20%.

Warranty & Support

A One-Year Warranty comes with each unit against manufacturer's defects. This does not include clogged filters or RO membranes due to lack of regular maintenance or excessive sediment, chlorine, chloramines, iron, sulfer or Parts Per Million of TDS in the source water. This warranty also excludes damage to units caused by using the unit outside of the specified parameters. Do not operate unit if incoming pressure exceeds 90psi or there is problem with water hammer spikes. You should contact Hydro-Logic directly in case of a set-up question or warranty issue.

DO NOT BRING UNIT BACK TO THE DEALER WITHOUT CONTACTING HYDRO-LOGIC FIRST.

The manufacturer believes the information and data contained herein to be accurate and useful. The information and data are offered in good faith, but without guarantee, as conditions and methods of use of products are beyond the manufacturer's control. The manufacturer assumes no liability for results obtained or damages incurred through the application of the presented information and data. It is the user's responsibility to determine the appropriateness of the products for the user's specific end uses.

Tech Support / Contact:

Please contact Hydro-Logic for all questions.

info@HydroLogicSystems.com

1-888-H2O-LOGIC

(1-888-426-5644)

Visit us on the web at: www.HydroLogicSystems.com

Precautions:

- Do not install the unit where the source/inlet pressure may be more than 90 psi or there is excessive water hammer/spike problems. If your inlet pressure is more than 90 psi, install a pressure regulator, available at your dealer or through Hydro-Logic.
- Protect unit against freezing to prevent cracking of the filter housing and water leakage.
- Keep out of direct sun light or high intensity lights. This will degrade the housing and fittings over time.
- Do not drop or place heavy objects on top of unit.
- When replacing filter cartridges use filter wrench to remove housing. Do not use the wrench to tighten. Hand tighten the housings only. Take care not to over tighten.
- Do not install where leakage or failure may cause damage to property.

System Specifications:

	Hydro-Logic Part Number	Product Water Flow Rate	Inlet Tubing Size	Product Tubing Size	Waste Tubing Size
TRITON-RO/DI100	31051	100 GPD, 4 GPH	1/4"	1/4"	1/4"
TRITON-RO/DI200	31052	200 GPD, 8 GPH	1/4"	1/4"	1/4"

Filter Replacement Schedule:

	Hydro-Logic Part Number	Replacement Schedule
Mermbrane Elements	22155	6 months - 2 years
Carbon VOC Filter - Green - Coconut 10" x 2.5"	22150	2,000 Gallons
Sediment Filter - 1 Micron 10" x 2.5"	22160	Ever carbon filter change or when it appears dirty
Mixed Bed, Color Changing DI Cartridge 10" x 2.5"	22016	Estimated life of 7,500 Parts Per Million*

* Example: estimated number of gallons DI cartridge is good for at 5 PPM inlet water is 1,500 gallons. Divide estimated life by feed water PPM to get estimated number of gallons.

Note: Check with your municipality to see if your city uses chlorine, chloramines or a combination of both. Chlorine and/or chloramines* deteriorate membranes over time. This happens faster if your carbon or optional KDF filters are not changed regularly. BE SURE TO CHANGE YOUR PREFILTERS BASED ON THE FILTER REPLACEMENT SCHEDULE!

* Chloramines are chlorine bound to ammonia, and do not evaporate.

Thank you for choosing

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