

# stealthRO<sup>150</sup><sup>TM</sup>

*Customized Reverse Osmosis Filter*



## User Manual

**HydroLogic**<sup>®</sup>  
PURIFICATION SYSTEMS

# Description

The **Stealth RO150™** is a customized Reverse Osmosis water filter that is capable of reducing up to 99% of most contaminants. This system is designed for use with hydroponic or horticultural applications. This system is built to give the maximum amount of flow from the membrane while sending less waste water to the drain, compared to similar RO filters. Please read the following setup and maintenance guide to get the maximum results from your filter.

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**stealthRO150™**  
Customized Reverse Osmosis Filter



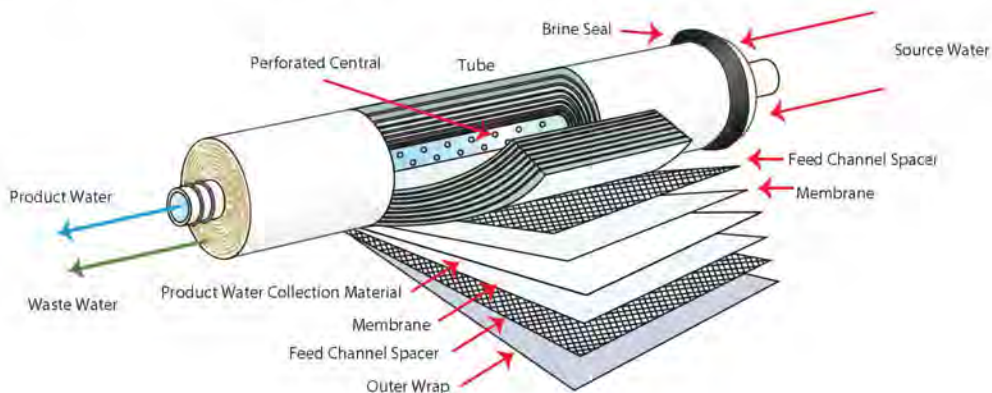
## Precautions:

- Do not install the unit where the source/inlet pressure may be more than 80 psi or there are excessive water hammer/spike problems. If your inlet pressure is more than 80 psi, install a 3/8" pressure regulator (HL#10071 see pg. 14), available at your dealer or through HydroLogic. If you suspect you may have a problem with water hammer or pressure spikes, use the high limit pressure gauge (HL#19036 see pg. 15) to determine what your upper pressure reading is.
- Protect unit against freezing to prevent cracking of the filter housing and water leakage.
- Keep out of direct sunlight or high intensity lights, which degrade the housing and fittings over time. For added protection use the Algae Block Sleeve (HL# 26009 see pg. 14) to protect from sun or lights.
- **Replace both clear pre-filter housings every three years. HL#23165**
- Do not drop or place heavy objects on top of unit.
- When replacing filter cartridges use the filter wrench to remove housing. Do not use the wrench to tighten the housings. **Hand tighten the housings only.** Take care not to over-tighten.
- Do not install where leakage or failure may cause damage to property.
- If you are going to store or not use your stealth RO for an extended period of time (2 weeks+), remove your membranes, seal them in plastic and put in refrigerator.

	Hydro-Logic Part Number	Product Water Flow Rate	Inlet Tubing Size	Product Tubing Size	Waste Tubing Size
STEALTH-RO150	31035	150 GPD (Gallons Per Day)* 6.25 GPH (Gallons Per Hour)	3/8"	1/4"	1/4"

\*see page 17 for operating limits

## Reverse Osmosis Membrane Diagram



## Filter Replacement Schedule:

Filter	Hydro-Logic Part Number	Replacement Schedule
Membrane Element - 150 GPD	22121	6 months - 2 years
Carbon Filter - Green - Coconut 10" x 2.5"	22110	1,250 gallons of purified water
Sediment Filter - Pleated 10" x 2.5"	22125	clean regularly, change every 6-12 months
Low Pressure, Cold Water, High Flow Membrane (optional upgrade)	22122	6 months - 2 years
KDF85/Catalytic Carbon Filter (optional upgrade)	22060	2,000 gallons of purified water



**HL#22121**



**HL#22110**



**HL#22125**



**HL#22122**



**HL#22060**

**Note:** Check with your municipality to see if your city uses Chlorine, Chloramines or a combination of both. This will determine if the standard green carbon filter is adequate or if you should upgrade to the optional KDF85/Catalytic Carbon filter. The carbon or optional KDF85/Catalytic Carbon filter are responsible for removing chlorine and/or chloramines. If you don't change these according to the above schedule chlorine and/or chloramines will break through, into the membranes and deteriorate them quickly.

**BE SURE TO CHANGE YOUR PRE-FILTERS BASED ON THE FILTER REPLACEMENT SCHEDULE!**

The Flowmaster filter capacity monitor is a great way to keep track of your filter changes. HL#19014 (See page 14).

**If you have the upgraded KDF85/Catalytic Carbon Filter, this is your replacement schedule**

***KDF85/Catalytic Carbon Reduces:***

- Chlorine***
- Chloramines***
- Iron***
- Hydrogen Sulfide***
- Heavy metals***

KDF85 is the most advanced media available to filter and pre-treat your water. KDF85 is especially useful to pre-filter your water when using Reverse Osmosis and can extend the life of your membrane when changed regularly. This special filter is made using a blend of KDF85 and medical grade Catalytic Granular Activated Carbon. This premium grade of carbon reduces Chloramines and Chlorine to the lowest industry standard levels available. The media of the KDF85 filter is superior to ordinary grades of activated carbon for chloramine removal and is acid washed, pH buffered, and rinsed with sanitized water. This unique process helps to ensure a neutral pH and minimize the possibility of metal contaminants appearing after filtration.

This specialized filter is designed to double the filter life of your carbon filter (see diagram below). KDF85 is great for people on city water with its ability to remove the majority of all Chlorine and Chloramines. KDF85 is also ideal for people on well or spring water sources and can reduce many more contaminants such as: iron, sulfur, and heavy metals than standard Carbon Filters and help your garden thrive. Water containing contaminants such as iron and sulfur can foul Reverse Osmosis membranes quickly and lead to poor water quality and as a result lead to decreased yields and nutrient lock out. Thank you for choosing HydroLogic Purification Systems for your water filtration needs.

	<b>HYDROLOGIC PART NUMBER</b>	<b>REPLACEMENT SCHEDULE</b>
<b>KDF85/Catalytic Carbon upgrade filter</b> 10"x2.5" for Stealth- RO150/300	22060	2,000 gallons of purified water

# stealthRO<sup>150</sup>™ Unit Includes:



- 1. Stage 1** - Pleated, Cleanable Sediment Pre-Filter  
**reduces dirt, sediment, silt, rust, etc.**
- 2. Stage 2** - Green Coconut Carbon Block Pre-Filter  
**reduces chlorine and other toxins**
- 3. Stage 3** - 150 GPD Reverse Osmosis Membranes  
**reduces PPMs of Total Dissolved Solids**
- 4.** Inlet Pressure Gauge with safe zones  
**shows dynamic line pressure and optimal operating zones**
- 5.** 5 feet white 3/8" inlet tubing, 8 feet black 1/4" waste water tubing, 8 feet blue 1/4" purified water tubing  
**food grade LLDPE (linear low density polyethylene) tubing**
- 6.** Inline Shut-Off Valve with 1/4" Quick Connect  
**turns system on/off**
- 7.** Double-Ended Filter Housing Wrench  
**large end for pre-filter housing, small end for membrane housing cap**
- 8.** Flow restrictor/flush kit assembly with 1:1 and 2:1 flow restrictors  
**determines waste to purified water ratio**
- 9.** 3/8" QC X Garden Hose Connector

# stealthRO<sup>150</sup>™ Setup



**A:** The system comes with 2:1 and 1:1 flow restrictors which determines the waste water to purified water ratios. The 2:1 (purple tubing) flow restrictor will give you the best trade off between membrane life and waste water. If you have relatively low Parts Per Million (PPM) source water or desire less waste water you can choose to use the included 1:1 (red tubing) flow restrictor.

**Warning:** The red 1:1 flow restrictor reduces waste water and can lead to reduction in the membrane(s) life. The higher the source water's PPM, the shorter your membrane(s) life will be. USE AT YOUR OWN RISK if the source water is above 300 PPM.



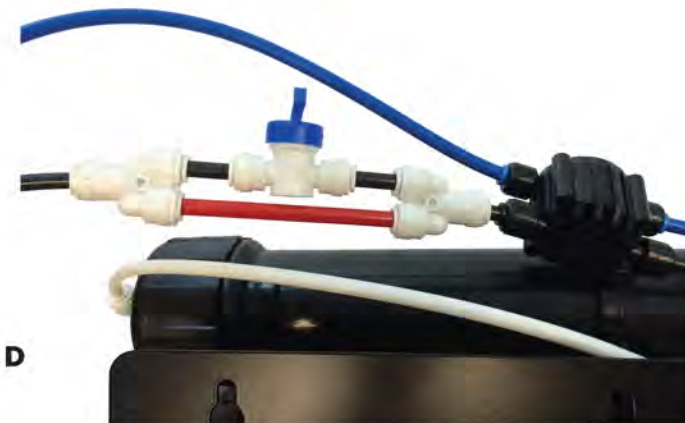
**B.** Once you have chosen the flow restrictor install it into the flow restrictor/flush kit assembly (push both ends of the flow restrictor all the way into the open quick connect fittings). Note: The flow restrictor can be installed in either direction.

# stealthRO<sup>150</sup>™ Setup (cont.)



**C:** Next take the flow restrictor/flush kit assembly and install it on the system by pushing the short piece of pre-installed black tubing on the flow restrictor/flush kit assembly into the open black quick connect fitting on the ASOV.

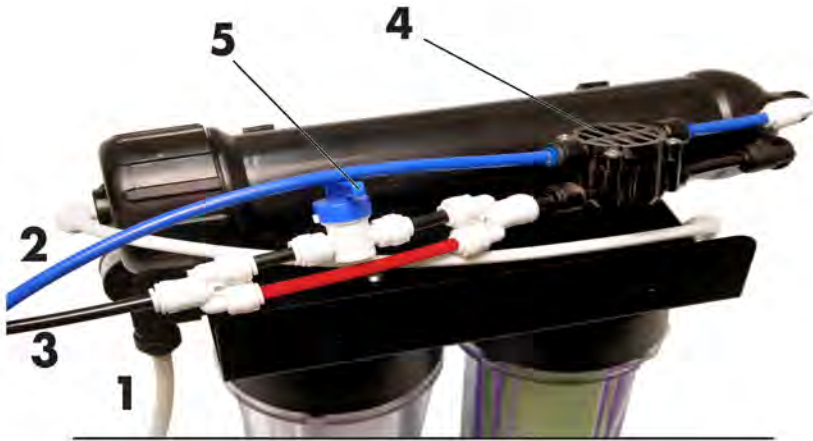
**Note:** When starting up the system for the first time, make sure that the blue valve on the flow restrictor/flush kit assembly is in the open position (parallel with tubing). In order to flush the carbon pre-filter properly please run for 2-3 minutes and discard all water. It is recommended to power flush the system once a week for 5 minutes. This will help remove scale build up on the membrane(s).



**D:** Once the initial flush is complete turn the blue valve on the flow restrictor/flush kit assembly to the closed position (perpendicular to the tubing). The blue valve should be in the closed position for normal operation.



# stealthRO<sup>150</sup>™ Setup (cont.)



1. Source/Inlet Line (White)
2. Purified Water Line (Blue)
3. Waste Water Line (Black)
4. ASOV
5. Blue Valve

## Main Unit Setup:

There are 3 long lengths of tubing included with the system. Push the 3/8" white inlet tubing into the 3/8" QC pressure gauge fitting. Connect the 1/4" blue purified water tubing to the blue outlet of the Automatic Shut-Off Valve. Connect the 1/4" black waste water tubing to the outlet of the flow restrictor/flush kit assembly. You are now ready to connect the included garden hose adapter to your source water and the other end of the 3/8" white inlet tubing. There are a variety of feed valve options available to connect to any existing plumbing. Inquire at your dealer, or through HydroLogic.

# stealthRO<sup>™</sup> 150 Setup (cont.)

Be sure the flow restrictor/flush kit assembly's blue valve is open (handle is parallel with tubing. Refer to page 7). Next, slowly turn the source water on until both the carbon and sediment filters have water in the housings. Once both pre-filter housings are full, open source water up all the way (do not exceed 80 psi). Power flush the system for 2-3 minutes when the system is new and/or when you replace your carbon filter. Next, close the blue valve and continue to flush the membrane for 30-45 minutes. This will flush out the food grade preservative in the membrane.

After the initial 30-45 minute flush turn the inline shut-off valve (pre-installed on the blue purified water line) to the off position (perpendicular to the tubing). This will shut the water off on both the blue and black lines, and pressurize the system. This is a good way to make sure that all the fittings and connections are secured properly and that there are no leaks. It is also a good way to make sure that the Automatic Shut-Off Valve (ASOV) is working properly, meaning the black drain line is also shutting off shortly after the blue line shuts off. If there are problems of any kind please contact HydroLogic directly at 888-426-5644

**Note: It may take up to 24 hours of running the system for the PPM & pH of the purified water to stabilize.**



installation guide video available at:

<http://www.hydrologicsystems.com/products/stealth-ro-150>

# Push In/QuickConnect Fittings

## Connecting Push-In Fittings:



## Link To Instruction Video

<https://goo.gl/L8b5Ri>

Push tubing firmly into the fitting, all the way to tube stop. The collet (gripper) has stainless steel teeth which hold the tube firmly in position while the O-ring provides a permanent leak proof seal. Pull tubing to check for security. If some tube pulls out, then push all the way in again until it stops. It is good practice to test the system prior to leaving site and/or before use.

## Disconnecting 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 HL# 24010 (available from your dealer) or small crescent wrench. The fitting can then be re-used. If the tube has been removed several times you may see score marks on the ends, and this can lead to leaks. It is best to cut the end off of the tubing with a sharp blade, being careful to cut straight across. Any angle to the cut can cause a leak.

# Filter Changes / Maintenance

It is essential that you change your pre-filters regularly. The green carbon filter has a rated life of approximately 1,250 gallons\* of purified water produced. The sediment filter can be cleaned at your faucet or with a garden hose as often as you like. You should change the sediment filter at least once a year or sooner if you have extremely dirty water.

\*2,000 gallon filter life with KDF85/catalytic carbon filter

# Filter Changes / Maintenance (cont.)

Dirt can become embedded in your pre-filters and cause slower flow rates. Use the included filter wrench to loosen the clear filter housing. Be careful not to over-tighten when reinstalling. It is preferable to hand tighten filter housings after a filter change.

The Reverse Osmosis membranes have a useful life of 6 months to 2 years depending on how high your source water PPM is, if there are high levels of certain contaminants (such as iron & silica), how much water you produce and regular pre-filter maintenance. 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 2 years+.

There are two indications as to when to change your membrane(s):

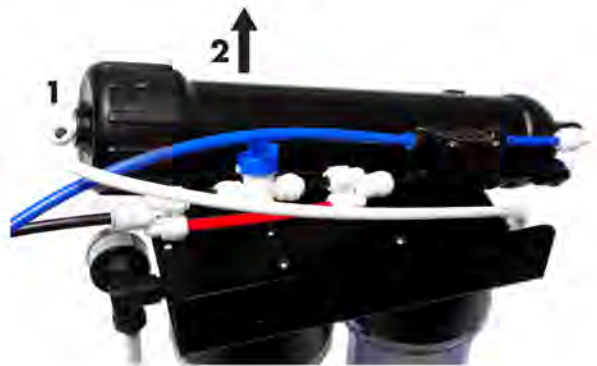
**1)** PPM rejection %: Test the RO product and source/inlet water to see what percentage of the inlet water's PPM the **stealthRO150™** is filtering out (rejection %). You should see approximately 98% of the inlet PPM's being removed when the membrane is new. If the rejection % falls under an acceptable level (typically 90%) it's time to change the membrane(s):

**2)** When the flow rate of the product water slows down significantly. This can also happen if your pre-filters are clogged. If you change your pre-filters and the product water still flows slowly then it's an indication you need a new membrane(s). When in doubt, contact HydroLogic.

## Changing the RO Membrane:

### STEP 1:

- 1)** Remove the white 1/4" tubing from the membrane housing
- 2)** Next, pull that same end of the membrane housing straight up to release it from the clip



# Changing the RO Membrane (cont.)

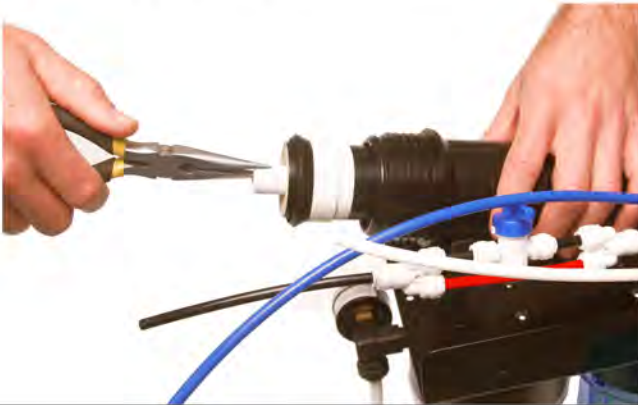


## **STEP 2:**

Firmly grip the membrane housing and twist the membrane cap counter clockwise using the provided filter wrench.

## **STEP 3:**

You can now remove the membrane with either a strong set of needle nose pliers or something similar. Hold onto the membrane housing body and pull straight out until you release the membrane. It may seem tight, but with even pressure it will come out.



# Changing the RO Membrane (cont.)

## STEP 4:

Push the new 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 tightly and reconnect the white 1/4" tubing. Be sure the o-ring in the cap is in place.



## STEP 5:

Run the system for 30-45 minutes, discarding all purified and waste water before using.

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## Important Information & Performance Parameters

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 composed of tightly wrapped sheets of a semi-permeable material. Under pressure, the membrane allows pure water 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 waste water. The ratio of waste water is determined by the flow restrictor installed in the flow restrictor/flush kit assembly. The system comes with a choice of 2:1 and 1:1 flow restrictors. Refer to page 6.

The flow of purified water is determined by the GPD rating of the membrane, inlet pressure and inlet temperature. The **stealthRO150™** has the capacity to produce 150 gallons per day (approx. 6.25 gallons/hour) when your inlet water is at 77 °F, 60 PSI, 500 PPM. If your inlet pressure is less than 60 psi, you may experience less than the rated 150 GPD flow rate. A minimum of 40 psi is required to operate the system. The higher the inlet pressure, the better the flow. A booster pump is available as an option in case of low pressure and is necessary if your pressure is below 40 PSI (HL# 29020).

You will notice in colder areas or in the winter, when water temperatures are lower, that the flow rate will be slower.

Inlet water that is very high in total PPM or very hard with calcium or magnesium, or high in certain contaminants such as iron or silica may shorten the life of the membrane and/or cause slower flow rates. The RO membranes can handle inlet water up to 1,000 PPM and with a hardness up to 10 grains per gallon (170 PPM). Note that this is considered both very contaminated and very hard water and may shorten the life of your 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. Softened water can be run through your **stealthRO150™** system for optimal performance. The membrane in the **stealthRO150™** is capable of removing 99% of salts that are introduced by the softener. Contact Hydrologic for more info at 888-426-5644.

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 ensure accuracy. Call us with questions about how to customize your water filtration needs and pre-treatment equipment.

# Options



## **Booster Pump HL# 29020**

For low inlet pressure under 40 PSI. Boosts pressure to 60+ PSI, giving faster flow rates. Simply connects onto the source/inlet line.



## **Float Valve - 1/4" HL# 27015**

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

NEVER FLOOD YOUR GARDEN AGAIN!



## **KDF85/Catalytic Carbon Upgrade Filter HL# 22060**

Reduces chloramines, chlorine, iron, sulfur and heavy metals. Great for well or city water sources.



## **Algae Block Sleeve HL# 26009**

Neoprene sleeve that covers all standard clear housings. Blocks light so no algae can grow easily removed to check status of filters. Reversible blue and black.



## **Leak Detector & Shut Off Valve 3/8" HL# 19023**

Installs on source/inlet line. If there is a leak anywhere in the system and water reaches the pad on the bottom of the leak protector the valve shuts off all incoming water, preventing further damage from the leak.



## **Pressure Regulator - 3/8" HL# 10071**

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



## **Cold Water, Low Pressure, High Flow Membrane HL# 22122**

Replaces standard membrane and is capable of producing 200 Gallons Per Day. Approximately 93% PPM rejection. Overcomes low pressure and low temperature issues that can decrease flow rates.



## **Flowmaster - 1/4" Ultra Low Flow Model HL# 19014**

Gallonage & filter capacity monitor. Operates at flow rates between 0.01-0.5 GPM. Ultra low-flow model. Alerts you when it's time to change your filters and measures total number of purified water gallons produced.



### UV Sterilizer Kit HL# 35015

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



### Stealth 150 to 300 Upgrade Kit HL# 33016

Convert your **stealthRO<sup>150</sup>** into a **stealthRO<sup>300</sup>** with this kit.



### Drinking Water Upgrade Kit HL# 26016

The Stealth drinking water add-on kit is for the horticulture enthusiast that also wants to use their system as a home drinking water system.



### TDS Monitor HL# 19006

Measures unpurified water PPM going into reverse osmosis system and purified water PPM coming out. Monitors the performance of your RO system. Instantly displays values and allows you to switch back and forth between dirty and clean water TDS.



### De-Ionization Add On Kit HL# 33005

This de-ionization filter is designed to serve as a post polishing stage for any Reverse Osmosis system delivering ultra pure 000 PPM water. Color-changing resin indicates when it is time for a replacement.



### Pressure Gauge - High Limit HL# 19036

Measures static pressure as well as high limit pressure. Used to diagnose water hammer or pressure spike issues. Also used to get accurate inlet pressure to determine if pressure booster is necessary for a Reverse Osmosis system.



### Fittings HL# various - see website

Fittings are available to customize your setup. Visit [www.hydrologicsystems.com](http://www.hydrologicsystems.com)



### Tubing HL# various - see website

Extra tubing is available to customize your setup. Visit [www.hydrologicsystems.com](http://www.hydrologicsystems.com)



# Component Specifications

## Sediment Filter - Pleated, Cleanable

- 5 micron nominal filtration
- SURFACE AREA: Approximately 4 sq. ft. (0.37 M2)
- TEMPERATURE LIMIT: Up to 140°F (60 °C) depending on pressure and time under load
- FILTER MEDIA: Polyester - Plus™
- END CAPS: Plastisol (pliable PVC)

## Carbon Filter - Coconut, Earth Friendly

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 which has more micropores than 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

- 10 micron nominal filtration
- 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 microbiologically safe and adequately disinfected water. Do not use with water of any unknown origin or water quality. When in doubt contact HydroLogic to order a water analysis kit.

# Component Specifications (cont.)

## RO Membrane:

**stealthRO** 150™ 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.

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

## RO Membrane Operating Limits: **Very Important**

- MEMBRANE TYPE: Thin Film Composite
- MAXIMUM OPERATING TEMPERATURE: 113 °F (45 °C)
- MAXIMUM OPERATING PRESSURE: 100 PSI
- MAXIMUM FEED FLOW RATE: 2 GPM
- MAXIMUM TDS: <1000 PPM
- MAXIMUM HARDNESS: <10 Grains Per Gallon (170 PPM)
- PH RANGE, CONTINUOUS OPERATION: 2 - 11
- MAXIMUM FEED WATER TURBIDITY: 1 NTU
- MAXIMUM FEED SILT DENSITY INDEX (SDI): 5 SDI
- CHLORINE TOLERANCE: 0 PPM
- CHLORAMINE TOLERANCE: 0 PPM
- MANGANESE TOLERANCE: 0 PPM
- IRON TOLERANCE: <1 PPM
- SILICA TOLERANCE: <10 PPM

NOTE: Operating your membrane outside of the parameters voids the warranty.

## TFC Membrane Rejection Chart

Ion	Symbol	% Rejection
Aluminum	Al <sup>+3</sup>	97 – 98
Ammonium	NH <sub>4</sub> <sup>+</sup>	85 – 95
Borate	B <sub>4</sub> O <sub>2</sub> <sup>-2</sup>	30 – 50
Boron	B	60 – 70
Bromide	Br <sup>-</sup>	93 – 96
Cadmium	Cd <sup>+2</sup>	93 – 97
Calcium	Ca <sup>+2</sup>	95 – 98
Chloride	Cl <sup>-</sup>	92 – 98
Chromate	CrO <sub>4</sub> <sup>-2</sup>	85 – 95
Copper	Cu <sup>+2</sup>	96 – 98
Fluoride	F <sup>-</sup>	93 – 95
Iron	Fe <sup>+2</sup>	96 – 98
Lead	Pb <sup>+2</sup>	95 – 98
Manganese	Mn <sup>+2</sup>	97 – 98
Magnesium	Mg <sup>+2</sup>	95 – 98
Mercury	Hg <sup>+2</sup>	95 – 97
Nickel	Ni <sup>+2</sup>	97 – 98
Nitrate	NO <sub>3</sub> <sup>-</sup>	90 – 95
Phosphate	PO <sub>4</sub> <sup>-3</sup>	95 – 98
Polyphosphate	PolyP	96 – 98
Potassium	K <sup>+</sup>	92 – 96
Silica	Si	85 – 90
Silicate	SiO <sub>2</sub> <sup>-2</sup>	92 – 95
Silver	Ag <sup>+</sup>	95 – 97
Sodium	Na <sup>+</sup>	92 – 98
Sulfate	SO <sub>4</sub> <sup>-2</sup>	96 – 98
Thiosulfate	S <sub>2</sub> O <sub>3</sub> <sup>-2</sup>	97 – 98
Zinc	Zn <sup>+2</sup>	97 – 99
Arsenic	As	90 - 95

# Warranty & Support

A one year warranty against manufacturer's defects comes with each unit. **This does not include clogged or damaged pre-filters or RO membranes due to lack of regular maintenance or excessive sediment, chlorine, chloramines, iron, silica, manganese, sulfur or PPM in the source water.** This warranty also excludes damage caused by using the unit outside of the specified operating parameters listed on page 17. Do not operate unit if incoming pressure exceeds 80 psi or there is problem with water hammer or pressure spikes.

**WARNING: USING NON-ORIGINAL REPLACEMENT FILTERS OR MEMBRANES WILL VOID THE WARRANTY**

Change both clear pre-filter housings every three years, available through your local dealer. HL#23165

**DO NOT BRING UNIT BACK TO THE DEALER WITHOUT CONTACTING HYDROLOGIC FIRST.**

**Contact HydroLogic directly for questions and warranty issues**

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 HydroLogic for all questions.  
info@hydrologicsystems.com

1-888-426-5644

Visit us on the web at: [www.hydrologicsystems.com](http://www.hydrologicsystems.com)  
There are a variety of videos under the resources tab

# TROUBLESHOOTING

**1.Q:** The system is brand new, why is the flow rate of purified water so slow?

A: The system's GPD capacity is achieved when you have the following conditions for your source water: 77 °F, 500 PPMs, 60 PSI. If your source water is colder than this, or your inlet pressure is lower, or your PPMs are significantly higher, then you will experience less than the rated GPD flow rates. Hydrologic provides solutions to these less-than-desirable source water conditions. For instance, we have a pressure booster pump for low psi, pre-filtration for high PPMs, and cold water specific membranes. Call us for information.

**2.Q:** Why has the flow rate of purified water slowed down over time?

A: This can be due to multiple factors, such as clogged sediment or carbon pre-filter, clogged or fouled membrane, or changes to source water conditions. The quality of your water, frequency of use, and timeliness of pre-filter changes will determine how long your system performs at peak capacity.

**3.Q:** Why have the PPMS of the purified water increased over time?

A: This is typically due to deterioration of the membrane as a result of exposure to chlorine. The purpose of the carbon filter is to remove chlorine from the water. If it isn't changed on schedule, chlorine will pass through to the membrane and degrade it, causing more water to flow out of the purified line and an increase in PPMs.

**4.Q:** Why is the waste line running faster than the purified water line?

A: If you're using the 2:1 flow restrictor, that means the system will produce 2 parts waste water to one part purified water. If you're using the 1:1, you should have equal parts waste to purified water.

**5.Q:** Why does the waste line continue to run when the purified water line is closed off?

A: Over time, the automatic shut-off valve (ASOV) can accumulate scale and become clogged, causing it to malfunction. If you experience your waste line continuing to run after the purified water line is closed, please give us a call.

# TROUBLESHOOTING (cont.)

**6. Q:** Why is the system leaking?

A: This can be due to various reasons, including Teflon tape at threaded fittings, tubing not being pushed in all the way to the quick-connect fittings, or improperly seated O-rings in pre-filter and membrane housings. It is also important to make sure the ends of the tubing have a clean cut before inserting them into the quick-connect fittings (see page 10) Please call us if you're experiencing any leaks.

**7. Q:** Why did the clear pre-filter housing crack?

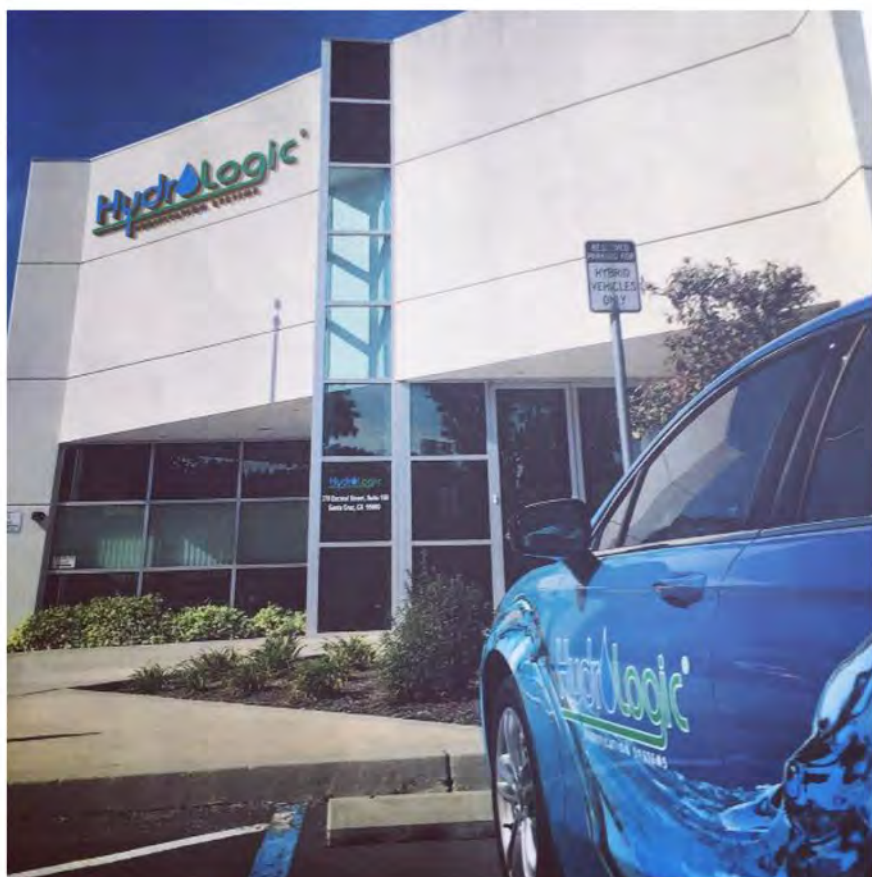
A: This can be due to freezing conditions, excessive pressure spikes, or long-term exposure to high intensity lighting.

**8. Q:** Why is the pH of the purified water higher/lower than the source water

A: The pH of the purified water depends entirely on source water chemistry. Customers can experience either slightly lower or higher pH due to their source water. This is completely normal for reverse osmosis technology. Since RO water is almost pure H<sub>2</sub>O and has no ability to buffer pH, the actual pH reading will not be accurate until you add minerals back.

**9. Q:** Why are both the 1:1 and 2:1 flow restrictors included in the box?

A: The flow restrictor determines your waste to purified water ratio. HydroLogic has always provided two options for the waste to purified water ratio, because water conditions vary wildly across the world; one fixed ratio would not work for every water condition. Please see page 6 for more detailed information.



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