

stealthRO100™

Customized Reverse Osmosis Filter



User Manual

HydroLogic®
PURIFICATION SYSTEMS

pure water's not **magic**
it's **logic**

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 Printed on 100% post-consumer material

Warranty & Support

A one year warranty against manufacturer's defects comes with each unit. This does not include clogged filter or RO membranes due to lack of regular maintenance or excessive sediment, chlorine, Chloramines or Parts Per Million 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.

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

Description

The **stealthRO**100™ is a customized Reverse Osmosis water filter that is capable of reducing up to 99% of most contaminants. The system is designed for use with hydroponic or horticultural applications. The filter 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 and your plants.

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stealthRO100™
Customized Reverse Osmosis Filter

stealthRO¹⁰⁰™ Unit Includes:

3-stage Reverse Osmosis Water Filter

1. **Stage 1** - Pleated, Cleanable Sediment Pre-Filter
2. **Stage 2** - Green Coconut Carbon Block Pre-Filter
3. **Stage 3** - 100 GPD Reverse Osmosis Membrane
4. Inlet Pressure Gauge
5. 5 feet white 3/8" inlet tubing, 8 feet black 1/4" waste water tubing, 8 feet blue 1/4" purified water tubing
6. Garden Hose Connector with 3/8" Quick Connect
7. Inline Shut-Off Valve with 1/4" Quick Connect
8. Double-Ended Filter Housing Wrench. Large end for pre-filter housing. Small end for membrane housing. NOTE: Picture shows older version.
9. Optional Eco-Waste Reducer



Component Specifications (cont)

RO Membrane:

stealthRO¹⁰⁰™ 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 elements may vary +/- 20%.

Component Specifications

Sediment Filter

- 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)
- pH: 3-11
- DIMENSIONS: 2-3/4" (70 mm) OD; 1-1/16" (27 mm) ID

Green Coconut Carbon 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 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 micro biologically safe and adequately disinfected water. Do not use with water of any unknown origin or water quality.

stealthRO100™ Setup

Connections:



1. Pre-filters to Membrane Line
2. Membrane line
3. Purified Water Line (Blue)
4. Waste Water Line (Black)
5. Automatic Shut-off Valve
6. Flow Restrictor
(for waste water)

Initial Setup:

Connect the purified water line (blue) to the outlet of the Automatic Shut-off valve. At this step you can choose to use the Optional 2:1 Eco-Waste Reducer included with your system (see instructions on Eco-Waste Reducer) or purchase the Stealth-RO100 1:1 flow restrictor (call your distributor or Hydro-Logic directly). Connect the waste water line (black) to the outlet of the flow restrictor. You are now ready to connect the included garden hose adaptor to your source water. There are a variety of options available to connect to any existing plumbing. Inquire at your dealer, or through Hydro-Logic.

Setup continued on page 4.

stealthRO100™ Setup (cont)



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

Continued from page 3

When first turning on the source/inlet water (slowly) allow both filter housings to fill with water completely. The membrane housings will now start filling with water. When you see water flowing from the purified water line (blue), you can turn the source/inlet water on all the way. Flush the system for 30-45 minutes before using the water in your garden.

It is recommended that the first time you run water through the system to turn the inline shut-off valve to the 'off' position as soon as you see water flow from the blue purified water line. The valve should be installed on the blue purified water line. This will pressurize the system and is a good way to make sure that all 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 is working properly, meaning the black drain line is shutting off. If there are problems of any kind please contact Hydrologic directly at 888-426-5644.

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

Options



Booster Pump

For low inlet pressure under 40 PSI. Boosts pressure to 60+ 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 sidewall of tank. **NEVER FLOOD YOUR GARDEN AGAIN!**



KDF85/Catalytic Upgrade filter

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



Algae Block Sleeve

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



Extra tubing and a wide selection of fittings and feed valves are available to customize your setup. Contact your dealer or visit www.hydrologicsystems.com

NOTE: You can upgrade your **stealthRO100™** to a **stealthRO200™** and double your flow rates. Contact your dealer or visit www.hydrologicsystems.com for more info.



UV Sterilizer Kit

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



Membrane Flush Kit

Extends life of your RO membranes. Periodically power flushes the membranes.



Pressure Regulator

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



Low Pressure, High Flow Membrane

Replaces standard membrane and produces 200 Gallons Per Day. Approximately 93% PPM rejection.



1:1 Flow Restrictor

Replaces standard Stealth-RO100™ flow restrictor to save 50% of the drain water. **Gives 1:1 ratio.**

Changing the RO Membrane (cont.)

STEP 4:

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 and you are ready for **Step 5.**



STEP 5:

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 composed of 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 restrictor used on the drain line. The **stealthRO100™** is designed to waste at a ratio of 3:1 being about 25% more efficient than similar RO systems. Included optional Eco-Waste Reducer can reduce this ratio to 2:1 (See instructions before use). Optional Flow Restrictor can reduce this ratio to 1:1 (Ask your distributor or call Hydro-Logic).

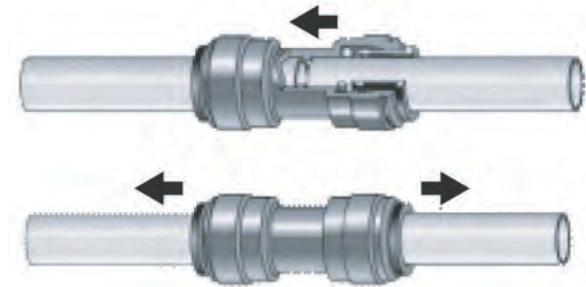
The flow of purified water is determined by the rating of the membrane, inlet pressure, inlet temperature, and inlet PPM's. The **stealthRO100™** has the capacity to produce 100 gallons per day, with inlet water at 77° F, 60 PSI, 500 PPM. You will notice in colder areas or in the winter, when water temperatures 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 is available as 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. Call us with questions about how to customize your water filtration needs.

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.

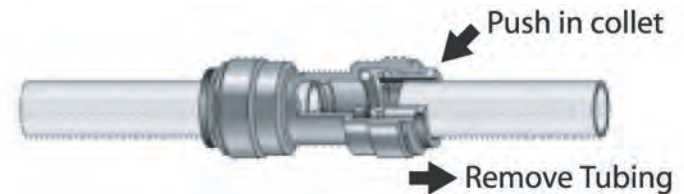
Push In/QuickConnect Fittings

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. 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.

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. The fitting can then be re-used. 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.

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 hose. You should change the sediment filter at least once a year or sooner if you have extremely dirty water. Dirt can become embedded and it can cause slower flow rates. Use the included filter wrench to loosen the clear filter housing. Be careful not to overtighten when reinstalling. You can usually just hand tighten it.

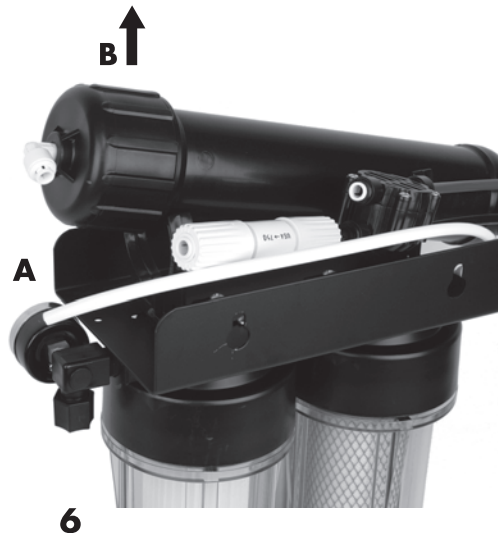
** 2,000 gallon filter life with KDF85 carbon filter*

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 2 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 **stealthRO100™** is filtering out. You should see at least 94% of the inlet PPM's being removed.

Changing the RO Membrane: ...An easy process.

STEP 1:

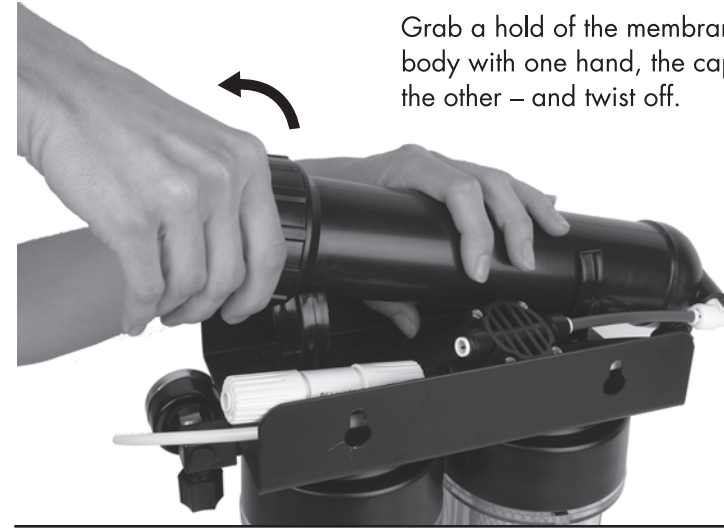
- A) Remove the white 1/4" tubing from the membrane housing by following directions on page 5
- B) Next, pull that same end of the membrane housing straight up to release it from the clip



Filter Changes / Maintenance (cont.)

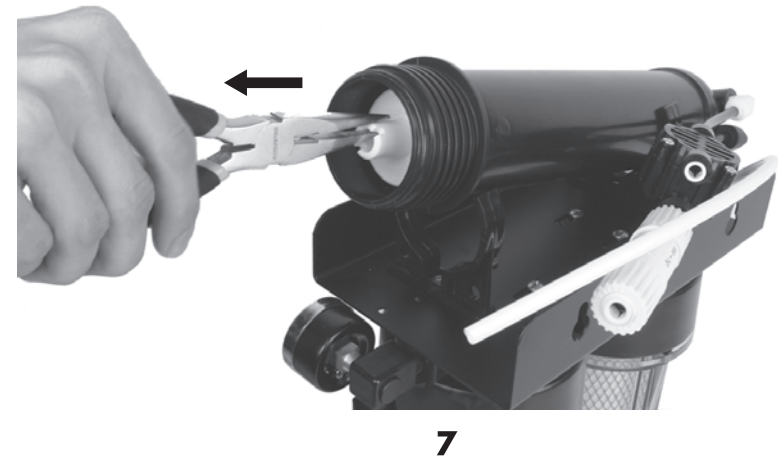
STEP 2:

Grab a hold of the membrane housing's body with one hand, the cap with the other – and twist off.



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.



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.
- For added protection use the Algae Block Sleeve to protect from sun or lights.
- 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
STEALTH-RO100	31035	100 GPD, 4 GPH	3/8"	1/4"	1/4"
STEALTH-RO200	31040	200 GPD, 8 GPH	3/8"	1/4"	1/4"

Filter Replacement Schedule:

	Hydro-Logic Part Number	Replacement Schedule
Membrane Element	22120	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 regularly
KDF85/Catalytic Carbon Upgrade Filter 10" x 2.5"	22060	2,000 gallons of purified water

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

HydroLogic[®]
PURIFICATION SYSTEMS