

# GROWONIX

TUNED FOR GROWING



## EX200, EX400 & EX400-T OWNERS MANUAL

[WWW.GROWONIX.COM](http://WWW.GROWONIX.COM)

GROWONIX  
TUNED FOR GROWING



Built in the U.S.A.

# INTRODUCTION

## OUR MISSION

Durability, Reliability, Efficiency, Purity, and Conservation form the foundation on which we design and build all of our products. Consistent and superior quality sets us apart from other manufacturers and increases our value to you - our customer. Whether you are a hydroponics hobbyist, serious enthusiast, or large-scale gardener, GrowoniX is committed to bringing you the best solution for water purification systems.

## WHAT IS REVERSE OSMOSIS?

Reverse osmosis (RO) is a filtration method that removes many types of large molecules and ions from solutions by applying pressure to the solution when it is on one side of a selective membrane. This filtering process ensures that the solute (waste water) is contained within the pressurized chamber while the pure solvent (RO water) is allowed to pass freely through the membrane.

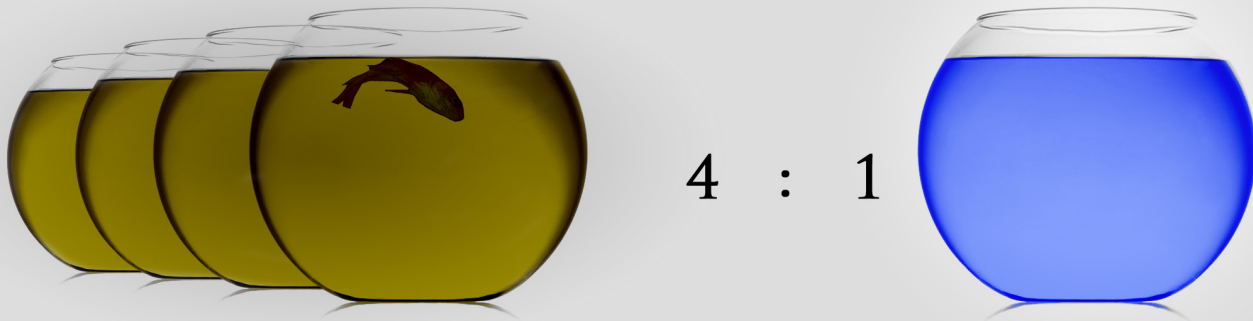
## TUNED FOR GROWING - IN TUNE WITH OUR CUSTOMERS

Traditional RO systems have waste ratios of approximately 4:1, which means there are 4 gallons of waste water produced for every 1 gallon of purified water. GrowoniX line of water filters achieve waste ratios of 2:1 with all 200-400 GPD systems, and an astounding 1:1 ratio with the 600-1000 GPD systems.

GrowoniX has created a complete product line that will address the needs of hydroponic operations of all sizes. Our filters will significantly reduce your water use while dramatically increasing your yields.

### THE TRADITIONAL WAY

takes 4 gallons of waste water to produce 1 gallon of pure water



### THE GROWONIX WAY



# FEATURES

- 200-400 GALLON PER DAY SYSTEMS
- 8-17 GALLONS PER HOUR
- HIGH FLOW COLD WATER MEMBRANE ELEMENTS.
- 2:1 WASTE RATIO  
HIGH FLOW WASHABLE SEDIMENT FILTER
- EX200-400 CARBON FILTER RATED FOR 7500 TOTAL GALS , OR 2500 GALS OF PURIFIED WATER.
- EX400-T CARBON FILTER RATED FOR 16,000 TOTAL GALS , OR 5300 GALS OF PURIFIED WATER.
- PATENTED METAL HOUSING  
AUTO SHUTOFF VALVE
- EZ HOOKUP KIT
- WALL MOUNTABLE
- USES 50% LESS WATER THAN  
TRADITIONAL RO SYSTEMS



**NO ADDITIONAL PRE-FILTERS NEEDED**

CHLORAMINE REMOVAL REQUIRES **KDF** CARBON OPTION

MEMBRANE FLUSH KIT OPTIONAL

## WHY USE A GROWONIX EX SERIES?

The EX Series is designed to flow between 8-17 GPH (Gallons Per Hour) for the EX200-EX400 correspondingly—at almost 0 ppm RO water, and a 2:1 waste ratio. It's affordable and durable, packed with features you would expect from a higher priced unit. It outflows all other RO's in its class, with all the quality you would expect from a GrowoniX product.



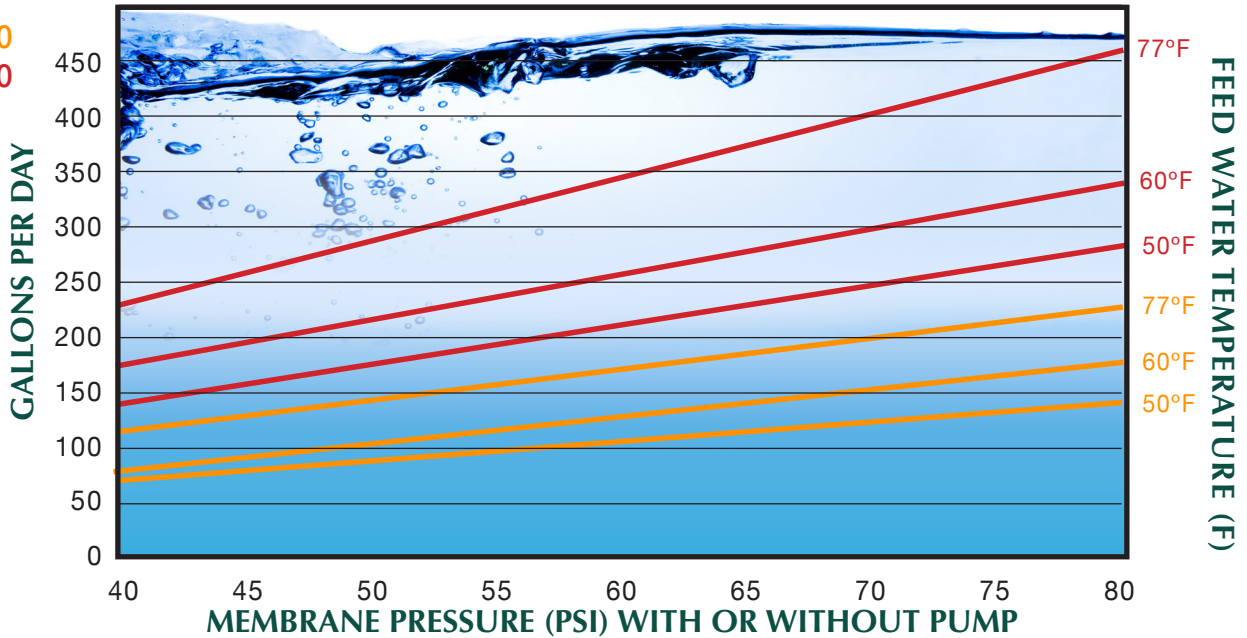
No Assembly Required



PART #	FLOW RATE	CARBON CAPACITY TOTAL GALLONS	BOOSTER PUMP
EX200	200 GPD	8,000	BP-1530-38
EX400	400 GPD	8,000	BP-1530-38
EX400-T	400 GPD	17,000	BP-1530-38

# FLOW RATES

EX200  
EX400



Test Conditions: Permeate flow and salt rejection based on 550 ppm, 80 psi, 77°F (25°C), pH 7, and 50% recovery.

## SYSTEM SPECIFICATIONS

	EX200	EX400/EX400-T
Recovery (System Ratio)	33% (2:1)	33% (2:1)
Nominal Salt Rejection %	97%	97%
Permeate Flow GPD	200	400
Permeate Flow GPH	8	17
Min Feed Flow GPM	0.42	0.83
Max Feed Water TDS	<2000	<2000
Max Feed Temp °F (°C)	90 (32.2)	90 (32.2)
Min Feed Temp °F (°C)	40 (4.44)	40 (4.44)
Max Ambient Temp °F (°C)	115 (46.11)	115 (46.11)
Min Ambient Temp °F (°C)	40 (4.44)	40 (4.44)
Max Feed Pressure psi	80	80
Min Feed Pressure psi	40	40
Max SDI Rating SDI	<3	<3
Mad TDS ppm	2000	2000
Max Hardness gpg	0	0
Max pH (Continuous)	10	10
Min pH (Continuous)	3	3
Max Turbidity NTU	1	1
Feed inch	3/8" Tube	3/8" Tube
Permeate inch	1/4" Tube	1/4" Tube
Concentrate inch	1/4" Tube	1/4" Tube
Dimensions L x W x H inch	14" x 7" x 16"	14" x 7" x 18"
Weight lbs	13	15

# ACCESSORIES

## BP-1530 *Booster Pump.*



- DOUBLES pure water production for all systems 600 GPD and under.
- Can siphon from a rain barrel or tank and produce full pump pressure.
- ZERO psi of incoming water pressure to produce the full flow rate.
- High pressure cutoff, automatically shuts off when used with a solenoid valve, ball valve, float valve, or watering wand etc...
- Adjustable output pressure.
- 1 GPM flow rate.

## UV-1530 *Ultraviolet Filtration*



- Stainless Steel Ultraviolet Filter
- Destroys 99.9% of Micro-Organisms in your water supply.
- A must for well water treatment, whole house filter systems, or any time water will be stored.

## ESOK-34 *Electric Shut Off Kit*



- An essential add-on to any water filter.
- Shuts down feed water BEFORE the water filter.
- Controls on/off cycling of high pressure booster pumps.
- 120VAC piggyback cable, 20ft.
- Solenoid valve with manual override for failsafe water-making.

## EP-2 *Delivery Pump*



- 7 GPM delivery pump.
- High pressure cutoff, automatically shuts off when used with a solenoid valve, ball valve, float valve, or watering wand etc...
- Transfer water from storage tanks to batch tanks.
- Siphons water up to 12' in elevation.
- Able to run dry intermittently and slurp.

## VA-FLV-1438 *Float Valve*



- 1 GPM flow rate max.
- Adjustable positioning via thumb screw.
- Can be mounted vertically or horizontally.
- 1/4" or 3/8" tubing port sizes.
- Bulkhead mounting style with sealing washer.

# REPLACEMENT FILTERS

Product	Sediment	Carbon	Membrane	Ultraviolet
EX200/EX400	SF-2510-PL	CF-2510-CC	GXM-150-HR	UV-1530
	SF-2510-SP	CF-2510-GB	GXM-200-HF	
EX400-T	SF-2520-PL	CF-2520-CC	GXM-150-HR	UV-1530
	SF-2520-SP	CF-2520-GB	GXM-200-HF	
		CF-2520-KDF		

*\*Blue color indicates filters installed in unit.*

*\*Green color indicates optional filters.*

*\*Chloramine removal requires the KDF85 carbon filter.*

\*EX200-EX400 CARBON FILTER RATED AT 7,500 GALS TOTAL CAPACITY, OR 2,500 GALS OF FILTERD WATER AT 2:1 RATIO.

\*EX400-T CARBON FILTER RATED AT 16,000 GALS TOTAL CAPACITY, OR 5,300 GALS OF FILTERD WATER AT 2:1 RATIO

## FILTER INDEX



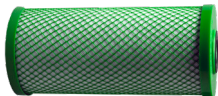
### GXM HIGH FLOW COLD WATER MEMBRANES

Highest flowing ultra-low-energy membranes on the planet—with the lowest waste ratio.



### KDF85/CATALYTIC ACTIVATED CARBON FILTER

Premium carbon filter using the best catalytic activated carbon with a bed of KDF85 media. There's no better carbon filter available.



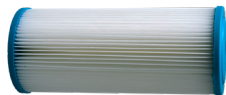
### COCONUT CARBON FILTER—“GREEN BLOCK”

Premium coco carbon, produced using eco-friendly low emissions processes



### COCONUT CARBON FILTER—“WHITE BLOCK”

Economy coco carbon, same performance as Green Block, for a little less money.



### PLEATED SEDIMENT FILTER

High flow washable sediment filters with ultra low pressure drop.



### SPUN SEDIMENT FILTER

Spun poly sediment filters with huge dirt holding capacity and a little more pressure drop.



### UV STERILIZATION

Kills 99.9% bacteria and viruses.



### ALKALINE INLINE

Inline filter adds calcium & magnesium to filtered water, and raises the Ph.



### REMINERALIZING INLINE

Inline filter adds calcium & magnesium to filtered water.



### DI INLINE

De-Ionization filter removes last bit of PPM.

# PRECAUTIONS

\* Do not use unit with inlet water pressure exceeding 80 psi. If inlet water pressure is too high, install water pressure regulator before the unit. Pressure regulators are available at [GrowoniX.com](http://GrowoniX.com) or your local plumbing supply. \*

A minimum of 40psi is recommended to operate GrowoniX water filters. If your inlet water pressure is too low, a booster pump can be used to increase pressure.

Slower performance may be noted in areas with colder temperatures, higher water salinity, or lower inlet water pressure.

Keep unit away from direct light. Direct light can cause algae and other biologicals to grow inside of the filter housings.

Do not install unit near electrical outlets or electrical devices.

Do not install in places where a leak can cause damage.

Do not use a flow restrictor other than the one included with your unit.

## INFORMATION ON QUICK CONNECT FITTINGS

GROWONIX WATER FILTERS USE QUICK CONNECT FITTINGS THAT ALLOW FOR EASY MAINTENANCE.

### MAKE A CLEAN TUBE CUT

Cut the tube squarely and if using plastic tubing, ensure that the cut has not made the tube out of round.

Also ensure that the tube has a smooth outside diameter without any burrs or score marks prior to inserting it into the fitting.

### INSERT TUBE INTO FITTING

Push the tubing through the collet and dual o-rings until it bottoms out against the tube stop. The collet holds the tube in place and the dual o-rings provide a leak resistant seal.

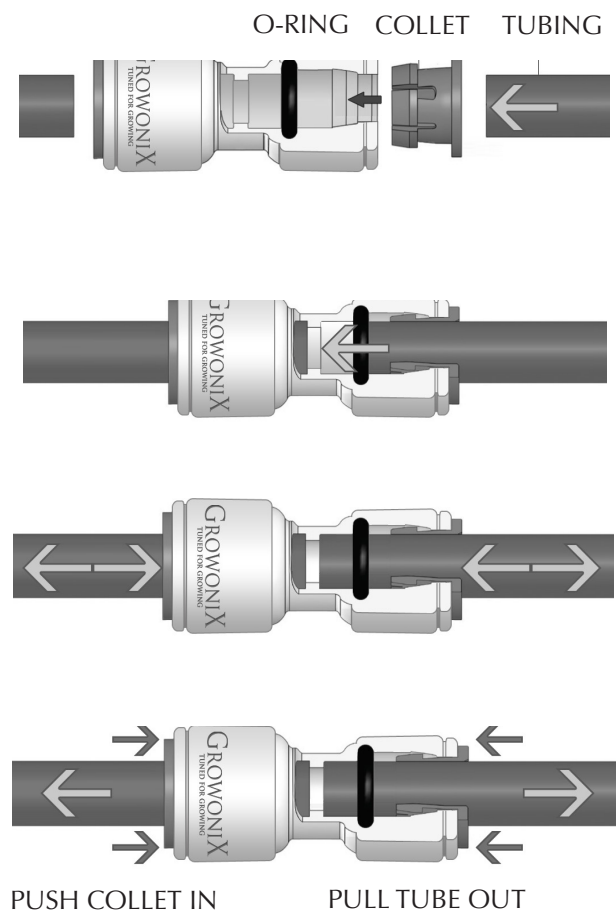
### TEST AND INSPECT

Push and pull the tubing toward and away from the fitting to ensure that it has been installed properly.

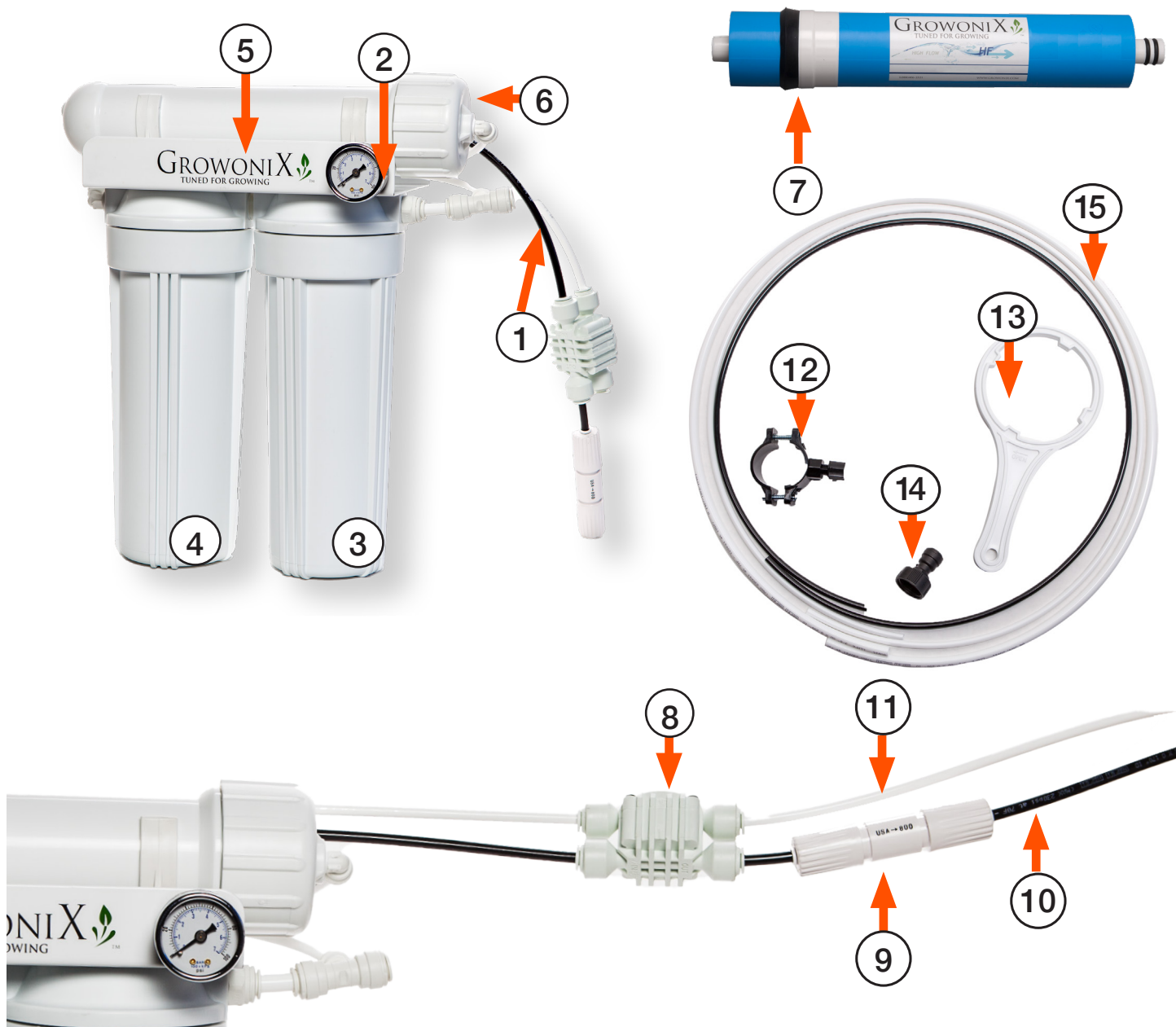
Test and inspect the installation for any leaks.

### TUBE REMOVAL

Relieve pressure from the tubing and fitting. Push uniformly around the collet flange against the fitting body while pulling the tubing away from the fitting to release it.



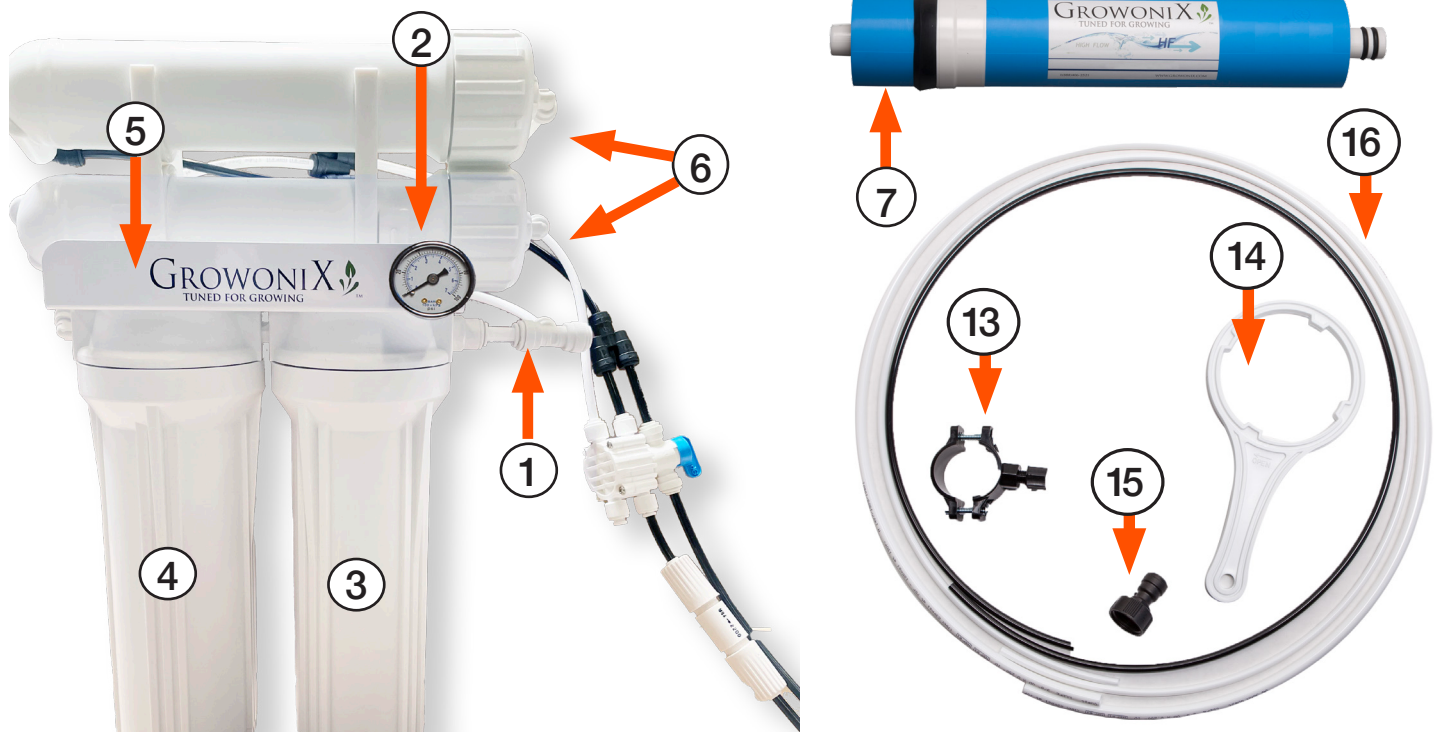
# EX200 COMPONENT DIAGRAM



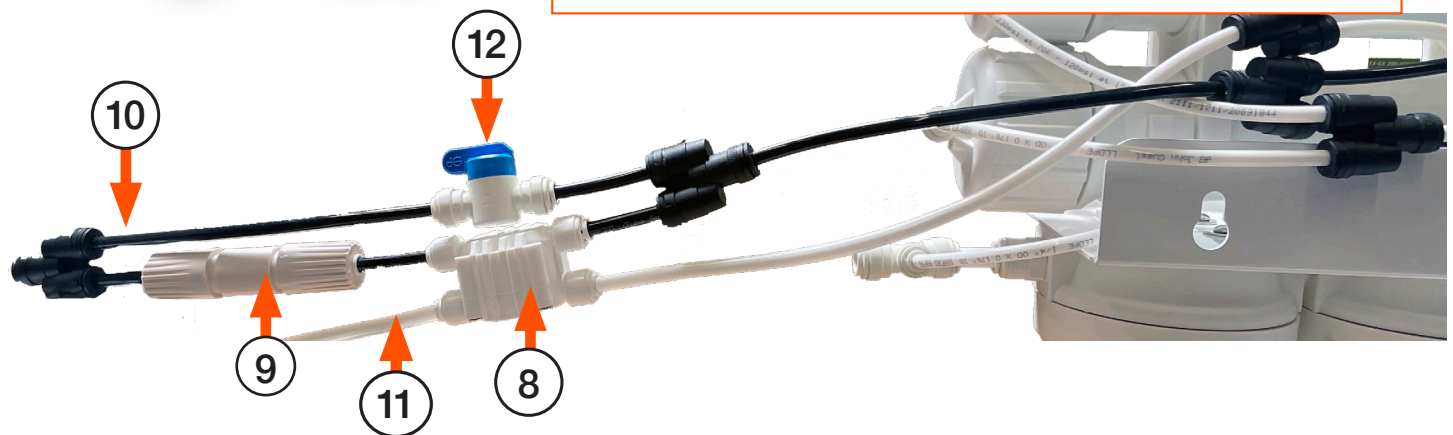
- |                                 |                                  |
|---------------------------------|----------------------------------|
| 1. Supply water in              | 9. Flow restrictor               |
| 2. Pressure gauge               | 10. Waste/drain tubing           |
| 3. Sediment filter              | 11. RO water out                 |
| 4. Carbon filter                | 12. Drain saddle clamp           |
| 5. Patented EX mounting bracket | 13. Filter wrench                |
| 6. Membrane housing             | 14. Garden hose adapter          |
| 7. RO membrane                  | 15. Supply, RO, and drain tubing |
| 8. Auto shutoff valve           |                                  |



# EX400 COMPONENT DIAGRAM



**\* THE EX400 HAS 2 MEMBRANES \***



- |                                 |                                  |
|---------------------------------|----------------------------------|
| 1. Supply water in              | 9. Flow restrictor               |
| 2. Pressure gauge               | 10. Waste/drain tubing           |
| 3. Sediment filter              | 11. RO water out                 |
| 4. Carbon filter                | 12. Ball Valve                   |
| 5. Patented EX mounting bracket | 13. Drain saddle clamp           |
| 6. Membrane housing             | 14. Filter wrench                |
| 7. RO membranes                 | 15. Garden hose adapter          |
| 8. Auto shutoff valve           | 16. Supply, RO, and drain tubing |

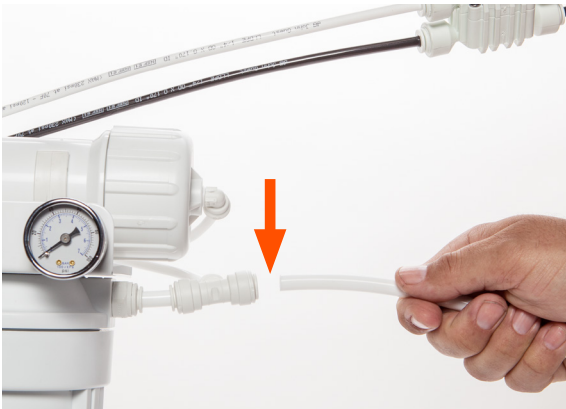
**A "FLUSHKIT" IS COMPRISED OF PARTS 8-12 AND IS MENTIONED THROUGHOUT THIS MANUAL.**



# SETUP INSTRUCTIONS

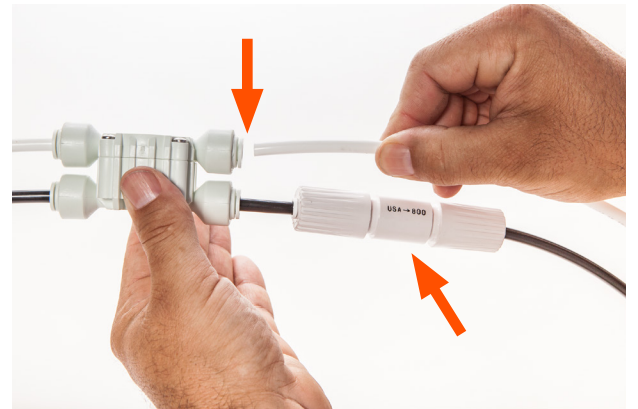
- Always turn incoming water pressure off before servicing the unit.
- Always turn incoming water pressure on slowly, allowing all air to be discharged from the system before full water pressure is restored.
- GrowoniX EX200 - EX400 water filters are designed to be used with between 40-80 psi of incoming water pressure. Do not exceed 80 psi of incoming water pressure.
- If incoming water pressure is too high, install pressure regulator before unit.
- It is recommended to flush the carbon filter and membrane upon initial startup. (see following instructions)

1



Connect the 3/8" white supply tubing to the inlet fitting, making sure the inlet seats all the way into the quick-connect fitting. This is the supply water line.

2



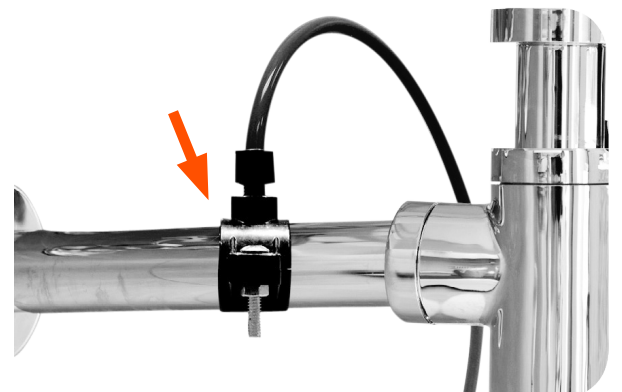
Connect the 1/4" white RO tubing to the auto shut-off valve, making sure the RO tubing seats all the way into the quick-connect fitting. This is the filtered RO water out line.

3



Connect the 1/4" black drain tubing to the tee fitting just after the flow restrictor.

4



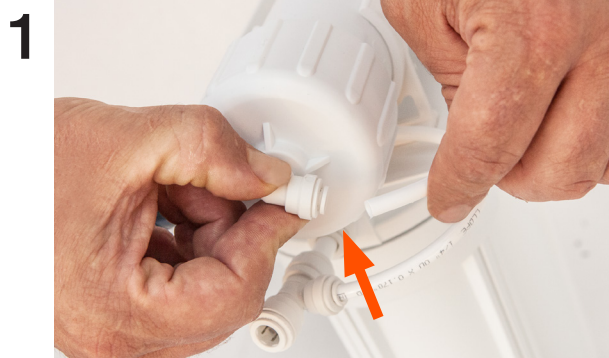
Mount the drain clamp to an available drain pipe. Only insert the tubing halfway into the drain pipe—do not bottom out. Connect other end of drain tubing to the included drain clamp.

**BEFORE TURNING INCOMING WATER SUPPLY ON, REFER TO NEXT STEP "FLUSHING THE KDF85 CARBON FILTER" ON THE NEXT PAGE.**

# FLUSHING THE KDF85 CARBON FILTER

Growonix water filters can be upgraded with a KDF85 Catalytic Carbon Pre-Filter. The "KDF" carbon filter is a superior blend of highly reactive catalytic carbon and KDF85 process media used to remove/reduce iron, hydrogen sulfide, chlorine, chloramine, bacteria, scale, and algae.

The catalytic carbon in these filters is in a loose form, and thus will discharge a small amount of carbon dust upon initial startup. It is recommended to unhook the membrane input side and flush ten gallons of water through the carbon filter before re-connecting to the RO membrane. This will ensure no dust gets into the membrane causing premature fouling.



1 Make sure the incoming feed water is shut off, ensuring the RO filter is depressurized. Disconnect the 1/4" white tubing that feeds the membrane input from the carbon filter.



2 Position the fitting over a drain or bucket and slowly turn on incoming water pressure. Allow 10 gallons (EX200-400) and 20 gallons (EX400-T) of water to flush through carbon before reconnecting to membrane input.



3 Reconnect the tubing to the membrane inputs and resume normal filter operation.



**MAKE SURE WATER IS FREE FROM CARBON FINES & DEBRIS BEFORE RECONNECTION TO MEMBRANE INPUT**

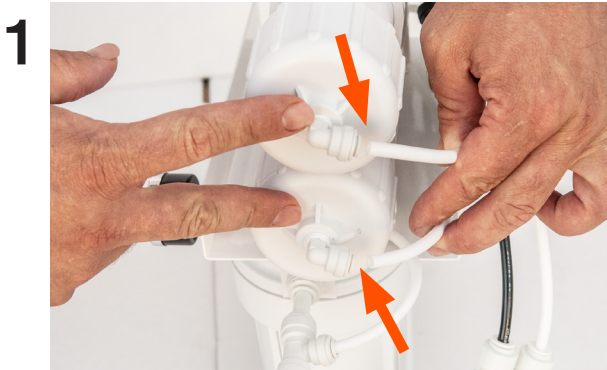
\*EX200-EX400 CARBON FILTER RATED AT 7,500 GALS TOTAL CAPACITY, OR 2,500 GALS OF FILTERED WATER AT 2:1 RATIO.

\*EX400-T CARBON FILTER RATED AT 16,000 GALS TOTAL CAPACITY, OR 5,300 GALS OF FILTERED WATER AT 2:1 RATIO.

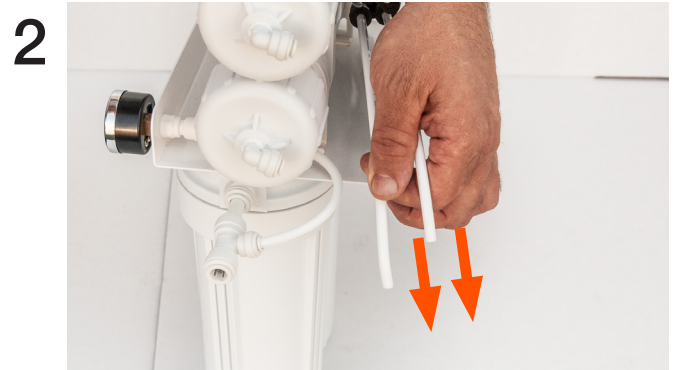


# FLUSHING THE KDF85 CARBON FILTER

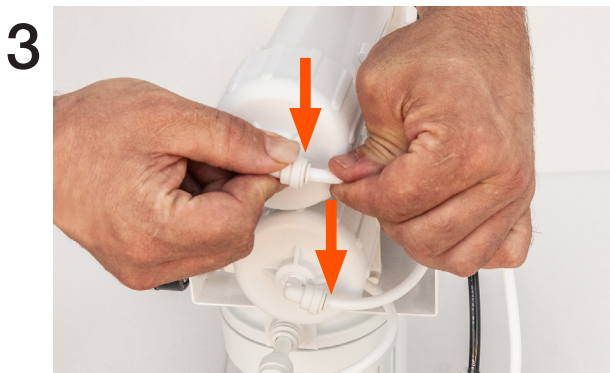
**\* THE EX400 AND EX400-TALL HAVE TWO RO MEMBRANES \*  
IT IS NECESSARY TO DISCONNECT BOTH MEMBRANE FEED LINES  
TO PROPERLY FLUSH THE CARBON FILTER.**



Make sure the incoming feed water is shut off, ensuring the RO filter is depressurized. Disconnect the 1/4" white tubing that feeds the membrane input from the carbon filter.



Hold the tubing over a sink or bucket. Slowly turn on incoming water pressure, allowing 10 gallons (EX400) or 20 gallons (EX400-T) of water to flush through the carbon filter. Once flushed, turn off incoming feed water.



Reconnect the tubing to the membrane inputs and resume normal filter operation.



**MAKE SURE WATER IS FREE  
FROM CARBON FINES & DEBRIS  
BEFORE RECONNECTION  
TO MEMBRANE INPUT**

\*EX200-EX400 CARBON FILTER RATED AT 7,500 GALS TOTAL CAPACITY, OR 2,500 GALS OF FILTERED WATER AT 2:1 RATIO.

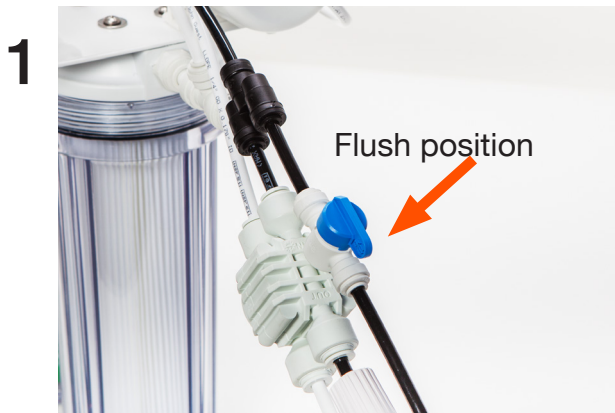
\*EX400-T CARBON FILTER RATED AT 16,000 GALS TOTAL CAPACITY, OR 5,300 GALS OF FILTERED WATER AT 2:1 RATIO.

# FLUSHING THE MEMBRANE ELEMENT

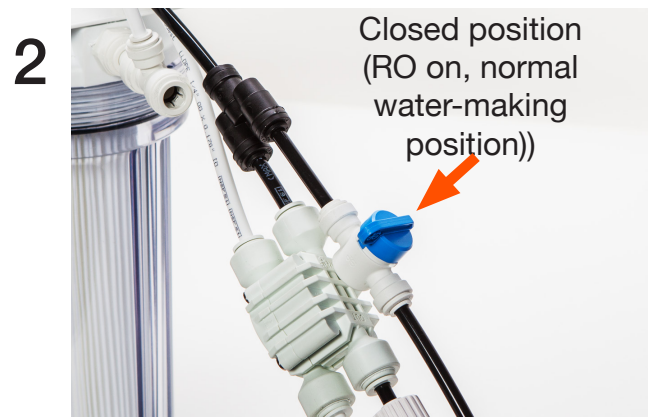
GrowoniX EX200 - EX400 water filters are offered with an **OPTIONAL MANUAL FLUSH VALVE**. Flushing the membrane element after each use for approximately 3-5 minutes will remove standing salts from the membrane, significantly extending membrane life. Even weekly flushes will improve membrane life and system performance.

The flush valve is located in the waste line of the RO membrane. To flush the membrane simply turn the flush valve to the FLUSH position as seen in picture 1. High pressure water will bypass the flow restrictor and shutoff valve and be sent down the drain, carrying membrane pollutants with it. If using a float valve, and the system happens to be OFF due to valve engagement, opening the flush valve will start the system again in flush mode.

**If you have a flush valve, then follow the steps below.**



1 Make sure the flush valve is open (in the FLUSH position).  
Let the system run for 3-5 minutes.



2 After flushing is complete, simply turn flush valve to the CLOSED position. The Membrane has been flushed.

**If you do not have a flush valve, then flushing can be done by disconnecting the drain line either before the ASV or at the flow restrictor. Make sure the feed water is turned OFF and the system is depressurized before attempting to remove the drain line connection. Follow the steps below.**



1 Remove the Flow Restrictor



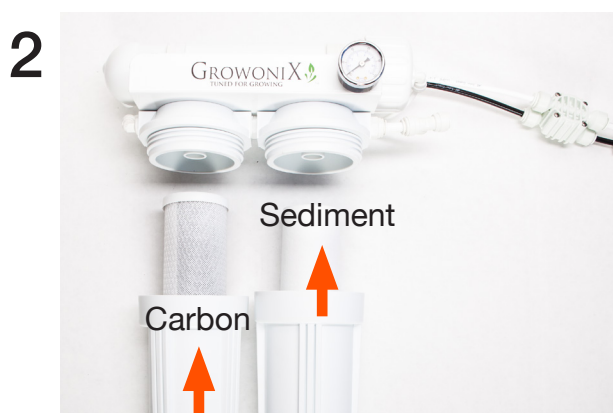
2 Let system run for 3-5 minutes.  
Replace the Flow Restrictor

# REPLACING THE PRE-FILTERS

- ❖ Sediment filters should be changed when either brown discoloration occurs, or system flow rates have significantly declined.
- ❖ Carbon filters have a gallon count: 7,500 gals total capacity, or 2,500 gals of filtered water at 2:1 ratio for the EX200 - EX400, and 16,000 gals total capacity, or 5,300 gals of filtered water at 2:1 ratio for the EX400-TALL.
- ❖ Always turn incoming water pressure off before servicing the unit.
- ❖ Always turn incoming water pressure on slowly, allowing all air to be discharged before full water pressure is restored.



Unscrew the sediment and carbon filter housings using the supplied filter wrench. Wash inside of the filter housings to remove debris.



Install the new sediment and carbon filter, making sure they go into the correct filter housings.



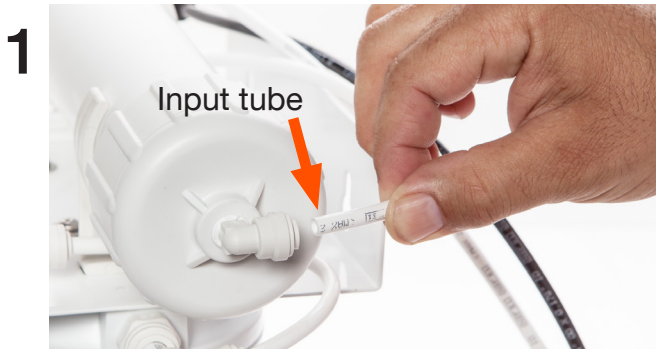
When replacing the filter housings, make sure the housing O-rings are seated properly. Grease the O-rings with food grade silicone grease.



Tighten the filter housings by hand, do not use the filter wrench. Do not over tighten.

# REPLACING THE MEMBRANE ELEMENT

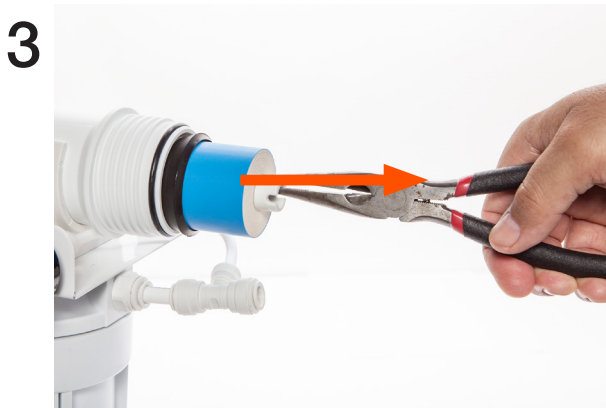
- Before servicing membrane element system must be de-pressurized. To de-pressurize the EX200 - EX400, turn incoming water supply completely OFF and open the flush valve.
- It is suggested that you replace sediment and carbon pre-filters as well when replacing membrane element.
- After replacing membrane turn incoming water pressure on slowly, allowing all air to be discharged before full water pressure is restored.
- End-caps can be difficult to re-install. To aid in installation, apply continuous pressure to end cap. Do not strike the end cap.



Disconnect the input tube(s) from the RO membrane housing.



Unscrew the membrane housing end cap. Caps can be difficult to remove. Be sure to have a firm grip on opposite side of the housing. Do not lose the O-ring on inside of the cap. Each cap has two O-rings.



Pull out the membrane using needle nose pliers or other similar tool.



Insert the new membrane into the housing, making sure the end with the brine seal goes in last. Make sure the membrane is completely seated into the housing.



Replace the end cap and tighten it by hand. If the O-rings are dry, lubricate with food grade silicone lubricant. Allow the system to run for ½ hour before using the RO water.

# SPECIFICATIONS CHARTS

## PLEATED SEDIMENT FILTER 2.5 " DIAMETER

### Materials of Construction:

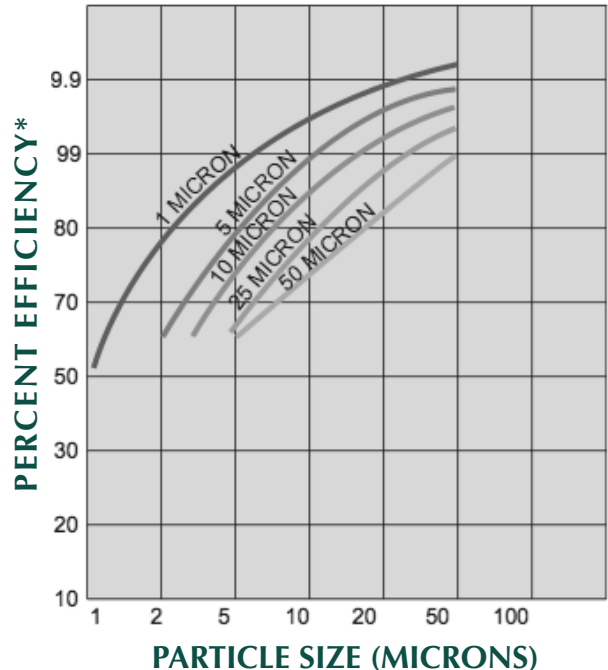
- Filter Media
- End Caps
- Core
- Temperature Rating
- Non-woven Polyester
- Vinyl Plastisol
- Polypropylene
- 40°F to 125°F (4.4°C to 51.7°C)

### Size Description:

- 2 1/2" X 9 7/8"

### Initial AP(psi) @ flow rate (gpm):

- 1 psi @ 10 gpm(.01 bar @ 38 L/min)



## ECO COCONUT CARBON BLOCK FILTER

### Materials of Construction:

- Carbon: NSF listed 61, Coconut Shell PAC
- End Caps: Polypropylene
- Inner/Outer Wraps: Polypropylene
- Nettings: Polypropylene
- Gaskets: NBR
- Temperature Ring: 40°F to 180°F

### OD X Length:

- 2-3/4" X 9-3/4"

### Nominal UM Rating

- 10

### Initial AP(psi) @ flow rate (gpm):

- 1 PSI @ 30 GPM

### Chlorine, Taste, Odor Reduction Capacity Flow

- >8,000 gallons @ 1 GPM

## RO MEMBRANE ELEMENT

### Operating Limits:

- Membrane Type: Thin film composite
- Maximum Operating Temperature: 110°F (45°C)
- Maximum Operating Pressure: 125 PSI
- Maximum Feed Flow Rate: 1 GPM
- Maximum Concentrate Flow Rate: 4 x Permeate
- pH Range, Continuous Operation: 3-10
- Maximum Feed Water Turbidity: 1 NTU
- Maximum Feed Silt Density Index (SDI): 5 SDI
- Chlorine Tolerance: 0 PPM
- Applied Pressure PSI (BAR): 65 (4.48)
- Permeate Flow Rate GPD: 150
- Nominal Salt Rejection(%): 97%