



## User Manual

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# Blue Dragon® Pro 1

SKU H400

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The Blue Dragon Pro 1 is a 3-stage pure water system that comes on a powder coated steel frame and stainless-steel housing. The 3 stages consist of a carbon filter, a Low Pressure Nano Membrane, and a DI filter to produce mineral-free water for streak-free windows.

The Blue Dragon® Pro 1 puts out over 3/4 of a gallon of water per minute. It can easily work up to 50 feet.

The Low Pressure Nano Membrane included with this unit is from a newer class of membranes that work with lower pressures and are ideal to use with water from city and county water systems.

Together with durable larger fittings and quality hose, it is engineered to withstand the most demanding conditions of any window cleaning jobs.

# Table of Contents

Blue Dragon Pro 1® In The Box..... 4

Blue Dragon Pro 1® Out Of The Box ..... 5

Start Up System (First Time Use)..... 8

Shutdown System (First Time Use)..... 9

Start Up System (Every Day Use)..... 10

Connecting Water-Fed Pole ..... 11

Shutdown System (Every Day Use)..... 12

Maintenance..... 13

Blue Dragon® Pro 1 Serviceable Housing ..... 15

RO Preserve (SKU H435) ..... 16

System Restart..... 17

Using Your TDS Tester ..... 18

Testing Your RO Membrane ..... 19

Replacement Parts ..... 20

Warranty Policy..... 21

## Blue Dragon Pro 1® In The Box

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1. Upon receiving the unit, inspect for any damage or missing components. Must report any damage or missing components within 24hrs to the supplier.
2. Blue Dragon® Pro 1 ships complete in one (1) box.
3. Be sure to inventory all items that were to be included with your order.

### Package includes:

- Nano membrane
- Carbon filter
- Pre filled DI cartridge
- Filter wrench
- TDS meter
- Female quick connect
- Garden hose quick connect
- Waste hose
- 5/8 light blue hose
- R/O Protect



## Blue Dragon Pro 1® Out Of The Box



1. Flip handle, it is backwards for shipping purposes.



2. Make sure the membrane is in the stainless steel housing, lube the center and outside gaskets of the top cap with the petroleum jelly provided and install on to the stainless steel housing.



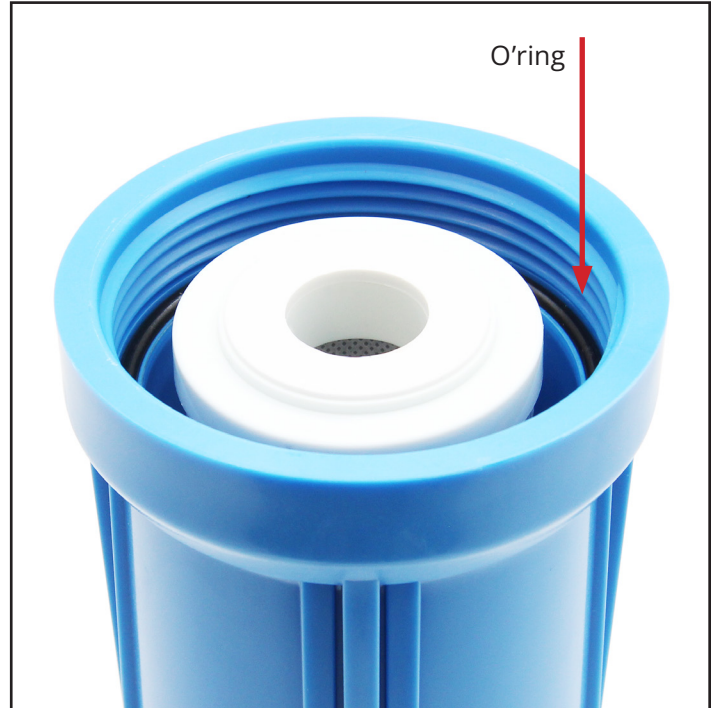
3. Make sure the cap is sitting down all the way on the stainless steel housing, half moon bracket should go over the bottom lip of the cap and the top lip of the stainless steel housing.



4. Once the cap is in place, mount the stainless steel half moon brackets and tighten them up with a wrench. Do not over tighten.



5. Mount the 5/8 light blue hose from the cap to the carbon filter housing outlet.



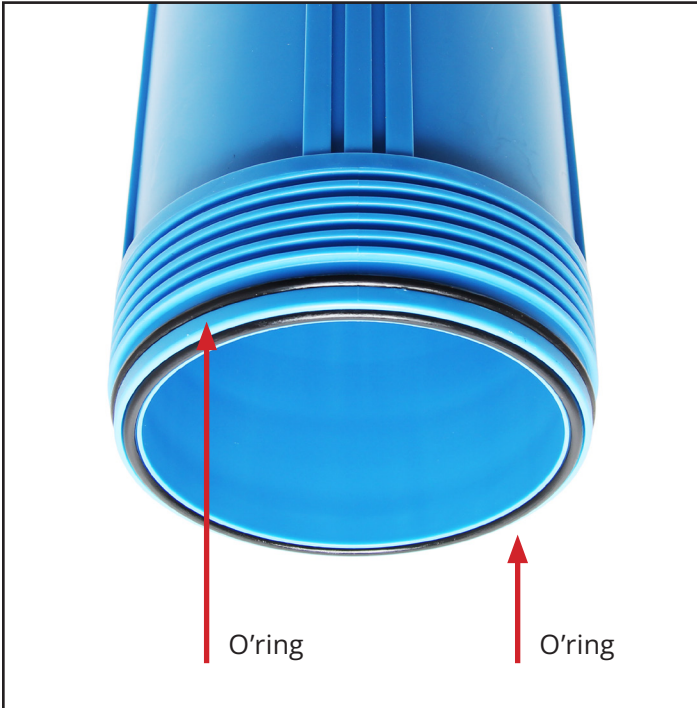
6. Put a carbon filter in the 10 inch housing and make sure the O'ring is in place before install.



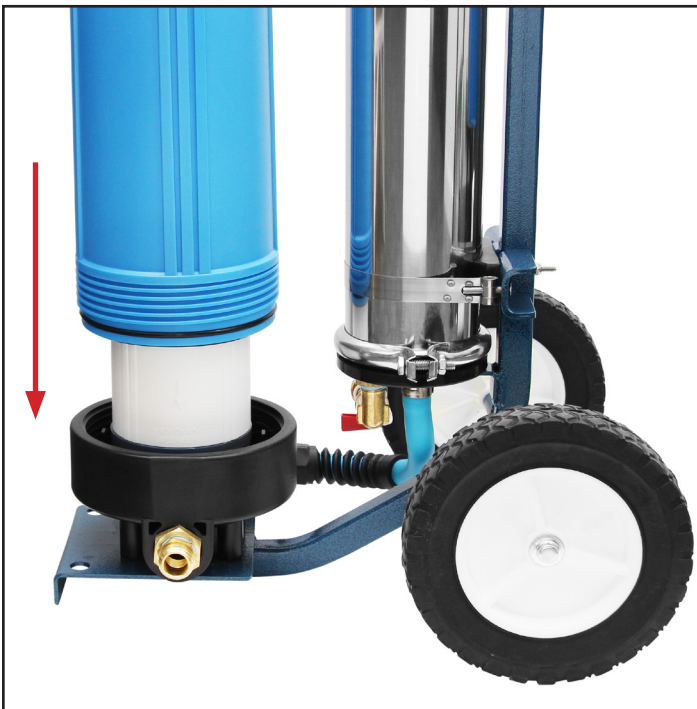
7. Hand tighten the cap on the back of the cart.



8. Center the pre-filled DI cartridge on the cap in front of the cart, **the arrow should be pointing down to the cap.**



9. The 20 inch housing has 2 O'rings, make sure they are in place before install.



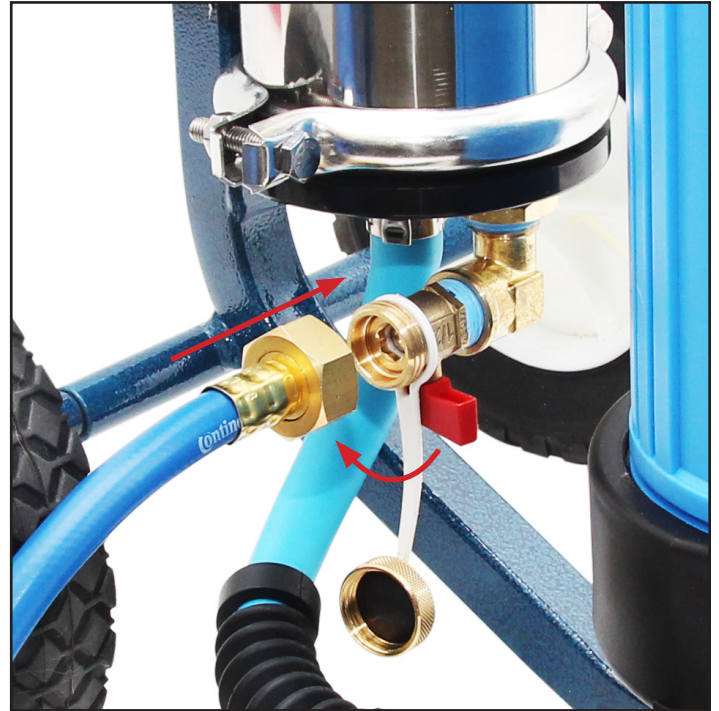
10. Place 20 inch housing over the DI cartridge and hand tighten the housing to the cap. System is ready for **Start Up (First Time Use)**.



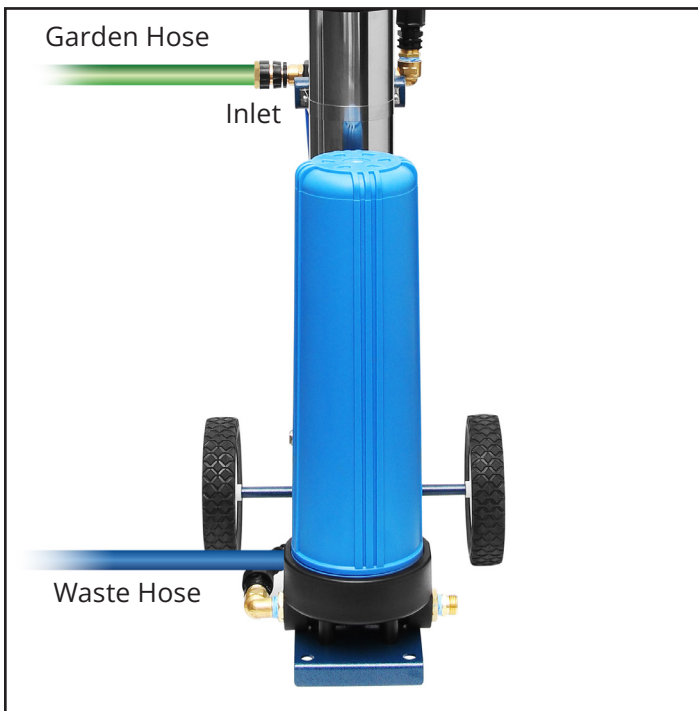
## Start Up System (First Time Use)



1. Connect a garden hose to the water inlet.



2. Remove end cap from by-pass valve and connect waste hose to valve, turn valve fully open.



3. Turn tap water supply on and allow the system to flush for **15-20 minutes**.

Use a 5/8 or 3/4 inch garden hose to supply the system for best flow.

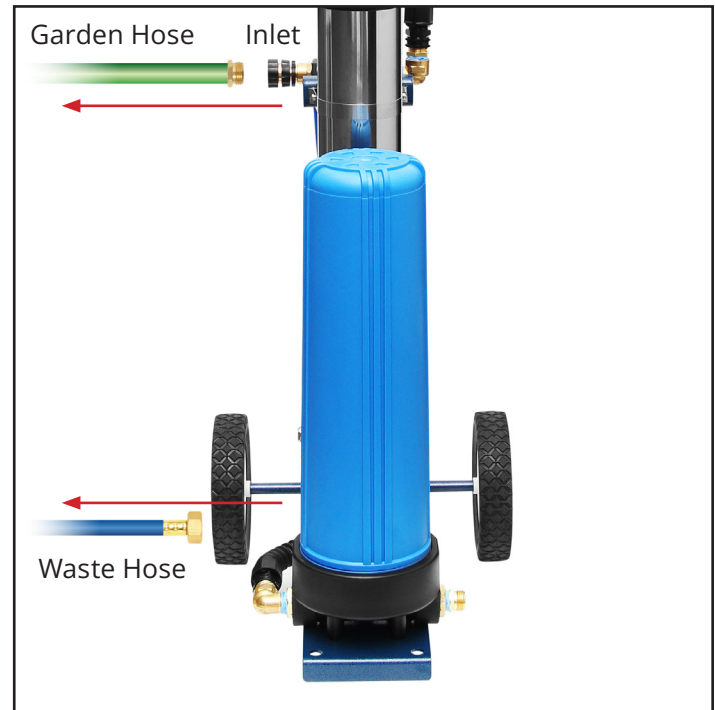
**Do not use collapsible hoses.**

Shutdown system by following:

**Shutdown System (First Time Use)**

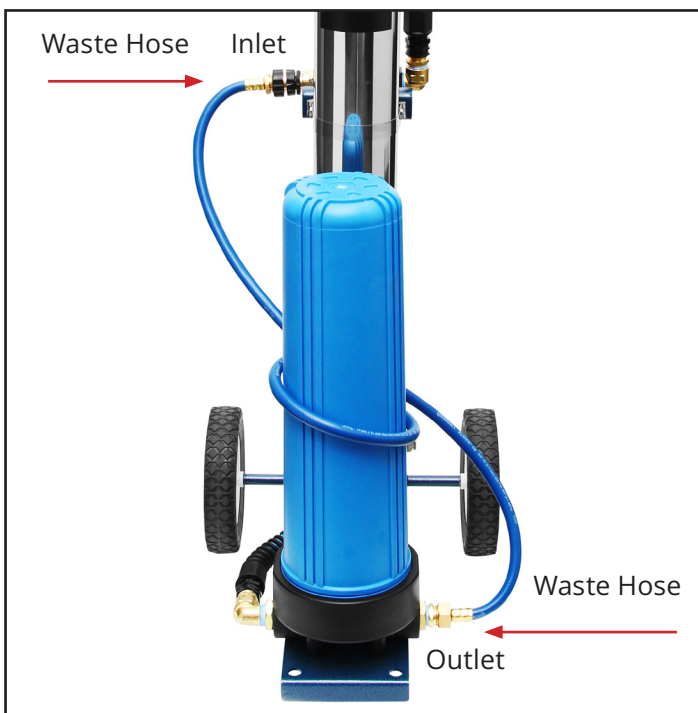


## Shutdown System (First Time Use)



1. Turn water supply off. Turn off the by-pass valve and remove the waste hose, place the end cap back on to the valve so no water runs out.

2. Remove garden hose from water inlet.



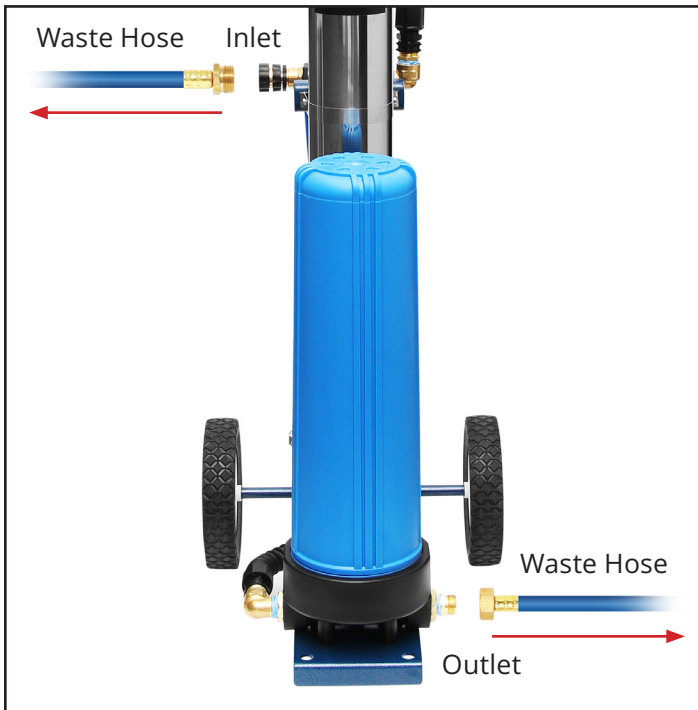
3. Connect waste hose from the water inlet to the DI outlet.

After completing the First Time Use steps let the system sit for **4 to 6 hours** to allow the membrane to soak up water, **for best results let it sit overnight.**

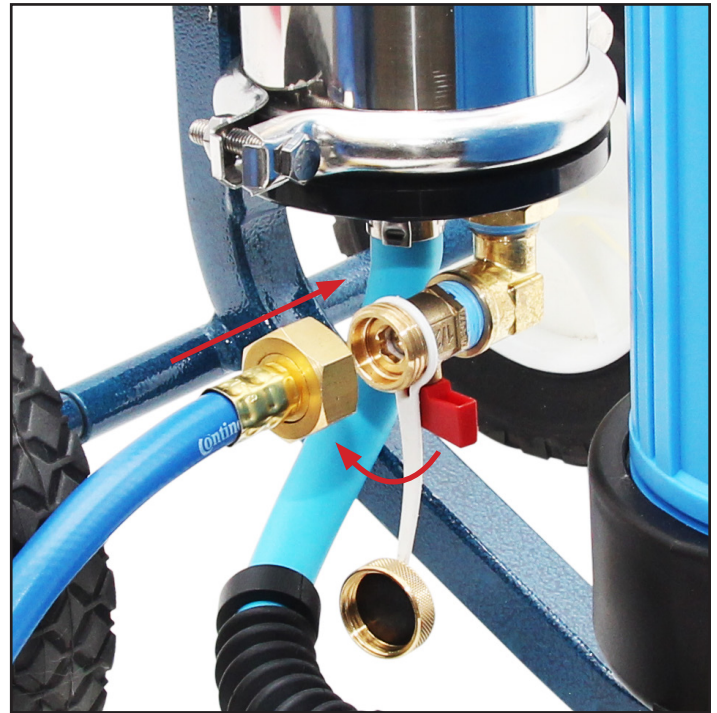
**Never let system dry up, always leave system with water. After the first initial setup you will not need to charge the system unless you replace the membrane.**

**Cart can be used standing or laying down.**

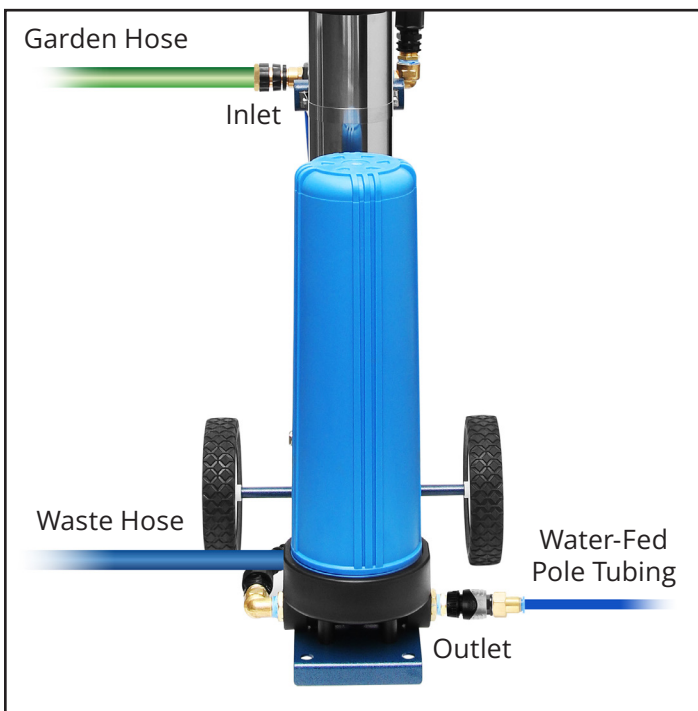
## Start Up System (Every Day Use)



1. Disconnect waste hose from water inlet and DI outlet.



2. Remove end cap from by-pass valve and connect waste hose to valve, turn valve fully open.



3. Connect the garden hose to the water inlet and the quick connect with Water-Fed pole tubing to DI outlet, turn water supply on and let run for a couple of minutes.

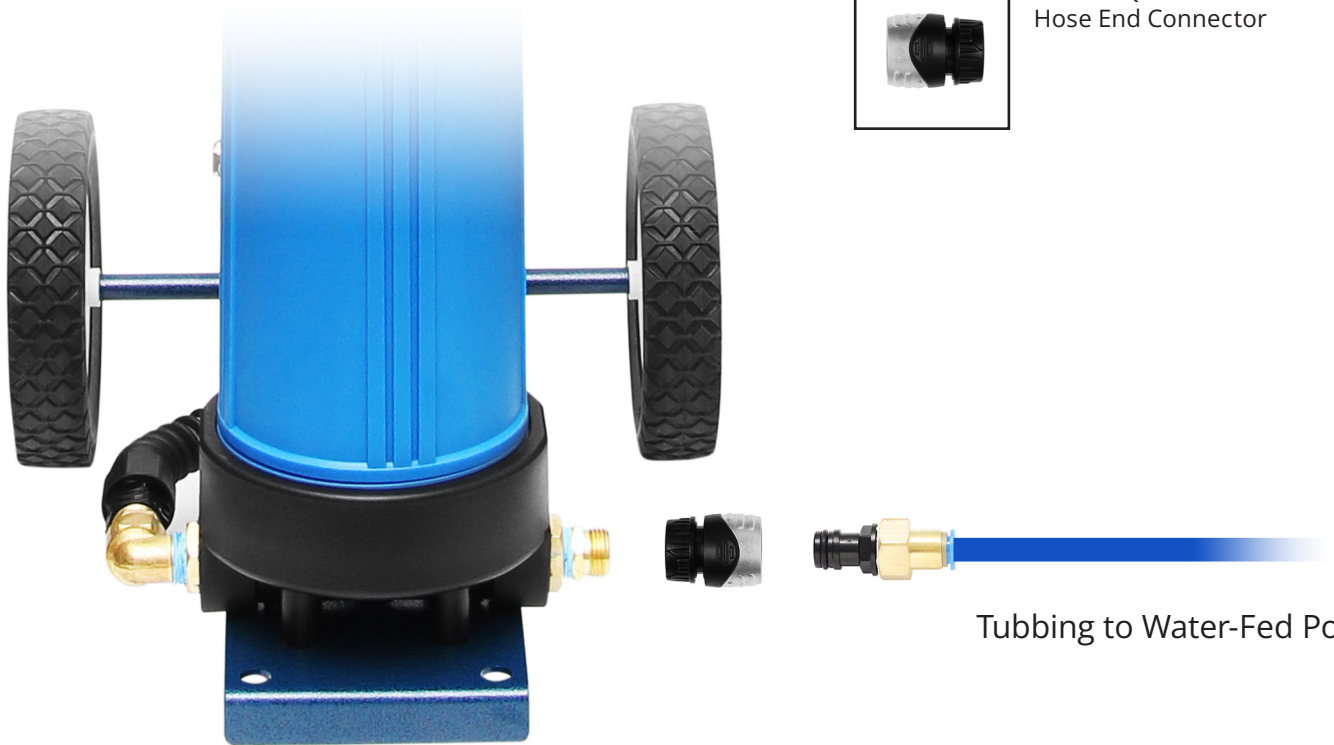


4. Turn the by-pass valve off, water will still run out slowly from the valve. It is normal for water to run out of the by-pass valve so the membrane can properly filter water. System is ready to be used.

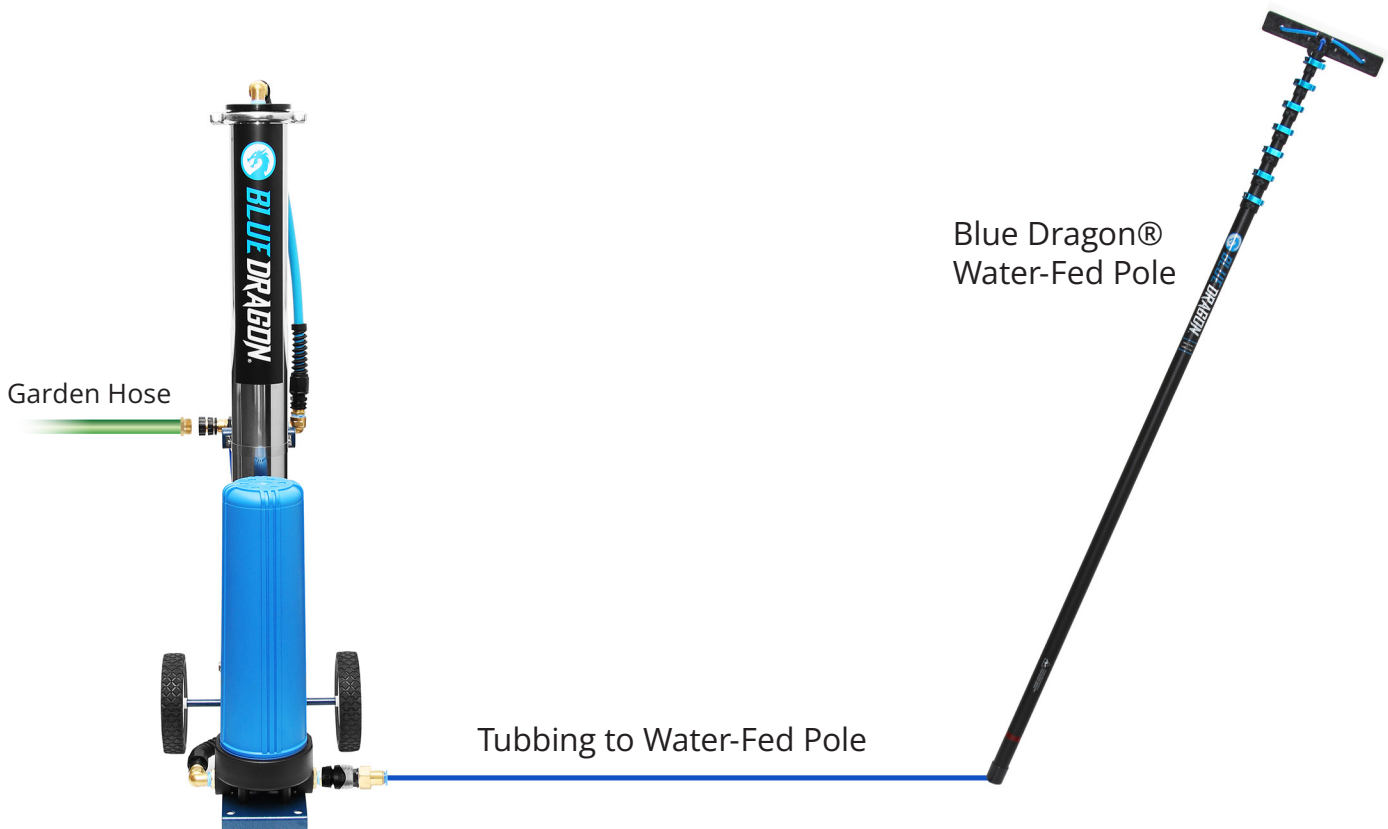
# Connecting Water-Fed Pole



Female Quick Connect Female Hose End Connector



Tubing to Water-Fed Pole



Blue Dragon® Water-Fed Pole

Garden Hose

Tubing to Water-Fed Pole

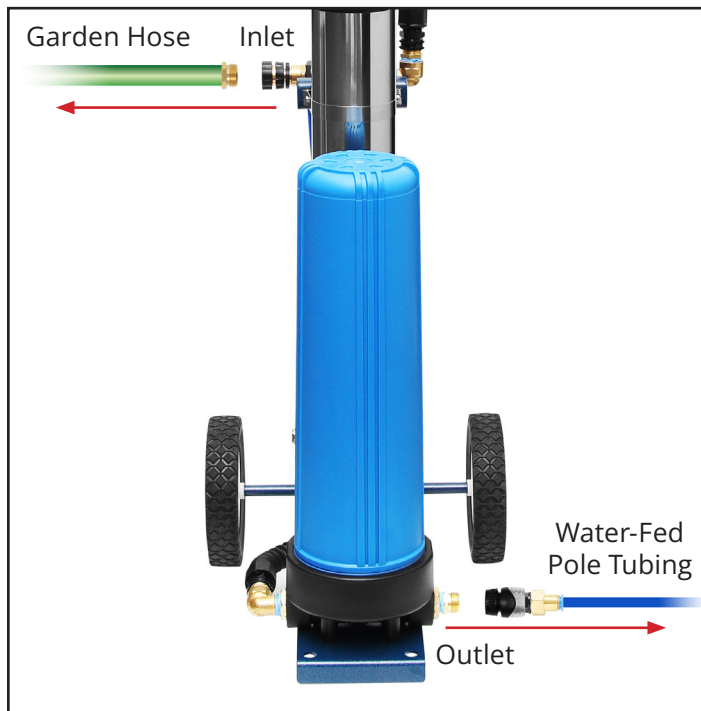
## Shutdown System (Every Day Use)



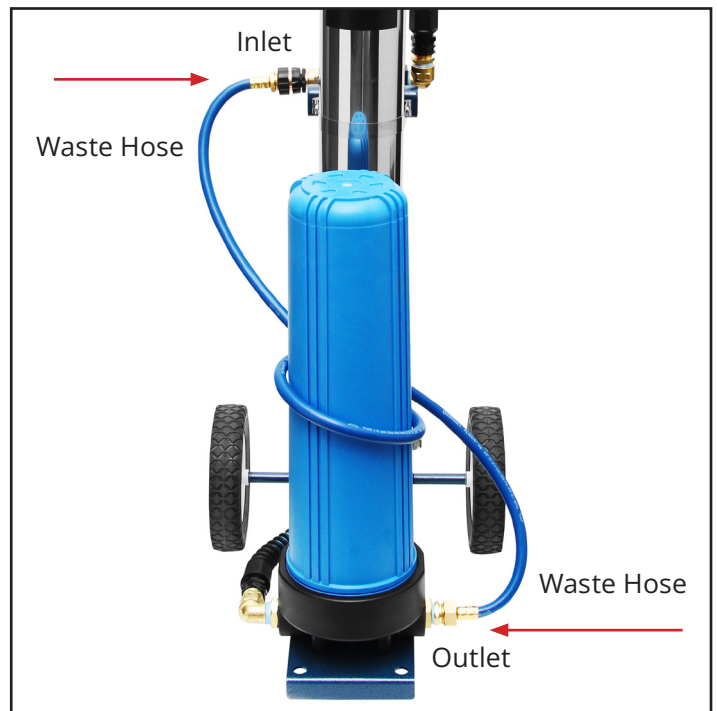
1. Turn by-pass valve fully open and let water run for a couple minutes.



2. Turn the water supply off. Turn off the by-pass valve and remove the waste hose, place the end cap back on to the valve so no water runs out.



3. Remove garden hose from water inlet and the quick connect with Water-Fed pole tubing from DI outlet.



4. Connect waste hose from the water inlet to DI outlet. **System is ready to be transported or stored.**

## Maintenance

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It is important to check the TDS level of the water coming from the system occasionally this can be done by filling the cap of your handheld TDS meter with the water from your water-fed hose.

When TDS levels reach 10 ppm you will need to change your DI filter resin.

The carbon block cartridge should be checked 1-2 months. The carbon filters main job is to remove chlorine. Check to see if your carbon filter is working properly and efficiently with a chlorine test kit, failure to do so can damage your RO membrane.

Your Blue Dragon® Pro 1 is a water purification system that needs to be maintained. Running water through the RO membranes every 2 weeks will help to keep RO's working at peak performance. Do not drain your system. It is important to keep the filters hydrated.

### Filter Replacement and Procedure

Your carbon filter protects your system from getting damaged by chlorine and water disinfection agents. It is recommended that you change your carbon filter every 5,000 gallons. Failure can result in damage to the RO membrane.

DI resin has a limited lifespan based on the amount of dissolved solids it is removing from

the water. The DI resin needs to be replaced as needed to get clean streak free windows. Reorder SKU H447.

To remove these filters, slide the universal housing wrench over the filter housing. Once snug turn the filter counter-clockwise, once the housing is loose you can unthread housing sump from the housing head. Remove the old filter and replace with a new one. All rubber seals and O-ring should be lubricated before reinstalling filter housings.

To change the RO membrane, disconnect the hose from the top of the filter housing. Remove stainless steel bracket by undoing the two 14 mm bolts. Pull housing cap off, cap has two slots to insert a flat object to help remove it from housing. Twist and lift up on the membrane to release from the bottom cap.

When installing the new filters you will need to lubricate all O-rings on the housing cap to ensure a tight seal. The white nipples on each end of the membrane will also need to be lubricated to seat into the O-rings in the top and bottom housing cap. It is recommended to use petroleum lubricant or any silicone safe lubricant. Put the new membrane into the housing the same way the old one was installed. There is a black O-ring on the membrane. This O-ring should go on the top end of the housing. Be sure to run water through the system and purge all air out before you connect any booster or pump to the system.



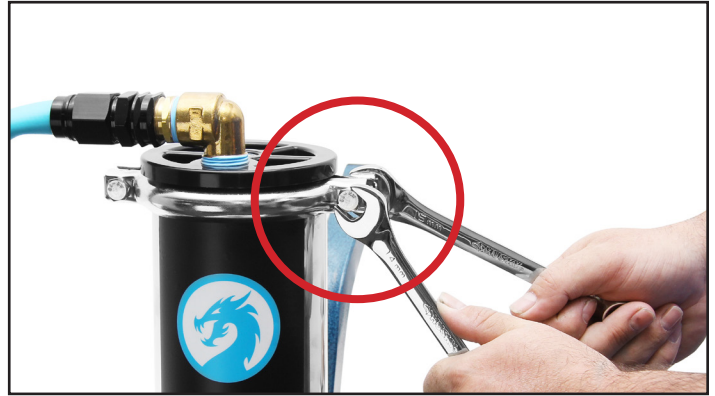
***\*RO membranes should not be allowed to dry or collect stagnant water in the bottom of the membrane. This will diminish performance and potentially fail. To prevent this, RO's should be run on a regular basis, 2 weeks after first use, even during off season.***

# Blue Dragon® Pro 1 Serviceable Housing

## Hub Removal Instructions

### Step 1:

Remove stainless steel bracket (14mm bolts).



### Step 2:

Insert flat objects (flat head screwdriver) into side slots of housing cap.



### Step 3:

Remove cap.



***Any alterations to your system will void its warranty.***

## RO Preserve (SKU H435)

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### Protection & Storage Solution For RO Membranes

Use RO Preserve to prevent biologic fouling as well as mold from forming inside the RO membrane during off season or out of service for 5 week or more.



### Blue Dragon® Pro 1 RO/DI Long Term Storage Instructions

#### System Preparation

1. Remove the carbon filter and drain all water. Reinstall empty filter housing. *for Propylene Glycol (RV antifreeze) for freeze protection.*
2. Remove DI filter and drain all water. Reinstall empty filter housing. Do not let filter dry out completely, filter can then be wrapped in plastic to prevent drying out and stored in a location that will not freeze.
3. Make sure waste hose is connected from the DI outlet to the water inlet.
4. Disconnect hose from the top cap of RO housing and remove cap.  
*\* See page 6*
5. Open by-pass valve and let as much water drain out as possible from housing and RO membrane. Close valve after draining water.
6. Pour one packet of RO Preserve into 2 gallon of pure water or distilled water. Make sure all the powder dissolves. *\*Substitute water*
7. Slowly pour the entire solution into the RO housing and filling it to the top.  
*\*Make sure you also fill the center of the membrane.*
8. Reinstall the top housing cap and reconnect the hose.
9. Blue Dragon® Pro 1 is ready to be stored.



## System Restart

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### System Restart Procedure After RO Preserve

1. Disconnect waste hose from water inlet and DI outlet, install waste hose to by-pass valve.  
*\*RO Preserve solution will start coming out.*
2. Fully drain system.
3. Install new carbon filter.
4. Connect a garden hose to the water inlet and open by-pass valve.
5. Allow the system to flush for a minimum of 10 minutes to flush out solution.
6. Close by-pass valve to the working position and run the system for an additional 5 minutes. Check your TDS to make sure your system is working properly.
7. Shutdown system.
8. Install DI filter cartridge into housing.
9. System is now ready to go.



## Using Your TDS Tester

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This is a simple but reliable tester that measures the Total Dissolved Solids (TDS) in water. It gives a reading in parts per million (ppm) of all the dissolved solids, good or bad. Dissolved solids in water are mainly its mineral content. If your tap water, for example, has a TDS reading of 250 parts per million, that means that the total content of the minerals dissolved in the water make up 250 parts per million of the total volume.

For practical purposes, TDS measurement is a very effective way to test your reverse osmosis unit's performance.

### To Operate:

1. Remove the cover from the bottom of the tester, then turn on the unit by pressing the On/Off button. The display should read 0.
2. Insert the tip of the tester (the end where the cover was) into the water to be tested. A half inch or so deep is plenty. You'll ruin the meter if you submerge it too deeply.
3. Read the numbers on the display. The number you see is the TDS (Total Dissolved Solids) of the water expressed in PPM (parts per million).
4. The Hold button are features you probably won't need. Hold locks the number on the display so it won't go away.
5. When you're finished, turn the tester off.



**TDS Meter** | Product SKU Z619

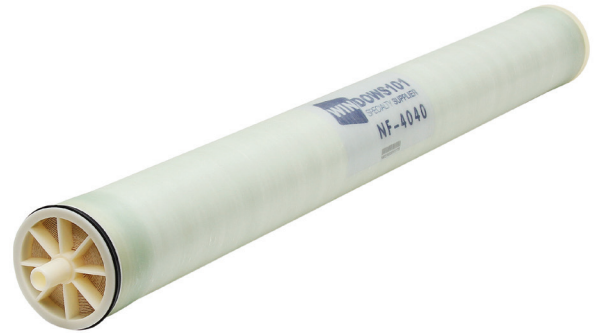
## Testing Your RO Membrane

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Measure the TDS of your tap water, then measure the product water for comparison. The RO water should be about 1/10 or less the reading of the tap water. In other words, if the tap water reads 250, the reverse osmosis water should read around 25 or less.

What you are measuring is the performance of the reverse osmosis membrane. As long as you get a respectable TDS reading, the membrane does not need to be replaced.

Typically, reverse osmosis membranes last two years or longer.



**RO Nano Membrane** | Product SKU Z606

**Important:** If you are testing a new unit, always wait until it has run for a few days to ensure a reliable reading. It takes quite some time for the newness to wear off the system.

If you are servicing the unit, take your test before changing the carbon filters. New carbon filters will corrupt the reading considerably and read too high. The meter can read the manufacturing residue from the carbon filters.

# Replacement Parts

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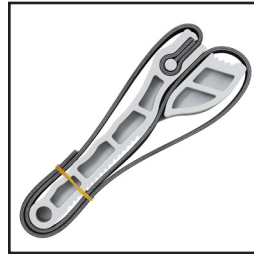
**RO Nano Membrane - 40in**  
Product SKU: Z606



**Female Quick Connect Female Hose End Connector**  
Product SKU: Z861



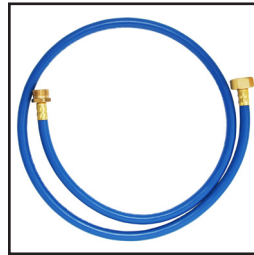
**2.5 x 10in Carbon Filter**  
Product SKU: Z608



**Universal Housing Wrench**  
Product SKU: H436



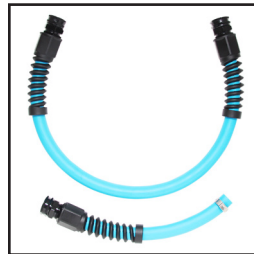
**Empty Refillable Filter Cartridge**  
Product SKU: Z612



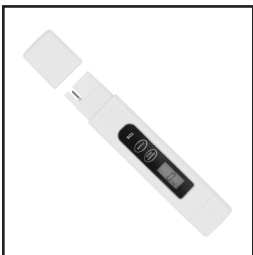
**Waste Hose**  
Product SKU: H433



**RO Cart Refill Kit**  
Product SKU: H447



**RO Cart Hose**  
Product SKU: H449



**TDS Meter**  
Product SKU: Z619



**RO Preserve**  
Product SKU: H435



**Garden Hose Quick Connect**  
Product SKU: H432

# Warranty Policy

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## 2 Year Limited Warranty

All sales of Blue Dragon® Pro 1 after January 1, 2022, are covered by this warranty

## Full One Year Warranty ( U.S continental 48 states only)

For one year from original ship date, Windows 101 LLC warrants the Blue Dragon® Pro 1 against defects in material and workmanship under normal use and service to the original purchaser. Wear items exempt from warranty include filters and membranes. Parts replaced or repaired are warranted for the remainder of the original warranty period.

## Limited 2 Year Warranty

For the second year from the original ship date, Windows 101 LLC warrants the Blue Dragon® Pro 1 against defects in material under normal use and service to the original purchaser. Wear items exempt from the limited warranty include filters, membranes, hoses and plastic housings.

## Limited Warranty ( Alaska, Hawaii, Canada, Puerto Rico and International)

Time periods listed above. Consumer will be responsible for costs of transportation and delivery of all replacement parts from Windows 101 LLC to consumer.

This warranty shall not apply to failures caused by misuse or abuse, improper maintenance as stated in the operation manuals, use of unauthorized repair parts.

Windows 101 LLC disclaims and denies any liability for any direct, indirect, special incidental or consequential damage which may be suffered as a result of sale, delivery, servicing, use, loss of any product, downtime, labor, freight, or other charges not expressly included herein.

## Blue Dragon® Pro 1

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SKU H400

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