



SG1&2

Pure Water System

Effective May, 2024

Pure Water Window Cleaning System Operation and Maintenance Manual

Overview

Congratulations on your purchase.

Thank you for purchasing the SG Pure Water System! With proper care, this unit will provide you with years of trouble free service. This system was designed with professional window cleaners in mind. The SG will help you clean faster, safer, and better than ever before, leaving spot free results that you and your customers will love!

The following is provided to help you understand how your system purifies water. The SG is a multi-stage water purification unit using sediment, carbon, reverse osmosis, and deionization to remove impurities from water before delivery to surfaces for cleaning. *General lifespan of the filters will vary depending on feed water TDS (Total Dissolved Solids).* Based on an average TDS of 100 ppm (parts per million) in your water, approximately 20,000 gallons of water can be passed through the Carbon/Sediment and DI filters before replacement filters are needed. Lower TDS levels in the source water will allow for a longer lifespan, while higher TDS source levels will lead to a shorter lifespan. It is recommended that the Carbon/Sediment and DI filters be replaced at the same time. The RO membrane is rated to process 100,000 gallons under ideal conditions. Failure to properly maintain the RO membrane will reduce the life of the filter.



In The Box

Parts Check

- SG System
- Handheld TDS Meter
- Shutoff Valve
- Pressure Gauge (SG2 only)

1. Unpacking/Inspecting The System

Your system is packaged to stay undamaged in transit. Please inspect all components to ensure no damage has occurred prior to continuing. Carefully remove the packaging material from around the system and discard. Your SG comes with all filters installed. Inspect your SG unit for any shipping damage. If damage has occurred, notify abc Window Cleaning Supply as soon as possible to begin a damage claim. Check all fittings to ensure that they are connected tightly, as they may loosen during shipping.

2. General Safety

DANGER

The motor is non-submersible. Keep the motor dry at all times. Protect the motor from wet weather.

DANGER

Do not allow any part of the cord or receptacle ends to sit in water or in damp conditions.

DANGER

All wiring must be performed by a qualified electrician.

DANGER

The motor must be installed in compliance with all local national codes.

DANGER

Risk of electrical shock! This motor is supplied with a ground conductor and grounding attachment plug. Never remove the grounding prong on the power cord. Removal of grounding prong will make the pump unsafe to operate and increases the risk of fatal electric shock.

DANGER

This motor is supplied with a GFCI attachment. Do not operate this motor without GFCI protection. Do not operate the motor with a damaged power cord.

DANGER

Only pump clear, Non-salt water.

DANGER

Never run the pump dry.

3. Initial Setup

SG1

Follow these steps for starting up the SG1. If you have an SG2 (it will have a pump and motor attached), skip to the next section.



You can also watch the quickstart video at:
www.window-cleaning-supply.com/SG1QS

Ver el vídeo de inicio rápido:
www.window-cleaning-supply.com/SG1QSSpanish



1. Attach the male end of the 24" connection hose from the top of the Carbon/Sediment filter to the top of the RO membrane canister. Screw on tight enough to engage the rubber gasket. **Do not overtighten**, or you could damage your brass fittings. You want to tighten the fitting to the point where the female side will no longer swivel.
2. Unscrew the male garden hose fitting on the black bypass tube from the bottom of the Carbon/Sediment filter. These two fittings are connected to seal the system while in transit but will not be connected during use.
3. Fully open the valve on the bypass tube, positioning the red handle in line with the black tubing.
4. Attach shut-off valve to the DI filter.
5. Attach pole tubing to quick connect shut-off and turn to open position.
6. Attach feed hose to Carbon/Sediment inlet on system and to source water. Refer to next section to make sure air is fully purged from source hose.
7. Turn on source water.
8. Lay the system on its back and elevate the outlet side of the unit so that the bypass is facing upward until air has been purged from the RO housing through the bypass line. Failure to bleed the air out of the system can result in lower production and possible damage to the filter housings. Trapped air may also result in the plastic overheating and pressure rating of the RO housing dropping. Setting your system up out of direct sunlight on hot days will also help protect the plastic RO housing from heat damage.
9. Once the air has been pushed out of the filters, close the bypass valve partially to begin producing pure water.

DO NOT CLOSE OFF FLOW THROUGH THE BYPASS LINE WHILE USING THE SYSTEM (some bypass water should always be flowing out). See Bypass Valve Operation section below for more information.

10. Start cleaning windows.

SG2



You can also watch the quickstart video at:
www.window-cleaning-supply.com/SG2QS

Ver el vídeo de inicio rápido:
www.window-cleaning-supply.com/S21QSSpanish

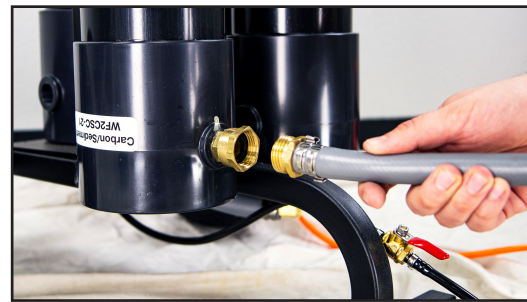


1. Attach the pressure gauge labeled PUMP to the male garden hose fitting on the pump (it will also have an arrow indicating that this is the outlet). Tighten fittings enough to engage the sealing gaskets. **Do not overtighten**, or you could damage the fittings or the housings they attach to.
2. Connect the 16" hose from this pressure gauge to the RO membrane inlet on the top of the housing.
3. Unscrew the male garden hose fitting on the black bypass tube from the bottom of the Carbon/Sediment filter. These two fittings are connected to seal the system while in transit but will not be connected during use.
4. Fully open the valve on the bypass tube, positioning the red handle in line with the black tubing.
5. Attach garden house to the DI filter (sold separately).
6. Attach shut-off valve to the other end of the hose you are using.
7. Attach pole tubing to quick connect shut-off and turn to open position.
8. Attach feed hose to carbon inlet on system and to source water. Refer to next section to make sure air is fully purged from source hose.
9. Turn on source water.
10. Lay the system on its back and elevate the outlet side of the unit so that the bypass is facing upward until air has been purged from the RO housing through the bypass line. Failure to bleed the air out of the system can result in lower production and possible damage to the filter housings. Trapped air may also

result in the plastic overheating and pressure rating of the RO housing dropping. Setting your system up out of direct sunlight on hot days will also help protect the plastic RO housing from heat damage.

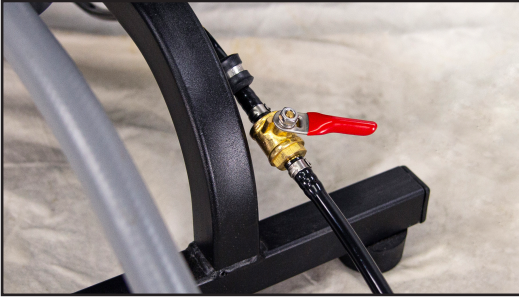
11. Once the air has been pushed out of the filters, close the bypass valve partially to begin producing pure water. **DO NOT CLOSE OFF FLOW THROUGH THE BYPASS LINE WHILE USING THE SYSTEM** (some bypass water should always be flowing out). See Bypass Valve Operation section below for more information. **Do not exceed 180 PSI on your filters.**
12. If using the pump, connect GFCI plug to power source and turn on. **Do not run the pump dry or before the air has been removed from the filters. Do not shut off bypass or pure water flow while the pump is running.** This may damage your system.
13. Start cleaning windows.

4. Hooking Up To Water Source And Purging Air



Locate an external water source. Attach one end of the feed hose (sold separately, part number WF612010 or hose of your choice) to the water source. Open the faucet at the building and make sure all air is out of your source hose. Turn off water and attach to inlet of Carbon/Sediment filter. A 1/2" garden hose is preferred. Attach the other end of the feed hose to the female connection on the Carbon/Sediment filter. Open bypass valve fully and turn on source water. Elevate the outlet side of the unit so bypass is facing upward until air has been purged from the RO housing through the bypass line. Once the air in the filters has left the bypass line, adjust valve to desired flow rate. Open the shut-off valve between the hose and the pole to allow water to flow through the pole and wash windows. **Do not drink pure water made from your system.** If using a pump, wait for water to flow from brush before turning the pump on. **Do not exceed 180 PSI.**

5. Bypass Valve Operation



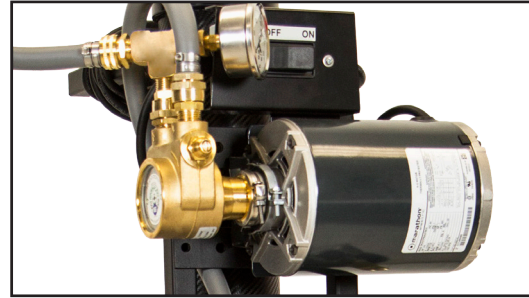
The system comes with a bypass tube and valve that control the amount of water leaving the RO membrane. This is the black tubing with a valve located on the bottom of your system. The RO membrane uses the bypass flow to remove concentrated dissolved solids from the filter. **There should always be water flowing out of the bypass tube.** Inadequate bypass flow will result in fouling and possibly damage the RO membrane.

The water coming out of the bypass tube may initially appear milky. This milky appearance is actually small air bubbles being pushed out of the filter housing through the bypass line.

The bypass valve is also the primary way you can control the pressure of your system. Opening the bypass valve more will reduce the amount of pressure that is used to produce pure water resulting in lower flow rates at the brush. Slightly closing the bypass valve will increase the amount of pressure which will lead to higher flow rates at the brush. Slightly closing your valve so that the flow of the bypass is roughly equal to the flow of pure water exiting the system is a good place to start. This will restrict flow for elevated system pressure, but also allows waste water to exit your membranes. When using a pump, open the bypass valve fully to start then reduce flow for optimal pressure. **Do not exceed 180 PSI on your filters.**

Flushing water through the RO membrane after use will remove excess minerals from the membrane. **It is recommended that you run your system with the bypass valve fully open for 3-5 minutes each time you finish using your system** to help clean out your RO membrane and extend its life. See Shutdown section of this manual for more details.

6. SG2 Pump Operation



Your SG2 system comes with a direct drive rotary vane pump. This pump has graphite vanes which push the water through your system. **Do not run the pump dry.** Running the pump without water could result in damage to these vanes and a loss of pump function.

Do not shut-off your bypass valve or pure water outlet while the pump is running. This can damage both the filters and the pump.

The best connection to an electrical outlet is to plug the GFCI plug directly into the wall outlet. In some situations this is not feasible and extension cords can be employed. Ensure that any power cords are free from damage and heavy enough to power the unit.

We recommend using cords with 10 gauge (or larger) wire for spans up to 100 feet and 8 gauge (or larger) wire for spans up to 200 feet for this unit. Smaller gauge extension cords may be able to handle the amperage requirements, but will allow significant voltage loss over distance. **Running the motor and pump with a low voltage supply, caused by undersized extension cords, will cause the motor to overheat and possibly shut down.** This will damage the motor over time and can cause it to stop working completely.

7. Operating The SG2 Without Power

In some instances, operators will opt to use this system without the pump. When tap pressures are adequate (50 or more psi), you can bypass the pump using the 24" hose to connect the Carbon/Sediment filter to the RO membrane. This method ensures maximum flow when not using the pump. The SG2 system will also produce water without bypassing the pump. Follow the steps below to ensure water is flowing through the pump should you choose not to bypass it.

If you experience little or no flow coming out of the bypass tube attached to the RO with your source water turned on, the pump may be restricting flow. The pump is located before the RO membrane, so no bypass flow usually indicates that the pump is restricting flow. Double check that your source water is reaching the system – **running your pump without supply water will damage the unit.** With the source water turned on, quickly turn the pump on then off. Rotating the pump a little bit moves the inner components so that water will flow through the pump. When using the system without power for extended periods of time, follow the steps above to bypass the pump for best production rate.

8. TDS (Total Dissolved Solids) Meter



Total Dissolved Solids are the minerals and salts within source water that lead to spotting on glass as the water evaporates. Your TDS meter measures the amount of dissolved solids using the conductivity of the water. The meter can test water before and after individual filters or the entire system to determine how they are performing. TDS levels are measured in parts per million (ppm).

Push the “On” button on the handheld TDS meter to get a TDS reading of the water sample. A TDS reading of 0 – 10 is acceptable for cleaning most windows, though specific conditions and results may vary.

Remove the cap from the TDS meter and fill it with the sample you wish to test. When measuring source water before pure water TDS levels, it is important to rinse out any source water with pure water to ensure accurate readings. Even a single drop of source water will cause the pure water TDS reading to appear higher than it actually is. Gather multiple readings, rinsing each time, to ensure accurate readings.

Your TDS meter also has a thermometer that reads temperature. This can allow you to monitor the temperature of your feed water. Running your system at feed water temperatures of less than 10 °C (50 °F) will result in low flow exiting the system. RO membranes require more pressure to create the same amount of

clean water as the temperature of the water gets colder. A pump can help to compensate for low source water temperatures. Do not let the system or any filter freeze when operating in lower temperatures.

9. Using A WaterFed® Pole To Clean Glass



Once your SG system is hooked up, and you have a WaterFed® pole connected to the hose, you’re ready to clean glass.

Always begin by cleaning the top row or highest windows first, including scrubbing the frames. Work the WaterFed® pole up one side of the frames, across the top, and back down the other side. Scrub the glass in an up and down motion, moving the pole the entire length of the glass with each stroke if possible. Return the pole to the top of the window, and with a side to side motion, allow rinse water to flow completely down the surface of the glass.

Frame rinsing may not be required. If the height of the glass and the weight of the pole allow for it, hold the brush slightly off of the surface of the glass to rinse. If this is not possible, move the pole side to side slowly with the brush on the glass at the top, and let the water flow down the glass to rinse.

Once you have completed the top row or highest glass on one side of the building, repeat these steps for each tier or level of glass, working your way down. A good initial scrubbing on the glass followed by a complete rinse will ensure that the glass dries completely spot-free.

Pure water is a great natural solvent for many soils. In some cases, such as heavy soils, a pre-soak or even a double scrub and rinse may be needed to achieve optimal results. The agitation of the brush, coupled with the flow of water through the brush when scrubbing, should break down and suspend most soils, readying them for complete removal via the rinse step.



As with any new procedure, practicing the use of your WaterFed® pole is the best way to achieve optimal results. Learn more about basic techniques at: www.window-cleaning-supply.com/wash-and-learn

10. Soap Residue

Seeing spots when your TDS levels are below 10? A common issue encountered when transitioning buildings from traditional window cleaning methods to pure water cleaning is soap residue. After the initial cleaning with pure water, small white or gray spots and runs will be seen on the glass after drying. Most often this is soap and/or detergent residue actually left behind by previous traditional cleanings and brought out of the pores of the glass by the pure water cleaning process. The soap can take up to 30 minutes to dissolve if it has been baked on or pushed into seals and frames. Soaking the glass 15-20 minutes before performing a normal agitation and rinse cycle will remove soap spotting. Repeat agitation and rinse if the spots persist.

11. Shutdown

1. If using a pump, shut off the pump before turning off supply water.
2. Close the shut-off valve to the pole. Open bypass valve to fully open position and flush out the system for 3-5 minutes.
3. Turn supply water off.
4. Disconnect water line and tip system on end if draining is desired.

12. Maintenance

The Carbon/Sediment filter should be replaced every 6 months with frequent use and should not be kept in service for more than a year. **Failure to replace the Carbon/Sediment filter regularly can lead to chlorine reaching your RO membrane and result in damage to the membrane.** We often recommend that users should replace both their Carbon/Sediment and DI filters at the same time as this usually ensures that the carbon is kept fresh without having to track service dates.

An RO membrane has the potential to process 100,000 gallons of water when properly maintained. To test the health of your RO membrane, compare the TDS levels of the source water to the level of pure water leaving the RO membrane. For example, 100 TDS source water

with 10 TDS leaving the RO membrane indicates 90% rejection. When RO rejection rates drop below 80% it is generally time to replace the RO membrane canister. As stated above, bleeding the RO at the beginning of each use and flushing the RO at the end of each use are essential to achieving maximum RO lifespan. Trapped air can result in the plastic overheating and pressure rating of the RO housing dropping. Setting up your system out of direct sunlight on hot days will also help protect the plastic RO housing from heat damage.

The lifespan of your DI filter depends on the TDS of the water entering the filter. As your RO membrane nears end of life your DI filter will exhaust much faster. Periodically check the TDS of the purified water leaving the DI filter with the provided handheld meter. When the TDS levels reach unacceptable levels for your application (abc suggests 10ppm or less for window cleaning and 40ppm or less for cleaning opaque surfaces) the DI filter is completely exhausted and should be replaced. See troubleshooting section below for more information on high TDS levels coming from the system.

13. Filter Replacement



Learn how to tell which filters to change:
www.window-cleaning-supply.com/FilterTime



Learn how to tchanges your filters:
www.window-cleaning-supply.com/SGChange

Carbon/Sediment Filter

1. Unscrew brass fitting on top of the Carbon/Sediment filter (P/N WF2CSC-21).
2. Unscrew the bolt at the top of the Carbon/Sediment filter cartridge.
3. Remove the Carbon/Sediment filter by first pulling top of the filter away from the frame removing it from top bolt. Next, lift up to remove the filter from the clip at the bottom. Discard used filter.
4. Slide the female end of the new filter into the clip at the bottom of the frame so that the female inlet fitting is pointed forward. Swing the top so that the bolt is inserted in the hole on the cap of the filter labeled **SG1&2**.
5. Tighten the bolt to secure the filter (checking to make sure that the filter is seated in the bottom clip).
6. Attach your 24" connection hose to the new Carbon/Sediment filter. Fittings should be tight enough to avoid leaks, but overtightening could result in damage to the brass fittings.

DI Filter

1. Unscrew brass fitting from the bottom of the Deionization (DI) filter (P/N WF2CDI-21) and any hoses attached to the top of the filter cartridge.
2. Unscrew the bolt at the top of the DI filter cartridge.
3. Remove the DI filter by first pulling the top of the filter away from the frame pulling it off of the bolt at the top. Next, lift up to remove the filter from the clip at the bottom. Discard used filter.
4. Slide the bottom of the new filter into the clip at the bottom of the frame and swing the top so that the bolt is inserted in the hole on the top cap of the filter.
5. Tighten the bolt to secure the filter (checking to make sure that the filter is seated in the bottom clip).
6. Attach your brass fitting to the bottom DI filter. Fittings should be tight enough to avoid leaks, but overtightening could result in damage to the brass fittings.

RO Membrane

1. Remove the black bypass hose from the RO membrane by pushing down on the retaining ring of the port while pulling on the tubing in the opposite direction.
2. Unscrew the pure water outlet on the bottom of the RO membrane canister and the male end of the 24" connection hose from the top of the RO membrane (P/N WF3CRO-40).
3. Using a 7/16 socket, unscrew the single lag bolt holding both sets of saddle clamp halves together to release the membrane.

4. Remove the RO membrane. Discard used membrane.
5. Put new RO membrane into the saddle clamps so that the bypass and outlet fittings are down.
6. Reattach the lag bolts holding the filter in place. **Do not overtighten** or you could damage both the clamps and the filter canister. Normally you want to leave $\frac{3}{8}$ " gap between the top and bottom parts of each saddle clamp on the screw side and you want the lag bolt to be tight enough that the filter will not spin in the clamps.
7. Reattach the pure water outlet to the bottom center of the filter. Attach the male end of the 24" connection hose to the top of the RO membrane canister. Screw both fittings on tightly enough to engage the rubber gaskets. Fittings should be tight enough to avoid leaks, but overtightening could result in damage to the brass fittings or the plastic housing.
8. Attach the black bypass line to the push-to-fit fitting.

14. Storage

Storage - Short Term (2-4 Weeks)

Do not allow the filters or system to freeze. Failure to do so could result in damage to your filters and SG system. **Do not allow DI or RO membranes to dry out.** Dry DI resin will lose its charge and therefore become unable to remove dissolved solids from the water. Dry RO membranes will develop cracks which allow more dissolved solids to pass through the membrane. This will deplete the downstream DI filters at a faster rate. abc recommends that you run water through your Carbon/Sediment filter and RO membrane once every 2 weeks or so, not only to help keep your filters moist but to also wash out any microorganisms that might try to grow in your filters. RO and DI filters need to stay moist but do not need to be full of water. Always run your source water through the Carbon/Sediment filter before the RO membrane when flushing the filter.

Storage - Long Term (Winterizing)

abc strongly recommends flushing out the RO membrane filter once every 2-4 weeks during storage periods to ensure the maximum lifespan of the filters. When flushing the RO membrane, the source water should always be passing through the Carbon/Sediment filter before the RO membrane. This will prevent damage to the membranes from chlorine and chloramine. Periodic flushing will ensure that the RO membrane does not dry out and will reduce the chance that biological growth will foul the filter while in storage.

If periodic flushing is not feasible, we recommend that users wrap filters tightly in plastic wrap or plastic bags and then seal with tape. This will reduce the chance that

the filter dries out when in storage. **Do not allow RO or DI filters to dry out.** Dry DI resin will lose its charge and therefore become unable to remove dissolved solids from the water. Dry RO membranes will develop cracks which allow more dissolved solids to pass through the membrane. RO and DI filters need to stay moist but do not need to be full of water.

Store filters indoors over the winter. **Do not allow the filters or system to freeze.** Failure to do so could result in damage to your filters and SG system. After filters have been stored this way, they will need to be flushed thoroughly before use.

15. Upgrading From The SG1 to SG2

Part Number: TSSG-Upgrade

Contents of the Upgrade Kit:

- 1— Power Switch Assembly (SKU: TA-SG-PS)
- 1— SG Pump-motor Combo (SKU: WF7000-SGPM)
- 1— Pressure Gauge (SKU: TA-PG)
- 1— 16" Connection Hose
- 2— ¼-20 bolts (long)
- 2— ¼-20 bolts (short)
- 4— ¼-20 lock nuts
- 2— Washers

1. Remove the RO Membrane

Start by removing the RO membrane from the frame. With the unit standing upright, use a 7/16" wrench to loosen the two lag bolts holding the filter clamps together. Then remove the hose from the inlet on top, followed by the hose on the bottom and then the bypass hose. Note that water may drain from the RO membrane when you go to move it.

2. Attach the Pump-motor to the Frame

With the unit resting back on its handle, place the motor on the flat crossbars with the brass pump hanging off of the right side of the frame. The four holes in the motor yoke should line up with four of the holes in the frame starting with the holes in the DI side of the frame. Insert one of the shorter bolts and one of the longer bolts into both of the provided washers. Use the longer bolt to pass through the motor yoke, crossbar, and frame (with the washer under the hex head of the bolt). Next, insert one of the shorter bolts through the lower crossbar and yoke (with the washer under the hex head of the bolt). Do not tighten these down fully before attaching the power switch assembly as you will want to have a little bit of wiggle room for the next step.

3. Attach Power Switch Assembly to the Frame/Motor

Align the mounting holes of the power switch assembly with the top holes in the motor frame and crossbars above the long and short bolts we just affixed. Insert the long bolt on the left side of the mounting bracket and the remaining short bolt on the right side. It helps to insert the bolts onto the power switch assembly before setting it in place. The power switch bracket should be positioned on top of the grey powder coated motor yoke. Fully tighten all 4 bolts attaching the motor and switch to the frame. Finally, plug the cord from the motor into the power switch assembly.

4. Reattach the RO Membrane to the Frame

Position the RO membrane with the bypass outlet at the bottom of the frame. The lip of the RO membrane housing will rest on the axle when the unit stands up. Replace the outer part of the filter clamp and reinsert the bolts holding them together. There should still be a ¼" gap under the bolt between the clamp halves when fully tightened. If the bolt is overtightened it will damage the clamp. Next, reattach the fitting to the bottom (outlet) of the RO followed by the bypass line using the push-to-fit outlet.

5. Plumb Hoses between the Carbon/Sediment and Pump

Attach the 24" Grey hose from the top of the Carbon/Sediment filter to the female swivel inlet on the pump.

6. Follow Steps Given in SG2 Quickstart Guide and Manual

Your SG1 system should now be in the same configuration as a new SG2. By following the steps in the quickstart guide and the manual, you will attach the pressure gauges and finish plumbing the system. **Make sure to familiarize yourself with the sections of the manual dealing with Initial Setup, Inline Pressure Gauges, and Motor Operation, as failure to do so will result in damage to your system and very expensive replacement parts.**

16. Troubleshooting

1. Low Pure Water Flow out of the Brush:

1. Low tap pressure is one of the most common causes of low flow of pure water. Source water pressure is the primary driver of system performance. Even sources that appear to have plenty of flow out of the tap may not have enough PSI to push water through the RO membrane. Ensure that the tap pressure is sufficient using a pressure gauge (TA-PG sold separately). Trying a different source may lead to

better performance. Also, check all hoses (incoming and outflowing) for kinks or blockages, especially hose reels that are wound too tight. Trying a larger diameter hose (½") or a shorter hose length between the system and the tap can also improve flow. If using the SG1, adding a pump, such as the abc boost pump (WF1000-BP) or the SG1->2 upgrade kit (TSSG-Upgrade), can help compensate for low source pressure. **Do not exceed 180 PSI** when using a pump.

2. Mineral fouling of the RO membrane will lead to reduced pure water production from your system. Processing water through the RO membrane without enough (or any) bypass flow will lead to increasing mineral concentration within the RO housing. In minor cases, this will result in a temporary drop in production from the RO membrane. Flushing the excess minerals from the housing will return the filter to normal production rates if no fouling has occurred. In extreme cases, the mineral buildup will permanently reduce the flow rate of the filter. These cases can only be fixed by replacing the filter.

3. Biologic fouling is another potential cause of reduced pure water production from the RO membrane. Algae, bacteria, and fungi can land and grow on the surface of the RO membranes. These organisms eventually block off pores in the membrane leading to reduced production levels. Letting filters sit for long periods of time without running any water through them increases the chances of biological fouling. After long term storage, running a series of long flushes will often return the RO membrane to normal production levels. Fully open the bypass hose and then shut off your system's pure water outlet at the DI filter. Run it like this for 10 minutes and then open your pure water outlet and restrict your bypass to its normal running setting. We recommend removing the DI filter after the extended flush. Test the water coming out of the RO (not the bypass water). If levels are as expected, put the DI filter back on and use the system like normal. Doing this flushing process 2 or 3 times may be required to return to normal production levels.

4. Expect decreased production rates when running your RO membrane with colder source water. The ideal temperature for source water is 77°F. You can expect around half the flow for water at 50 degrees that you would get at 75 degrees, even if both sources are at the same PSI. Use your TDS meter to measure the temperature of your source water to determine if this is the cause of lowered flow rates.

5. Leaks in the system and the pole tubing can release pressure and take flow away from the jets in your brush. A couple of small leaks in the pure water lines can cut pressure to the jets in half. Read the "leaks" section below for more information on eliminating leaks in the system.

2. High TDS coming from the system:

1. Retest your water sample. When you get a higher than expected reading on your handheld TDS meter, use the water you are testing to wash out both the measuring lid and the measuring prongs of the meter itself then retest your water sample. **Do not get the body of the meter wet, it is not waterproof.** Minerals can stay in the cap from other measurements and can make the sample appear to have a higher TDS than it actually does. Taking multiple samples ensures maximum accuracy.

2. Elevated TDS levels coming from the RO membrane can indicate that both the RO and DI need to be replaced. First, disconnect the DI filter from the end of the RO membrane. Use your handheld TDS meter to measure the TDS of the water coming out of the RO and compare that to the TDS levels of the source water. Your RO should have a rejection rate of over 80%. If the rejection rates are below normal, follow the step below to ensure that the RO membrane needs to be replaced.

3. High TDS coming out of the system usually indicates that the DI filter is spent. Testing before and after the DI filter will verify that there is not another issue. If the TDS levels before and after the DI filter are the same, the filter is completely depleted. Replace the DI filter (P/N WF2CDI-21) once depleted. If water coming from the RO membrane has high TDS levels, check the RO performance as well.

4. If your RO rejection is lower than expected, you can try running a 10 minute flush. Increasing flow through the filter housing will help the flushing process. Disconnect the bypass tube from the bottom of the filter and then shut off your system's pure water outlet at the DI filter. Water should be flowing out of the now open push-to-fit connector at the bottom of the RO membrane. Run it like this for 10 minutes. Turn off water. Open your pure water outlet, reconnect bypass tube, and restrict your bypass valve to its normal running setting. Turn water on, then check your RO TDS to see if it is dropping to more acceptable levels. Repeat the flush 2-3 times if necessary to try and reduce the RO TDS.

5. If the TDS levels coming from the RO membrane do not drop, your RO is spent. You can continue to use the spent RO, however you will use up your DI filter faster than normal. Replace the spent RO membrane (WF3CRO-40) as soon as possible.

3. Leaks:

Leak between brass fitting and plastic housing

1. Unscrew leaky brass fitting.
2. Check brass fittings for damage or deformation. If necessary replace brass fitting. Replacement parts can be ordered from abc or bought from a local store. The plastic hole size is ½" national pipe thread (NPT) and the brass fitting connection is a standard ¾" garden hose thread (GHT).
3. Fittings should be attached with an adhesive to prevent leaks. We recommend Liquid Nails Perfect Glue from Home Depot.
4. If leak persists, replace filter.

Leak between brass garden hose fittings

1. With the source water off, check that fitting is properly tightened. Tighten until you feel the gasket engage. **Do not over tighten.**
2. Unscrew the leaky connection. Check gasket in the female fitting for damage or deformation. Replace gasket if necessary.
3. Check brass fittings for damage or deformation.
4. If necessary, replace brass fittings. Replacement parts can be ordered from abc or bought from a local store. The plastic hole size is ½" national pipe thread (NPT) and the brass fitting connection are a standard ¾" garden hose thread (GHT). Fittings should be attached to the housing with an adhesive to prevent leaks. We recommend Liquid Nails Perfect Glue from Home Depot.

Leak on push-to-fit connection

1. Make sure that tube is properly inserted into fitting. Inserting the tube part way into the fitting will cause leaks.
2. Bending the tube as it enters the push-to-fit connection can also cause leaks. Reduce strain on the tube to prevent this.
3. Damage to the tube, such as scratches or cracking, will interfere with the sealing elements. Cut off any damaged tube and reinsert into the fitting.

4. Water coming out of bypass hose

1. Strong bypass flow is normal during system operation. This water is the discharge water and it contains a very high TDS. This water is non-potable but is not harmful to plants. **DO NOT DRINK DISCHARGE WATER.**
2. Milky white bypass flow is a common occurrence when starting up the system or using a new RO membrane. It is trapped air being pushed out of the filter housing and will stop once the air is gone.

Expressed Warranty

abc Window Cleaning Supply warrants new water purification systems against manufacturing defects under normal use to the original purchaser. abc Window Cleaning Supply warrants new equipment for one year from the original purchase date to be free from manufacture defect. Any parts sent out for warranty are warranted from the original purchase date of the machine.

The customer must first contact abc Window Cleaning Supply to notify them of the problem. abc Window Cleaning Supply may require the merchandise to be shipped back to them at the customer's expense to evaluate the warranty claim. It is the responsibility of the customer to package the product properly so that it arrives for evaluation undamaged. If the equipment is found to be a manufacture defect abc Window Cleaning Supply will reimburse shipping expense and parts will be sent out at no charge including standard ground shipping. Rush shipping will be the sole responsibility of the customer.

Wear items exempt from warranty include filters and membranes

This warranty does not apply to misuse or abuse causing failure of the system. The customer must contact abc Window Cleaning Supply before attempting any repairs or modification to the system. Failure to do so will void your warranty.

abc Window Cleaning Supply holds no responsibility for loss of labor, time or any costs associated with using the equipment. abc Window Cleaning Supply holds the sole discretion of whether a claim falls under warranty.

Returns

If for any reason the customer wishes to return the system they may do so at any time within 30 days of the original purchase date.

The customer must first contact abc Window Cleaning Supply to notify them of their intent to return the merchandise.

The customer is responsible for the return of all merchandise and insuring that the product is properly packaged to arrive in a new resellable condition. The customer is responsible for all costs associated with returning damaged merchandise to a new resellable condition.

The customer is also responsible for a 20% restocking fee, in addition to any costs associated with shipping and repairing the merchandise to a new resellable condition. abc Window Cleaning Supply will issue a refund to the credit card on file once all repairs are completed.

Replacement Parts



RO Membrane
WF3CRO-40



DI Filter
WF2CDI-21



Carbon/Sediment Filter
WF2CSC-21



Rubber Feet
WF7000-RF



Wheel
WF65000-WH



Pressure Gauge
TA-PG



Shut-off Valve
WF601311



TDS Meter
HMTDS-3



Pump
TA-NXT-PUMP5



3/4 HP Motor
WF-7000-SGM

Optional Upgrades



Outlet Splitter Kit
WF7000-OSK



10' Source Hose
WF612010



SG 1 > SG2 Upgrade Kit
TSSG-Upgrade

Replacement Hoses available upon request. 1-800-989-4003



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