

ROVER Pure Water System

Effective September, 2018

Pure Water Window Cleaning System Operation and Maintenance Manual



Overview

Congratulations on your purchase.

Thank you for purchasing the Rover 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 Rover will help you clean faster, safer, and better than ever before, leaving spot free results that you and your customers will love.

The following information will help you get your system set-up & running. Keep this manual for future reference.

In The Box

Parts Check

- TS2900 (Rover) System
- Shut Off Valve
- TDS Meter
- Allen Wrench
- T-wrench With Brass Attachment
- Molykote 111 Packet

1. Unpacking/Inspecting The System

Carefully remove the packaging material from around the system and discard. Your TS2900 comes with the DI filter installed and ready for use. Inspect your TS2900 for any shipping damage. If damage has occurred notify the shipping company that made delivery to begin a damage claim.

2. System Overview

The TS2900 is a single stage purification system using Deionization (DI) as the sole method of purifying the water. The DI cartridge removes dissolved solids from source water, resulting in pure water. General life span will vary depending on feed water TDS. Based on an average TDS of 100 in your water, approximately 450 gallons of DI water is produced before the resin cartridges require a replacement.

3. Initial Setup

You can also watch the quickstart video at: www.abcWindowSupply.com/RoverQuickStart



- 1. Attach quick connect shut off to the Rover system.
- 2. Attach pole to quick connect shut off and turn to open position.
- 3. Attach source hose to water source and the other end inlet of the Rover system.
- 4. Turn on water.
- 5. Start cleaning windows.

4. Achieving Maximum Filter Life

DI only systems produce a large output of water. High flow rates (normally 2 gal/min or more) can cause the water to pass through the filter before the resin has a chance to pull the dissolved contaminants from the water. This can lead to higher TDS and make resin look exhausted when it still has life left. Depending on the height and output requirements it is recommended that you close the shut off valve to the minimum required output to effectively clean windows. The less water that you allow to pass through the system the longer filter life you can expect.

The flow rate of water passing through the DI filter will ultimately determine the amount of time a filter will last. Reducing the flow rate by 50% will roughly double the hours of cleaning that the filter will last. It is important to note that changing flow rate will not significantly change the gallons of water that the filter will produce, it only increases the amount of time that the filter will last. Similarly, using the shutoff valve on the pole tubing to turn off the flow of water between floors and windows can increase the number of hours of cleaning from a DI filter.

5. Hooking Up To Water Source



Locate an external water source. Attach one end of the feed hose (sold separately) 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 the filter. A ³/₄" garden hose is preferred. Attach the other end of the feed hose to the female connection on the system. Open the shut-off valve between the hose and the pole to allow water to flow through the pole and wash glass. Do not drink pure water made from your system.

6. 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).

Remove the cap from the TDS meter and fill with the sample you wish to test. 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.

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.

Your TDS meter also has a thermometer which reads temperature. This can allow you to monitor the temperature of your feed water. Do not let the system or any filter freeze when operating in lower temperatures.

7. Using A WaterFed[®]Pole



Once your Rover system is hooked up, and you have a WaterFed®pole connected to the unit, you're ready to clean windows.

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 spotfree. 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 technique at www. abcWindowSupply.com/StartingWF

8. Soap Residue

Getting spotting 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 may be seen on the glass after drying. Most often this is soap and or detergent residue 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. This initial soak can be done with unfiltered water, to save resin life for the final rinse. Repeat agitation and use a longer more complete rinse if the spots persist.

9. Shutdown

- 1. Turn supply water off.
- 2. Unhook all hoses.
- Plugging the system with the plastic caps provided can help keep the DI filter moist between uses and can help extend filter life. DI resin must remain moist but doesn't need to be filled with water. Draining the filter by standing it on one end can make filter lighter for transport.

10. Maintenance

Your Rover system requires little maintenance to operate at peak performance

The lifespan of your DI filter depends on the TDS of the water entering the filter. Periodically check the TDS of the purified water leaving the DI filter with the provided hand held 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.

11. Filter Replacement

Learn how to change your filters by video: www.abcWindowSupply.com/RoverFilter

Learn when to change your filters with this guide: www.abcWindowSupply.com/FilterTime



- 1. Using the provided allen wrench, unscrew the two retaining screws from the female/inlet side.
- 2. Pull out the two crescent shaped retainers.
- 3. Using provided t-wrench attempt to remove the system end plug by pulling.

WARNING: DO NOT ATTEMPT STEP 4 WITHOUT ENSURING THAT ALL OF THE AIR HAS LEFT THE SYSTEM. TRAPPED AIR WILL CAUSE THE CAP TO SHOOT OUT VIOLENTLY AND CAN RESULT IN INJURY OR DAMAGE TO THE SYSTEM OR SURROUNDING PROPERTY.

- 4. If the system end plug is stuck you can use hydraulic pressure to push the system end plug out. Unthread the T-wrench and attach a water source to the cap. After ensuring that the shut off valve is set to the open position, turn on water. Lift the system outlet into the air and wait for all the air to exit the system and for water to flow evenly out of the shut off valve. Place the system back on the ground. Ensure the area around the inlet side is clear and shut the shut off valve on the system outlet. The inlet cap should slide easily out of the system. Turn off source water. DO NOT USE AIR PRESSURE TO ATTEMPT TO REMOVE THE SYSTEM END PLUG. DAMAGE OR INJURY WILL RESULT.
- 5. Using needle nose pliers (not included), pull out the filter insert.
- 6. Refill your filter insert following the instructions in the following section. If you don't want to deal with the mess of handling bulk resin, abc sells premade replacement inserts that will work with your rover system(SKU: WF2440-DI).
- 7. Slide the new or refilled insert into the open inlet side of the Rover system. Ensure the side of the insert with the rubber chevron/gasket ends up on the inlet side. Inserting the filter backwards or from the outlet side will allow water to bypass the insert around the outside and will lead to higher TDS water exiting the system.
- 8. If needed recoat the system end plug in molykote 111.
- 9. Using the T-Wrench, insert the system end plug back into the system housing until it passes the groove cut into the system housing.
- 10. Replace the crescent shaped retaining brackets into the groove so that the holes in the brackets line up with the threaded holes in the system end plug.
- 11. Screw in the two retaining screws into the threaded holes in the system end plug.

12. Refilling Your Filter Insert

If desired the filter insert can be reused by removing the white tape from the outlet end of the filter insert and removing carrier from the end of the white tube. Remove the exhausted resin and replace with new bulk resin. Ensure the resin that you buy is in the hydrogen cycle (like abc's bulk resin, SKU: DIRESIN). If you try to use resin made for water softeners, which is set to the sodium cycle, you will just get salt everywhere when you try to use the system. Tightly packing the resin will prevent channels from forming. If your insert isn't properly filled the water will cut a channel through your resin and will bypass the resin without coming into contact with it. This can lead to good resin appearing exhausted. Lightly tapping the filter insert as you fill it can help the resin be settle properly. You will also notice 3 felt circles in the original filter insert. These also help avoid channeling and can be added to the insert at the 1⁄4, 1⁄2 and 3⁄4 marks as you refill the insert. Once you have filled the insert with resin, replace the end carrier and secure it with PVC pipe wrap tape, available online and at most hardware stores.

Bulk resin should be stored in an air/water tight container. If DI resin dries out it will lose its charge will not be able purify water as effectively.

13. Storage

Do not allow the filters or system to freeze.

Plugging the inlet and outlet of the system with the provided caps can help the resin in the insert to remain moist and extend its life.

A replacement insert/new resin may be required after extended periods of storage.

14. Troubleshooting

Low Pure Water Flow Out Of The Brush

1. Ensure that the tap pressure is sufficient using a pressure gauge (P/N TA-PG). 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 more) or a shorter hose length between the system and the tap can also improve flow.

2. 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.

High TDS

1. High TDS Source water will exhaust resin at a quicker rate. If you are having to change your resin more often than you would like, consider buying a multistage system, like the abc Solo. RO membranes take 90% of the tds out of the water before it hits your DI resin. This will let your resin last 10 times as long. Understand that RO based systems restrict the flow of water exiting them by 50% or more. This may mean you will also require a pump to get close to the water flow and pressure that you are used to with your DI only system.

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

3. High TDS usually means that the resin is exhausted and must be replaced. Follow the steps set out in the Maintenance section to replace your filter.

4. High flow through the system can prematurely exhaust the resin. Not only will it raise the amount of water the resin has to process but it will also lower amount time that the resin is in contact with the water. By cutting the flow of the water, either at the source or by using the shut off valve after the system, you will ensure that you get the most out of your resin.

5. Improper packing of the filter insert can lead to channeling, which will allow high tds water to flow straight through the filter insert. If you just refilled your insert, got good numbers for a short time and then got higher numbers more quickly than expected, it might be worth it to reopen the insert and check that it is still full. If it isn't, top off the insert, compress the resin as much as possible and then put the insert back into the system. If channeling remains an issue, hard mounting the filter to run vertically can also make channeling less of a problem.

6. Putting the filter insert into the system backwards can allow the water to flatten the rubber chevron and flow around the outside of the insert. Check to ensure that the filter insert is being inserted the proper way. Also check the chevron for damage. Replace damaged chevron if necessary.

15. Leaks

Leak Between Brass Garden Hose Fitting And Plastic Housing

- 1. Unscrew leaky brass fitting.
- Check brass fittings for damage or deformation. 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).
- 3. Fittings should be attached with an adhesive to prevent leaks. We recommend Liquid Nails Perfect Glue from Home Depot.

Leak Between Brass Garden Hose Fittings

- 1. With the source water off, check that the 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. 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 with an adhesive to prevent leaks. We recommend Liquid Nails Perfect Glue from Home Depot.

Expressed Warranty

abc Window Cleaning Supply warrants new water purification systems against manufacturing defects under normal use to the original purchaser.

abc Window Cleaning 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 to notify them of the problem. abc may require the merchandise to be shipped back to them at the customer's expense to evaluate the warranty claim. If the equipment is found to be a manufacture defect abc Window Cleaning 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 before attempting any repairs or modification to the system. Failure to do so will void your warranty.

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

Returns

No returns are accepted on this unit. The consumable nature of this system does not allow for us to take returns.

Replacement Parts



DI Filter Insert WF2440-DI





Saddle Clamp TA-RO-200588 Replacement Feet WF7000-RF



Bulk DI Resin DIRESIN



Shut-off Valve WF601311



TDS Meter HMTDS-3



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