



TUCKER®
DESIGNED FOR THE PRO

Tucker® Rival Cart
3-Stage RO/DI Mobile Water
Purifier Manual

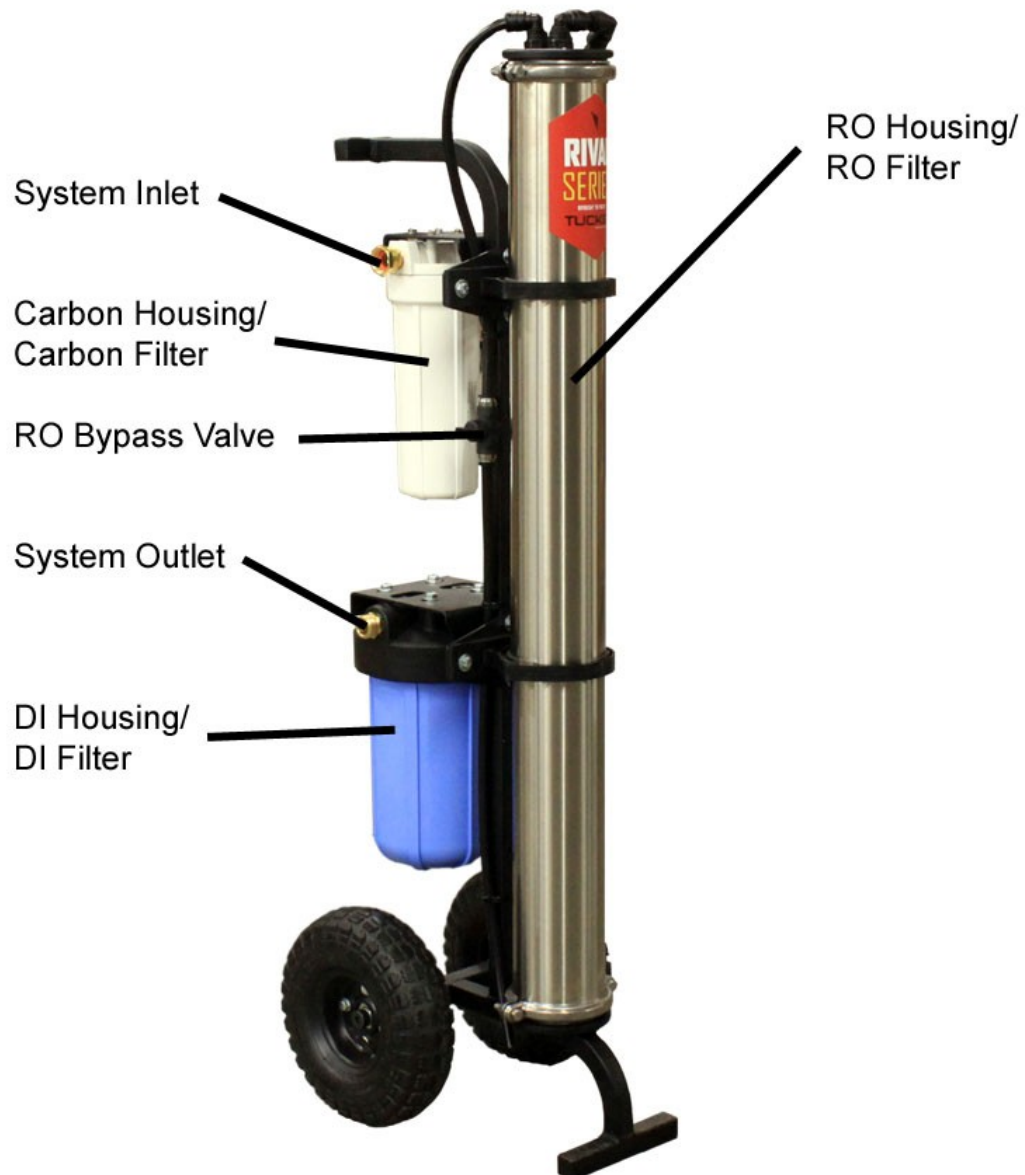
RHG Products Company

www.rhgproducts.com

303-663-1779

Rival Series Cart

System Features and Layout



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General Purpose and Use

The Tucker® Rival Cart is a mobile pure water window cleaning system to be used with a water-fed window cleaning pole. The system purifies water to a 100% pure deionized state.

The system will purify water without the aid of a booster pump. Boosting pressure to the system will increase water production rate as well as increase the efficiency of the RO membrane.

Purification

Tap water filtered through your Rival Cart system goes through 3-stages of purification.

1. **Carbon Pre-Filtration:** Carbon filters remove chlorine and water disinfection agents from your source water, protecting your RO membrane. Rival Carts are shipped with a combination sediment-carbon filter to prevent carbon fouling. Combo filters may be ordered from RHG directly. Should you choose to source a pre-filter locally, a carbon block filter must always be present in your carbon housing, or you risk premature failure of your RO membrane.
2. **Reverse Osmosis Purification:** RO Membranes reject solids from your pre-filtered water, creating a waste stream. Solids removed from the water flow out of your bypass valve at all times during filtration. A significantly more pure water stream is passed on to your DI filter, extending your DI media life.
3. **Deionization Purification:** Your RO permeate water is filtered through a DI Mixed Media Bed. New DI media produces 100% pure water. DI media is consumed in this process. The purified water exits the system to your cleaning equipment.

New Machine Setup Procedure

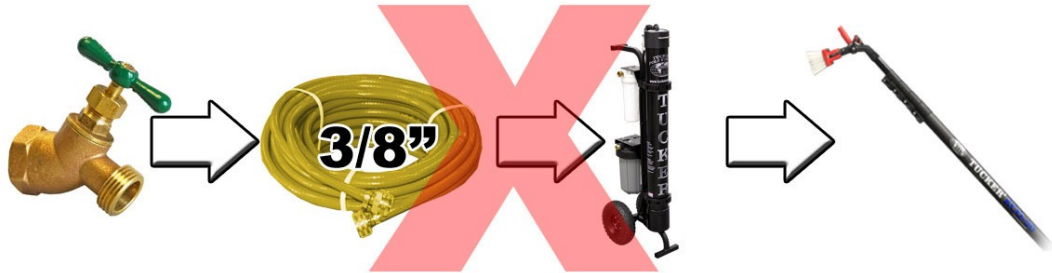
1. Unpack unit and inspect for any damage that may have occurred during shipping.
2. Be sure to inventory all items that were to be included with your order.
3. Any damage or missing components must be reported within 24 hours to the supplier of your system.
4. Your Tucker® Rival Cart is shipped complete in 1 box.
5. **Install your DI Filter. It has been bagged separately for protection.**

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For Rival Kit Owners:



**YOUR 3/8" YELLOW HOSE IS A PURE WATER HOSE.
USE A LARGER DIAMETER GARDEN
HOSE TO SUPPLY YOUR SYSTEM.**



Operation Instructions

1. Fully open bypass waste valve.
2. Attach a garden hose to the inlet of your system.
3. Turn tap water supply on.
4. On first use, allow system to flush for 15 minutes, then slowly close the bypass valve all the way. Although the valve is fully closed, water will still flow out of it. This is normal. Water will begin to flow to the system outlet under tap pressure. For daily use, flush the system for 5 minutes at the beginning of each job.
5. It will take a few minutes for all of the air to purge out of your system. Only turn on any pumps after air has been purged.
6. After the initial 'air purge' you will not need to purge air again unless you replace a filter.

The purifier terminates in a 3/4" Male Garden Hose thread. This is for connection to a hose or hose reel, or directly to a quick connect for a 5/16" pole hose adapter.

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Maintenance

It is important to check the TDS level of the water coming from your system occasionally. This can be done by filling a cup with the water from your reel and testing it with your handheld TDS meter.

Once the TDS levels rise above 10 parts per million you will begin to see spotting on windows and should consider changing your DI Filter.

Your Tucker® Rival is a water purification system and as such it needs to be maintained. Running water through the RO membrane every 2 weeks will help to keep the RO working at peak performance. Do not ever drain your system as it is important to keep the filters hydrated.

Filter Replacement Schedule & Procedure

Your carbon filter protects your system from damaging chlorine and water disinfection agents. It is recommended that you change your carbon every 5000 gallons. Failure to do so will void your warranty. Order RHG #20026. RHG #20026-CK filters Chloramine treated water. Rival Carts are supplied with RHG #20025/26 combination sediment/carbon filters to prevent premature carbon block fouling in high TDS areas.

Your DI filter has a limited lifespan based on the amount of dissolved solids it is removing from the water. DI filter cartridges need to be replaced as needed for your cleaning application. Glass can typically be cleaned spot free with water up to 10ppm TDS. Non-glass surfaces may be cleaned with water up to 40ppm TDS. Order RHG #20027.

To remove these filters, slide the correctly sized provided plastic wrench over the filter housing from the bottom up. Once snug, turn the filter counter-clockwise (as viewed from the bottom of the filter) to break any seal that may have formed. Once the housing is loose, continue unthreading housing sump from the housing head. Remove spent filter and replace. Ensure the rubber washers provided with your replacement filter are correctly placed and aligned. All rubber seals, including the large diameter O-ring around the mouth of the housing, should be lubricated at this time. RHG/Tucker® uses Dow Molykote 111.

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RO membranes have a much longer service life and in the experience of RHG may last the life of the system. However ROs are only warrantied for factory defect and may eventually diminish in performance or fail. If you experience a reduction in RO performance in your Rival system, contact RHG directly to troubleshoot.

To change your filter cartridge, first disconnect any hoses from the elbow in the insert at the top of the filter housing. Remove the stainless steel retaining clamps. Pry the filter insert from the housing. A small slot is present at the rim of each insert should you need the aid of a flat head screw driver. Remove the spent filter cartridge and replace. Reassemble filter housing and reconnect hoses. Flush new carbon filter cartridge if needed.

To install the new filter, you may need to relubricate your filter housing insert which also ensures a tight seal. The white nipples on each end of the membrane will likely need to be lubricated to seat into the O-rings in the top and bottom of the housing. Use a silicone valve stem lubricant. RHG uses Dow Molykote 111. Put the new filter into the housing the same way the previous one was installed. There is a white O-ring on the membrane. This O-ring should go at the top end of the housing. Insert the membrane from the opposite end first. Reassemble filter housing and reconnect hoses.

Be sure to run water through the system without any booster motor/pump assembly powered on to purge all air out of the system before or you risk damaging the filters.

RO MEMBRANES SHOULD NOT BE ALLOWED TO DRY OR COLLECT STAGNANT WATER IN THE BOTTOM OF THE MEMBRANE. THIS WILL DIMINISH PERFORMANCE, POTENTIALLY TO THE POINT OF FAILURE. TO PREVENT THIS, ROs SHOULD BE RUN ON A REGULAR BASIS, AT LEAST EVERY TWO WEEKS, AFTER FIRST USE, EVEN DURING "OFF-SEASON".

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STAINLESS RO HOUSING SERVICE

DISCONNECT PLUMBING FROM
SERVICE END



LOOSEN HEX BOLTS W/ 1/2" WRENCH
REMOVE RETAINING CLAMPS



REMOVE PRESSED IN CAP



REMOVE SPENT RO MEMBRANE



LUBRICATE REPLACEMENT RO AT PERMEATE TUBES BOTH ENDS.
REINSTALL RO AND REASSEMBLE HOUSING. BE SURE TO MAINTAIN
ORIGINAL PLUMBING CONFIGURATION.

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Shutdown Procedure

1. Open the bypass valve fully to flush the system and turn off any pumps.
2. Flush the system for 4 to 5 minutes at the end of the each job.

****If you leave the unit inoperative for longer than 2 weeks, remove your DI and run the RO in flush mode for 4 minutes and RO production mode for 10 minutes before replacing the DI filter. Flush for an additional 4 minutes.**

3. Turn off the water supply to the unit.
4. Disconnect the water supply.

It is important to always flush the system after each use. Failure to do so will decrease the filters life.

Any alterations to your system will void its warranty.

Troubleshooting

My new DI isn't making pure water.

RHG/Tucker® Supplies only Virgin Mixed Bed DI resin. Sometimes, chemical residues left over from the manufacturing process will show up on a TDS meter, but should not spot. Wash a test pane and check for spotting. The TDS should zero out shortly. If you have refilled your own DI, make sure the bed is tightly packed into the housing, leaving no air gaps for water to escape around the media. Be sure the DI canister is installed with the black seal on top, nearest the black sump head.

My system isn't producing adequate water volume.

RO/DI systems will always produce less water than is supplied to the system. Half of the product is rejected as waste. The main point of restriction is the RO membrane. RO water production is dictated by incoming water pressure, and to a lesser extent, water temperature. RO production will cease completely a few degrees above freezing. Adequate volumes for cleaning in a residential setting are typically reached around 50-60psi. Low pressure and temperature can be overcome with the use of a booster pump.

If you have good pressure and are still experiencing low volume, there are areas to troubleshoot. Be sure all internal seals on the Carbon and DI filter are correctly aligned. After installation, a round impression should be created on the seals by the housing, centered on the seal. Pre-filters are susceptible to clogging. Keep your pre-filters maintained within their service life. Cleaning in areas with unusually "hard" water can prematurely clog your pre-filters. Check your bypass valve for proper function. Normal operation is for a bypass valve to allow the full rate of flow from the waste while open. While closed, the waste flow will be reduced greatly. The system should then begin producing clean water at the same rate as waste.

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