

Stop!
**This Reverse Osmosis Water
Filtration System must be installed
by a certified professional.**
See Page 1.



Reverse Osmosis Water Filtration System

Installation & Service Guide



Reverse Osmosis Water Filtration System Service Manual

INTRODUCTION/PRECAUTIONS

This Reverse Osmosis Water Filtration System (RO System) uses multiple filtration technologies to reduce the levels of contaminants in the water supply. For proper operation, it is essential to confirm that the influent water supply complies with the following operating parameters. Failure to adhere to the operating parameters may negatively impact system performance and will void the warranty. **DO NOT USE WITH WATER THAT IS MICROBIOLOGICALLY UNSAFE OR OF UNKNOWN QUALITY, WITHOUT ADEQUATE DISINFECTION BEFORE OR AFTER THE SYSTEM.**

- Water Supply: Must be potable
- Feed Water Pressure: 40-60 to 80 psi (3.45-5.5 bar)*
- Water Temperature Range: 40-100°F (4.4-38°C)
- Total Dissolved Solids (TDS): 2000mg/L (2000 ppm)
- pH Limit: 4-11
- Chlorine: 1 mg/L (Change pre-filters more often if chlorine exceeds 1 mg/L)
- Hardness: 10 GPG (171 mg/L) Soften or expect to replace the membrane more frequently if hardness exceeds about 10 GPG.
- Turbidity: 5 NTU Maximum
- Iron: Less than 0.1 mg/L
- Hydrogen Sulfide: Less than 0.1 mg/L
- Manganese: Less than 0.05 mg/L

*This RO System requires adequate pressure to operate. As the TDS level increases, the influent pressure requirement increases. In general, this system requires a minimum of about 40 psi at the membrane inlet with ≤ 500 mg/L TDS. With 2000 TDS, the RO System will need about 55-60 psi to achieve minimal acceptable performance.

RO System must be installed and maintained by a qualified, experienced technician or plumber.

It must be installed in a location protected from sunlight and not subjected to freezing or impact. The inlet pressure must be regulated to within the operational parameters. Use a dedicated pressure boosting device or regulator to maintain proper water pressure. Install and maintain redundant, adequate leak protection devices and or methods. Install to a cold water feed only.

This drinking water RO System is designed for aesthetic water improvement only and will not protect against disease causing or remove naturally occurring bacteria. It must be used with a potable water supply only.

Installation must comply with all local and state laws, regulations and codes.

When properly applied, installed and maintained, this RO System will provide consistent, great tasting water that can be used for a wide variety of purposes.

The RO System is made with plastic housings and components that will naturally degrade over a highly variable period of time. To reduce the risk of damage, under normal conditions, it is recommended that the system's plastic housings and components be replaced at 5-10 year intervals.

INSTALLATION

Water Supply Valve: The provided feed water valve is designed to adapt to most common configurations. If it is out of code compliance or fails to provide a proper installation connection, you will need to source an alternate valve with connectors from a plumbing supplier. Install to the cold water supply line only. Make sure there is a quality, operational cold water supply valve at the point of installation.

System Mount: Secure the RO System using the bracket mounting holes. You will need to locate studs or other secure mounting points. Most systems will include two #10 x 3/4" #2 Phillips pan head or truss head stainless steel sheet metal screws that can be used for mounting in certain applications. Use appropriate hardware based on the particular installation.

Faucet: (This only applies if you are connecting your RO System to a faucet and not to an Ionizer.) The faucet should be positioned for both function and appearance. Take great care prior to installing the faucet as a permanent hole may need to be drilled in the sink. *Use a pre-drilled hole if available.* If a hole must be drilled, carefully choose a position with an adequate accessible flat area that allows for proper clearance.

Most sink types require a special drill type that will be specific to the material being drilled. The hole size required will vary based on the style and type of faucet. To help protect the drilling site use masking tape to cover and surround the area. Use safety glasses and adequate dust protection to prevent the inhalation of irritating or dangerous residue. Install the faucet firmly, but do not over-tighten. The typical faucet connector threads directly on to the shaft of the faucet.

Drain Clamp: The drain configuration will vary based on the type of faucet. A non-air gap faucet will have a 1/4" drain line connection. An air gap style faucet will require a 3/8" drain line connection. The drain operates under low pressure or mere gravity. It is critical to install the drain line in an efficient manner that avoids unnecessary length, bends and loops. If the drain connection device included with the system is not code approved in the installation area, use an alternate, code approved drain connection method.

Attach the drain clamp to a vertical section of the drainpipe about 6" above the trap and clear of any garbage disposal as debris can restrict the drain flow and prevent proper system operation. Consider replacing any damaged or corroded drain pipes prior to completing system installation. The connection of the drain clamp should face the system faucet.

Taking care not to damage the drain pipe, drill a 1/4" to 3/8" hole and file clean any rough edges. Line up the hole in the drain clamp with the hole in the drain pipe, making sure the drain clamp gasket is in place. Do not over-tighten. Shorten the provided drain tubing to allow for a relatively straight line connection. Take great care NOT to trim the drain line tubing on the end where the drain flow restrictor is installed. This will typically be identified with a small sticker that reads "Flow Capillary Inside."

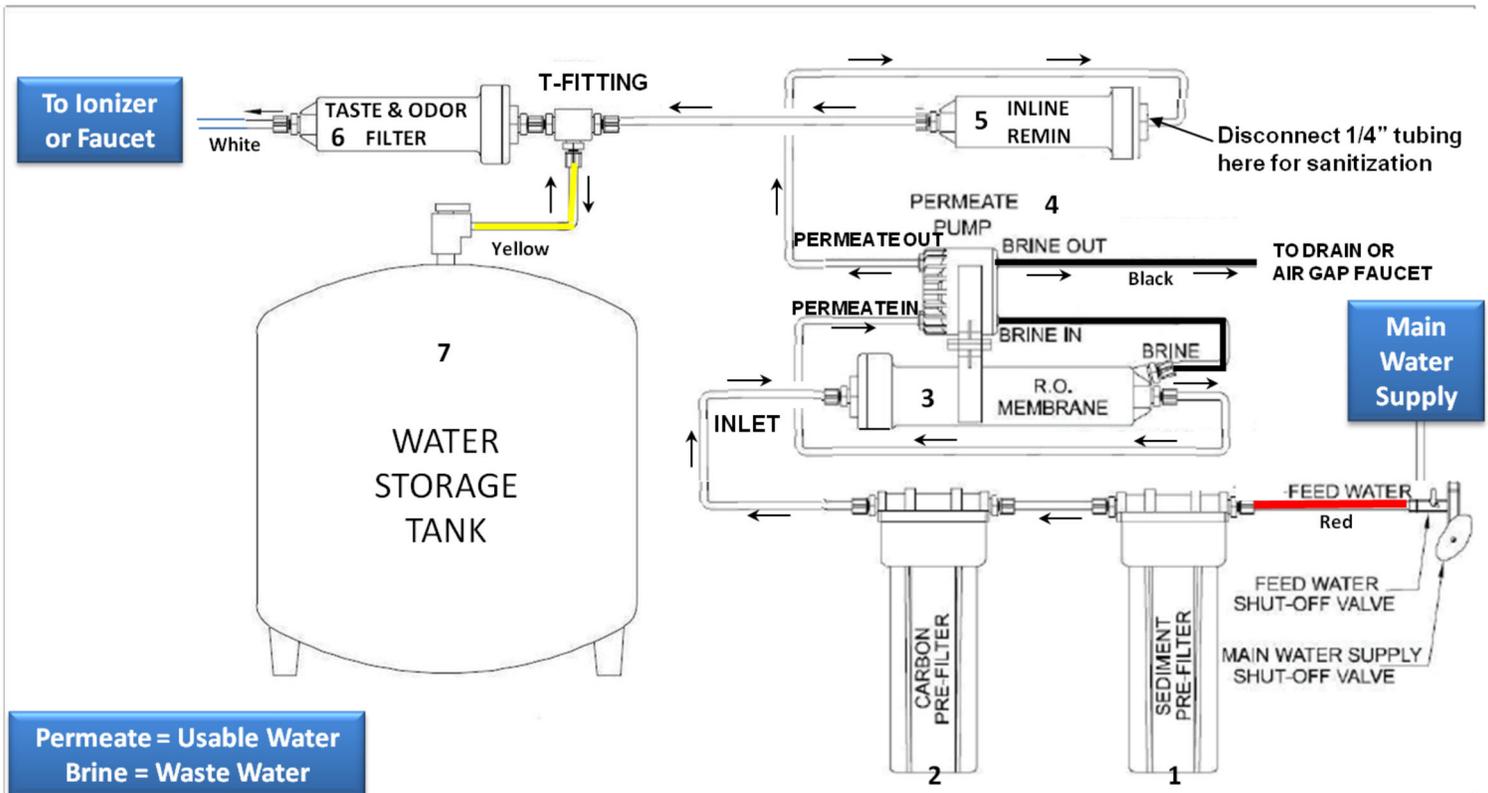
Storage Tank: Wrap the 1/4" MNPT storage tank connection point with Teflon tape. Hand tighten (do not over-tighten) the provided tank ball valve. Using a high quality, accurate, low range air pressure gauge, adjust the empty storage tank air pressure to 5-7 psi.

Fittings: Confirm that all fittings are properly connected. Clips and tube inserts are optional and not included. If you desire to use clips and tube inserts to secure your RO System, you must acquire them from a plumbing supply store.

Tubing Connections: RO System typically comes with color coded tubing. Red 1/4" connects the Feed Water Valve to the Sediment Pre-Filter (#1). Black 1/4" connects the membrane reject line to the drain or when an air gap style faucet is used, this tube will connect the air gap stem on the bottom of the faucet to the membrane reject line. When using an air gap style faucet, the Black 1/4" connects the air gap stem on the bottom of the faucet to the drain connector. Yellow 3/8" connects the Storage Tank to the T-Fitting attached to the Taste & Odor Filter (#6). White 1/4" connects the Taste & Odor Filter to the Ionizer (or faucet). (See drawing)



Reverse Osmosis Water Filtration System

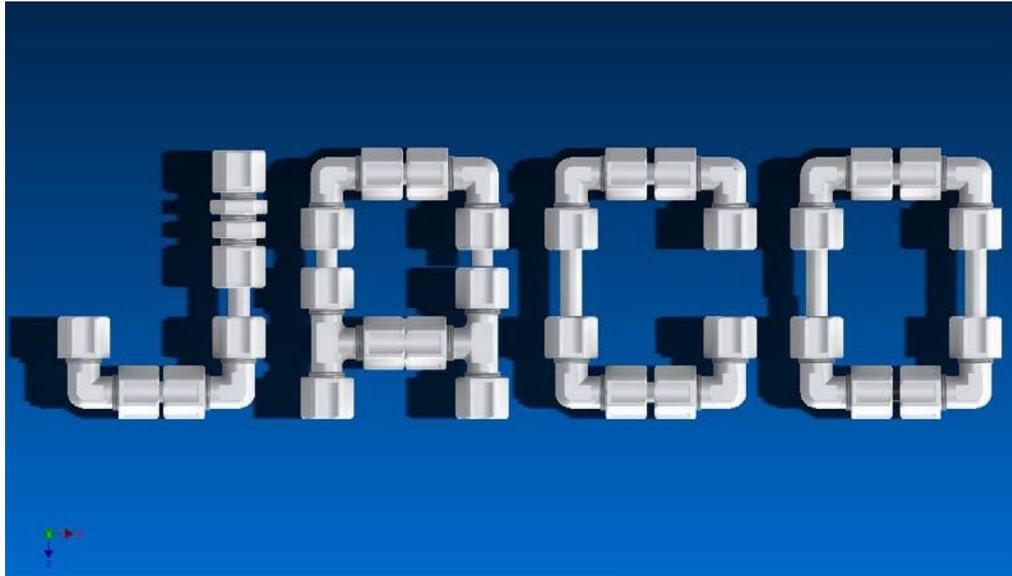


Main Components

- | | |
|------------------------|------------------------|
| 1. Sediment Pre-filter | 5. Inline Remin |
| 2. Carbon Pre-filter | 6. Taste & Odor Filter |
| 3. R.O. Membrane | 7. Tank |
| 4. Permeate Pump | |

Color-Coded Tubing

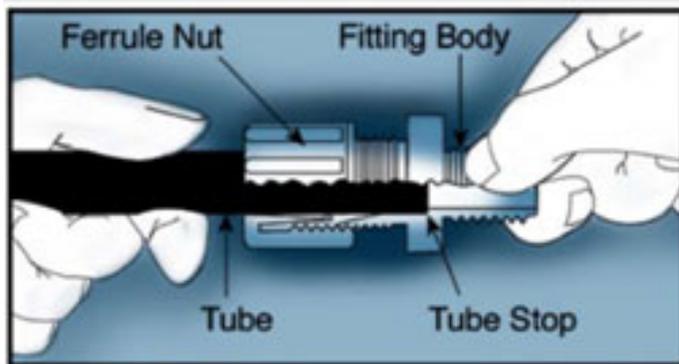
- Feed Water Valve to Sediment Pre-Filter #1 (Red)
- Membrane Reject to Drain or Air Gap Faucet (Black)
- Storage Tank to T-Fitting (Yellow)
- Taste & Odor Filter to Ionizer or Faucet (White)



INSTALLATION INSRUCTIONS FOR JACO TUBE FITTINGS

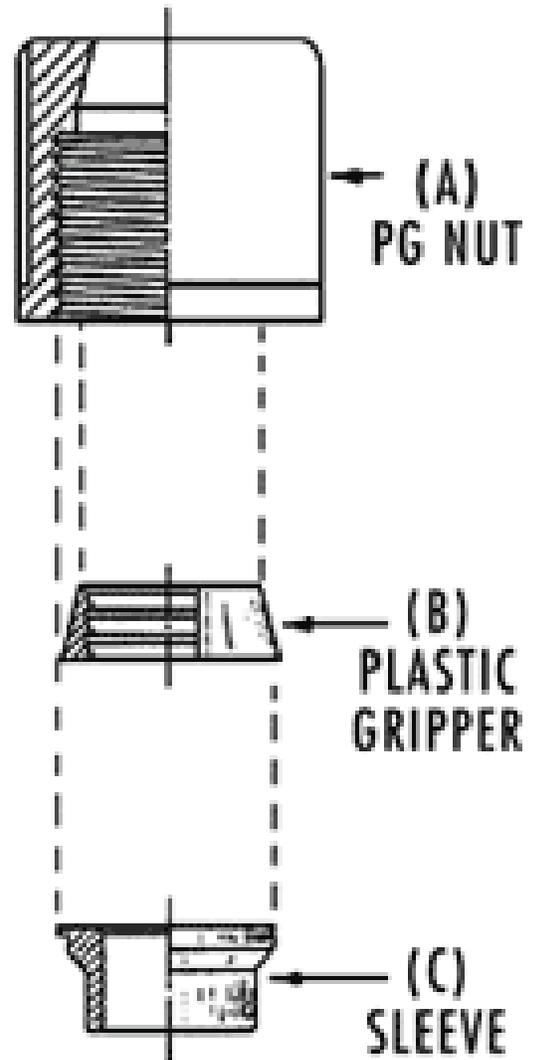
1. Cut the tubing end squarely and remove the internal and external burrs.
2. Insert the tubing through the back of the nut all the way through the nut assembly to the tube stop in the fitting body (see illustration). If the tubing does not enter the nut easily, loosen the nut one turn and then insert the tubing all the way to the tube stop in the fitting body.
3. Turn the nut hand tight.
4. Wrench tighten the nut 1-1/2—2 turns.
5. All nuts must be retightened when the system reaches projected operating temperature.

NOTE: Squeaking sound when tightening nut is normal. For pipe threaded connections. Teflon Tape must be used.



NOTE: It is not necessary to disassemble this fitting for application. Merely insert tubing to stop and tighten nut.

PG NUT ASSEMBLY





John



How to make a Standard Connection

MAKING A GOOD CONNECTION

To make a connection, the tube is simply pushed in by hand; the unique patented John Guest collet locking system then holds the tube firmly in place without deforming it or restricting flow.

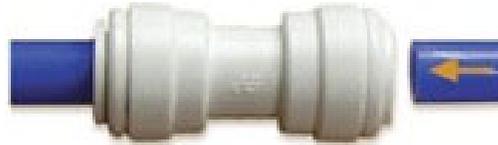


CUT THE TUBE SQUARE



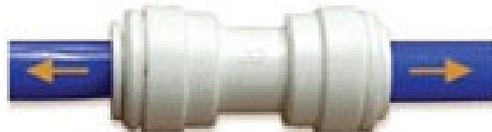
Cut the tube square. It is essential that the outside diameter be free of score marks and that burrs and sharp edges be removed before inserting into fitting. For soft, thin-walled tubing we recommend the use of a tube insert.

PUSH UP TO TUBE STOP



Push the tube into the fitting and up to the tube stop.

PULL TO CHECK SECURE



Pull on the tube to check that it is secure before use.

TO DISCONNECT



Push in the collet and remove tube. To disconnect, ensure the system is depressurized before removing tube. Push in collet squarely against face of fitting. With the collet held in this position, the tube can be removed.

SYSTEM START-UP

The system should be sanitized prior to use, annually and after any service or filter replacement. Use a tray or drip pan to catch any spilled water. Use a good quality, unscented 5.25% liquid chlorine bleach.

1. With the feed water turned off and the system drained of water through the ionizer (or faucet), remove each filter from Housing #1 and #2 and the membrane from Membrane Housing #3. Also disconnect the 1/4" tubing from the inlet side of the Inline Remin Filter #5. Tape the tubing you just disconnected onto the Inline Remin so that it is situated above all the other filters to prevent water from draining while sanitizing.
2. Using a soft cloth, mild detergent and warm water, clean the inside of Housing #1 and #2. Thoroughly rinse the housings.
3. Add about 2 teaspoons of the 5.25% bleach to each Housing #1 and #2. Take care not to contact the O-rings or housing threads with bleach. Properly place the O-rings and install the housings on to the caps. Firmly hand tighten *only*.
4. BE CAREFUL! SLOWLY open the feed water valve. Allow the system to fill with water, carrying the bleach solution throughout all internal wetted areas needing sanitization. Those areas are the 2 Pre-filter Housings #1 and #2, then Membrane Housing #3 and finally, Permeate Pump #4.
5. Close feed water valve as soon as water starts flowing out of the disconnected 1/4" tubing attached to the Inline Remin. Let the chlorinated water stand in the system for about 20-30 minutes.
6. Release the 1/4" tubing taped to the Inline Remin Filter. Place it into a bucket to drain. Then turn on feed water to rinse the system.
7. Turn off feed water. Remove the Housings, discard the water and rinse thoroughly.
8. Re-install the filters in Housing #1 and #2 and membrane in Membrane Housing #3 making sure the O-rings are properly seated. If performing annual maintenance, replace used or damaged O-rings.
9. Reconnect the 1/4" tubing to the inlet side of the Inline Remin Filter #5.
10. Turn on feed water. Allow system to run and fill the storage tank. It is essential to have leak protection in place and to monitor the system for leaks. Watch diligently for leaks during the first few hours of operation.
11. Allow the system to fill the tank and discard the first full three tanks of water.

The RO System will produce water at a rate that mimics a fast drip or slow trickle and will typically fill the storage tank in about 1 to 4 hours. The storage tank uses an air charged bladder to push product water to the Ionizer (or faucet). Based on various factors, the actual liquid volume of the storage tank will likely be about 50% of the actual capacity. As the tank empties, it is normal for the flow rate to the Ionizer to steadily decrease. The system will automatically replenish the storage tank at the rate of about 1-2 gallons per hour. Note that lower water temperature will result in slower replenishment of the storage tank.

OPERATION AND MAINTENANCE

1. Pre-filters should be replaced about every 6 months or as needed based on local conditions. High sediment, chlorine or other contaminant levels may necessitate more frequent service. Low sediment, chlorine and other contaminant levels may allow for less frequent service. Failure to replace the cartridges in a timely manner may result in reduced or complete loss of production and damage to the membrane and other components. Use sanitary gloves and maintain filters in a clean environment when handling and replacing.
2. The membrane element requires consistent drain flow at the designed rate to prevent contaminants from building up and fouling the membrane sheets. The membrane can suffer premature failure from lack of use, so use your system frequently for drinking, cooking and other filtered water applications. The membrane should last at least 12 months and, in most cases, will operate properly for more than 2 years. Test and inspect with each service, but the service life is highly variable. Replace as needed or every 3 years, whichever comes first.
3. Typical post filters are simply polishing water that has already been filtered by the system. If the balance of the pre-filters and membrane are serviced and functioning properly, the post filter should last a full 12 months under normal conditions. Replace as needed. Specialty post filters may require more frequent or varying levels of monitoring and service.
4. Any time a tube is removed, cut the end with a quality tubing cutter to provide a new sealing surface. Take care not to cut the drain line flow restrictor which is typically inserted inside the 1/4" black drain tubing closest to the membrane.
5. Inspect the leak protection and pressure regulating methods and/or devices. Replace batteries and confirm proper operation.
6. With each service, it is recommended to replace the O-rings in Housing #1 and #2. Be sure to apply a film of appropriate silicone lubricant to the new O-rings.
7. The storage tank should be inspected and air pressure adjusted with each service. Use a quality low range pressure gauge and Schrader-style hand operated bicycle pump to set the emptied tank air pressure at 5-7 psi.
8. The housings should be carefully inspected at each service interval and replaced at no more than 5 years for clear and 10 years for white or other color. Replace immediately in the case of an inspection concern or event involving slightly above specification pressure or temperature. In the case of an extreme pressure or temperature event, replace the system.
9. The system should be sanitized annually. See "System Start-Up" section for instructions.

Reverse Osmosis Water Filtration System Warranty and Limited Remedy One Year Limited Warranty

AlkaViva LLC's one year limited warranty begins 90 days after date of manufacture. Warranty covers defects in materials and workmanship of the reverse osmosis water filtration system provided the system is installed and operated within the recommended operating parameters. Operational and installation parameters must comply with state and local codes, manufacturer's recommendations and with generally accepted industry standards, in that order.

This warranty does not apply to consumable items such as filter cartridges. Provided feed water parameters are met, the membrane is warranted one time on a 12 month prorated basis. This warranty does not apply to products or components that are damaged as a result of neglect, misapplication, freezing, act of God, misapplication, damage, hot water or any other factor outside of normal operation. Contact AlkaViva in advance for advice as to the suitability of a particular product for a specific purpose.

Warranty does not extend to items built wholly or partially to the Purchaser's design or specifications. This AlkaViva warranty is in lieu of any other warranty, expressed or implied. AlkaViva does not make any warranty or implied warranty as to the merchantability or fitness for a particular purpose. Contact AlkaViva to obtain a Service Authorization number or to discuss any warranty issues by submitting the Water Ionizer Repair/Support Form at:

<https://www.alkaviva.com/repairs>

Purchaser's exclusive remedies under this warranty shall be limited to the repair or replacement of the non-conforming item(s) as determined by AlkaViva. Warranty applies only to the specific failed component part(s). Items for warranty consideration must be sent freight insured, pre-paid and appropriately packaged to AlkaViva with a formal Service Authorization (SA). Customer is required to pay for return shipping upon completion of repair. Warranty is for replacement product only with no remedy allowed for any other related expenses, consequential damages, lost business or any other expenditures whether actual or not.

Items returned under warranty, but found not defective will be returned at customer's cost with normal inspection charges to apply. Items returned under warranty and found defective will be repaired, replaced or credited to the customer. Items returned for non-warranty inspection and repair will be repaired and returned at normal charges.