

# Owner's Manual

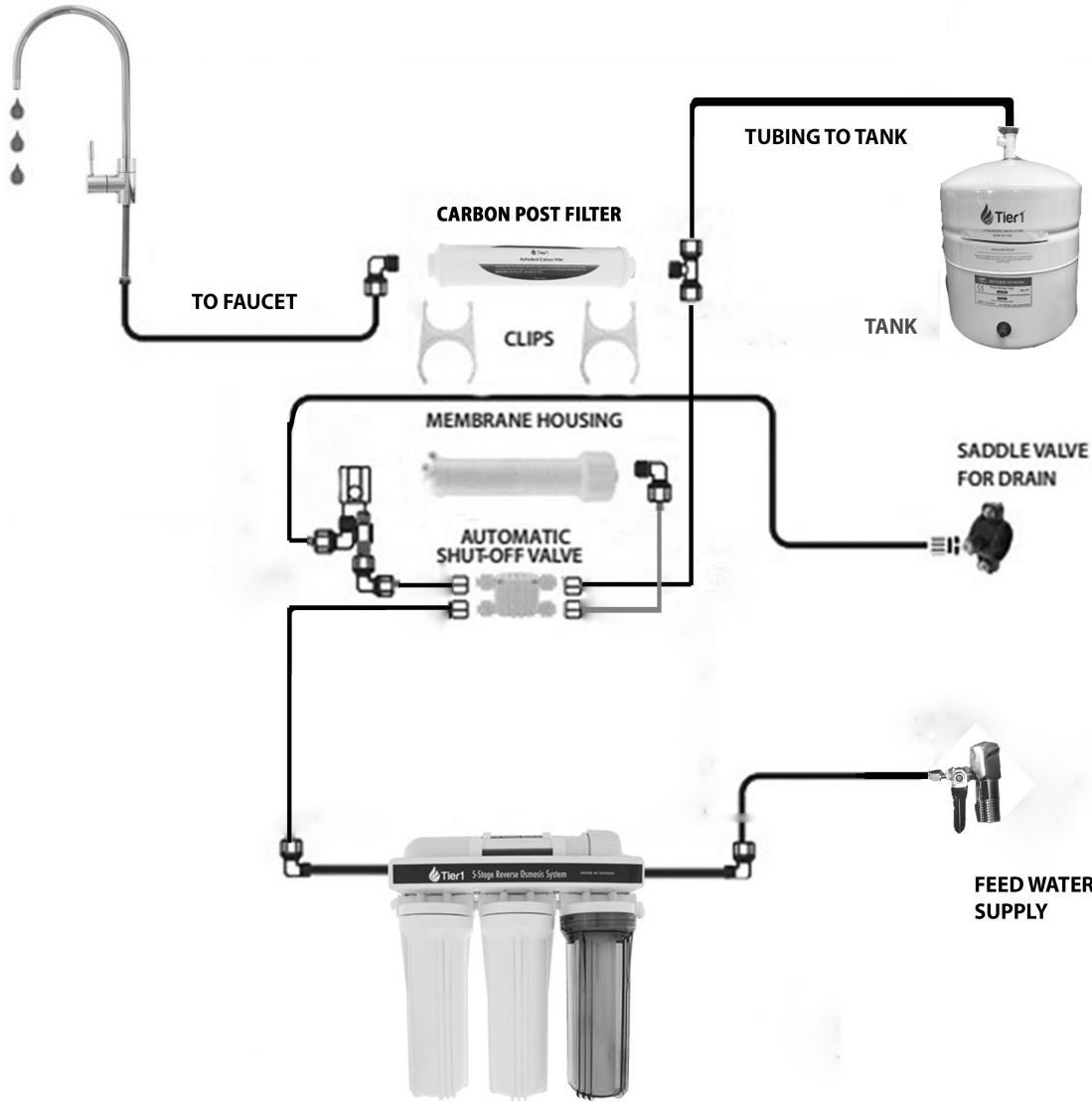
**RO5**

## **Tier1® 5-Stage Reverse Osmosis System**





# 5-Stage Reverse Osmosis System



**1** The 1st stage in any RO system will be a sediment filter designed to remove particulate contaminants. These filters should be changed every 3-6 months depending on your water quality. This should be done to ensure a consistent flow rate and preserve the life of the other filters.

**2** The 2nd stage in any RO system will be a carbon filter designed for aesthetic polishing and chemical removal. The RO5 uses a Tier1 carbon block water filter. This filter will make your water taste and smell better. It also reduces chlorine and other such chemical contaminants.

**3** The 3rd stage in the RO5 and any other 5 stage RO is an additional sediment filter. The RO5 uses a Tier1 sediment filter. This additional stage is designed to further reduce the aforementioned contaminants, and extend the life of your filters and system.

**4** The 4th stage in the RO5 system is the RO membrane. The RO5 uses a Tier1 brand RO membrane. During this stage, Reverse Osmosis filtration takes place. This step removes nearly all Total Dissolved Solids from the water including micro-particles and chemicals.

**5** The 5th stage is an inline carbon filter designed to polish the water coming from the tank. This ensures you have a pleasant taste for water dispensed at a designated RO Faucet. The RO5 uses a Tier1 inline coconut granular activated carbon water filter.



# Read all instructions before beginning installation

This installation manual provides directions for installing your Tier 1® RO5 5-Stage Reverse Osmosis System under a kitchen sink. Before installation, verify that the RO5 system will fit in the location selected.

## Tools needed for installation

- Power drill with a 3/16" drill bit
- Phillips head screwdriver
- Towel
- Bucket
- Flashlight
- Plastic pipe cutter for 1/4" water tubing

## RO5 System parts

Verify that all of the system components are included:

A. System Manifold attached to Mounting Bracket

- Cartridge Filter Sumps, containing three Cartridge Filters (shipped attached to Manifold)
  1. 1 Micron Sediment Filter
  2. 5 Carbon Block Filter
  3. 5 Micron Sediment Filter
  4. Membrane Housing (shipped attached to Manifold)

B. 50 GPD RO Membrane

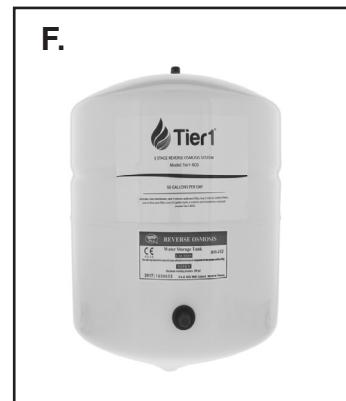
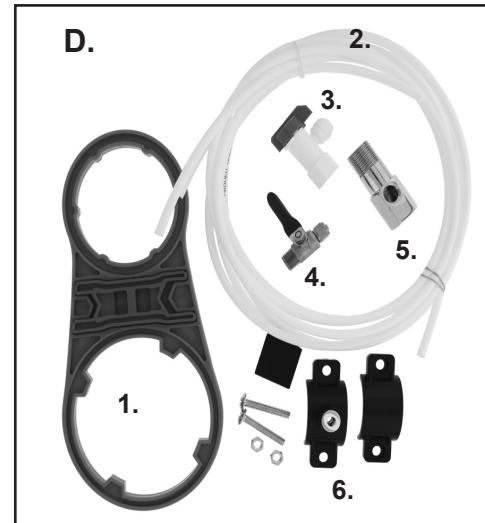
C. Inline Post Carbon Filter (shipped attached to clips above Membrane Housing)

D. Parts bag containing:

1. Sump Wrench
2. 1/4" Plastic Tubing
3. Tank Ball Valve
4. Water Line Ball Valve
5. Feed Water Connector
6. Drain Line Adaptor, Gasket, and screws to assemble

E. Faucet with base plate, o-ring, rubber washer, flat washer, star washer

F. Storage Tank

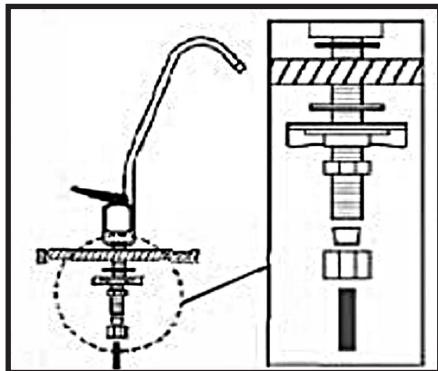


# Installation Instructions

## Install Drinking Water Faucet:

The faucet's base requires an area two inches (2") in diameter on the sink or countertop. If there is a sink sprayer, this hole can be used if the sprayer is disconnected and abandoned. If a new 1/2" hole needs to be drilled, we recommend contacting a professional.

1. Slide the o-ring gasket over the faucet's base plate.
2. Slide the threaded end of the faucet through base plate, rubber washer and hole.
3. From under the sink, slide the flat washer over the threads, followed by the star washer.
4. Thread the hex nut and faucet adapter onto the threads. Tighten nut.



## Dry Fit and Install the Manifold:

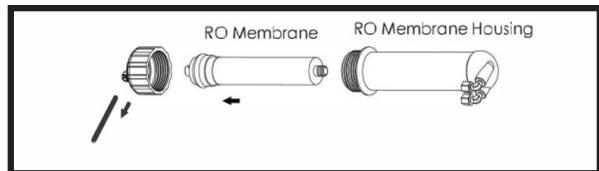
1. Test fit the manifold in desired location. The manifold is shipped with mounting bracket attached. Use included installation screws to mount the manifold to an under sink wall or cabinet. There are two mounting holes, one on each side of the manifold's back plate. Leave enough room to be able to remove the filter sumps from the manifold for easy filter changes. We suggest a minimum of two inches.



2. Unscrew and remove the filter housings, and unclip the carbon post filter and membrane housing from the manifold for easier installation.
3. Mount the manifold, checking that system is level.

## Install RO Membrane:

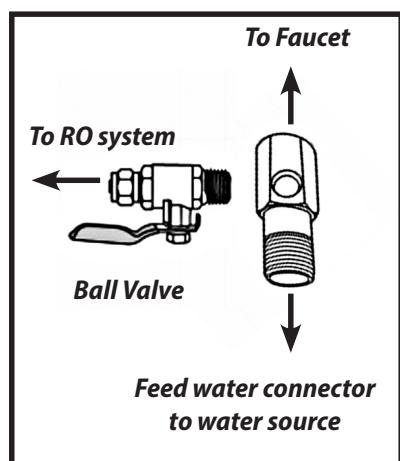
1. Remove plastic from RO membrane. Disconnect the quick connect fitting from the membrane housing cap.
  - To disconnect quick connect fitting, depress the collar ring surrounding the water line and pull out the line.



2. Unscrew the membrane housing cap.
  - Apply food grade silicone lubricant to the o-rings on the post of the new membrane to ease installation and provide a tight seal.
3. Hold the center post of the membrane to insert o-ring end into the membrane housing.
4. Replace and hand-tighten the cap.
5. Reconnect the tubing by firmly inserting the water line into the quick connect fitting.
6. Use the manifold clips to reattach the membrane housing and carbon post filter to the manifold.

## Connect System to Cold Water Line:

1. Turn off the cold water supply below the faucet
  - **Note:** RO Systems should only be supplied by the cold water line.
2. Disconnect the faucet cold water line from the feed water source.
3. Connect the feed water connector to the cold water line using the threaded attachments.
4. Re-attach the sink faucet to the cold water line using the feed water connection.
5. Join the feed water connector and the ball valve at the side outlet using their threaded connections.



# Installation Instructions

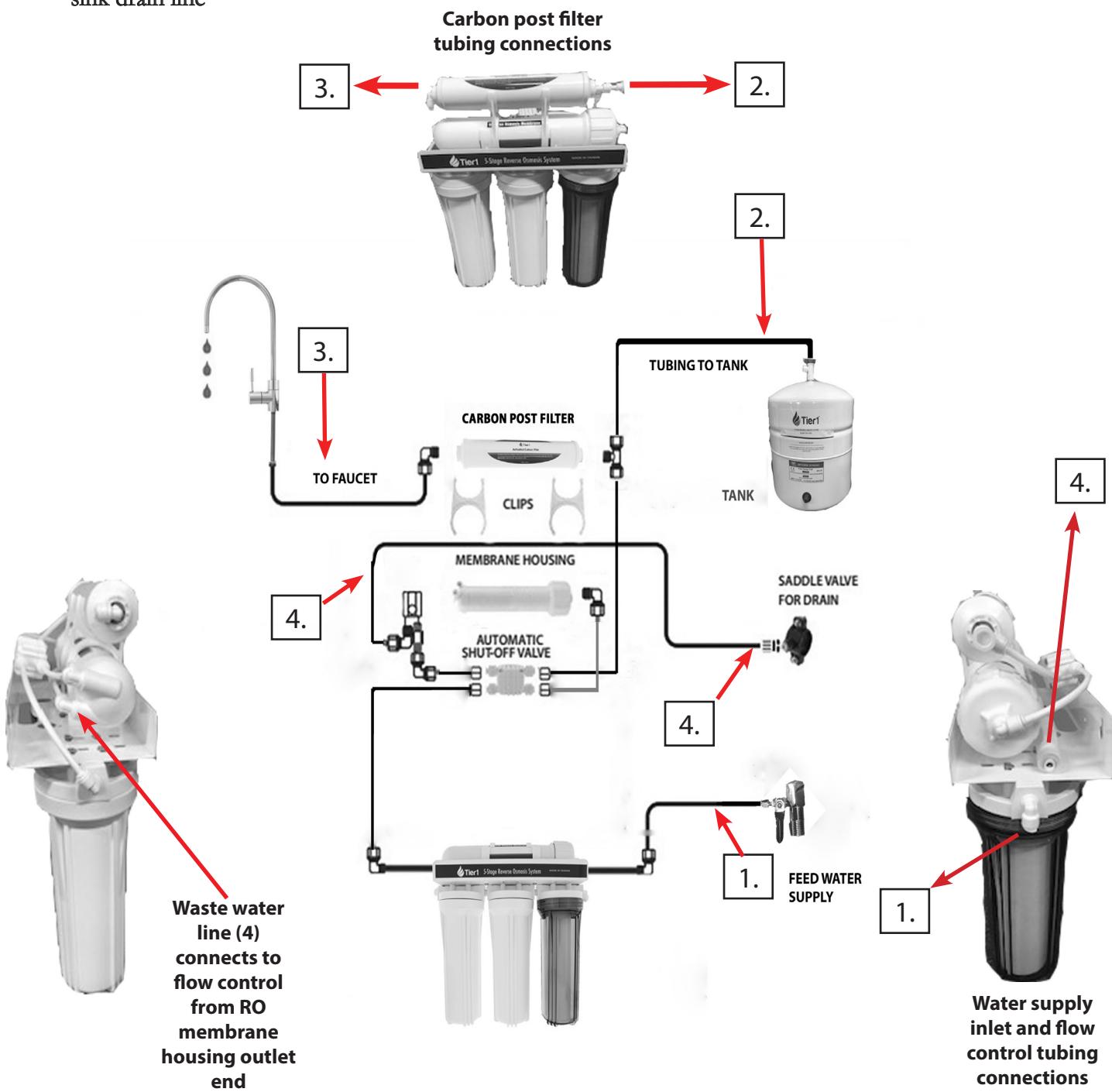
## Cut Water Tubing:

Note: Four separate sections of water tubing are needed for installation. This will require cutting the tubing into appropriately sized sections. Measure the necessary tube lengths for each of the four required connections:

1. Feed water source (ball valve connector) to system manifold
2. Carbon post filter to storage tank
3. Carbon post filter to faucet
4. RO membrane drain outlet from flow control to sink drain line

Measure enough extra length between tube connections so that the water lines are allowed a “relaxed” installation position.

- Use a plastic pipe cutter to ensure clean cuts so that water lines do not crack or sit incorrectly.
- Make cuts perpendicular to the pipe itself.
- Place the tubing into the pipe cutter and squeeze the handles.
- Once the cut has been made, inspect the end of the line to ensure a clean cut.



# Installation Instructions

## Connect Feed Water Source, Tank, and Faucet:

You may find it necessary to unclip the RO membrane housing and the carbon post filter for ease of installation of the tubing.

1. Insert one end of the tubing into the quick connect fittings on the feed water ball valve. Press the tubing firmly into the quick connect fitting. Once installed, pull gently on the tube to check that it is seated securely.
2. Insert the other end of the same tubing into the inlet elbow-shaped quick connect fitting on the manifold.
3. Attach the tank ball valve to the threaded connection on the top of the water storage tank.
4. Remove dust cap from end of carbon post filter quick connect fitting.
5. Use second section of tubing to connect the water storage tank to the carbon post filter.
6. Insert third section of tubing from the faucet adaptor to the carbon post filter on the manifold.

## Install Drain Line:

1. Attach the drain line gasket by peeling the paper backing off of the adhesive side of the gasket and pressing it into the drain line adaptor.
2. Dry fit the drain line adapter above the "U"-shaped plumbing trap on sink drain line.
3. Mark a spot that aligns with the open drain inlet located in the center of the drain line adapter.
4. Use power drill with a 3/16" drill bit to drill a hole through the marked inlet location on one side ONLY of the vertical run of the sink drain line. DO NOT drill through both sides of the sink drain line.
5. Align the drain line adapter over the drilled hole. Match up the inlet exactly with the drilled hole.
6. Secure the drain line adapter with the included hardware. Secure the screws using a Phillips head screwdriver. Do not over tighten.
7. Using the last piece of cut tubing, use quick connect fittings to connect the RO membrane drain outlet with flow control to the drain line adapter.

## Replace Housings:

1. Re-install the three filter housings onto the bottom of the manifold. Ensure that any o-rings have been well lubricated with food-grade silicone lubricant.  
**Note:** Hand tighten only, do not over tighten.

## Filling System:

1. Turn cold water supply on and check for leaks.
2. Turn storage tank ball valve to "CLOSE". Turn drinking water faucet on and run until empty, this should take about 10-15 minutes.
3. Flush the filters by allowing 1 gallon of water to run through the filters.
4. After flushing the filters, turn the drinking water faucet off, and turn the tank ball valve to "OPEN".
5. After the RO tank fills, which can take up to 8 hours, drain the tank by opening the faucet. Emptying tank may take several minutes. DO NOT USE THE FIRST TANK OF WATER.
6. When the drinking water faucet flow slows, turn off the drinking water faucet.
7. The system is now ready to filter water for consumption.

## Replace filters:

**Note:** Your system is shipped with filters installed in the housings and sumps. Follow the instructions on the next page to change out used filters at the appropriate time.

## When to change your RO System Filters:

### 1. Cartridge Sediment Filters:

#### Tier1-P5-10 and Tier1-P1-10

The sediment filters should be changed every 3-9 months depending on water usage. Filter life is 8000 gallons or 6 months based on typical water consumption of a family of four.

### 2. Carbon Cartridge Filter:

#### Tier1-E5-10

The carbon filter should be changed every 3-6 months depending on water usage. Filter life is 600 gallons or 6 months based on typical water consumption of a family of four.

### 3. Reverse Osmosis Membrane:

#### Tier1-TROM-50

RO Membrane should be changed every 24 months based on typical water consumption of a family of four.

### 4. Carbon Post-Filter:

#### Tier1-IN-WF0140

Carbon post-filter should be changed every 3-6 months depending on water usage. Filter life is 300 gallons or 6 months based on typical water consumption of a family of four.

# Filter Replacement

1. Before changing filters, shut the water off to the system:
  - Turn off the feed water line by turning the ball valve connected to the feed water connector.
  - Turn storage tank ball valve to "CLOSE".
  - Turn on the drinking water faucet to release the system water pressure.
2. To change cartridge filters:
  - Place a bucket or towel below the housings to catch any water released.
  - To change filter in sump:
    - ◊ Slide sump wrench up from bottom of housing. Turn wrench counterclockwise to begin unscrewing the sump from the cover. When able, hand-loosen the sump.  
**Note:** Sump will be full of water and may drip when removed.
    - ◊ Remove the used filter from the sump and discard.
    - ◊ Rinse the interior of the sump to remove any debris.
    - ◊ Remove the sump o-ring. Apply a layer of food grade silicone lubricant to new o-ring and install in sump.
    - ◊ Install new filter by centering cartridge hole over bottom sump post.
    - ◊ Reinstall the sump in the manifold by hand-tightening counter-clockwise.  
**Note:** NEVER tighten a sump with the wrench. Doing so could damage the o-ring and cause leaks.
  - Repeat this process for the filters in all three filtration stages.

## Replace RO Membrane:

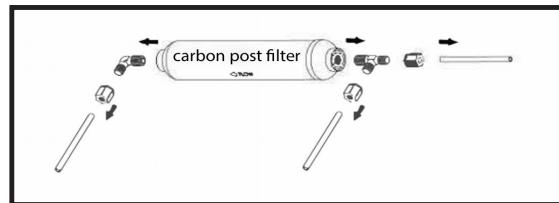
1. Disconnect the quick connect fitting from the membrane housing cap.
  - To disconnect quick connect fitting, depress the collar ring surrounding the water line and pull out the line.
2. Unscrew the membrane housing cap.
  - There will be water in the housing. Use a towel or a bucket to catch the excess water.
3. Pull on the center post of the membrane to

remove it. Discard used membrane.

4. Apply food grade silicone lubricant to the o-rings on the post of the new membrane to ease installation and provide a tight seal.
5. Hold the center post of the membrane to insert o-ring end into the membrane housing.
6. Replace and hand-tighten the cap.
7. Reconnect the tubing by firmly inserting the water line into the quick connect fitting.

## Replace Carbon Post-Filter:

1. Turn off feed water ball valve and storage tank ball valve to release pressure from the tank and drinking water faucet.
2. Disconnect quick connect fittings from the filter.
  - To disconnect quick connect fittings, depress the collar ring surrounding the water line and pull out the line.
3. Remove the carbon post-filter from the manifold



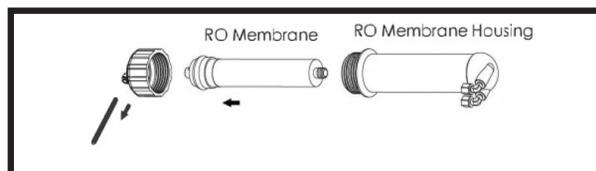
brackets and dispose.

4. Insert the new carbon post-filter into the manifold brackets.
  - Position water flow directional arrows toward the outlet end of the water line.
5. Reconnect both water lines by firmly inserting the water lines in the filter quick connect fittings.
6. After installation, gently pull on the tubing to ensure a secure connection.
7. Turn on the feed water line and the tank water line to restore water flow to the system.

## Flush RO System:

After a RO Membrane or complete filter change, it is recommended that you flush your RO Filtration system:

1. Open the RO Faucet and allow it to run until empty. This should take 10-15 minutes.
2. Turn tank ball valve to "Open".
3. RO tank may take up to 8 hours to fill.
4. After the RO tank has refilled, drain the tank a second time.
5. The system has now been flushed and is ready for use.



**Usage Notes:****RO Tank Pressure:**

It may become necessary to adjust or re-pressurize the air pressure in your RO Tank. If you find that your water pressure is too light or too heavy, you can adjust the flow by ensuring your tank is correctly pressurized. A full tank should have 35-40 psi. An empty tank should be 8-10 psi.

**TDS Meter Readings:**

Some customers like to check their system's filtration by checking the Total Dissolved Solid (TDS) rating. This can be done with a TDS meter and a glass of water.

**System Not in Use:**

Turn off the feed water source if you will be away for more than 7 days. Discard the water in the storage tank when you return.

**Troubleshooting and Technical Support:**

Tier1® Technical Support is available to assist you with your installation or system questions.



**1-855-378-9116**

To talk to one of our Technical Support Specialists, call 1-800-378-9116, Monday-Friday, 8 am - 5 pm central time.

You may also contact our Technical Support Team at any time by emailing to [support@tier1water.com](mailto:support@tier1water.com) to receive a response from one of our Specialists during regular business hours, Monday - Friday, 8 am - 5pm central time..



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Zumbrota, Minnesota

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