ULTIMATE REVERSE OSMOSIS SYSTEM

RO-LITE COMMERCIAL SYSTEM INSTALLATION INSTRUCTION & OWNER'S MANUAL



APEC WATER®

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Please keep this Owner's Manual for future reference.

It contains helpful information on how to maintain and care for your APEC Reverse Osmosis water filter system.

Thank you for choosing APEC everse osmosis systems.
You now own the finest water filter in America.

Please read and become familiar with instructions and parts needed before proceeding with the installation.

BEFORE INSTALLATION:

Inspect the system:

Please take the system and all the components out of the box. Inspect the system and all the connection fittings carefully, make sure nothing is damaged during shipping. If any part is cracked or broken, please do not proceed with the installation and contact APEC or your distributor for an exchange or diagnosis.

Recommended tools list:

- Variable speed drill
- Drill bit- 1/4" (for the waste line), 1/8" (as pilot, not mandatory), and 1/2" (for faucet hole, if necessary)
- 5/8", 9/16" open-end wrench, or adjustable wrench, pliers
- Phillips screwdriver
- Utility knife, or scissors
- Teflon tape

Operating Parameter

- Operating pressure: 85 psi maximum.
- Feed water temperature: 40 – 100 degree F (4-37 degree C).
- **Do not** connect this unit to hot water source.
- Protect the RO from freezing. Water freezing in the system will damage it.
- Install the RO in a sheltered environment, avoid exposure to hot and cold weather or under direct sun light.

General Installation/Operation/Maintenance Requirements

- Installation needs to comply with state and local laws and regulations.
- System must be installed indoor away from possible environmental damage.
- Do not use with water that is microbiologically unsafe or of unknown quality without adequate disinfection before or after system. Systems certified for cyst reduction may be used on disinfected water that may contain filterable cysts.
- This reverse osmosis system contains a replaceable treatment component critical for effective reduction of total dissolved solids. The product water shall be tested periodically to verify that system is performing satisfactorily.

Important! Please TURN OFF the main cold water supply to the RO system when the unit is not in use during a vacation or extended leave. During very cold or freezing weather conditions, please also TURN OFF the main cold water supply and completely drain all of the water from the RO system and water storage tank.

Components included with the Ro system:



1 RO system



3 Pre-filters in 3 Housings



1 Storage tank

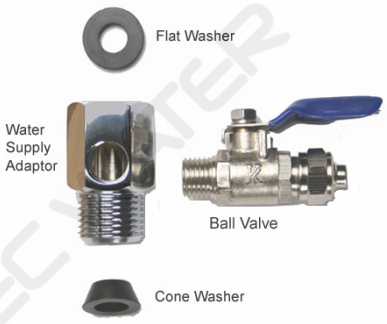


2 - 4 RO membranes (depends on model) **Pre inserted in membrane housing**

Installation Kit includes



1 Faucet with washers, nuts and adapter



1 Feed water adaptor with feed water ball valve kit



1 Drain saddle for waste water



Color tubings 3/8″



1 Tank shut-off valve with adaptor fitting



1 Wrench to open 3 pre-filter housing



1 Wrench to open membrane housings

Component Itemization:



#1) Bracket
#2) Membranes inside their housings
#3) In-line carbon filter (last-stage filter)
#4) Sediment pre-filter and housing (1st stage filter)
#5) Carbon block pre-filter and housing (2nd-stage filter)
#6) Carbon block pre-filter and housing (3rd-stage filter)
#7) Storage tank
#8) Tank shut-off valve
#9) ASO
#10) Check valve
#11) T-fitting (Last-stage filter)
#12) Feed water inlet
#13) Filtered water outlet

Fitting Types:

The Ro Lite Commercial System comes standard with Quick-Connect (QC) Fittings.

Quick-Connect (QC) Fittings: (no insert, sleeve, or nut), most of the fittings on the RO unit are this type.

To connect: See **Fig.1** Push the tubing into the Quick-Connect fitting tightly, gently pull back on the tubing to make sure connection was secure.

- No inserts, sleeve, or nuts are needed to secure the connection.
- No Teflon tape!



Fig. 1

To disconnect: See **Fig.1A** Push in and hold down on the collet ring around the base of the fitting, then pull out tubing.

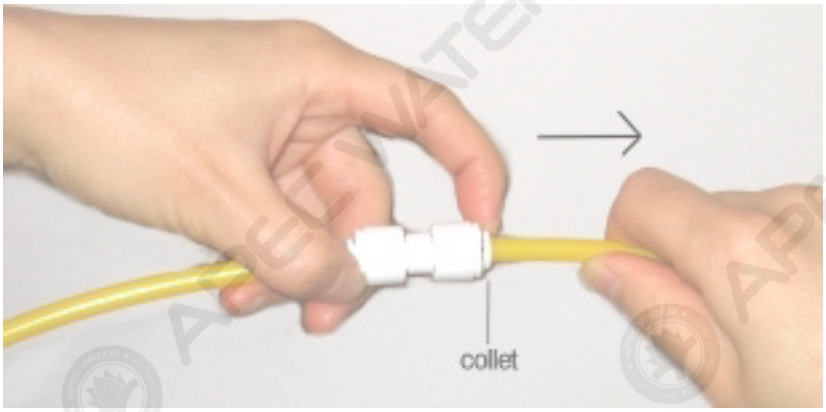


Fig. 1A

INSTALLING THE SYSTEM

*All filters are already pre-installed inside their housings, please follow the installation steps listed below.

The Ro Lite Commercial system can be installed in any location where there is a cold water supply with sufficient water pressure for your chosen RO model, and an outlet to drain off the waste water generated by the system. A sheltered environment is recommended to avoid any exposure to hot and cold weather or under direct sunlight.

Step 1: Feed Water Connection

The Ro system must be connected to the COLD water supply only!

The Ro's feed water adaptor fits a 1/2" pipe. If you need to cut the pipe, using a qualified plumber is highly recommended.

The instructions below are for "under-sink" installation.

1. **For under-sink hook up:** Locate the **Cold** water supply valve under the sink. Turn OFF the incoming cold water completely.

   Note: If the cold water shut off valve is unable to turn off the water, the main water supply to the house must be shut off for the installation.

Be sure to use Teflon Tape on all metal connections to prevent leaks!

2. **For Flex Line Riser: See Fig. 2A.** Loosen nut and separate cold water riser tube from faucet shank. Gently bend riser tube so that the Feed Water Adapter (Fig.5) fits onto the faucet shank. Fit the new cone washer provided in the kit onto the riser tube. Connect the riser tube, the feed water adapter, and faucet shank together and tighten. Use Teflon tape on threaded parts to prevent leaks.

   For Solid Copper Riser: See Fig. 2B. Follow the same procedure as for flex line. If the copper riser cannot bend, then it's best to replace it with a flex line riser. Then fit the feed water adaptor the same way as described above. Use Teflon tape to prevent leaks.



Fig. 2

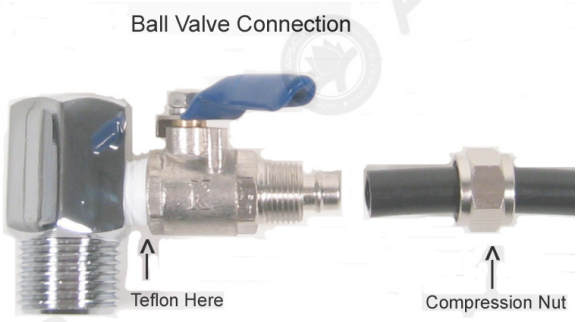


Fig. 2C

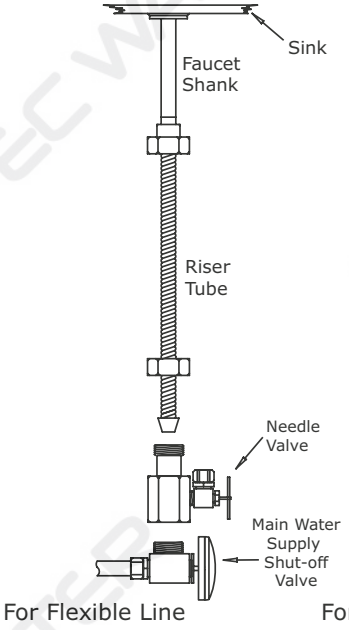


Fig. 2A

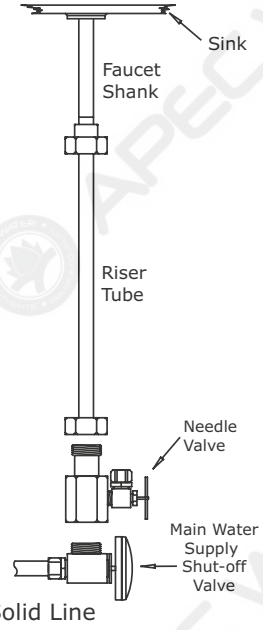


Fig. 2B

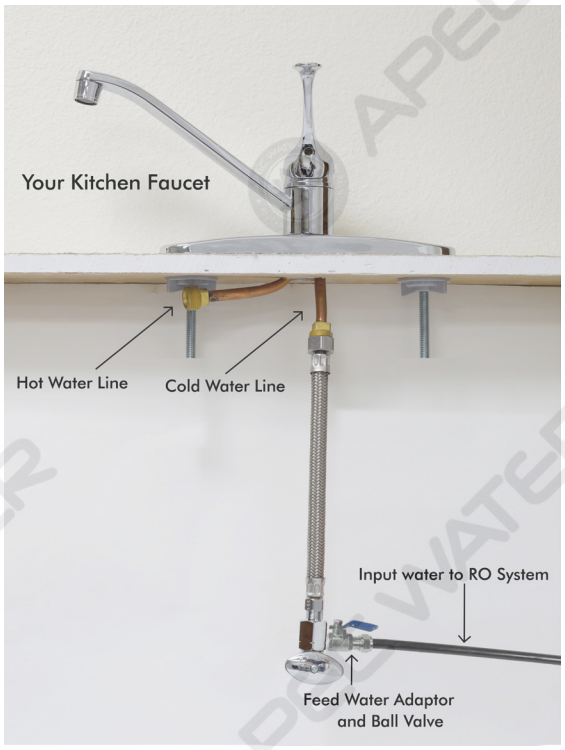


Fig. 2D

3. **Ball Valve:** See **Fig. 2** Screw the Ball Valve onto the Adapter tightly. Apply **5-6** rounds of Teflon tape onto Ball Valve before attaching it to the Adapter. (Note: The "cone washer" is not needed if your water line already has a built in washer).

To **Open** Ball valve: Turn Handle to the horizontal position.
To **Close** Ball valve: Turn Handle to the vertical position.

4. **Test for leaks at this point:** Close the Ball Valve by turning the "handle" to the vertical position, this will shut-off the feed water. Then, turn ON the cold water supply, watch to see if there is water leaking at the connection. If there is leakage, re-examine the connection and try applying more Teflon tape or more tightening at the connections.

Ball Valve: The Feed Water Ball Valve allows you to shut-off feed water to the RO system without shutting off the cold water supply to your sink. When installation is complete, please remember to **Open** the Ball Valve to let the feed water through. To open valve: Turn the "handle" to the horizontal position.

Step 2: Drain Saddle Installation

Note: To avoid annoying drainage noise, mount drain line as low as possible on the vertical tailpiece, or on horizontal tailpiece.

There is constant water pressure "packed" inside the RO system which blocks the waste water from backing-up into the system. So the waste water is "forced-drained", not "gravity-drained".

1. See **Fig. 3.** The drain saddle assembly should be installed above the trap and on the vertical or horizontal tailpiece. To reduce the drainage noise, mount the drain line as low as possible above the trap, or on the horizontal tailpiece.

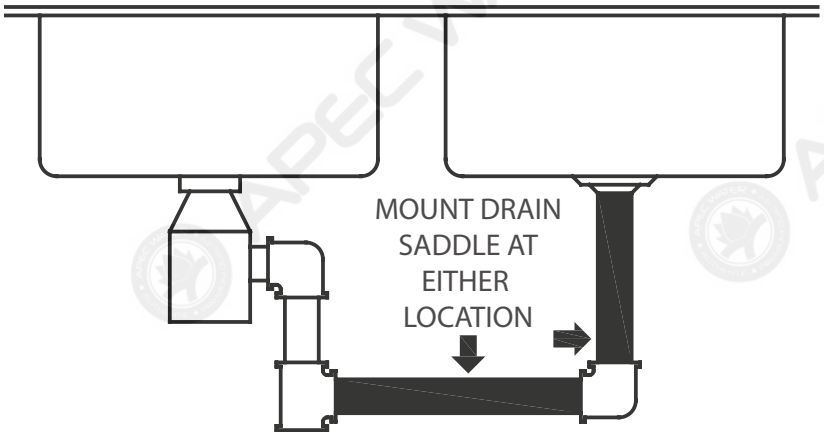


Fig. 3

2. See **Fig. 4.** Mark the position of the hole on the drain pipe and drill a 1/4" hole through one side of the drain pipe. There is a piece of self-adhesive sponge provided. Glue this sponge to the inside of the saddle, this will cushion any gap between the saddle and the pipe. Make sure the hole on the sponge is thoroughly punched out, and is aligned to the hole on the saddle.



Fig. 4

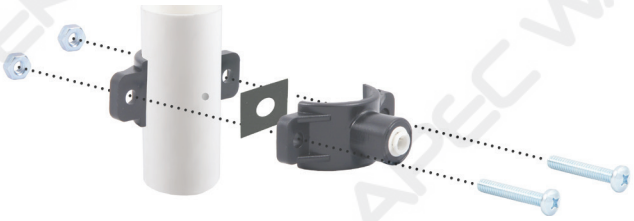


Fig. 4A

3. See **Fig. 4A, 4B.** Make sure to align the drain saddle hole to the drilled hole perfectly. Mis-aligning these two holes will block the waste water and cause membrane damage. Attach the drain saddle to the drain pipe and tighten the two screws.



Fig. 4B

Step 3: Drilling A Hole For The RO Faucet

The RO dispensing faucet can be mounted on the sink, on the counter top, or simply hang at a location where it's convenient for you to dispense the filtered water. You will need to drill a hole only if you choose to mount the faucet on a surface.

If you don't need the faucet:

If you don't need to use the faucet and connect the RO's output directly to your appliance (Icemaker, coffee maker, soda machines etc.), please make sure your appliance has a **shut-off** function when it's full, so that the RO can **shut-off** properly. Without an "air-tight" shut off valve at output end, the RO will not shut-off automatically—it will keep running and quickly deplete the pre-filters and membranes.

Prepare & drill surface for mounting the faucet:

The faucet should be positioned with aesthetics, function and convenience in mind. An ample flat area is required for the faucet base so that the faucet can be drawn down tightly.

Conditions that may be present which could eliminate the need to drill a hole:

a) If there is an extra hole already in your sink, covered by a chrome cover, then remove the chrome cover and install the faucet there.

b) If there is a spray hose either not functioning or not desired, then remove the spray hose and plug the outlet under the main faucet. Be sure to check if the spray uses a diverter at the base of the spout. If so, remove to avoid trouble later on.

c) If the task of drilling is not a feasible option (i.e. the home is rented, a drill is not available etc.), then just connect the faucet and hang it on the cabinet door or wherever that is convenient. Be creative!

Safety glasses should be worn to protect your eyes while drilling the faucet hole.

* For best results use a 1/2" carbide-tipped masonry drill bit to drill the hole.

1. Carefully select the faucet location. Make sure the faucet stud will be accessible from below when the hole is drilled. If space is not available on the upper sink area, the faucet can be located on the counter top by the edge of the sink. If the counter top is ceramic tile, the method for drilling the hole will be the same as for porcelain sinks.

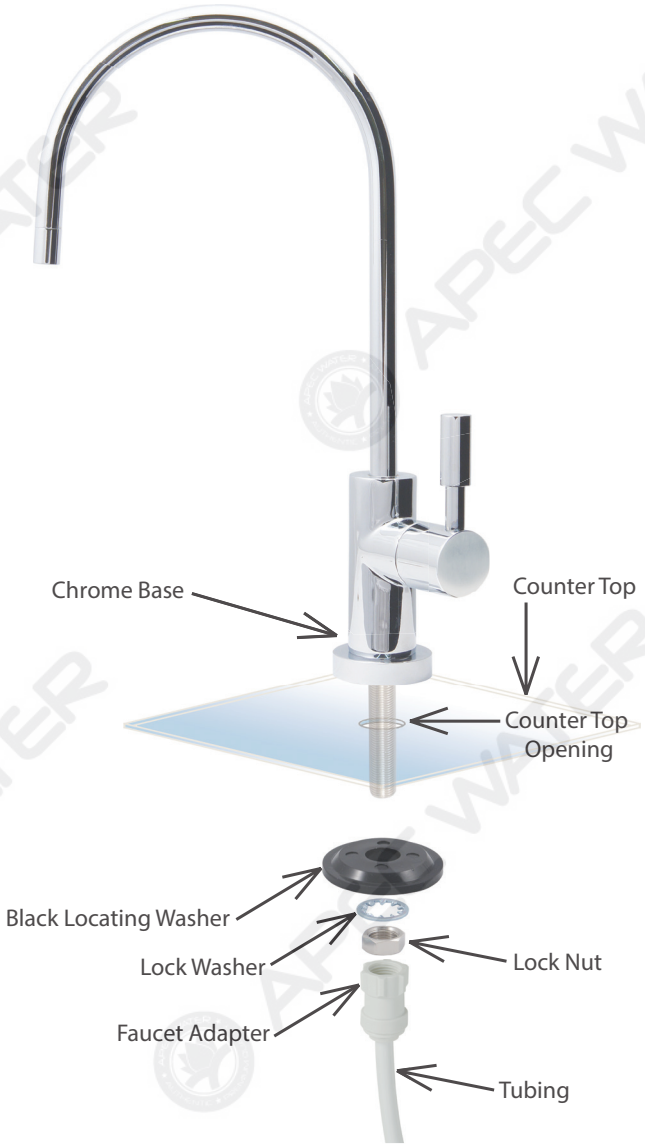
2. **For Stainless Steel Sink:** Before using a 1/2" carbide drill bit, an indent should be made with a center punch to keep the drill bit from walking. A small pilot hole will also aid the drill bit.

3. **For Porcelain Sink:** Porcelain enameled sinks can readily be chipped if care is not exercised when drilling the hole. Before starting the drill motor, apply firm downward pressure on the bit until a crunching occurs. This will help keep the drill bit from walking when starting the hole. A small pilot hole will also aid the drill bit.

Note: Immediately after the hole drilling is done, clean up all metal chips, for **metal chips will stain the porcelain!!**

Step 4: Mounting The Faucet

1. Mount the faucet as shown in **Fig. 5** below:



2. Connect the **Clear** output line to the faucet:

   Screw the "Faucet Adapter" (provided) onto the faucet base, as shown in **Fig. 5** above. Connect the 3/8" Clear output line to the Faucet Adapter, simply push the line into the Adapter tightly. NO Teflon tape needed here. (Note: Discard the un-used nut and sleeve in the faucet kit).

Step 5: Positioning The System

The RO system can stand on the ground or be secured to the wall. The storage tank may be laid on its side if needed. This position does not affect the tank's performance. If there is not enough room near the RO system, you can put the tank away from the system, up to about 20 feet horizontal without much pressure loss.

Step 6: Connecting The System

There are 4 connections:

Point A to X: Connect RO to COLD water supply- **3/8" Red** tubing.
Point G to Y: Connect product water from Last-stage post carbon filter to tank- **3/8" Yellow** tubing *.
Point H to Z: Connect product water from Last-stage post carbon filter output to dispensing faucet- **3/8" Clear** tubing.
Drain line to W: Connect waste water line from the RO to drain outlet- **1/4" Black** tubing.

* How Tank line works: The line from Point **G to Y** works as a 2-way line; the Product water enters and leaves the tank via this same line.

Make the tubing connections as follows:

To ensure a smooth and correct installation, please connect the water lines in the order outlined below. Refer to **Fig.6** for proper point locations.

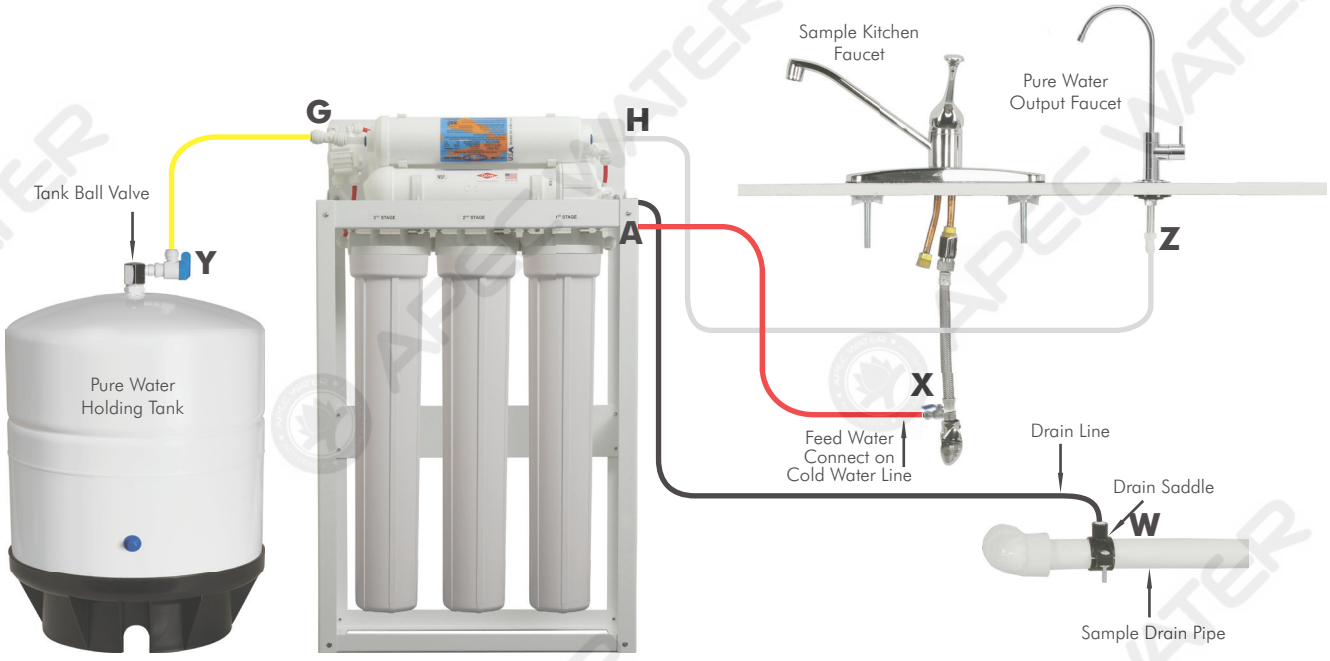


Fig. 6

1. Point Z **Faucet connections:**

Tubing color: Clear tubing. Connect the 3/8" CLEAR tubing to the base of the RO faucet.
Fitting type: Quick-Connect fitting. No Teflon tape needed here.

2. Point X **Feed water connection:**

Tubing color: Red tubing. Connect the 3/8" RED tubing to the Feed Water Ball Valve.
Fitting type: Metal compression nut fitting. No Teflon tape needed here.

3. Point W **Waste water connection:**

Tubing color: Black-tubing. Connect the 1/4" BLACK tubing from the RO to the Drain Saddle.
Fitting type: Quick-Connect fitting on drain saddle. No Teflon tape needed here.

4. Point A **System water inlet (to Stage 1 prefilter) connection:**

Tubing color: Red tubing. Connect the 3/8" RED tubing from the Feed Water Ball Valve to the RO's stage 1 pre-filter.
Fitting type: Quick-Connect fitting here. No Teflon tape needed here.

(**UV Light:** If your RO has a UV light at Stage-0, then connect the Red tubing to the UV light inlet port).

5. Point H **Stage-5 filtered water to faucet connection:**

Tubing color: Clear tubing. Connect the 3/8" CLEAR tubing from the faucet base to the last stage post carbon filter's outflow end at point **H**. (See "Flow➡" arrow on the filter for flow direction).
Note: Remove the "end plugs" from the filter to open up the ports.

Fitting type: Quick-Connect fitting. No Teflon tape needed here.

(**UV Light:** If your RO has a UV light at the last stage, then connect the Clear tubing from the UV outlet port to the RO dispense faucet).

6. Point G **Last Stage Post Carbon filter's T-fitting connection:**

Tubing color: Yellow tubing. Connect the 3/8" YELLOW tubing to last stage filter's T-fitting.
Fitting type: Quick-Connect fitting (remove protective "end plug" from the T-Fitting to open the port).

7. Point Y Tank's input & output connection:

Fig. 7





Tank Shut-Off Valve Kit: The tank-shut off kit includes 2 parts. A Shut-off valve and a Tank Output Adaptor. They are NOT tightened when we ship out the tank. At this point, wrap Teflon tape onto threaded parts on the tank adaptor. Put the 2 parts together and tighten them to secure no-leak connection. Please do not over-tighten for it may crack the plastic shut-off valve!

Put Valve onto Tank: Apply 5-6 wraps of Teflon tape on the tank's threaded metal stem. Screw the tank valve onto the tank's stem, as shown in **Fig.7** above.

Connect tank line: Connect the 3/8" yellow tubing from Stage-5 T-fitting to tank's valve.

Option: Feeding a 2nd Outlet

If you want to connect product water from the RO to a 2nd outlet, you will need:

- One 3/8" T-fitting, preferably the quick-connect type fitting.
- Extra 3/8" tubing long enough to go from the RO system to your 2nd outlet
- Optional: One 3/8" shut-off valve, preferably the quick-connect type.

Before connecting the output water line from Point **Z to H**, add a T-fitting near point **H** (see **Fig.6A**) to divert product water to both the faucet and your 2nd output point.

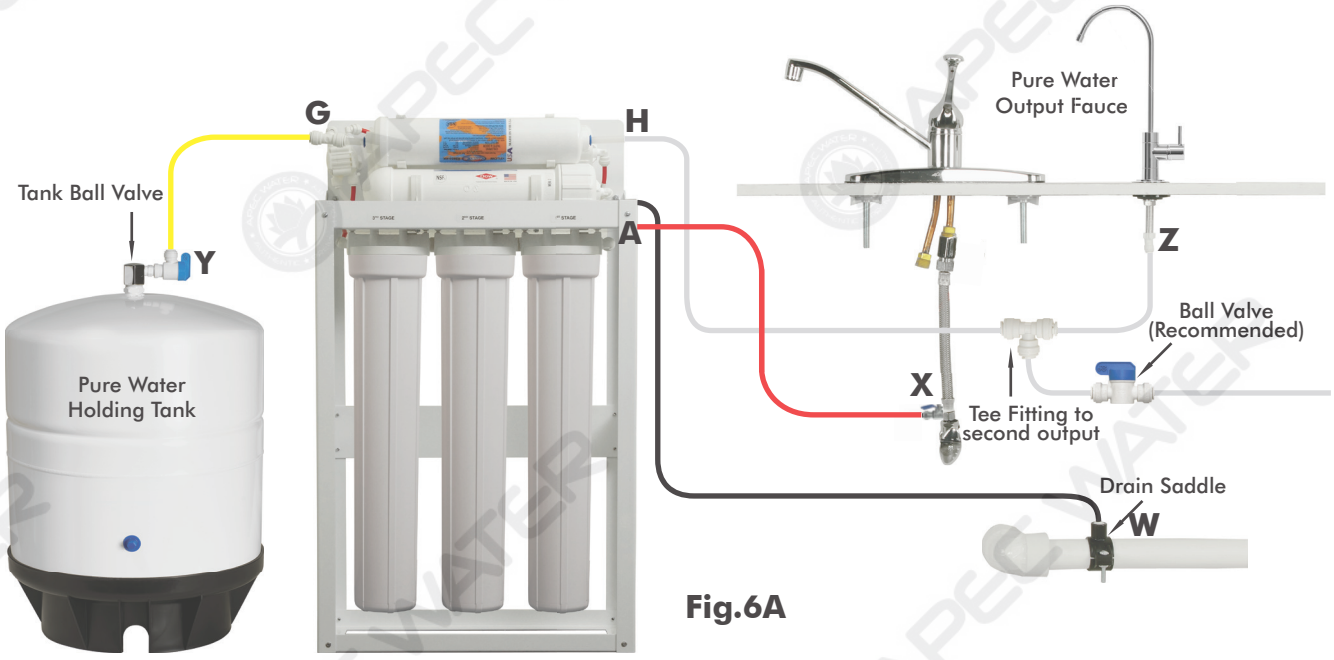


Fig.6A

Step 7: System Start-Up

1. **Turn on feed water:** Slowly, turn on your cold water supply. **Open the Feed Water Ball Valve** to allow the raw water to enter the system. Turn the "handle" to the horizontal position. **Check for leaks!**

2. **Turn on tank valve:** Turn on the tank's ball valve to allow water to enter the tank. The tank's valve is "On" when the valve lever is parallel (in the same direction) with the valve's outlet (see **Fig.7**). **Check for leaks!**

3. **Wait for tank to fill:** Before usage, allow the tank to fill. It takes 2-3 hours to fill tank depending on the incoming water pressure.

4. **Drain Tank:** **Do not use the first tank of water! Drain it out to flush the system and new filters.** Lift the faucet lever up into a locked position to drain tank. Let the tank refill again and the pure water is ready for use.

5. **Clean up area:** Allow the system to run while cleaning up tools and work area.

6. **Check for leaks!** Make sure **no water is leaking** at joints, fittings, valves, and tubing connections.

Congratulations! You have successfully installed the Reverse Osmosis System.

*** End of Installation Section ***

FILTER CHANGE SCHEDULE

The system requires very little maintenance. Just change the filter cartridges regularly as suggested below. Keep the system sheltered from the weather elements, and run the system within its reasonable output capacity (i.e. allow the system to rest a few hours a day).

Stages-1,2,3 Pre-filters:

City water usage: Replace the pre-filters at least once a year (annually), or about 8000 gallons of filtered water produced, whichever comes first.

Well water usage: Replace the pre-filters every 6-8 months depending on well water quality.

Stage-4 Membrane: City Water: Replace every 3-5 years depending on input water quality, water usage, and prefilter change maintenance.

Private Well Water: Replace every 2-3 years depending on well water quality, and pre-filter change maintenance.

Membranes Replacement: (2 to 4 membranes depending on RO model)

Lite-180gpd Model: Two 90gpd membranes, replace both together.

Lite-240gpd Model: Three 90gpd membranes, replace all 3 together.

Lite-360gpd Model: Four 90gpd membranes, replace all 4 together.

Post Carbon Filter (Last Stage): Replace every **3-5 years.**

It's best to replace this filter when replacing the stage-4 membrane.

Important! It is important to change the 3 pre-filters timely, at least every 12 months. The pre-filters protect the stage-4 membranes. If they are not changed timely and become over-depleted, the membrane will be damaged and the RO system will be contaminated.

It's best to use APEC replacement filters. Using "non APEC" and lesser quality filters may clog up the RO system and damage the membrane.

FILTER CHANGE INSTRUCTIONS

How To Replace Stages 1, 2, 3 Pre-Filters:

1. Turn OFF cold water supply to RO system. Turn OFF tank's ball-valve. Turn on RO faucet briefly to relief the built-up pressure inside the RO system. This will make opening the housings easier.

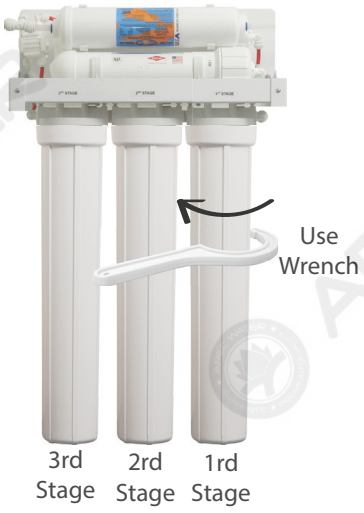
2. Open housing: Have the RO standing upright. Slip the plastic wrench onto the #1 housing. Looking down from a top view, you should open the housing turning clockwise. If necessary, lay the RO down on the floor to get a better leverage. If the housing is too tight, use a hammer and tap on the wrench handle to help turn the wrench.

3. Discard 3 used filters, wash housings with mild soap, rinse off. Put 3 new filters into their respective housing: sediment filter in stage-1, carbon block filter in stages 2 & 3.

4. Close up the housing. Make sure each housing has a **black O-ring** in the thread groves. Use wrench to tighten each housing.

5. **Remember: Turn ON the cold water supply and OPEN the tank valve after you finished changing filters!**

6. **Check for leaks!**



STEP 1



STEP 2

After taking the housing off, take out the dirty filters and put the new 3 pre=filters in. Remember, Stage 2 and Stage 3 are the same carbon filters.

How to Replace Stage-4 Membrane:

There are several membranes (2 to 4 depending on model) provided with your system. Please insert the membrane into each housing one-by-one to prevent mis-connecting the tubing.

1. Locate the Membrane housings on the system. **See Fig 8**

2. The number of housing matches with the number of membranes provided. Each housing is labeled as: "MEM-1", "MEM-2", "MEM-3", "MEM-4" depending on your Ro model.

3. Start with "MEM-1" housing: Insert the membrane into one housing at a time. Finish up the connection before going onto the next housing. This will prevent confusing the tubing order.

   Insert membrane: See **Fig.8A** Remove the tubing from the membrane housing cap. Open the cap. Insert membrane all the way into the housing tightly with the correct side going in first as shown below. The end with 2 black-rings goes in first.

4. Close the housing cap. Re-connect the tubing to cap as before. Make sure to connect each color coded tubing to its corresponding (matching) housing. This is important for proper filtration.

5. Proceed to insert the other membranes in the same manner.

Note: Make sure the membrane's end with 2 black-rings goes into housing first!

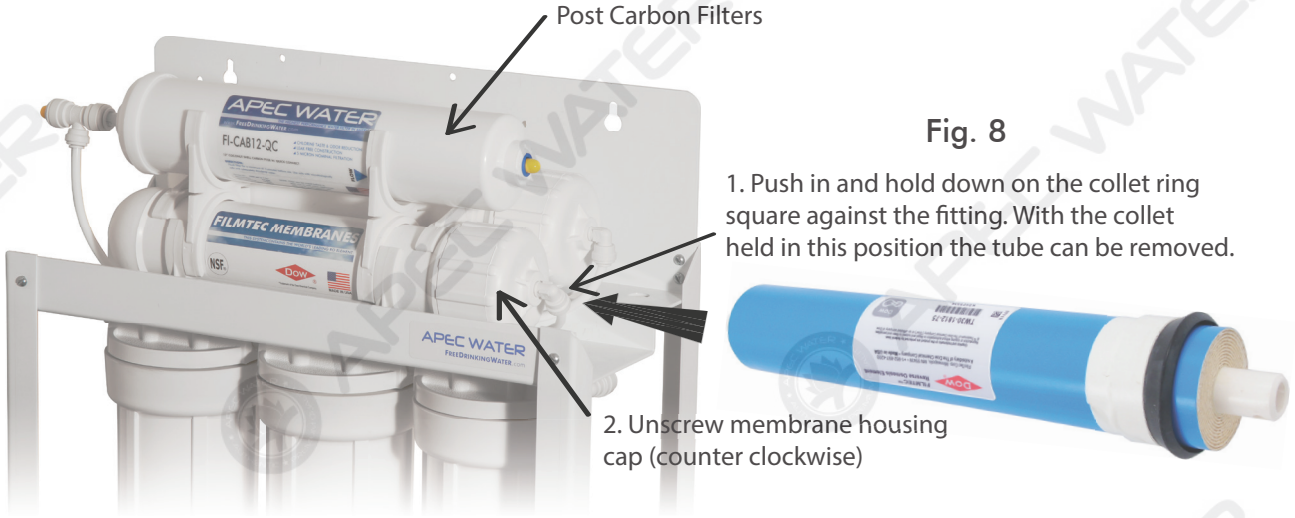


Fig. 8



Fig. 8A

How to Replace Last Stage Post Carbon Filter:

Replace this last filter at the same time you replace the stage-4 membrane.

1. Locate the last stage carbon filter. See **Fig 8** on Page 16.

2. Remove the OLD filter: Disconnect the input 3/8" tubing at Point **G**. and output 3/8" tubing at Point **H**. Discard the old filter. (See **Fig.6** on Page 10)

   To disconnect: Push in and hold down on the collet ring square against the fitting. With the collet held in this position the tubing can be removed. See **Fig.1B** on page 3.

3. Remove the 2 end plugs from the new filter to open up the parts.

4. Reconnect the input and output tubing. Make sure the "Flow ➡" on the filter is pointing to the pure water output direction.

*** * * End of Installation Manual * * ***

OWNER'S MANUAL

This section provides explanation and basic concepts on how an RO system works, and how it performs in relation to your input water's condition. We hope this information helps keep your RO system running at top performance for years to come.

1). Basic Terms

GPD = Gallons Per Day (flow rate)
PSI = Pounds per Square Inch (pressure)
TDS = Total Dissolved Solids (contaminants)
PPM = Parts Per Million (unit used to measure TDS level)
TDS Meter = A digital meter for measuring the TDS level in the water

2). Water Pressure – The Most Important Factor!

The RO system runs on water pressure. Therefore your water pressure has the most direct effect on how well your RO will perform. Your Lite Commercial RO requires a **minimum 50 psi** input water pressure to run efficiently. Higher pressures of 70-85psi will give faster output, fuller and quicker tank refills, and higher contaminant rejection rates compare to lower pressure levels.

Output at 77 °F VS. Various Input Water Pressure

ITEM#	40 psi	50 psi	60 psi	70 psi	80 psi
LITE-180	120 GPD	150 GPD	180 GPD	220 GPD	250 GPD
LITE-240	160 GPD	200 GPD	240 GPD	280 GPD	320 GPD
LITE-360	175 GPD	220 GPD	270 GPD	317 GPD	360 GPD

3). Storage Tank's Volume:

Your incoming water pressure will determine how fast and how full the storage tank will be filled up. The storage tank is pressurized, so when it fills up, it asserts a "back-pressure" accordingly. The RO system has to override this back-pressure when it spurts the product water into the tank. Therefore, the stronger your input water pressure is, the fuller and quicker the tank will be filled. If the water pressure is low, the tank will take longer to fill and may not fill up to its full capacity.

The 14 gallon tank will fill up according to your input water pressure as follows:

Input 70+ psi > tank fills 9.7 gallon (almost 100% full)
Input 60 psi > tank fills 9.0 gallon (almost 88% full)
Input 50 psi > tank fills 7.8 gallon (about 70% full)
Input 40 psi > tank fills 6.1 gallon (about 50% full)

So, if your input water pressure is low, the tank will not fill up to full.

* 14 gal is the tank volume. The tank bladder's actual holding capacity depends on your input water pressure. Higher water pressure fills up the bladder more, and lower water pressure fills it up less.

4). How Long Does It Take to Fill Tank?

Depending on your water pressure and RO model, the standard tank will fill up in about 2-3 hours. After the tank is filled, the RO will shut off automatically.

5). Ro Delivery Pressure.

The Ro's delivery pressure depends on how full the storage tank is. If the tank is full then water comes out strongly at the faucet. If the tank is only half-full or near empty, the faucet flow will be slow and sluggish.

For a standard 14-gallon tank, the tank's pressure and fullness correlate as follows:

10 gallons > 50 psi output pressure (pressure inside tank)
9.0 gallon > 40 psi
7.8 gallon > 30 psi
3.3 gallon > 14 psi
1.6 gallon > 10 psi
Tank empty > 7 psi (pre-charged pressure)

6). Feeding Multiple Outlets:

Feeding the filtered water to multiple outlets is do-able. The key is to choose the right RO model that fits your input water pressure level. This model should fill up the tank quickly and fully. A frequently full tank will then provide good delivery pressure to feed the multiple outlets in your house.

We suggest limiting output points to no more the 3 outlets. Total distance should be within 20 ft. horizontal and 10 ft. vertical from the RO system.

7). Low Water Pressure – RO Problems:

The 3 most common problems caused by low water pressure:

1) Tank does not fill up, get little water from tank
2) Sluggish flow at the dispensing faucet
3) RO makes water slower than the claimed GPD

If you experience these problems, please check your water pressure as the first step. This will often solve the above listed problems.

8). How to Test Your Water Pressure:

Get a water pressure gauge that adapts onto your sink or garden faucet (from hardware store), attach gauge onto faucet, turn water on to FULL, then take a reading.

For some areas, water pressure is lower during the day and higher at night when less people are using water. So to get an accurate average, take several measurements at different times of the day and average them out.

9). TDS Meter – How to Test Your Water's Quality:

The TDS meter is used to test your water's quality before and after the RO system. It also tells you when the membrane needs to be changed.

Use 2 clean glasses, put your tap water in one glass, and the filtered water in another (rinse this glass with filtered water several times to get an accurate reading).

Turn on the meter. The meter will show "000" reading on its screen. Place the TDS meter into the Product water. Record product water's TDS reading. Then do the same for the Tap water. Record the Tap water's reading. Compare the 2 readings.

The Product water's TDS should be about 3%-10% of your Tap water's TDS. This is a normal range.

For example:

Input tap water TDS is 100 ppm > Then output filtered water TDS should be 3-10 ppm.

This means the RO system has removed 90% - 97% of the contaminants (TDS) from your input water, leaving only 3%-10% of TDS in the filtered RO water. This is a normal rejection range. This means the RO membrane is in good condition.

When the product water's TDS reaches 15%-20%, then it's time to change the membrane.

10). How do I know when to change the membrane?

It's best to check the membrane's condition with a TDS (Total Dissolved Solids) meter. When the TDS reading of the filtered water starts to increase, or when the taste of the pure water is not as good as before, it's time to replace the membrane and the 5th Stage carbon filter. **Please see "Page 24" for details on how to test your water's quality and membranes using a TDS meter.**

11). Premature Membrane Failure:

There are 4 common causes that lead to premature membrane failure:

1) Failing to replace the 3 pre-filters as frequently as needed:

   If you're on **city water**: The over-depleted carbon pre-filters allow the chlorine to get through and damage the membrane.

   If you're on **private well** water: The overloaded pre-filters allow excessive sediments and particles to get through and clog up the membrane surface.

2) Your water source may contain certain organic or chemical compounds that form a slimy film which covers up the membrane's surface. This will disable the membrane prematurely. In this case, adding a UV light could help extend the membrane's life.

3) Your water source is extremely hard. Our RO systems can treat Total Dissolved Solids (TDS) up to 2000ppm. Hard minerals are a part of the TDS Composite. If the TDS in your water exceeds 2000ppm, it will clog up the membrane quickly.

4) If the waste water flow is somehow restricted or blocked, the membrane will be damaged prematurely. So please check to make sure the waste water is draining off properly.

*** * * End of Owner's Manual * * ***

LIMITED PRODUCT WARRANTY

Scope

APEC takes pride in selling a superb line of products, including this reverse osmosis system ("Product"). As such, APEC expressly warrants to the original purchaser that, for a period of one (1) year from the date of purchase, the Product will be reasonably free of defects in materials and workmanship. Within that one (1) year period from the original purchase, APEC will, at its option, repair or replace the Product without charge, or refund the cost of the Product, if the Product fails or does not perform as warranted solely due to a manufacturing defect within the warranty period, subject to the limitations and exclusions set forth in this Limited Product Warranty. This Limited Product Warranty only applies when the Product is used, stored, handled, fabricated and/or installed in the manner recommended by APEC in the Installation Instruction & Owner's Manual ("Manual").

Repair or Replacement

Repair or replacement during this one (1) year warranty shall include reasonable labor charges necessary to repair or replace the defective Product, but shall not include freight charges or any other local labor charges from third parties other than APEC, unless APEC expressly approves such charges in writing. During the entire one (1) year warranty, APEC's obligation to repair or replace shall further be limited to repair or replacement with the styles, models, products, colors, etc. of the Product that are available at the time of the repair or replacement, and shall be limited to the repair or replacement of only the specific Product that fails due to a manufacturing defect. Any repaired or replaced product shall also remain subject to the original one (1) year warranty from the date of the original purchase, and any repair or replacement shall not extend the original warranty period in any manner or start a new warranty period.

Conditions of Validity of this Limited Product Warranty

Even though the Product has extremely high endurance for operating conditions such as pH, maximum TDS, temperature, and optimum water pressure, THIS LIMITED PRODUCT WARRANTY SHALL ONLY BE VALID IF:

1. The replaceable filters and membrane are changed and maintained on a regular basis as directed in the Manual. Moreover, depending on local water input water quality, regular maintenance may need to be increased.

2. The Product is operated within the confines of the following standard operating conditions:

	Water Pressure	pH Range	Max. TDS	Water Temperature
Lite Commercial RO System	50- 85 psi	2-11	2000 ppm	40-100 F

Any information or suggestion by APEC with respect to the Product concerning applications, specifications or compliance with codes and standards is provided solely for your convenient reference and is made without any representation as to accuracy or suitability. You must verify and test the suitability of any information with respect to the Product for your specific application.

Non-Covered Defects

THIS LIMITED PRODUCT WARRANTY DOES NOT COVER DEFECTS CAUSED BY:

1. Improper storage, installation, maintenance, handling, use and/or alterations of the Product, including, but not limited to, non-compliance with the installation, maintenance and standard operation conditions stated in the Manual and this Limited Product Warranty.

2. Unreasonable use, unintended use, or misuse of the Product for something other than its intended purpose as a reverse osmosis system.

3. Use of replacement parts, filters, membranes or other accessories that are not sold or manufactured by APEC for use with this particular Product.

4. Damage not resulting from manufacturing defects that occur while the Product is in the original purchaser's possession.

5. Installation of the Product with known or visible manufacturing defects at the time of installation.

6. Damage caused by freezing, flood, fire or Act of God.

CONDITIONS THAT RENDER THIS LIMITED PRODUCT WARRANTY VOID

THIS LIMITED PRODUCT WARRANTY SHALL BE VOID IF:

1. The Product is not operated in compliance with normal municipal water conditions for which the particular model of this Product is intended.

2. The person seeking to invoke the warranty is not the original purchaser. That is, this Limited Product Warranty only extends to original purchasers.

3. The is purchased used. That is, this Limited Product Warranty only covers new products.

4. The Product is purchased from someone other than APEC or one of APEC's authorized dealers. This is because, unless the Product was sold by APEC or one of its authorized dealers, APEC cannot verify or guarantee the integrity or authenticity of the Product.

General Conditions

The warranties set forth herein are the only warranties made by APEC in connection with the product. APEC cannot and does not make any implied or express warranties with respect to the product, and disclaims all other warranties, including, but not limited to, any warranty of merchantability or fitness for a particular purpose. Products sold by APEC are sold only to the specifications specifically set forth by APEC in writing. Other than the limited product warranty set forth herein, APEC makes no other warranties, express or implied. APEC's sole obligation under this warranty shall be repair or replacement of a non-conforming product or parts of the product, or at the option of APEC, return of the product and a refund of the purchase price. Buyer assumes all risk whatsoever as to the result of the use of the product purchased, whether used singularly or in combination with any other products or substances.

No claim by the buyer/owner of any kind, including claims for indemnification, shall be greater in amount than the purchase price of the products in respect to which damages are claimed. In no event shall APEC be liable to buyer/owner in tort, contract or otherwise, for any special, indirect, incidental, consequential, reliance, statutory, special, punitive or exemplary damages, including, but not limited to, lost profits, loss of use, loss of time, inconvenience, damage to good will or reputation, or loss of data, even if advised of the possibility of such damages or such damages could have been reasonably foreseen, in connection with, arising out of, or as a result of, the sale, delivery, servicing, use or loss of use of the products sold hereunder, or for any liability of buyer to any third party with respect thereto.

Obtaining Warranty Coverage or General Inquiries

If coverage is available, you may obtain coverage under this Limited Product Warranty by providing APEC with proof of original purchase, and that you are the original purchaser. For service under this Limited Product Warranty, you must notify APEC by phone at 1-800-880-4808, by email at techsupport@freedrinkingwater.com, or in writing at 301 Brea Canyon Road, City of Industry, CA 91789. In making the claim, please provide your name, address, phone number, a description of the product involved, and an explanation of the defect.

APEC WATER®

www.FreeDrinkingWater.com

301 Brea Canyon Road
City of Industry, CA 91789
1-800-880-4808

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Manual print Ver. 3.2, 2024 Feb.