

# REVERSE OSMOSIS SYSTEM

## Installation and Maintenance Manual

*Good water, Diamond life*



RO-50G/75G-100G/125G/150G

## SAFETY INSTRUCTIONS

This appliance is intended to operate and function as per the instructions in this manual. It is not designed to operate outside of the specifications listed and any attempt to do so or tamper with the unit can cause damage to the unit and/or bodily harm. This unit is not a toy keep out of reach from small children. If the unit requires service or repair, please contact your local service technician or sales representative.

- Please ensure feed water temperature is over 4°C. Using water below 4°C can cause ice to form and damage the unit.
- Please ensure power source is correct before connecting unit. Incorrect voltage could result in damage to unit and/or fire hazard.
- Do not cause damage to or use unit if the power cord is damaged. A damaged power cord could cause an electrical shock or fire hazard. If power cord is damaged, unplug and discontinue use immediately.

## CONTENTS:

1. INTRODUCTION	1
2. PACKAGE CONTENTS	1
3. TECHNICAL SPECIFICATIONS	2
4. BEFORE YOU START	2
5. HOW YOUR SYSTEMS WORKS	3
6. SYSTEM COMPONENTS	4
7. INSTALLATION	5
8. OPERATION AND MAINTENANCE	14
9. TROUBLE SHOOTING	20
10. SAFETY INSTRUCTIONS	21

## INTRODUCTION

We would like to thank you for choosing the A/B/C Series Standard Reverse Osmosis Unit. This is our standard 5-stage filtration unit with optional 6th stage filtration add-on. Our unit has been manufactured to strict quality standards to ensure you receive the best product possible. This unit is your first step to cleaner, healthier and better tasting water. The stages and their functions are outlined below.

**First Stage: Spun PP Filter** – removes larger particles suspended in water.

**Second Stage: Granular Carbon Filter** – removes organics, chlorine, odor, and turbidity.

**Third Stage: Block Carbon Filter** – further removes any organics, chlorine, odor and turbidity.

**Fourth Stage: RO Membrane** – removes bacteria, heavy metals, dissolved matter, and salinity.

**Fifth Stage: Inline Carbon Filter (post filter)** – adjusts the taste of treated water.

**Optional Sixth Stage add-ons include:**

**Alkaline filter** – improves the taste of RO water by adding minerals and raises PH.

**Ultraviolet Sterilizer** – kills any bacteria, virus, or organisms present in water.

## PACKAGE CONTENTS

**Reverse Osmosis Unit** – 1 pcs

**Housing Wrench** – 2 pcs

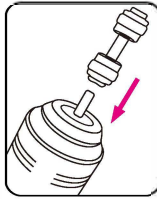
**Food Grade Tubing** – 4 pc (Red, White, Yellow and Blue)

## TROUBLESHOOTING

PROBLEM	CAUSE	SOLUTIONS
Milky colored water	√Air in system	○ Air in the system is a normal occurrence with initial startup of the RO system. This milky look will disappear during normal use within 1 to 2 weeks.
Noise from system	√Air gap faucet √Location of the drain saddle √Restriction in the drain line	○ Will disappear after system shut off ○ Relocate the drain to above water trap. ○ Blockage sometimes caused by debris from garbage disposal or dishwasher.
Small amount of water from RO drinking faucet	√System just starting up  √Air pressure in the storage tank is low.	○ Normally it takes 2-3 hours to fill tank. Low water pressure and/or temperature can reduce production rate. ○ Add pressure to storage tank. The pressure should be 5 - 8 psi when the tank is empty.
Slow production or no water from RO drinking faucet.	√Low water pressure √Crimps in tubing  √Clogged pre-filters √Fouled membrane	○ Add a booster pump ○ Make sure tubing is straight ○ Replace pre-filters ○ Replace membrane
Water taste or smell offensive	√Post carbon is depleted. √Fouled membrane √Sanitizer not flushed out	○ Replace post carbon. ○ Replace membrane. ○ Drain storage tank and refill it overnight.
No drain water	√Clogged flow restrictor	○ Replace flow restrictor.
Leaks	√Fittings are not tightened.  √Twisted O-ring √Misalignment of hole in the drain saddle valves.	○ Tighten fittings as necessary. ○ Replace the O-ring. ○ Realign drain saddle valve.

### ● Filter Replacement

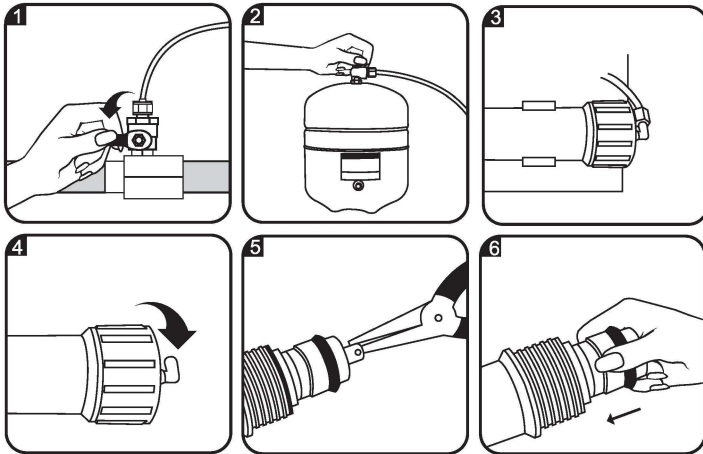
- Close Feed Water Valve.
- Close Tank Ball Valve on Pressure Tank.
- Open Faucet and drain any remaining water from system.
- Disconnect quick connect filters.
- Replace filters, reconnect, and open valves.
- Perform pre-filter flush after filters have been changed



**Note:** Diagrams on how to connect using quick connect fittings can be found in the installation section.

### ● Membrane Replacement

- Close Feed Water Valve.
- Close Tank Ball Valve on Pressure Tank.
- Open Faucet and drain any remaining water from system.
- Open membrane housing and remove used membrane.
- Follow the same procedure as RO membrane installation to replace RO membrane.



**Faucet** – 1 pcs

**Accessories** – Tee Fitting, Ball Valve, Feed Water Valve

**RO Membrane** – 1 pcs

**Manual** – 1 pcs

### TECHNICAL SPECIFICATIONS

**Voltage and Frequency:** 110V-240V 50Hz/60Hz

**Wattage:** 25W-36W

**RO Element Capacity:** 50/75/80/100/125 GPD

**Tank Capacity :** 3.2G Steel or 3.0G Plastic

**Inlet TDS:** ≤ 250ppm

**Chlorine Level:** ≤ 0.2ppm

**Average RO Rejection Rate:** 98%

**Inlet Water Pressure (min/Max):** 14.5 - 43.5 psi

**Inlet Water Temperature (min/Max):** 5°C - 45°C

**Flush Type (model dependent):** Auto or Manual

### BEFORE YOU START

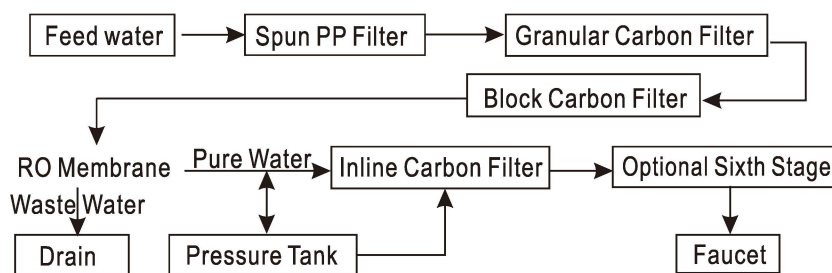
- Read through all instructions before beginning installation and using this system. Follow all steps exactly or risk damaging system/incorrect operation.
- This system contains filters that need to be replaced at certain intervals. Replacement intervals will vary according to use, please contact your local dealer for details.
- Please install system on potable water only . On non-potable water sources, system will not function properly and additional pre-treatment may be needed.

- Ensure source water pressure is between **14.5 - 43.5 psi**. If source water pressure exceeds maximum pressure a pressure reduction valve may be needed, consult your local dealer.
- Ensure source water temperature is between **5°C - 45°C**. System will not function properly if these temperatures are exceeded. **DO NOT INSTALL ON HOT WATER SOURCE.**
- Do not use system on noticeably contaminated water such raw sewage or well water.
- This unit operates on **110V~240V** power. Please ensure you are using the correct power source.

### CAUTION:

- Do not disassemble, open, or modify this unit. Tampering with the unit may cause failure or damage and will void warranty.
- Do not cover the unit, as this will prevent proper heat dissipation and can cause damage or fire.
- Do not place objects on top of the unit as this may cause damage to the unit and may cause leaking.
- Follow all recommended operating pressures and temperature, failure to do so will cause damage to the unit and void warranty.

### HOW YOUR SYSTEMS WORKS



### Filter Maintenance

To ensure the unit operates at its optimum level, routine maintenance is required. The frequency of maintenance depends on the feed water quality and amount of system usage. The following are some guidelines for scheduled filter changes, keep in mind the frequency of filter changes may vary. If in doubt, contact your local dealer or service technician.

- Change Spun PP Filter every 6-12 months or as required.
- Change Block Carbon Filter every 6-12 months or as required.
- Change RO Membrane every 24 months or as required.
- Change Inline Carbon Filter every 12 months or as required.

If you will be away or not using the unit for an extended period of time, please disconnect unit from power supply. If the unit has been shut down and not used for an extended period of time, perform the same flushing procedure as in the initial set up.

**Note:** Pump and membrane may be severely damaged if system is run without flushing pre-filters. Discard all water from flush, it is not suitable for use or consumption.

- After flushing pre-filters connect and open all valves.
- Wait approximately 2 minutes before opening faucet.
- Allow system to flush for first 10-15 minutes with faucet open.  
Do not use water from RO unit at this time.

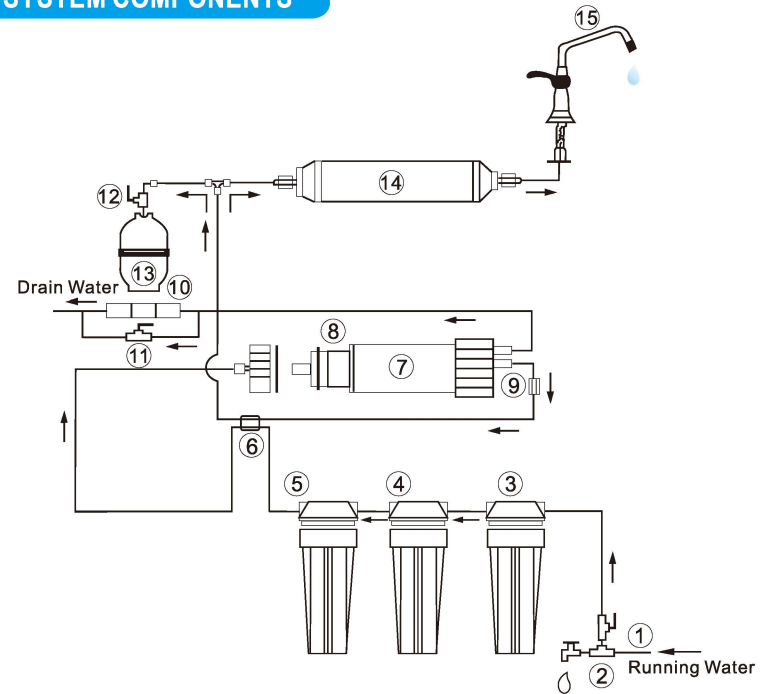
#### ● Flushing the Pressure Tank

- After flushing the Pre-Filters, allow the unit to operate and fill the Pressure Tank.
- Tank will take approximately 3.5 hours to fill. Once tank is full, discharge Pressure Tank by leaving faucet open.
- Once Tank is completely empty, close faucet and allow tank to fill again.

After the Pressure Tank has been flushed, the unit is ready for use.

After flushing the system is ready to use.

#### SYSTEM COMPONENTS



- |                           |                          |                        |
|---------------------------|--------------------------|------------------------|
| 1. Feed Water Valve       | 2. Tee Fitting           | 3. PP Spun Fiber       |
| 4. Granular Carbon Filter | 5. Block Carbon Filter   | 6. Auto Shut Off Valve |
| 7. Membrane Housing       | 8. RO Membrane           | 9. Check Valve         |
| 10. Drain Restrictor      | 11. By-pass flush Valve  | 12. Ball Valve         |
| 13. Pressure Tank         | 14. Inline Carbon Filter | 15. Faucet             |



## INSTALLATION

### Tools and Parts Required



Knife



Electric Drill



Seal Tape



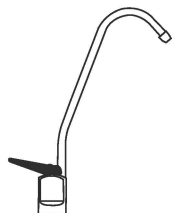
Hammer



Monkey Wrench



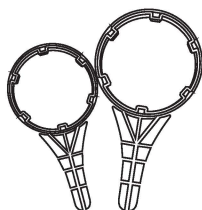
Scissors



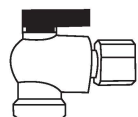
Faucet



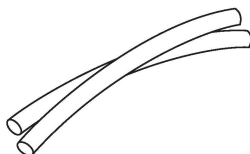
Tank



Housing Wrench



Tank Ball Valve

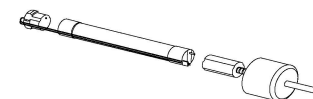


Water Pipe

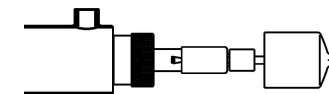


Clip

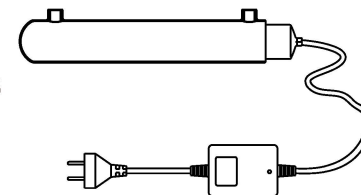
Step 4. Plug the **Adaptor** ( Item G) to the **UV Lamp** (Item F). See Figure 4.



Step 5. Insert the **UV Lamp** (Item F) into the **UV Chamber** (Item A). See Figure 5.



Step 6. Seal it up with the Rubber Stopper that is already attached to the **Adaptor** (Item G). See Figure 6



### WARNING!!!

Do not watch the ultraviolet rays emitting out of the UV lamp without protection since they will cause serious burn for naked eyes. Unplug the electrical ballast when maintaining the system.



## OPERATION AND MAINTENANCE

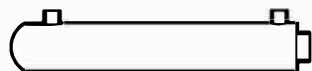
### Pre-filter Flushing (initial setup, before installing RO Element)

Prepare system for operation by flushing pre-filters:

- Disconnect RO element inlet tube on element housing cap. Open water main and inlet valve and allow system to run through the 3 pre-filters.
- Discard output water into container or drain.
- Continue flushing until output water is visibly clean. Reconnect tube.

⦿ **Install Ultraviolet Sterilizer(for the unit with UV Sterilizer)**

A. UV CHAMBER



B. GLASS TUBE



C. ALUMINUM NUT



D. SILICONE STOPPER



E. SILICONE SEAL



F. UV LAMP



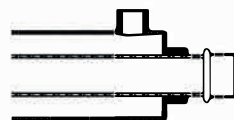
G. ADAPTOR



Step 1. Place **The Silicone Stopper** or **Silicone Seal** ( Item D OR E ) at the tip of **Glass Tube** ( Item B ). See Figure 1.



Step 2. Slide-in the **Glass Tube** ( Item B ) into the **UV Chamber** ( Item A ). See Figure 2.



Step 3. Fasten the **Aluminum Nut** ( Item C ) to seal the **UV Chamber** ( Item A ). See Figure 3.



Faucet Bracket



RO Membrane



Manual

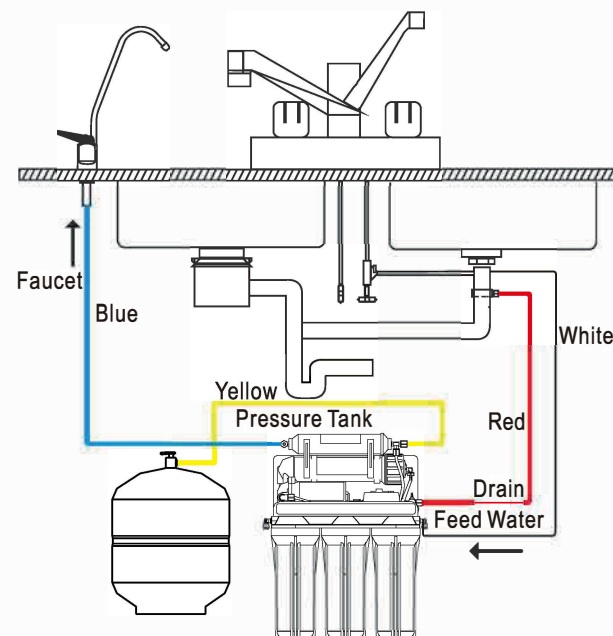


Feed Water Valve



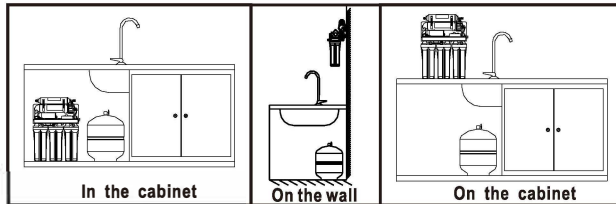
Tee Fitting

⦿ **Unit placement**





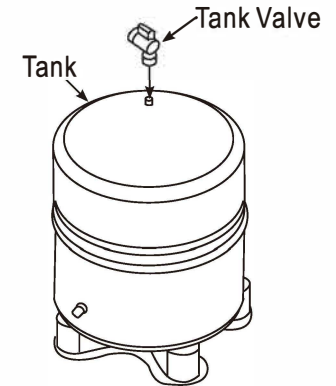
- The unit can be placed flat or upright and on top, inside, or under the cabinet. Feed Water connection should be as close as possible to unit. However, if due to space or other limitations, this unit can be placed where it is convenient.
- When choosing a location for the unit, remember to have easy access to cold water line, drain pipe, power outlet, and enough room to change filters.



**NOTE:** All components and tubing should be located in an area not exposed to freezing temperatures or direct sunlight.

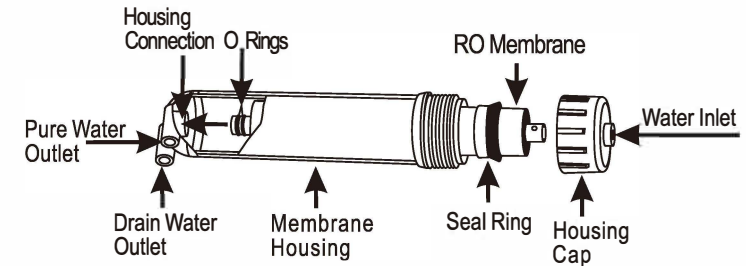
## ◎ Install Tank

- Hand tighten plastic.
- Shut-off valve to tank.



## ◎ Install RO Membrane Element

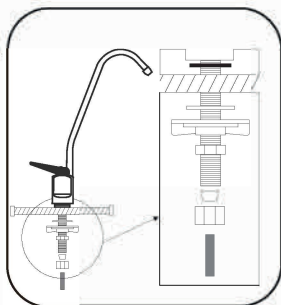
**NOTE:** Before proceeding with membrane element installation, please flush pre-filters thoroughly. (Instructions on how to perform filter flush provided in next section)



- Remove RO housing cap using wrench.
- Remove RO element from packaging.
- Insert RO element into housing with the small double O rings facing inward.
- Install membrane housing cap and tighten with wrench provided.

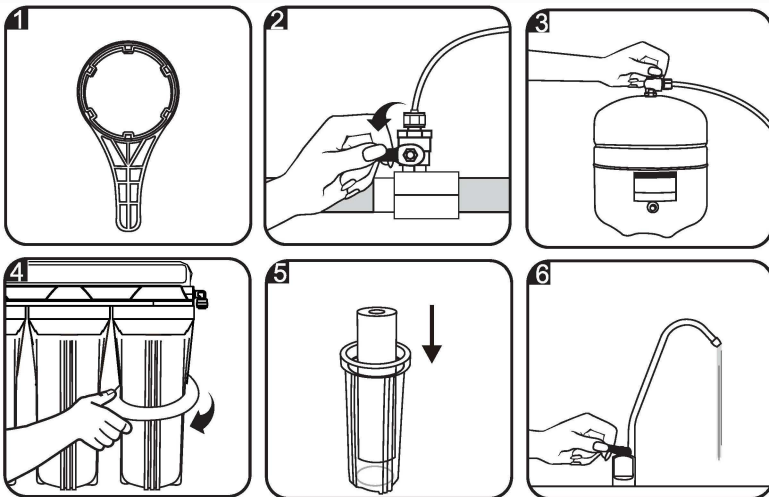
- Attach **Blue Pure Water** tubing to the bottom of faucet and connect tubing to unit.

**CAUTION:** Check that tubing is connected correctly according to Connection Diagram at beginning of section.



#### Install Pre-Filters

- Remove Pre-Filters from packaging.
- Place filters in appropriate housings according to labels and install filter housing from right to left in the following order: PP, GAC, CTO.
- Tightening housings with wrench provided.



**Note:** When installing housings make sure housing is level and even to avoid leaking.

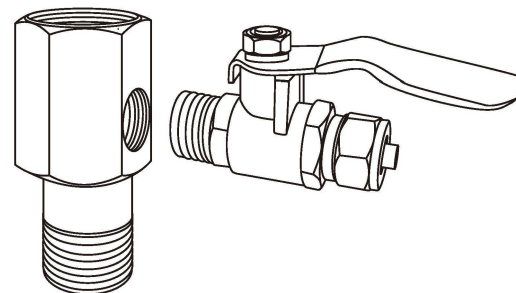
#### Feed Water Valve and Tee Fitting

- Install Tee Fitting and Feed Water Valve as per diagram.
- Wrap threads of Feed Water Valve and Tee Fitting with Teflon tape.
- Connect White Feed Water Tubing from unit to Feed Water Valve.

#### Install the Feed water valve

Install the Feed water valve Tee fitting, and then connect to source water.

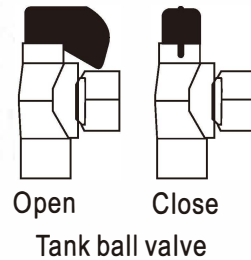
**Caution:** The water supply to your unit **MUST** be from **COLD WATER LINE**.



**NOTE:** Use only a **cold potable water** supply as Feed Water, hot water will damage your unit. Softened Feed Water will extend the life of the RO Membrane.

#### Pressure Tank

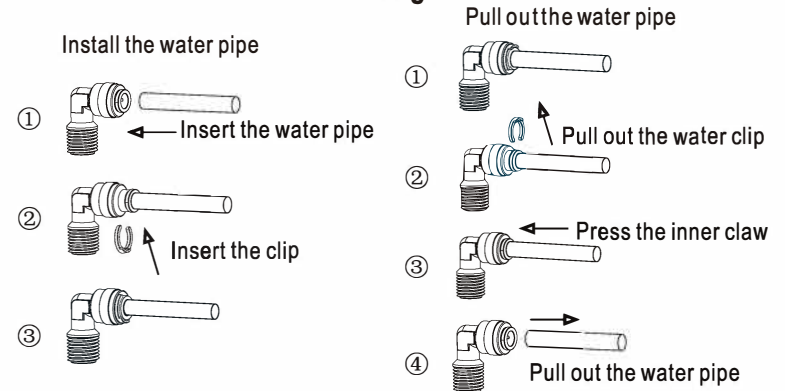
- Keep Pressure Tank within 10 feet of faucet.
- If longer length of tubing is needed, use 3/8" tubing only to prevent pressure drop.
- Tank can weigh up to 30lbs when full, find firm and level flooring.
- Install Ball Valve by screwing Valve on to Tank and apply Teflon tape to prevent leaking.
- Connect Red tubing from post filter to Pressure Tank.



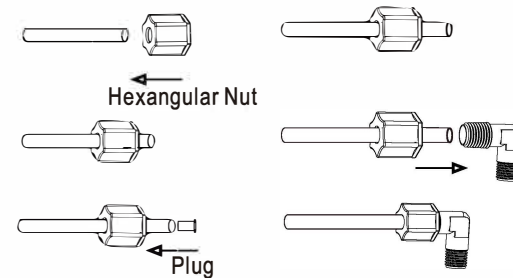
## ⦿ **Tubing Connection**

Refer to the following diagram for how to properly install the Quick fittings and JACO fittings.

### **Quick Fitting**



### **JACO Fitting**



## ⦿ **Faucet Installation**

- Select a convenient location near your sink to place the faucet.
- Drill a hole 12mm in diameter in counter top.
- Place washers, plates, seals and nuts in order as per diagram and tighten on to counter.