



5 STAGE R.O. SYSTEM WITHOUT BOOSTER PUMP USER MANUAL



make it easy, do it well.

SIMPLE, PURE, HEALTHY

ROQ-3405 5 STAGE R.O. SYSTEM WITHOUT BOOSTER PUMP

Warning and caution items:

01. Before using this machine, please read this operation manual in details.
02. When using, please level this equipment. Do not tilt or place on uneven platform.
03. Do not install at location with direct sunshine.
04. Please install this equipment with professional personnel. Please contact your local distributor.
05. Please make sure that grounding is connected correctly to ensure personal body safety.
06. Please do not dismantle or repair this equipment by yourself. If there are any damages, please send to our company designated maintenance locations for repair.
07. If the equipment malfunctions or during filter element replacements, please make sure that power supply is removed and the water source is cut off.
08. If the water pressure of installation area exceeds 80 psi, please install pressure-reducing valve.
09. For this water purification equipment, the ratio of produced pure water (small molecule water for drinking) and clean water (large molecule water for use) is around 45%:55%.
10. For first time installation or filter element replacement, black powder water will be discharged. This is activated carbon powder. It is normal. Please discharge water until water becoming clear.
11. Do not bend tubing to avoid pressure blockage.
12. Please use filter elements from the original manufacturer to ensure normal equipment operation.
13. This system is designed for household water source. Do not use in areas with unknown water quality.
14. Please locate this machine at proper area for water drainage to prevent furniture and floor damages.
15. Please install and maintain this system correctly, and change filter materials regularly. Please read this operation instruction manual in details. If there are any questions, please contact us.

Table of Contents

1. Introduction

- 1.1 Description of filter components -----
- 1.2 Operation method -----
- 1.3 Inspection for water filter -----
- 1.4 Restriction on feeding water -----
- 1.5 Filter element replacement -----

2. Installation

- 2.1 Confirm your installation components -----
- 2.2 Machine installation -----
- 2.3 Installation -----
- 2.4 Connection -----
- 2.5 Start up -----
- 2.6 Auto flush system -----

3. Maintenance

- 3.1 Filter element replacement time -----
- 3.2 Description of filtration conditions -----
- 3.3 Filter element replacement procedure -----
- 3.4 Filter membrane replacement procedure -----

4. Appendix

- 4.1 Parts name -----

1. Introduction

Thanks for using our company's product. This system will bring you healthy, clear and clean drinking water. You can take water from the water outlet of this machine or from the gooseneck faucet installed on your counter. It takes no spaces. It is pretty and convenient. The precision filtration network composes of seven stages of filtration to guard your drinking water stage by stage. It guarantees you that you will use the safest and most tasty water.

Reverse osmosis is the "most economic and effective method to produce pure and clean drinking water" recognized by European and American countries.

This Direct Flow Reverse osmosis water purification equipment is the latest technique in water treatment technologies. You can drink ready-made water with pure and clean quality. This is an innovation that breaks through traditional rules. It integrates the effort of many senior engineers. The product is developed through work of many years and large amount of research and development costs. It has received many patents from many countries.

This equipment does not require pressurized water storage tank. It will not cause bacteria to grow and does not take up spaces. And, there will be no storage tank explosion problems.

1.1 Description of filter components

Stage 1, sludge filter element (Sediment Filter)- the primary function is to remove sludge, suspended solids, particles, debris, and algae from water.

Stages 2, activated carbon filter element (Activated Carbon Filter)- the primary function is to remove odor, color, and chlorine etc. of chemical substances from water.

Stage 3, sludge filter element (Sediment Filter) 1 micron or use activated granular carbon.

Stage 4, reverse osmosis membrane (Reverse Osmosis Membrane)- the primary function is to remove toxic heavy metals, such as arsenic and lead etc., and scale pollution (calcium, magnesium etc) from water. The removal efficiency may be as high as 96%. This is so called "external body kidney" process.

Stage5, Post in-line actived carbonfilter. The primary function is to enhance the taste of pure water and to be delightful drinking water.

RO booster pump - it can store 3.2 gallon of water and with pressure device, it could push water from counter to outlet device (faucet).

1.2 Operation Method :

You can easily get the purest and testy drinking water which can be applied to make coffee cook, and make tea through gooseneck faucet on the counter. All you have to do is just simply to push the bottom (See picture 1 or 2).

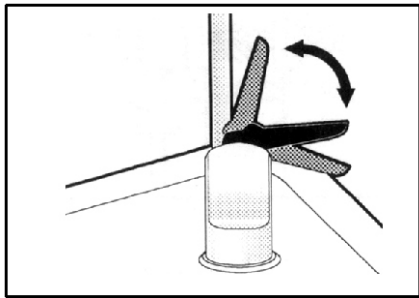


FIGURE.1

Picture (1). Press down the lever to discharge water. Release the button, to stop water. Press up the lever for discharge water continually and you must press down the lever to stop water.

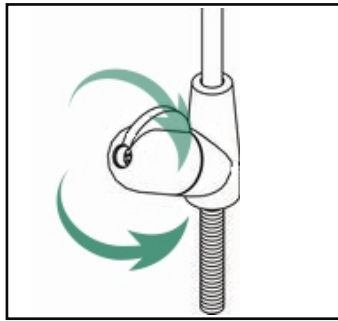


FIGURE.2

Picture (2). Turn the gooseneck faucet counterclockwise to discharge water. And turn clockwise to shut off water.

Your filter may be used for any situations that require clean water. Such as, the following situation:

Make coffee	Make milk	Make ice	Blend juice
Make tea	Pet water use	Cook spag hetti	
Cook soup	Clean vege table	Make drink	

1.3 Inspection for water filter

Your filter working condition can be checked by testing equipment. In normal condition, the replacement of filter should depend on the area of water quality. It also depends on what kind of water. Please refer to page 15 or be recommended to purchase our TDS device. Also, please check membrane condition once in two months.



FIGURE.3
TDS METER

1.4 Restriction on feeding water

This filter is designed to be used with city water or underground water (TDS less than 2000 PPM). The feed water quality requirement is as follows:

Item	Content	Limits
1	Pressure	10~30 psi (need booster pump) > 80 psi (need regulator)
2	Temperature	1~45°C
3	TDS-Total dissolve solid	0~200 ppm
4	PH	3~10
5	Chlorine	0~2 ppm
6	Iron	<0.5 ppm
7	Turbidity	0~1 NTU

Since reverse osmosis membrane is very sensitive to high chlorine concentration in city water, if the chlorine in water exceeds 2 ppm, it will cause damages to the membrane. If the frequency of using this machine is high, or your family member exceeds 4 persons, this may even shorten the replacement time for all filter elements.

1.5 Filter element replacement

Our company strongly recommends to replace filter cartridge on time in accordance to point 3 of this operation manual. And, use the maintenance card attached in this manual (page18) to track filter cartridge replacement condition records.

2. Installation

Since there are many types of faucets, this manual provides the installation instruction for general conditions.

2.1 Confirm tools for installation

Before you start, please first make sure that the installation components and tools are complete. Otherwise, you may feel annoyed when you discover the stuff is insufficient during half way of installation:

2.1.1 Tool preparation- please first check if your tools on hand are complete. (You should have the following tools by yourselves.)

Furthermore, please prepare a long electric extension cord to be used if the length of electric cable attached with the machine is not enough.

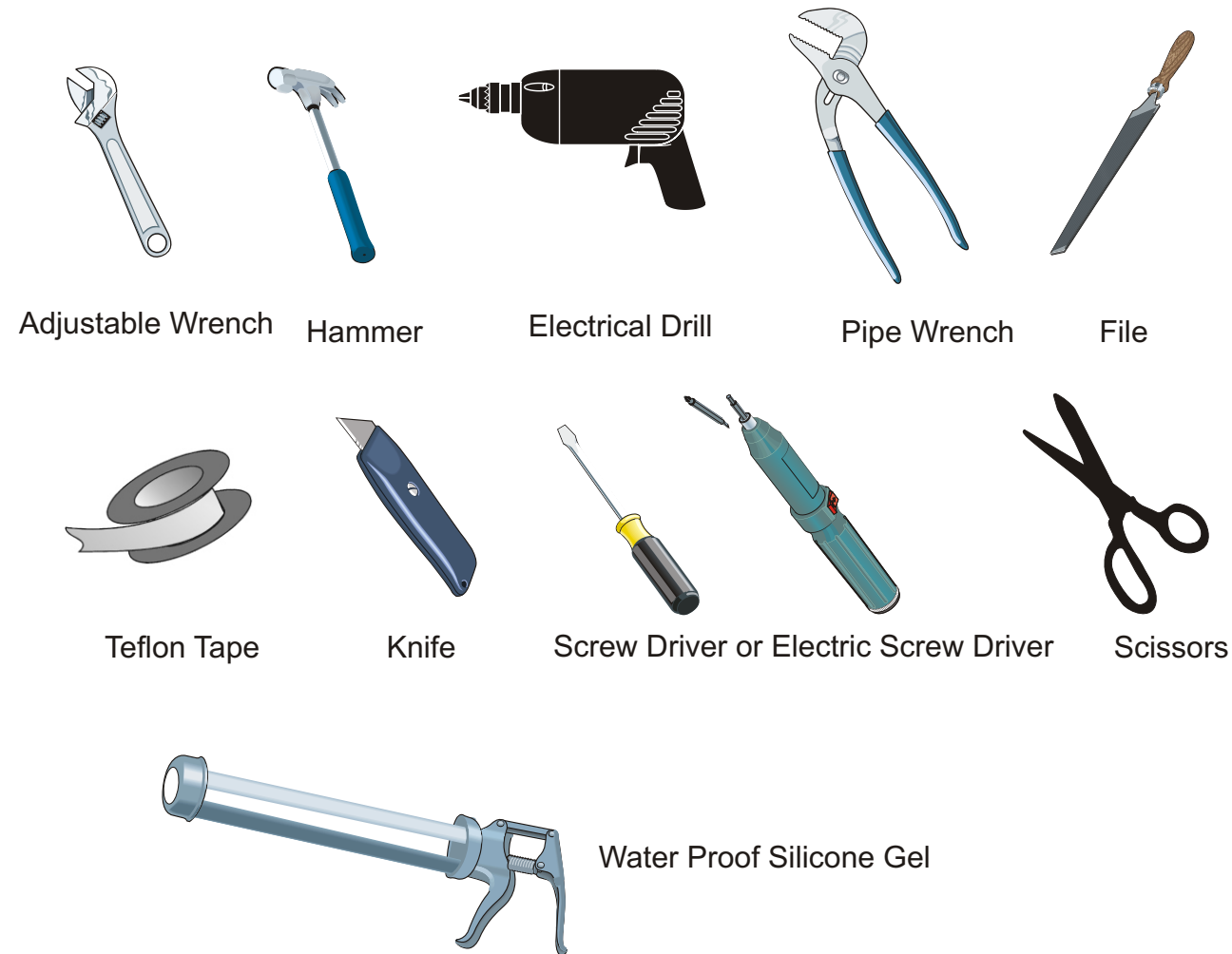


FIGURE 4. TOOL

2.1.2 Confirm your installation components

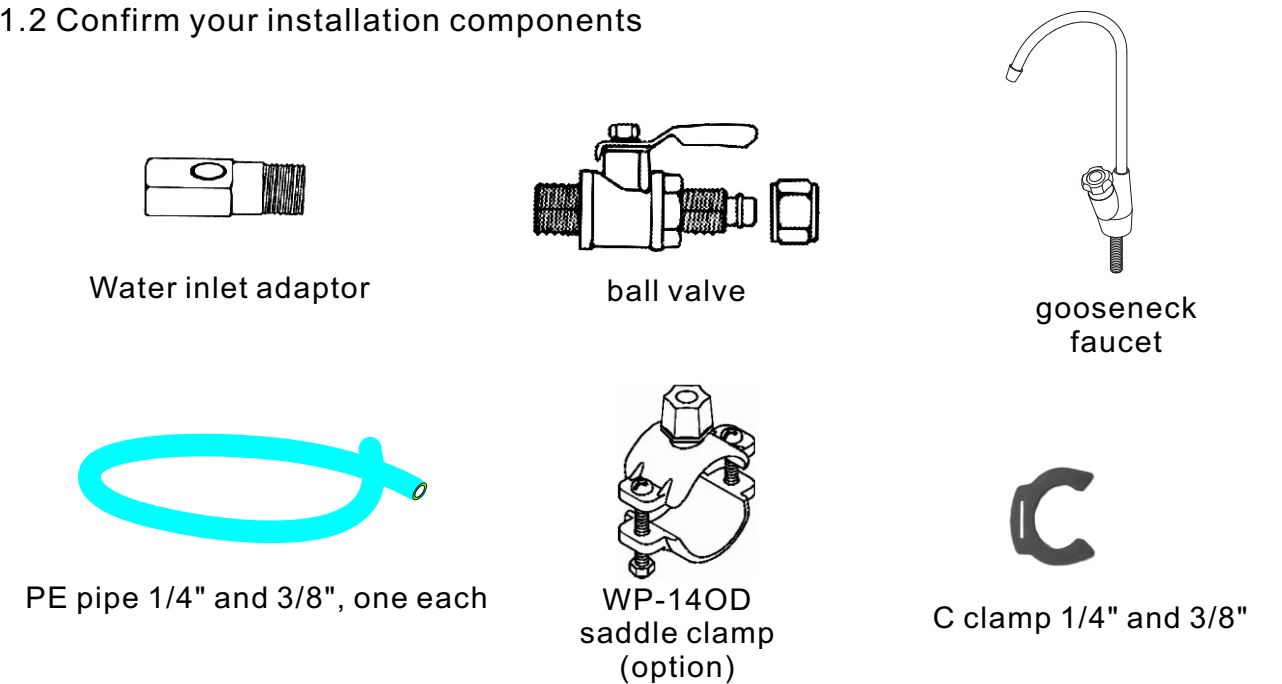


Figure 7. Accessories

2.2 Machine installation

Under sink:

The location of installation should be under the counter of kitchen. Please make sure there is enough space to install the machine. If depth of counter is small, you may take off upper drop tray, lower drop tray and antidust cover.

2.2.1 If your counter material is made by concrete, marble or other factors may not install the machine. Please find appropriate space to install it.

2.2.2 Turn off the source of water inlet-please find your water source and turn it off in order to prevent flooding during installation.

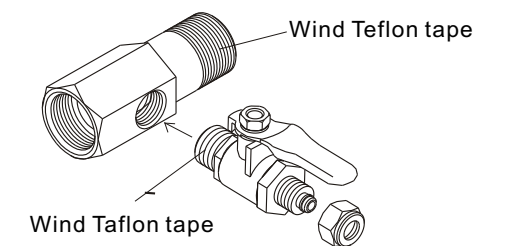
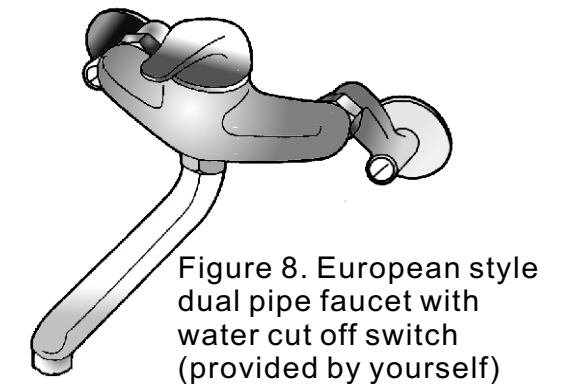


Figure 9. Water inlet adaptor set (sketch diagram)

2.2.3 R.O. installation for building and apartment

On the outlet of water tower supposed to have individual water supply tube please try to find your tube number (As shown in Figure 8) and turn it off. Some European style faucets have turn off device.

★Notice: Basically, there are two type of faucet which are single and dual. The machine is equipped with single faucet only. If your faucet is dual style, please purchase another installation package-please be aware of dimension.

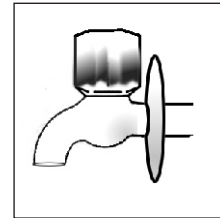


Figure 10.
Conventional faucet

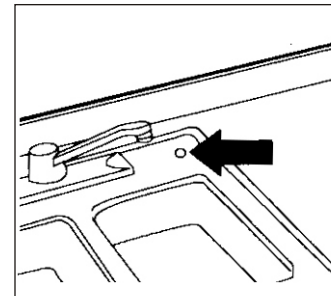


Figure 11.

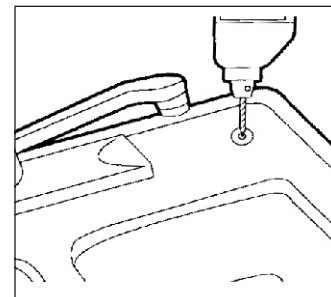


Figure 12.

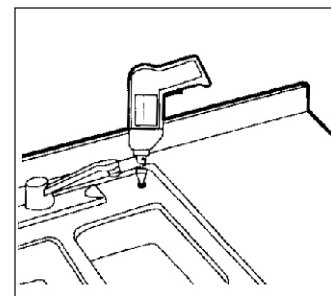


Figure 13.

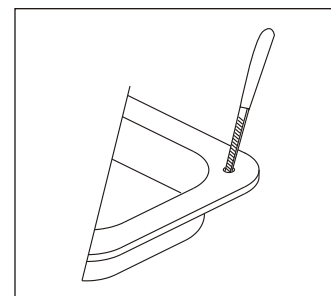


Figure 14.

2-3 Installation

2.3.1 Make sure the inlet of water source had turned off.

2.3.2 Please wind the Teflon tape around the outside thread of inlet adaptor and then connect the ball valve to water inlet adaptor. This is common water inlet adaptor set. (As shown in Figure 9)

2.3.3 Please wind the tape around the outside thread of water inlet adaptor and then screw it down to the connect point of faucet. After that, connect it with faucet.

2.3.4 Drill-You must drill three holes in order to install the power source, water source and gooseneck faucet. If you install the machine on counter, there is no need to drill hole2 and hole3. If your water and power and power source are under counter, there is no need for two holes. Before drilling, please make sure no pillar under the counter. Due to length of faucet, it will not be able to install.

Hole 1. Hole for installation of gooseneck faucet, please select a position for the installation of gooseneck faucet.

Hole2.Hole of water inlet.provide power source through counter. If the power source is under counter, there is no need to drill a hole.

Hole 3. Hole for entrance of power supply into counter. If the counter already has power supply device, there is not necessary to drill a hole on the counter.

Confirmation of hole dimension.

Confirmed hole dimension-hole1	13m/m or 1/2"
Confirmed hole dimension-hole2	6.5m/m or 1/4"
Confirmed hole dimension-hole3	6.5m/m or 1/4"

2.3.5 Installation of goosensck faucet: Pease refer to the picture and lock it with hole1 on the counter. After installation, make sure the object will not loosen.

2.3.6 Water distribution: Select untreated water position, it can be recycled and flush toilet or other purpose. Also, the untreated water can go through water pipe directly.

2.3.7 Storage tank - Install the ball valve on the top of tank. Aim the outlet of ball valve at the hole of storage tank. Put the storage tank under the counter or the place you require to place. Press the switch of ball valve.

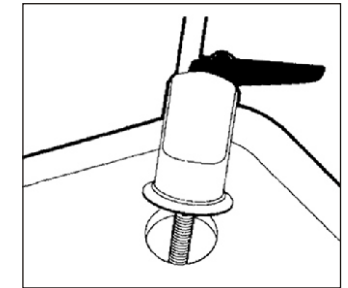


Figure 15.

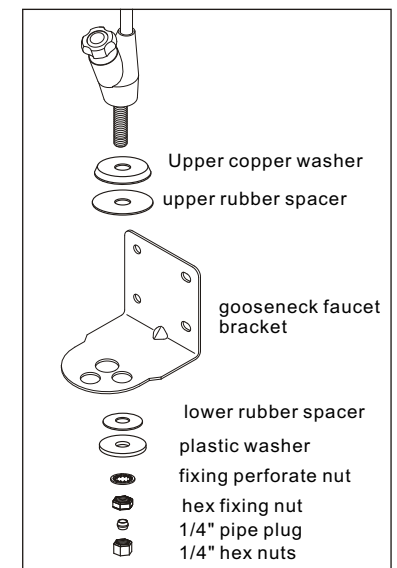


Figure 16. Gooseneck faucet assembly diagram

2.4 Connection

- 2.4.1 Quick connecting pipe: The machine totally adopt quick connecting fitting. All you have to do is to insert the PE pipe and connect with quick fitting, but it should be inserted to the bottom of connector in order to prevent leakage. (As shown in Figure 15)

★Note: When replace filter cartridge or move the position of this machine, if there is PE pipe disconnect and re-connect action, the end of the PE pipe may be damaged. If there is leakage at the connection between the pipe and the connector, please cut off a small piece at the end of the pipe and connect the quick connector again.

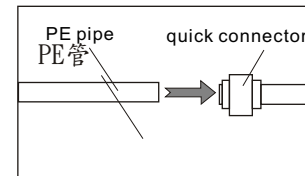


Figure 16. Quick connecting pipe (sketch diagram)

- 2.4.2 Cutting a piece of 1.8~2PE pipe and connect to water inlet adaptor. Then, go through hole2 and connect to the water inlet of machine (As shown in Figure 17-No. 1). Please make sure the pipe is in the bottom.
- 2.4.3 Cutting a piece of 60cm~80cm PE pipe and connect to the untreated water outlet of machine (As shown in Figure 17-No.2). Another side connect to untreated water.
- 2.4.4 Cutting a piece of 80cm~100cm PE pipe and connect to the high pressure switch. And the other side is connected to the ball valve of storage tank.
- 2.4.5 Cutting a piece of 100cm PE pipe and connect to the post in line cartridge and the other side is connected to inlet of faucet.

★Please make sure all of above mentioned are OK, and then manage the PE pipes, then put it back to counter.

★Any problem, please call for service.

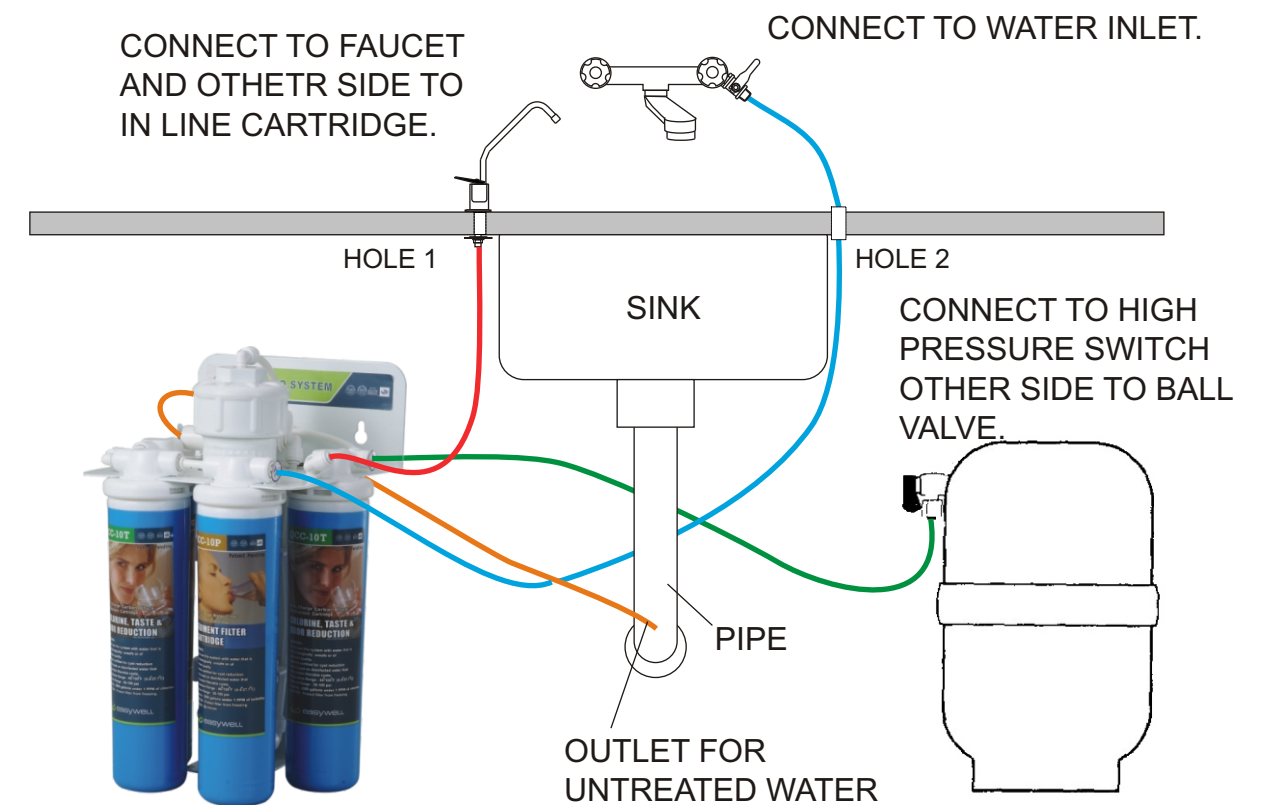


FIGURE 17. CONNECTION DRAWING

2.5 Start up

Before start up, please confirm again that the piping connections and nuts are tightened.

2.5.1 Turn on the ball valve of the water inlet three way valve set, and introduce water into the reverse osmosis system.

2.5.2 Turn the gooseneck water faucet in counterclockwise direction. After a few seconds, water flows down slowly out of the gooseneck water faucet.

2.5.3 Let the water flow for around 15 minutes. This action will flush and clean out liquid exited inside the reverse osmosis membrane. Then, turn off the gooseneck water faucet and check if the machine stops making water.

Installation procedure is then completed.

3. Maintenance

Please change filter cartridge frequently. After precise calculation for your reverse osmosis filtration system, it can last for several years under normal maintenance conditions.

3.1 Recommend schedule for filter cartridge replacement

3.1.1 Under normal conditions, the recommended filter cartridge replacement frequency is as follows:

Types of filter cartridges	external front installed filter cartridge 5 micron meter	first stage sludge filter cartridge 1 micron meter	Second and third stage activated carbon filter cartridge	Stage 4, 5, and 6 RO reverse osmosis membrane	Stage 7 In-line post activated carbon filter cartridge
outside appearance					
replacement time 1	3 months	6 months	6 months	2 years	12 months
replacement time 2	absorption capacity exhausted, no water passes through filter cartridge	absorption capacity exhausted, no water passes through filter cartridge	absorption capacity exhausted, no water passes through filter cartridge	produced water's TDS increases or cannot make water	The adsorption capacity has been exhausted. The drinking water feeling in the mouth not good or the water quality is not sweet.
absorption capacity	based on the contaminates and sludge in the water	based on the contaminates and sludge in the water	2500 gallon	based on the degree of cleanness of the water	1500 gallon
Results without replacement	water inlet blocked, pump overloaded, low service life	water inlet blocked, pump overloaded, low service life	water inlet blocked, pump overloaded, low service life	continuously deteriorated water quality	The bacterium growth affects the drinking water security

Description:

1. When either of the filter element replacement time 1 or replacement time 2 is reached, the filter element must be replaced.
2. Household water use calculation method: calculated as 2.5 liters per person per day.

3.2 Filter element replacement procedure

3.2.1 Close water inlet ball valve.

3.2.2 Remove the used filter cartridge and discard. Insert the new filter cartridge and push forward. Make sure that filter cartridge enters the lock tenon. Then turn clockwise for 1/4, and lock on.

3.2.3 In sequence, remove other filter cartridge to maintain the service life of the membranes.

3.2.4 Replacement of 5th stage filter in-line post filter cartridges, please refer to picture 18.

When you would like to remove the PE tube, please take off both sides of C clamp, then push the adjustable clamp toward internal, and then dismantles. When changing new filter, please follow up the direction as shown on filter housing. Otherwise, the machine will not work properly. It will be easier to install the filter if you follow up the above installation procedure with opposite direction.

Caution: if the fitting area is leaking, all you have to do is pull down PE tube and cut down 0.5 cm from PE tube. After that, just connect it to filter.

Caution1: Due to the internal pressure of system, if you feel it's difficult to loosen the filter, please try to knock the filter or turn on the gooseneck faucet to release the pressure.

Caution2: In order to avoid clogging on membrane, please flush the system with pure water, before replacing carbon filter.

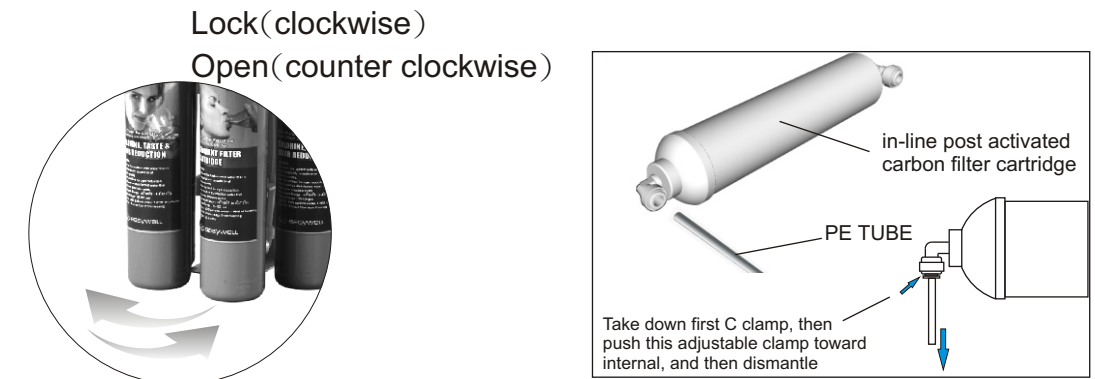


Figure 19. Filter cartridge replacement diagram

3.3 Filter membrane replacement procedure (See Figure 28, 29)

3.3.1 When TDS value is too high (exceed 10 PPM), recommend you replace all three membranes.

3.3.2 First close water inlet ball valve.

3.3.3 There is no need to remove PE piping. All you need to do is to use your hand to turn the cap of the membrane housing clockwise. The PE pipe connector turns automatically. See details in Figure 29.

3.3.4 Remove used membrane and discard. If it is difficult to be removed, use sharp pliers and point to the plastic center rod of the membrane, use force and pull out. Then, install the new membrane in the correct direction. Pay attention to the direction of the membrane otherwise, water may not come out.

3.3.5 Recommend to replace all three membranes at the same time for TDS value to return to normal.

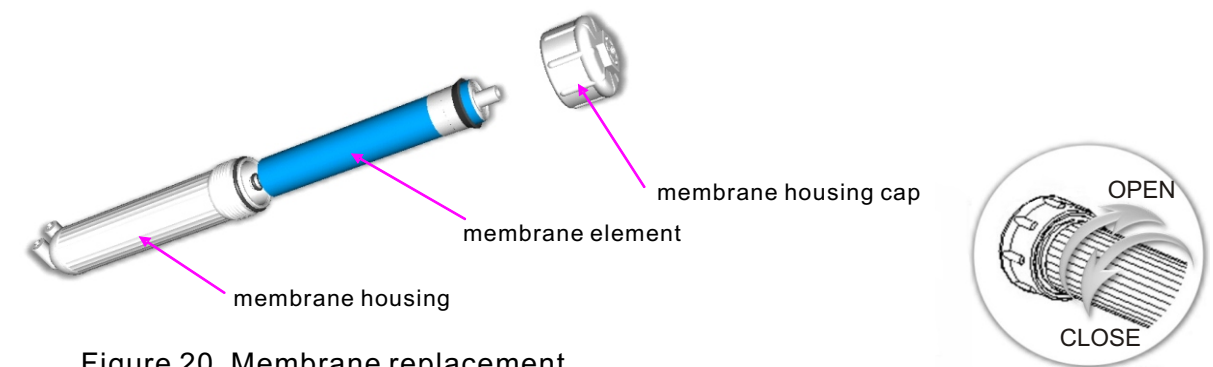


Figure 20. Membrane replacement diagram

4.1 COMPONENTS



FIGURE 21. R. O. COMPONENTS DIAGRAM

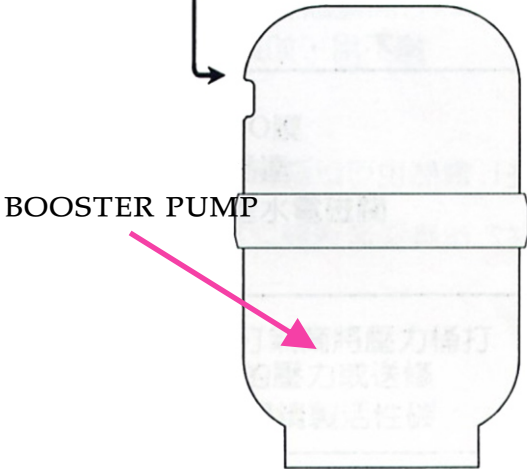


FIGURE 22. ACCESSORY DIAGRAM