

# AQUVERSE Quick Change RO Water Filtration System

## AQVR5 Installation Guide



### Pull & Turn Design

Pull & Turn design for quick filter replacement

### Simple

Simple design for undersink application

### Convenient

Twist and lock system with autoshut off valve

### Clean

Clean and fresh water

#### Note

Read through the instructions carefully before using or installing the product and ensure that the manual is kept in a safe place for future reference. The system must be properly installed and located in accordance with the installation instructions before it is used.

# Safety Instructions

## Attention Aquaverse QUICK CHANGE RO WATER FILTRATION SYSTEM Customer

This system is intended for use on potable water supplies. Do not use where water is microbiologically unsafe or with water of unknown quality. If bacterial contamination is present, a recognized method of water disinfection is required.

The Aquaverse QUICK CHANGE RO WATER FILTRATION SYSTEM contains a replaceable reverse osmosis membrane filter which is critical for the effective reduction of Total Dissolved Solids. The filtered water should be tested periodically to verify that the system is performing properly.

## SAFE PRACTICES

Throughout this manual there are paragraphs set off by special headings.

**Warning** indicates a potentially hazardous situation which, if not avoided, could result in injury or death.

Example-

### **WARNING**

Electrical shock hazard. Unplug the unit before removing the timer mechanism or cover plates.

**Caution** indicates a potentially hazardous situation which, if not avoided, could result in minor injury or property damage.

Example-

### **CAUTION**

Completely relieve the system pressure before replacing or installing filters or the membrane. Relieve the system pressure by closing the water supply and the tank shut-off valve and draining water from the faucet. Personal injury or flooding may result otherwise.

**Note** indicates useful information to help users install, operate, and maintain the system.

Example-

### **Note**

The nipple must extend no more than 1 inch above the cover plate.

# Introduction

Thank you for purchasing an Aquaverse Water Filtration System.

In order to fully enjoy your system, please read the users manual thoroughly before use and please use this manual for future reference. Since your satisfaction is our priority, feel free to contact our service experts should you have any questions.

**You may reach us toll free at 1-866-872-5722 or e-mail us at [CustomerService@osiml.com](mailto:CustomerService@osiml.com)**

For weekend support please email [callback@osiml.com](mailto:callback@osiml.com) with your question and phone number so our customer service team can contact you as soon as possible.

By now, you have probably already opened the box to survey the contents. Please take a few moments to view this manual before proceeding with the installation and use of the system. Some important items to review are as follows:

- Check all components for any damage caused in shipment. Also, take a quick inventory of all items supplied to ensure none are missing. A checklist in the next section will assist you with identifying these items.
- Ensure that the Aquaverse Water Filtration System and storage tank will easily fit into the desired location. This Aquaverse Water Filtration System and tank need to be removed for regular maintenance, so good accessibility is an important tip to keep in mind.
- Read all warnings contained within this manual.

The water produced by the 'Aquaverse Water Filtration System' can be used for many purposes around the home.

- **Drinking Water** - keep container of Aquaverse Water Filtration System water in the fridge to be able to enjoy the cleaner, fresher taste. Alternatively, take it directly from the tap.
- **Ice Cubes** - use Aquaverse Water Filtration System water to fill ice cube trays. Ice cubes made from Aquaverse Water Filtration System water are typically clearer and better tasting than ice made from plain tap water.
- **Automatic Ice Makers** - a water line from the Aquaverse Water Filtration System can be plumbed to refrigerators with automatic ice makers. Icemaker kit is provided with Aquaverse Water Filtration System. Please refer to Step 2, Quick Connect Tubes on page 7. The performance and function of the Automatic Icemaker of the Aquaverse Water Filtration System are not NSF certified.
- **Kettles and Coffee Makers** - plain tap water eventually causes films and scale in these devices that is difficult to clean. Aquaverse Water Filtration System water is very low in dissolved minerals content, greatly reducing the chance of scale buildup.
- **Cooking** - use Aquaverse Water Filtration System water for boiling pasta, rice or any other recipe that calls for water in the instructions.
- **Family Pets** - Allow your dog or cat to enjoy the same purified water you do.
- **Irons, Steamers & Portable Humidifiers** - prevent mineral build-up in household appliances that use water and eventually build-up with scale when using plain tap water.

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## AQUVERSE Quick Change RO Water Filtration System

AQVR5 Installation Guide

# Safety Guidelines

- Read all steps and guides carefully before installing and using your Aquaverse Water Filtration System. Follow all steps exactly to correctly install.
- This system must be installed in accordance with applicable city, provincial, state and local plumbing codes.
- To ensure this system continues to operate at its optimum condition, it is necessary to have a routine maintenance and replacement schedule. Please check the filter replacement frequency in the system specification section and maintenance section of this manual. Frequency at which filters must be changed will depend on quality of feed water supply and level of system usage. The replacement of the water treatment components of this unit is critical to maintain the performance of the system.

## WARNING

Do not use this system without adequate disinfection if the water is microbiologically unsafe or the water quality is unknown.

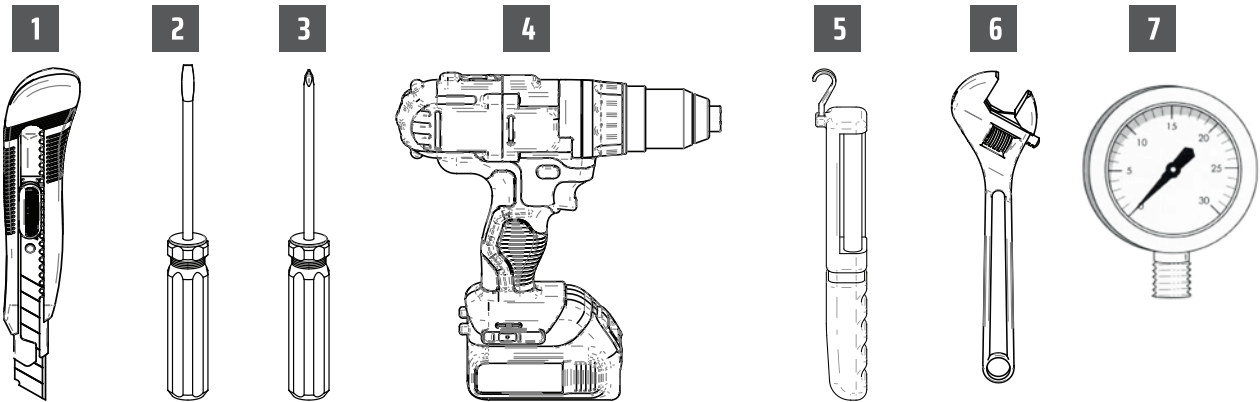
## CAUTION

Completely relieve the system pressure before replacing or installing filters or the membrane. Relieve the system pressure by closing the water supply and the tank shut-off valve and draining water from the faucet. Personal injury or flooding may result otherwise.

## Note

- Do not install the system where it will be exposed to a freezing temperature or direct sunlight.
- The water system contains a replaceable treatment component which is essential for effective reduction of total dissolved solids.
- Test the water from the system periodically to confirm that the system is working properly.
- Replacement of the reverse osmosis component should be with one of identical specifications, as defined by the manufacturer, to ensure the same efficiency and contaminant reduction performance.

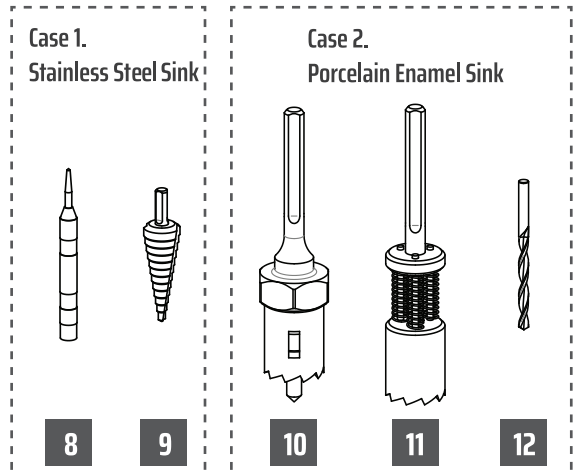
## Suggested Installation Equipment



### Recommended Tools

1. Utility Knife
2. Flathead Screwdriver
3. Phillips Screwdriver
4. Heavy Duty drill
5. Work Light
6. 2 Adjustable Wrenches

7. Pressure Gauge
8. Center Punch
9. Stepped Drill Bit (up to 1/2")
10. Finish Hole Saw (1/2")
11. Porcelain Saw (1/2")
12. Drill Bit (1/8")



# Package Contents



- 1. AQUVERSE Manifold System
- 2. Sediment Filter
- 3. Carbon block Filter
- 4. RO 50GPD Membrane Filter
- 5. Mineral Activated Carbon Filter
- 6. RO Storage tank
- 7. Tank Shut off Valve (John Guest®)
- 8. Faucet
- 9. 3/8" Faucet adaptor (John Guest®)
- 10. Angle Stop Valve (John Guest®)
- 11. Flow restrictor
- \*12. Equal T Fitting (John Guest®)

- \*13. Shut off Valve (John Guest®)
- 14. Drain Saddle
- 15. 6X Tapping Screw
- 16. 1/4" tube 3m (Orange)
- 17. 1/4" tube 1.5m (Black)
- 18. 3/8" tube 2m (Blue)
- 19. 3/8" tube 1.0m (White)
- \*20. 1/4" tube 3m (White)
- 21. Teflon tape
- 22. Installation manual
- 23. Installation template
- 24. 1/4" tube 60mm (Blue)

- 25. 3/8 - 1/4 Reducing elbow
- 26. Leak stop Valve

- \* Ice Maker Kit
- 12. Equal Tee Fitting
- 13. Shut off Valve
- 20. 1/4" tube 3m (White)

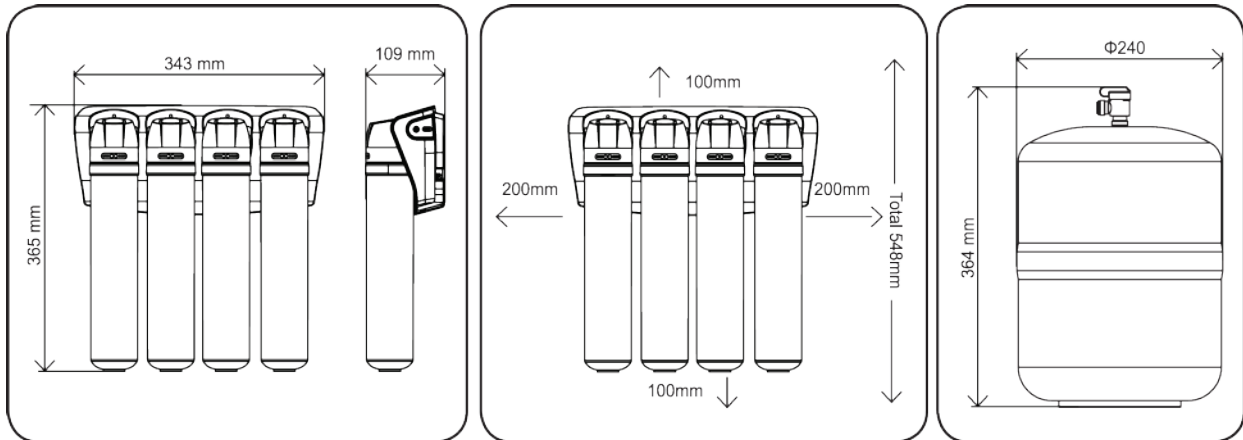
# Installation: Step 1. Select Component Installation Locations

## Dispenser Faucet

The faucet is designed to be mounted on the rear lip of the sink. It may be installed in an existing sprayer attachment hole or in a hole drilled at the time of installation. It may also be mounted to an adjacent counter top. It should be positioned so that water is dispensed over the sink. 15~ 20mm diameter hole is required.

## Important considerations

- Access to the bottom (undersink) of the faucet is required for attachment of product water line.
- There should be no undersink obstructions which would prevent smooth tubing runs to the drain connection, or RO module assembly.



## Filter System Assembly

The filter system assembly is designed to be mounted on any rigid vertical surface such as a cabinet sidewall, sheetrock in exposed stud. It should be positioned such that there is access to an inlet water source and drain. The installation should also allow convenient access for servicing.

## Inlet Water Supply Connection

Once a location is chosen for installation of the filter system assembly, select a nearby cold water line to provide the water source for the system.

### Note

Follow all local plumbing codes when connecting to service water.

## Drain Connection

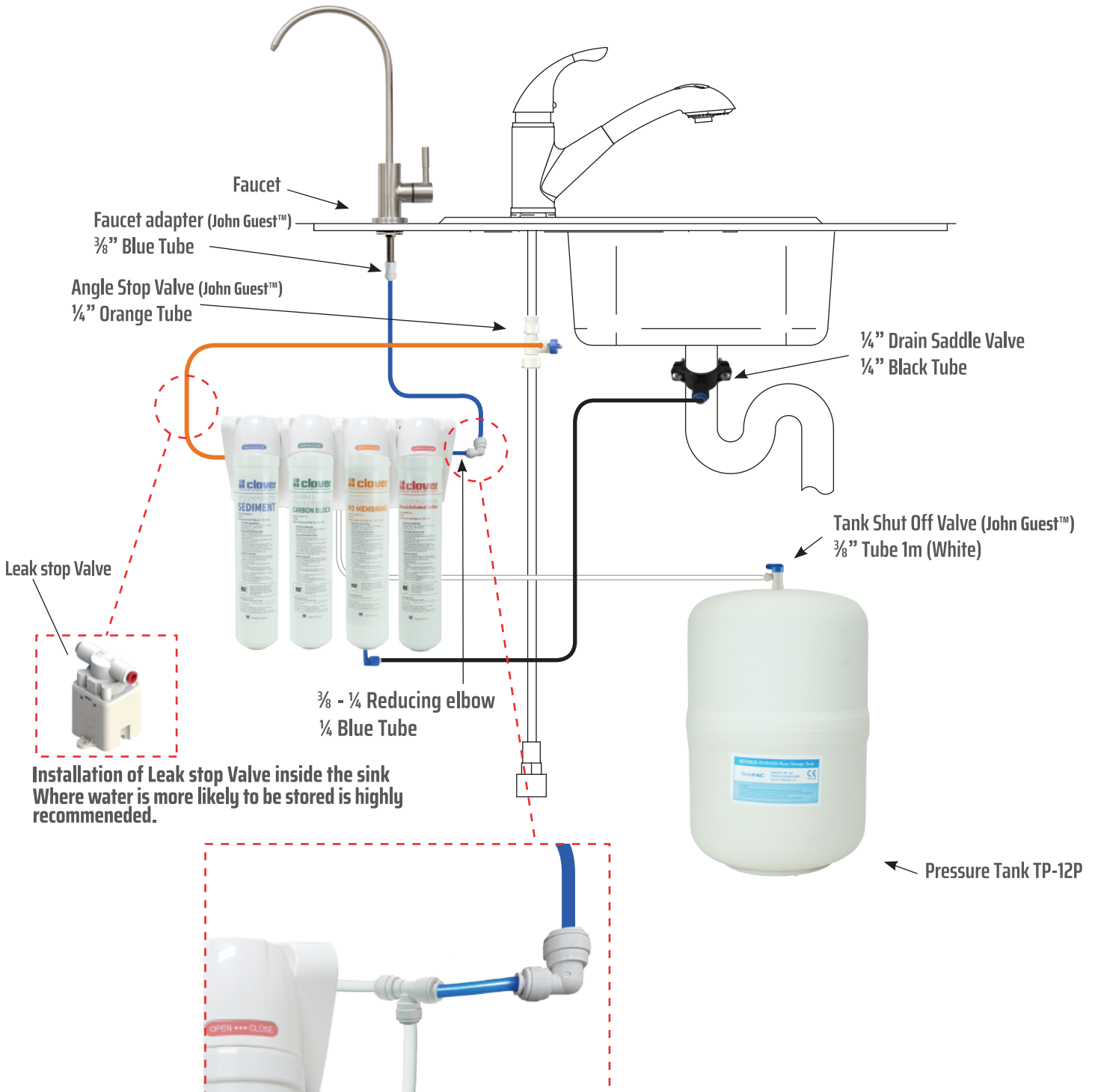
The most convenient entry to the drain is directly above the P-trap of the kitchen sink. However, the drain water from the system can be connected to adjacent sinks or a floor drain. Extra care should be taken when entering drains near dishwashers or food waste disposals as back flow may occur through the air gap and cause flooding.

### Note

Follow all local plumbing codes when connecting to drain.

# Installation: Step 2. Quick Connect Tubes

## TYPICAL INSTALLATION DIAGRAM



**Installation of Leak stop Valve inside the sink**  
Where water is more likely to be stored is highly recommended.

Please cut 60mm of white 1/4" tube provided as ice maker kit and use 60mm white 1/4" tube and equal T fitting to make additional water line. Please refer to the above image.

**Note** Use less than 1m 3/8" blue tube between manifold and faucet to achieve better flow rate.



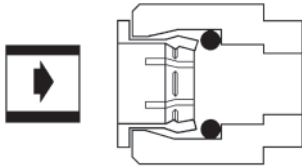
# Installation: Step 2. Quick Connect Tubes

## Tubing Connectors

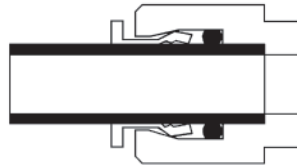
The system features reliable and convenient push-to-connect tubing connectors. Tubing is easily connected and disconnected from these fittings as follows.

### Quick-Connect Fitting

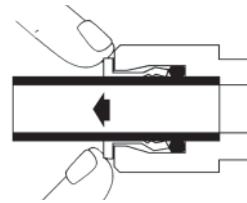
Insertion & Removal of Plastic or Copper Tubing



1. Simply push in tube to attach.



2. Tube is secured in position.



3. Push in collet from both sides to release tubing.

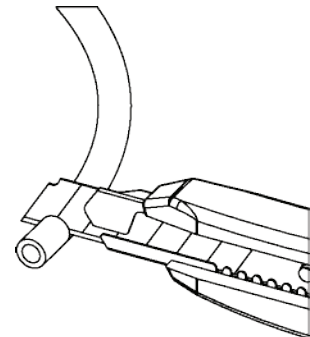
## CAUTION

Wear work gloves. Place the tube on a flat surface and gently cut it using a sharp knife.

### Connect

Cut the tubing squarely with a sharp knife. Be careful not to crush the tubing. To avoid leaks, make sure the tubing end is smooth and free of burrs and abrasions. Lubricate the end of the tube with water or a light coat of silicone and push the tube end firmly into the fitting. You should feel it push past the O-ring. Avoid bending the tubing sharply away from the fitting.

Cut tube squarely with a sharp knife.



### Disconnect

Hold the collar against the fitting body and pull the tube from the fitting. In the unlikely event that the connection leaks, remove and recut the tubing. Check the inside of the fitting for debris or O-ring damage. Reconnect.

Push-to-connect tubing connectors grip the outside diameter of the tube. To help assure a reliable connection, it is important to use high quality tubing with a consistent outside diameter.

# Installation: Step 3. Faucet Installation

The Aquverse QUICK CHANGE RO WATER FILTRATION SYSTEM features reliable and convenient push-to-connect tubing connectors. Tubing is easily connected and disconnected from these fittings as follows.

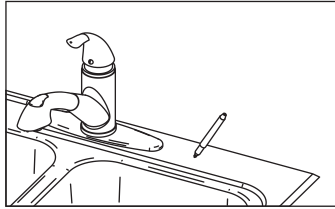
To simplify its access and installation, we suggest you install the faucet on the rear lip of the sink. It should be evenly positioned with the sink faucet and spray attachment. Should the spray faucet hole not be available for the installation, the sink must be drilled.

## Sink Drilling Instructions

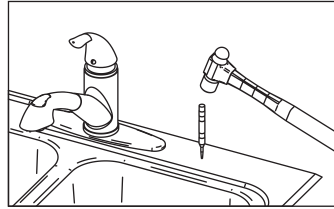
### CAUTION

- Wear work gloves. Gently hit the punch with a hammer to mark the drilling spot.
- Wear appropriate eye protection before using the drill.

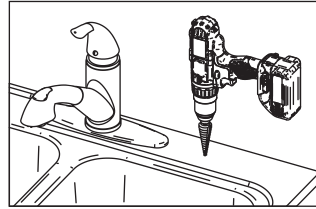
### Stainless Steel Sink



1. Select and mark the proper faucet location.



2. Center punch hole to provide a starting point for your drill.



3. Drill a  $\frac{1}{2}$ " hole in the sink using a stepped drill bit. If no stepped bit is available, start by drilling a  $\frac{1}{8}$ " hole. Using this hole as a starting point progressively drill larger holes. Increase drill size by  $\frac{1}{8}$ " until you reach a  $\frac{1}{2}$ " hole.

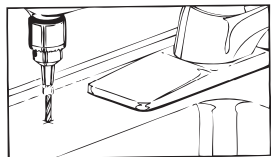
### Porcelain Enamel Sink

Follow these basic guidelines when drilling a porcelain sink:



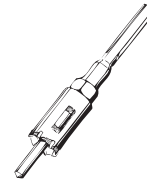
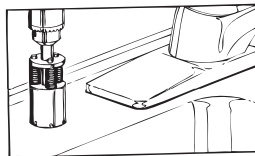
#### Pilot Drill

- Penetrate the porcelain to the base material.



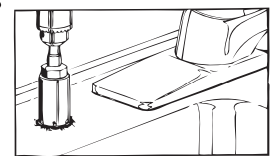
#### Spring Loaded Porcelain Saw

- Protect the surrounding porcelain material.



#### Finish Hole Saw

- Use the appropriate tool to drill the base material.



### Note

If the countertop is made of a specialty material, such as granite, it is recommended to contact a countertop craftsman and request professional service.

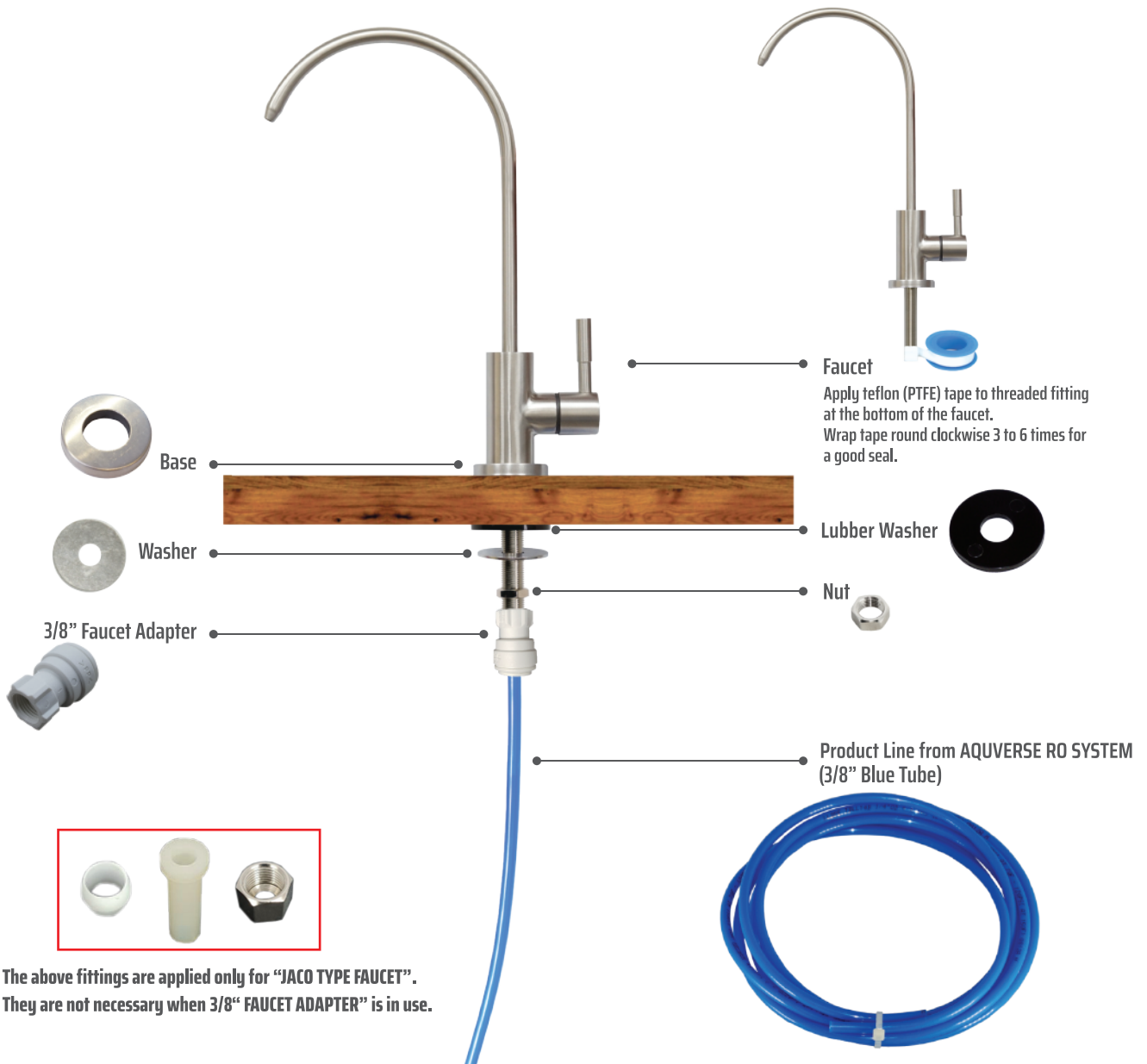
# Installation: Step 3. Faucet Installation

Check the 3/8" blue tube and make sure it is cleanly cut. Ensure that the tube is free of foreign materials, and that it does not have any scratches on the outside. Install the tubing into the push-in type fitting at the base of the faucet. Make certain that it is inserted all the way in. Once inserted, give it a slight pull to make sure it is locked into the fitting.

## Note

Use less than 1m 3/8" blue tube between manifold and faucet to achieve better flow rate.

- 1 Install Base, Washer, Lock Washer and Nut in the installation Kit of Faucet as shown in the picture on the below.
- 2 Install the Faucet Adapter on the bottom screw of the Faucet
- 3 Insert the tube into the Fitting section of Faucet Adapter.



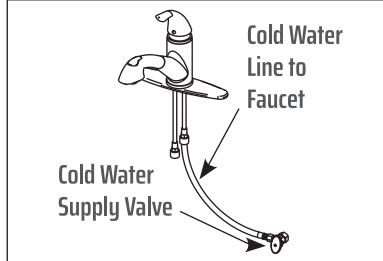
## Note

To disconnect tubing from the product water fitting, hold the collet firmly against fitting body and pull the tube from the fitting. Repeated assembly and disassembly will cause wear to the inner body. Visually inspect for excessive wear and replace the inner body as needed to prevent leaks.

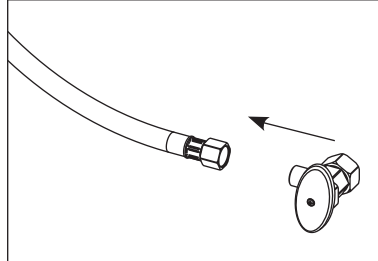
## Installation: Step 4. Install Adapter Valve on Water Supply

### CAUTION

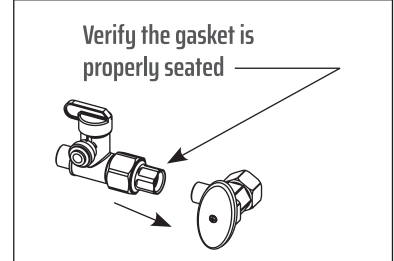
- Ensure that the adapter valve is connected to the cold water supply. System damage will result if it is connected to the hot water supply.
- System damages caused by a wrong water connection will not be covered by the product warranty.



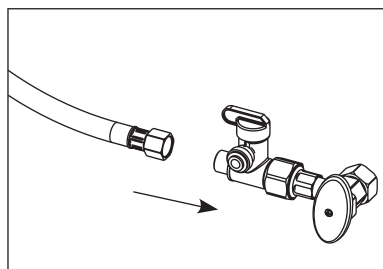
1. Shut off water at supply valve.



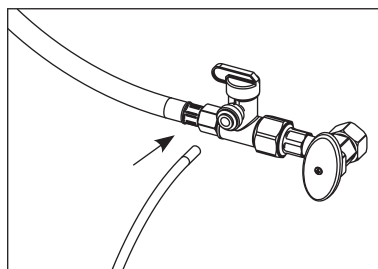
2. Disconnect hose from supply valve.



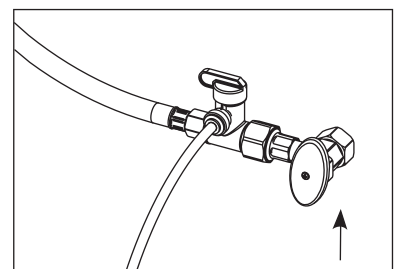
3. Install adapter valve on supply valve.



4. Connect riser hose to adapter valve.



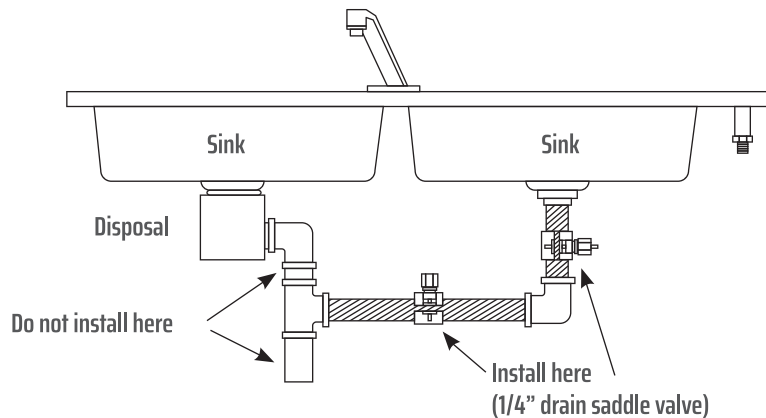
5. Insert 1/4" orange tube into quick connect fitting on valve.



6. Open the cold water supply valve and check for leaks.

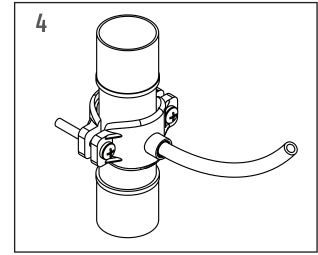
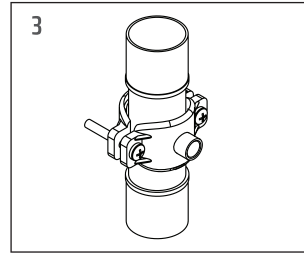
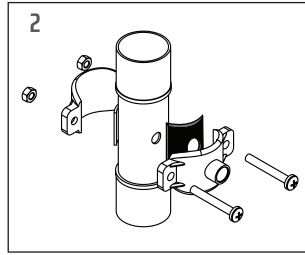
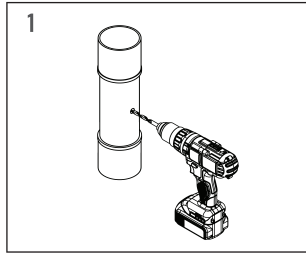
\*Please install filters before opening the cold water supply valve.

## Installation ; Step 5. Connect System Drain



Many homes are equipped with disposals and dishwashers. Home drain plumbing must be free of any blockage since this may cause a backup of dishwasher and disposal waste into the drain line and result in improper performance. To perform a simple drain check, fill the sink basin with several inches of water, pull the plug, and observe the drainage. If water backs up into the second sink (if present), or if drainage is slow or there is excessive gurgling, drain blockage may be present. Undersink drain plumbing usually resembles one of the following descriptions. In all cases, the drain tubing from RO membrane filter should run downward, free of dips and loops. This can vent sewer gas, which will produce foul odors.

## Installation: Step 5. Connect System Drain



1. For standard faucets, drill a 1/4" into the side of the drain pipe. The drill should be kept straight and centered. Do not drill through both sides of the pipe.

### Note

- Keep the drill straight and centered.
- Do not drill through both sides of the pipe.

2. Please remove the inner circle from the sealing sponge and attach the sealing sponge to the inner side of the drain saddle valve and install the drain saddle valve on to the drain pipe. Be sure to line up the saddle valve hole with the hole drilled into the drain pipe.

### Note

To avoid damaging the saddle valve or the drain pipe, be careful not to overtighten the bolts when installing the clamps.

3. Tighten the clamps with the help of the two bolts.

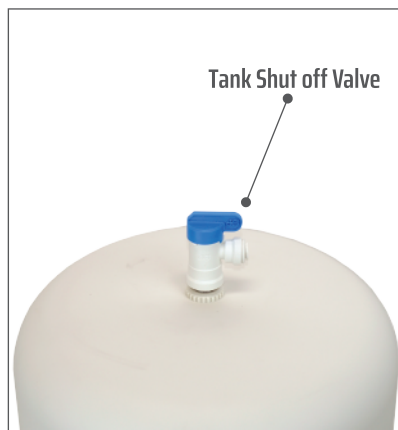
4. Install the black tube into the quick connect fitting at the saddle valve. Push firmly to make sure that it is inserted all the way. Give a gentle pull to check that it is locked into the fitting.

## Installation : Step 6. RO Storage Tank Assembly

1. Apply teflon (PTFE) tape to threaded fitting at top of tank. Wrap tape round clockwise 3 to 6 times for a good seal.

2. Attach shut off valve.

3. Connect white 3/8" tubing to tank.



### CAUTION

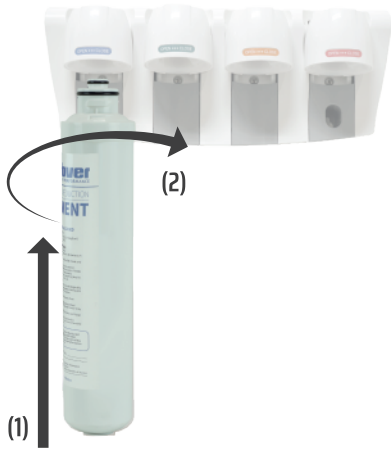
Do not hold the ball valve to lift or carry the tank. Personal injury or property damage may result if the valve breaks off.

# Installation: Step 7. Install Filter System Assembly

## Install Filter Cartridges

Push the cartridge (1) and twist (2) to lock into the manifold (as shown)

**1** Stage 1.  
Sediment Filter



**2** Stage 2.  
Carbon Block Filter



**3** Stage 3.  
RO Membrane Filter



**4** Stage 3.  
Flow restrictor



**5** Stage 4  
Mineral Activated Carbon Filter

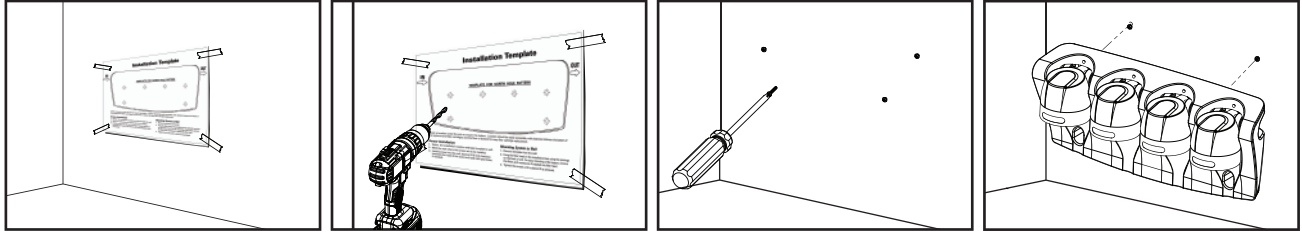


# Installation: Step 7. Install Filter System Assembly

## **CAUTION**

Wear an eye protection before using a drill.

### Mount Manifold



Check a location under the sink to mount the system. Location should be easily accessible, with clearance between the bottom of the replacement filter cartridges and the floor or bottom for easy filter cartridge replacement.

### Screw Installation

1. Select the installation location and tape template to wall.
2. Mark the wall where the screws are to be installed.
3. Install screws into the wall, leaving 3/16 inch clearance between the head of the screw and wall (drill pilot holes if needed).

### Mounting System to Wall

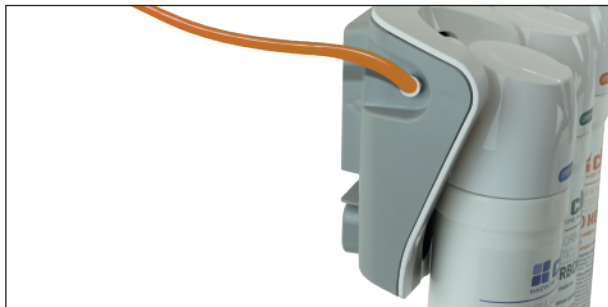
1. Remove template from the wall.
2. Hang the filter head on the installed screws using the openings on the back of unit. For easy mounting of the system, remove the filters and membrane if installed into filter head.
3. Tighten the screws until a desired fit is achieved.

## **CAUTION**

Wear work gloves. Place the tube on a flat surface and gently cut it using a sharp knife.

### Connect System

When cutting plastic tubing, use a sharp utility knife. Cut the tubing squarely. See Step 7 for cutting and connecting tubing.



1. Connect 1/4" Orange tubing from the feed water supply source to the system inlet on the manifold



2. Insert 1/4" Blue 60mm tubing to the system Outlet on the manifold And Connect the 1/4" Blue tubing and 3/8" Blue tubing using the 3/8-1/4" Reducing elbow.



3. Connect 3/8" White tubing from RO Storage tank to the system tank line on the manifold



4. Connect 1/4" Black tubing from Drain saddle to the Flow restrictor on the RO membrane filter

# Installation: Step 8. Install Leak Stop Valve

The Leak Stop Valve is a re-usable mechanic leakage protector. When the pulp detects water leakage, the valve operates and shuts down the feed water.

## Location

Find the adequate location to install leak stop valve. It is highly recommended to find the place where leaked water is more likely be stored in a sink for leak stop valve to activate as soon as the pulp detects water leakage.

## Connection

Install the leak stop valve between the angle stop valve and undersink RO system.

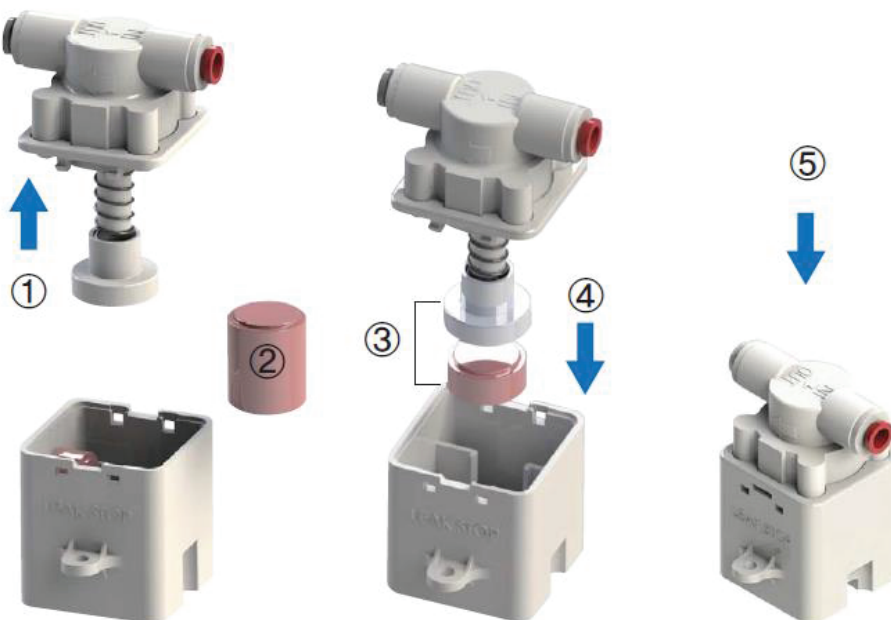
Please refer to Step: 2. Quick Connect Tubes on page 7.

There are IN and OUT on the top of the leak stop valve for the direction of tube connection.

## Specification

WORKING PRESSURE	0.5~10 bar (7~140 psi)
SHUT DOWN TIME	1 minute from water contact
DIMENSION	54 X 40 X 73 (mm)
INLET PORT	1/4" Fitting
OUTLET PORT	1/4" Fitting
WORKING TEMPERATURE	1~40°C (33 ~ 104°F)

## How to replace Pulp



① Pull (↑) the Upper cover upward and separate it from the Lower body.

② Take out the expanded P-pulp.

③ Assemble the spare P-pulp with the P-pulp case.

④ Insert the Assembled P-pulp into the Lower body.

⑤ Push the Upper cover downward and unite with the Lower body.



# Installation: Step 9. Start-up

1. Check system to verify all components are correctly installed
2. Installation of Leak stop Valve between the Angle Stop Valve and the Aquverse RO system(orange tube) is highly recommended for the prevention of water leakage.
3. Turn on the shut off valve and tank shut off valve.
4. Allow system to run & fill tank for 1-2 hours. You will hear the water running to drain while the unit is running. Once the water stops running to drain the tank is full.
5. Check for any water leaks around the system.
6. If leaks occur, shut off the feed water valve. check the connection points.  
If leaks persist, discontinue using and call the customer service center.  
If the leak stop valve is activated, please replace the pulp of the valve referring to Step: 8. install Leak Stop Valve on page 15.
7. Open the RO faucet and leave it open until water begins to trickle out.(water flows very slowly)
8. After water trickles out from the faucet, shut off the faucet to fill the storage tank with water. wait for 1-2 hours to fill completely depending on the production capability of the membrane. local water temperature, pressure and membrane capacity.
9. After the tank has been filled, open the faucet to flush the tank completely to remove carbon fine or particles from mineral carbon filter. Repeat this step two more times.
10. Close faucet and allow tank to fill.
11. System is ready to use.
12. Replacement cycle of each filter is
  - Sediment : 6 months
  - Pre-carbon : 6 months
  - Reverse Osmosis : 24 months
  - Mineral activated carbon : 12 monthsPlease write the date to replace on front of each filter.

## Note

After installing a new filter, always flush the system following the instructions in step 8. Flush the system at least twice to ensure good water quality.

# Troubleshooting Guide

If a problem cannot be corrected through the use of this troubleshooting guide,

**Please call our company directly at 1-866-872-5722 or e-mail us at [CustomerService@osiml.com](mailto:CustomerService@osiml.com)**

For weekend support please email [callback@osiml.com](mailto:callback@osiml.com) with your question and phone number so our customer service team can contact you as soon as possible.

Problem	Possible Cause	Remedy
1. Insufficient quantity of product water available to service.	a. Service greater than unit's specified output.	a. Use optional large tank for more storage capacity.
	b. Insufficient feed water flow.	b. 1. Clogged shut-off valve or feed tubing ; clean out or replace. 2. Sediment filter ; replace. 3. Clogged manifold; clean or replace.
	c. Insufficient feed water pressure	c. 1. Same as (b) above. 2. Change in line pressure; install booster pump. 3. Consult with local plumbers.
	d. Increase in feed water TDS.	d. 1. Same as (a) above. 2. Install booster pump. 3. Consult with local plumbers.
	e. Reduced feed water temperature.	e. Same as above.
	f. Shutoff malfunction.	f. Clean or replace shutoff.
2. Poor product water quality.	a. All of (1) above except (a) and (e).	a. All of (1) above except (a), (e), and (g).
	b. RO membrane filter worn out.	b. Replace RO membrane.
3. Bad tasting product water.	a. Decrease in product quality; see (2) above.	a. Same as (2) above.
	b. Foreign matter in storage tank.	b. Clean, sanitize, and flush storage tank.
	c. CM filter exhausted.	c. Replace CM filter.
	d. Storage tank bladder is ruptured.	d. Replace storage tank and check precharge pressure.
4. External leakage.	a. Tubing not fully seated in fitting	a. Check all fittings for tightness.
	b. Tubing abraded in seal area.	b. Recut tubing and redo connection.
5. Foaming at faucet tip.	a. Storage tank is positioned on side (Dissolved air cannot escape.)	a. Place tank in vertical position.
6. Bad smell from product water.	a. CM filter exhausted.	a. Replace CM filter.
	b. Sediment filter element.	b. Replace Sediment filter.
	c. Unit needs disinfection.	c. Sanitize unit.
7. Fast flow to drain.	a. Defective flow restrictor.	a. Replace flow restrictor.
8. Black specks in product water.	a. Carbon fines.	a. Flush CM filter.
9. Low faucet pressure.	a. Inadequate pre-charge pressure in storage tank.	a. Check tank pre-charge pressure and add air if required.
	b. CM filter plugged.	b. Replace CM filter.

# Overview of the Aquverse Water Filtration System



## Aquverse 4-stage Water Filtration System

**1: Manifold:** The manifold assembly serves as the functional hub of the water system by directing the flow through each of the system's main components.

\* **2: Sediment Filter(stage 1):** The sediment filter screens out particulate material, such as dirt, sand, or rust, which may clog the other filters in the system.

**4: Reverse Osmosis Membrane(stage 3):** The RO membrane reduces dissolved substances and other microscopic impurities. It consists of a membrane envelope wound around a perforated tube. Product water diffuses through the membrane to the inside of the envelope where it flows to and is collected by the tube. Impurities are flushed away in the drain stream.

The RO membrane featured in the Aquverse system offers exceptional contaminant rejection, application versatility, and long life. The membrane material is sensitive to an attack by chlorine. The CB filter must be maintained properly to prevent premature failure of the RO membrane.

For long term storage the RO membrane should be refrigerated to maximize performance once used. **DO NOT ALLOW TO FREEZE.**

\* **3: Carbonblock Filter (stage 2):** The 5 micron Carbonblock filter (stage 2) reduces chlorine which may damage the RO membrane. This filter must be regularly checked and/or replaced to prevent premature membrane failure and poor water quality.

### **CAUTION**

Flush the system for 24 hours before use in order to remove the preservatives and properly hydrate the membrane for maximum performance. If ingested, the preservatives may cause irritation of the gastrointestinal tract, colic, diarrhea, or similar symptoms. At the very least, the water supplied through the product during the first hour of operation must be discarded before it can be used for drinking or preparing food.

\* **5: Mineral Activated Carbon Filter(stage 4):** The Mineral Activated Carbon filter serves as a final polishing step to improve the water quality. It removes any remaining undesirable tastes & odors. And it is used for re-mineralization of soft, acidic and low pH water.

**6: Flow restrictor:** Flow Restrictor create pressure throughout the reverse osmosis membrane element and maintain a desired ratio of reject flow (to drain) and permeate (product) flow. It is recommended that you replace the Flow Restrictor each time you replace your reverse osmosis membrane to keep your system operating at peak efficiency.

**7: Dispenser Faucet:** The faucet allows the product water to be drawn from the system with a simple rotation of the handle.

**8: Storage tank:** The storage tank collects and stores the water produced by the water system. A compressed air diaphragm drives the water to the CM filter and faucet.

**9: Tank Shut off Valve:** Lock water in the tank during unit maintenance.

\* : **2,3,5 stage filter performance claim is not certified by NSF.**

### **Note**

To maintain system sanitation, thoroughly clean your hands before replacing filters and wear latex gloves.

# Specification

Stage 1	Stage 2	Stage 3	Stage 4	Storage Tank	Faucet
Sediment Filter	Carbon Block Filter	Reverse Osmosis Membrane Filter	Mineral Activated Carbon Filter	TP - 12P	NCPV 893 CP-KR01

## Daily Production Rate\*

L/day (G/day) . . . . . AQVR5 : 23.39 gpd

## Typical System Flow Sequence . . . . .

Sediment Filter → Carbon Block Prefilter  
 → Reverse Osmosis Membrane → Storage Tank  
 → Mineral Activated Carbon Filter → Dispensing Faucet

## Sediment Filter (Stage 1) . . . . .

5 Micron

## Carbon Block Prefilter & Postfilter (Stage 2) . . . . .

Carbon Block 5 Micron

## Reverse Osmosis Membrane (Stage 3) . . . . .

Thin Film Composite

## Mineral Activated Carbon Filter (Stage 4) . . . . .

Activated Carbon & Calcite

## Storage Capacity . . . . .

Metal – Capacity 3.2 Gallon (12 Liters)

## Replacement Filter

\* : This filter performance is not certified by NSF

Model	Purpose	Micron Rating (µm)	Capacity	Flow Rate	Rated Life	Stage
* Sediment (AQV-SED)	Sediment Reduction	5	-		6 Months	1
* Carbon block (AQV-CB)	Chlorine Taste and Odor		2,500 gallons (9,463 liters)	0.5 gal/min (1.9 liter/min)	6 Months	2
* Mineral Activated (AQV-CM)	Taste and Odor pH booster	-	2,000 gallons (7,570 liters)		12 Months	4

Model	Purpose	Recovery	Efficiency Rating	TDS Reduction	Rating	Rated Life	Stage
RO 50GPD Membrane (AQV-RO50)	TDS Reduction	25.75 %	16.34 %	90.3 %	23.39 gal/day	24 Months	3

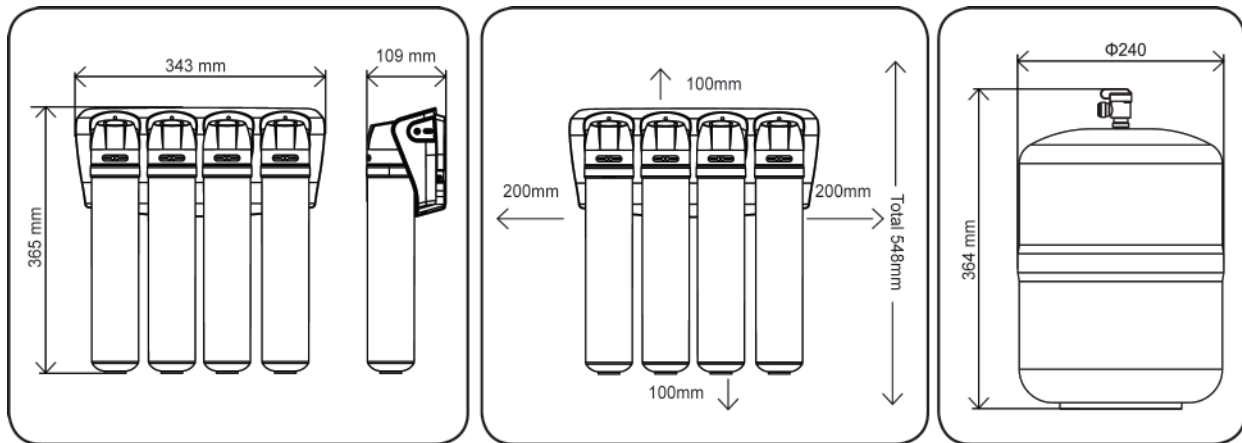
\*Recovery : (Product Water/Inlet Water)

<b>Note</b>	<ul style="list-style-type: none"> <li>• The rated life cycle and capacity of the filter may vary based on the local water conditions and the pre-filtration level of the water supply.</li> <li>• Replace the filter regularly (once every 6 to 12 months).</li> <li>• The reverse osmosis membrane's performance is affected by several factors, such as the water pressure and temperature, the amount of dissolved solids, the recovery rate*, and the water acidity (pH) level.</li> </ul> <p>*Efficiency rate: the amount of influent water (%) to the system water that is available to the user under typical daily operating conditions.</p> <p>*Recovery rate: the amount of influent water (%) to the membrane portion of the system water that is available to the user when the system is operated without a storage tank.</p>
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# Specification

Recommended Influent Water Characteristic		Notes
System Pressure	30 ~ 125 psi (207~862 kPa)	1. The reverse osmosis membrane used in these systems may be damaged by chlorine. These systems include CB filter which protect the membranes by reducing chlorine. Influent chlorine should not exceed 3 mg/L.
Temperature	39 ~ 100 °F (4 - 38 °C)	
pH range	5 ~ 10	
Turbidity	< 1.0 Net Turbidity (NTU)	
Hardness (CaCO <sub>3</sub> )	< 300 ppm	2. Additional information on factors that affect RO performance can be found in the "Performance & Technical Information" section.
Iron (Fe)	< 0.1 mg/L	
Chlorine (Cl <sub>2</sub> )	0 ~ 3 ppm (0~3mg/L)	

## Dimensions



\* Aquaverse Replacement Filters are available on Amazon.com.

# Performance & Technical Information

The performance of the Aquverse RO System can be characterized and judged by the quality and quantity of the water produced by the system. By measuring the contaminant removal performance and flow rates of the system, its operating status can be easily evaluated.

## Factors Which Affect Performance

Performance of the reverse osmosis membrane is affected by several factors which must be considered when judging the condition of the system. The main factors which affect system performance are pressure, temperature, total dissolved solids level, recovery and pH.

### Pressure

Water pressure affects both the quantity and quality of the water produced by the RO membrane. Generally, the more water pressure, the better the performance of the system. Be careful not to go below 30 psi or exceed 125 psi, the minimum and maximum operating pressure of the system.

### Temperature

The reverse osmosis process slows with decreasing temperature. To compensate, a temperature correction factor is used to adjust the actual performance of the RO membrane filter to the standard temperature of 77°F(25°C). This allows the performance of the unit to be accurately gauged against published standards. Temperature does not affect the concentrate flow rate.

### Total Dissolved Solids

The minimum driving force which is necessary to stop or reverse the natural osmosis process is termed osmotic pressure. As the total dissolved solids level of the feed water increases, the amount of osmotic pressure increases and acts as back pressure against the reverse osmosis process. Osmotic pressure becomes significant at TDS levels above 500 mg/L (ppm).

## Note

As more dissolved solids are filtered through the RO cartridge, the RO cartridge weight may increase, causing the water quality to fall and affecting the acidity level (pH) of the water. Do not use with water that is microbiologically unsafe or of unknown quality without adequate disinfection before or after the system.

Clover Co.,Ltd.

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Manufactured in Chungcheongbuk-do, Republic of Korea

## Arsenic Facts

Arsenic (abbreviated As) is found naturally in some well water. Arsenic in water has no color, taste, or odor. It must be measured by a laboratory test. Public water utilities must have their water tested for arsenic. You can get the results from your water utility. If you have your own well, you can have the water tested. The local health department or the state environmental health agency can provide a list of certified labs. The cost is typically \$15 to \$30. Information about arsenic in water can be found on the Internet at the U. S. Environmental Protection Agency website: [www.epa.gov/safewater/arsenic.html](http://www.epa.gov/safewater/arsenic.html).

There are two forms of arsenic: pentavalent arsenic (also called As(V), As(+5), and arsenate) and trivalent arsenic (also called As(III), As(+3), and arsenite). In well water, arsenic may be pentavalent, trivalent, or a combination of both. Special sampling procedures are needed for a lab to determine what type and how much of each type of arsenic is in the water. Check with the labs in your area to see if they can provide this type of service.

Reverse osmosis (RO) water treatment systems do not remove trivalent arsenic from water very well. RO systems are very effective at removing pentavalent arsenic. A free chlorine residual will rapidly convert trivalent arsenic to pentavalent arsenic. Other water treatment chemicals such as ozone and potassium permanganate will also change trivalent arsenic to pentavalent arsenic. A combined chlorine residual (also called chloramine) may not convert all the trivalent arsenic. If you get your water from a public water utility, contact the utility to find out if free chlorine or combined chlorine is used in the water system. The AQVR5 system is designed to remove pentavalent arsenic. It will not convert trivalent arsenic to pentavalent arsenic.

The system was tested in a lab. Under testing conditions, the system reduced [0.30 mg/L (ppm) or less] pentavalent arsenic to 0.010 mg/L (ppm) (the USEPA standard for drinking water) or less. The performance of the system may be different at your installation. Have the treated water tested for arsenic to check whether the system is working properly. The RO component of the AQVR5 system must be replaced every three (3) years to ensure that the system will continue to remove pentavalent arsenic.

The component identification and locations where you can purchase the component listed in this installation / operation manual.

# Certification Information

## Certification



**System tested and certified by NSF International against NSF/ANSI Standard 58 in model AQVR5 for the reduction of the claims specified on the Performance Data Sheet. ent.**

Substance	Influent Challenge Concentration mg/L	Max Allowable concentration mg/L	Average Product water Concentration	Average % Reduction
Arsenic	0.3 mg/L ±10%	0.01 mg/L	0.001 mg/L	99.7 %
Barium	10 mg/L ±10%	2 mg/L	0.13 mg/L	98.7 %
Cadmium	0.03 mg/L ±10%	0.005 mg/L	0.0001 mg/L	99.7 %
Chromium (Hexavalent)	0.3 mg/L ±10%	0.1 mg/L	0.006 mg/L	98 %
Chromium (Trivalent)	0.3 mg/L ±10%	0.1 mg/L	0.003 mg/L	99 %
Copper	3.0 mg/L ±10%	1.3 mg/L	0.039 mg/L	98.7 %
Fluoride	8.0 mg/L ±10%	1.5 mg/L	0.328 mg/L	95.9 %
Lead	0.15 mg/L ±10%	0.01 mg/L	0.004 mg/L	97.3 %
radium 226/228	25 pCi/L	5 pCi/L	5 pCi/L	80 %
Selenium	0.1 mg/L ±10%	0.05 mg/L	0.001 mg/L	99 %
Turbidity	11 ± 1mg/L	0.5 NTU	0.022 NTU	99.8 %
TDS	750 ± 40 mg/L	187 mg/L	75 mg/L	90.3 %

\* Tested using a pressure of 50 psi, temp of 77°F ± 2°F, pH of 7.5 ± 0.5

\* The reverse osmosis system contains a replaceable treatment component, critical for the effective reduction of total dissolved solids and that product water shall be tested periodically to verify that the system is performing properly.

\* Please refer to the owner's manual for proper maintenance and operation. If this device is not maintained and operated as specified in the owner's manual, there is a risk of exposure to contaminants. For more information, visit the California State Water Resources Control Board's web site at [www.waterboards.ca.gov](http://www.waterboards.ca.gov)

\* Note that while the testing was performed under standard laboratory conditions, actual performance may vary.

\* The concentration of the indicated substances in water entering the system was reduced to a concentration less than or equal to the permissible limit for water leaving the system, as specified in NSF/ANSI 58

\* This system has been tested for the treatment of water containing pentavalent arsenic (also known as As(V), As(+5), or arsenate) at concentrations of 0.30 mg/L or less. This system reduces pentavalent arsenic, but may not remove other forms of arsenic. This system is to be used on water supplies containing a detectable free chlorine residual at the system inlet or on water supplies that have been demonstrated to contain only pentavalent arsenic. Treatment with chloramine (combined chlorine) is not sufficient to ensure complete conversion of trivalent arsenic to pentavalent arsenic. Please see the Arsenic Facts section of the Performance Data Sheet for further information.

# Warranty

## Limited One-year Warranty

Aquverse warrants the product for a period of one year from the date of original purchase against any defects in materials or workmanship, subject to the exclusions listed below. Your sole and exclusive remedy under this limited warranty shall be the repair or replacement of the product, provided that if Aquverse determines in its sole discretion that neither remedy is practicable, Aquverse may provide you with a refund of your purchase price. This limited warranty does not cover any shipping costs to Aquverse. Aquverse may require proof of the date of purchase so please retain your receipt or invoice.

This limited warranty does not extend to and specifically excludes the following:

1. Any losses, damages or failures resulting from conditions beyond the manufacturer's control, including abuse, misuse, neglect, alteration, or failure to follow operating condition/notices and installation instructions.
2. Any losses or damages resulting from use with water that is microbiologically unsafe or of unknown quality, without adequate disinfection before or after the system.
3. Normal wear and tear, including scratches, dents and cosmetic rust.

## Limitation of Liability

UNLESS OTHERWISE REQUIRED BY LAW, IN NO EVENT SHALL AQUVERSE BE LIABLE FOR PERSONAL INJURY, OR ANY INCIDENTAL, SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES WHATSOEVER, INCLUDING, WITHOUT LIMITATION, DAMAGES FOR LOSS OF PROFITS, BUSINESS INTERRUPTION OR ANY OTHER COMMERCIAL DAMAGES OR LOSSES, ARISING OUT OF OR RELATED TO YOUR USE OR INABILITY TO USE THE PRODUCT, HOWEVER CAUSED, REGARDLESS OF THE THEORY OF LIABILITY (CONTRACT, TORT OR OTHERWISE) AND EVEN IF AQUVERSE HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

## Limitation on Any Implied Warranties

Your sole and exclusive remedy is product exchange as provided in this Limited Warranty. Any implied warranties, including the implied warranties of merchantability or fitness for a particular purpose, are limited to one year or the shortest period allowed by law.

This limited warranty gives you specific legal rights, and you may also have other legal rights depending on where you live.

Product	4 Stage Water System		Terms of Warranty
Model NO.			LIMITED ONE YEAR
Serial NO.			
Installation DATE			
Customer NAME		TEL.	



## Aquverse Quick Change RO Water Filtration System

AQVR5 Installation Guide