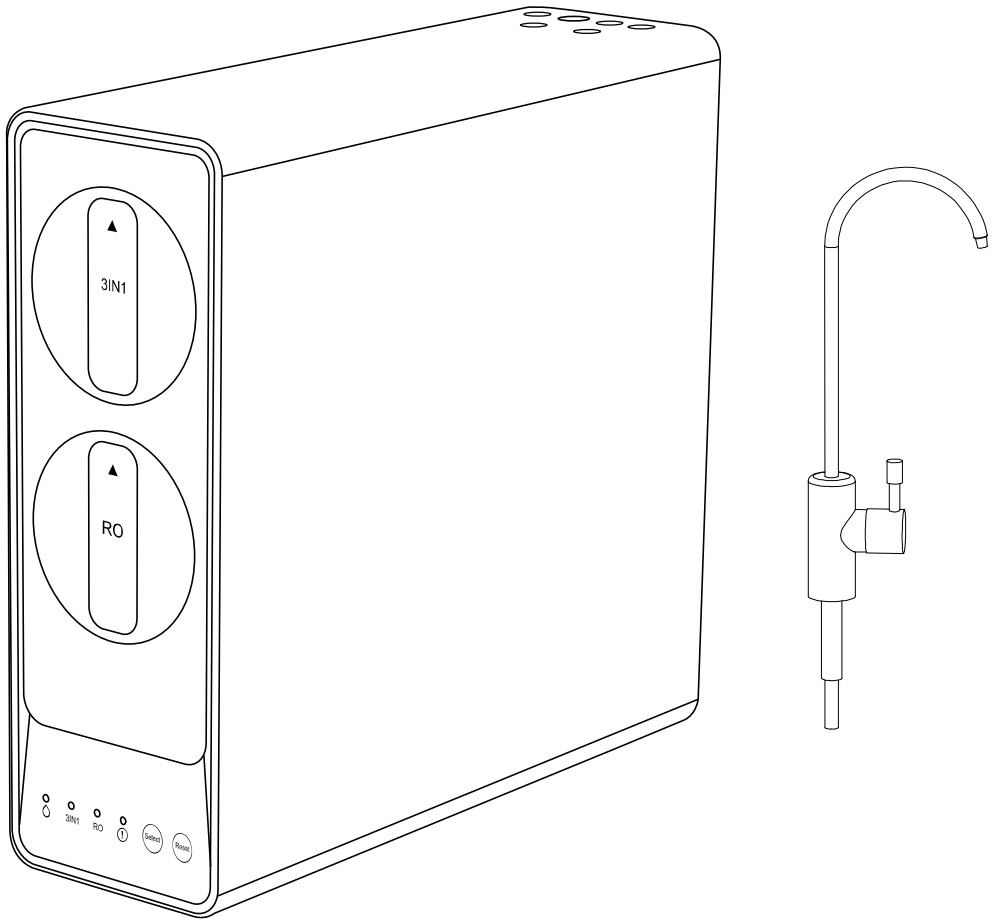
Owners Manual

RO Drinking Water System

RO-UX6



- **Please read carefully before proceeding with installation. Your failure to follow any attached instructions or operating parameters may lead to the product's failure. Keep this manual for future reference.**
- **Do not use the water that is microbiologically unsafe or of unknown quality without adequate disinfection before or after the system.**
- **Test the water periodically to verify that the system is performing satisfactorily.**

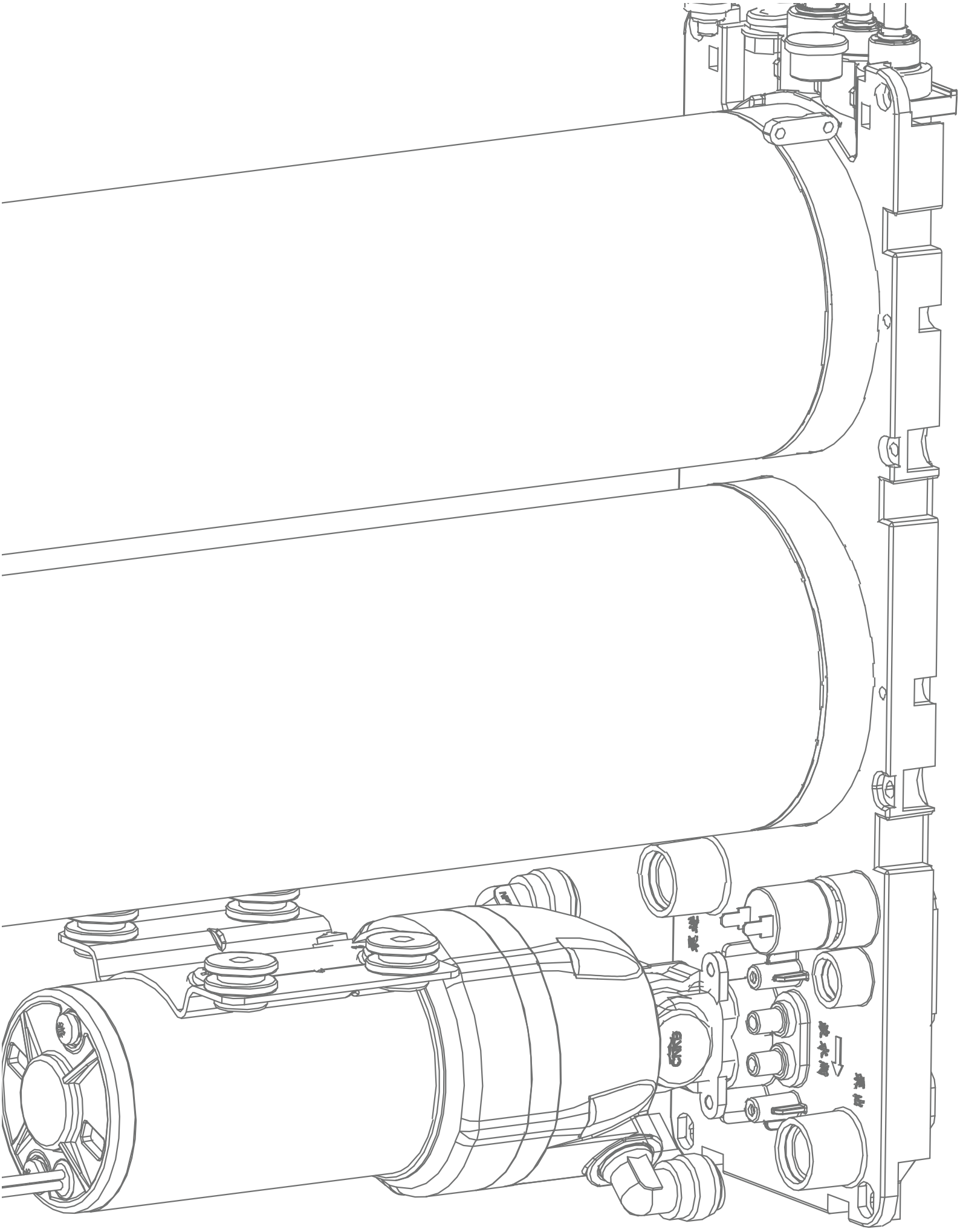


TABLE OF CONTENTS

READ THIS PAGE FIRST

BEFORE STARTING INSTALLATION

►You must read and understand the contents of this manual before installing or operating your RO system.

Personal injury or property damage could result if you fail to follow instructions in this manual.

►This system and its installation must comply with state and local regulations. Check with your local public works department for plumbing and sanitation codes. Local codes should be followed in the event the codes conflict with any content in this manual.

►This RO system must be operated on pressures between 14 psi to 58 psi. If the water pressure is higher than 58 PSI, use a pressure reducing valve in the water supply line to the RO system.

►This unit must be operated at temperatures between 5°C - 38°C （41°F and 110°F)

►Do not use this RO system on hot water supplies.

► Do not install this unit where it may be exposed to wet weather, direct sunlight, or temperatures outside of the range specified above.

► The appliance is only to be used with the power supply unit provided with the appliance.

► The appliance must only be supplied at safety extra low voltage corresponding to the marking on the appliance.

►Do not use water that is microbiologically unsafe without adequate disinfection before or after this system.

►This publication is based on information available when approved for printing. Continuing design refinement could cause changes that may not be included in this publication.

► This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved.

► Children shall not play with the appliance.

► Cleaning and user maintenance shall not be made by children without supervision.

INSTALL NOTES & SAFETY MESSAGES

Watch for the following messages in this manual:

EXAMPLE:

NOTE

Check and comply with your state and local codes. You must follow these guidelines.

EXAMPLE:

⚠ CAUTION

Disassembly while under pressure can result in flooding.

EXAMPLE:

⚠ WARNING

Electrical Shock Hazard! Unplug the unit before removing the cover or accessing any internal control parts.

RO SYSTEM SPECIFICATIONS

RO-UX6

Model		RO-UX6-400G	RO-UX6-600G	RO-UX6-800G
Water Supply		Municipal Water		
Feed Line Pressure		0.1MPa~0.4MPa		
Product Flow	Filtered Faucet	2 L/min		
	RO Faucet	1 L/min	1.5 L/min	2 L/min
Salt Rejection		≥93%		
Recovery		≥55%	≥65%	≥65%
Feed Water Temperature		5~38℃		
Ambient Humidity		≤90%		
Sound Level		≤50dB	≤55dB	≤60dB
Electrical	Input	100~240V AC 50/60Hz 3A		
	Output	DC24V 4A		DC24V 5A
	Power Used	85W	96W	120W
Membrane	Type	Thin Film Composite Membrane		
	Rating	400 GPD	600 GPD	800 GPD
Connection	Filtered	1/4"Quick Connect		
	RO	1/4"Quick Connect		
	Inlet	3/8"Quick Connect		
	Drain	1/4"Quick Connect		
	Power	Quick Connect Power Cable		
Accessory		Faucet & Installation Kit Included		
Gross Weight		15 Kg		
Product Dimension(WxDxH)		130*397*376 mm		
Carton Dimensions(WxDxH)		358*476*440 mm		

● Salt rejection and product flow are variable and can be effected by temperature and feed water conditions.

Model	Stage 1	Stage 2	Stage 3	Stage 4	Faucet
RO-UX6	Sediment Filter	Pre Carbon Block Filter	Reverse Osmosis Membrane	Post Carbon Block Filter	SS Steel
	5 Micron	CTO	400/600/800 GPD	CTO	

PERFORMANCE & TECHNICAL INFORMATION

The performance of the RO-UX6 system can be characterized and judged by the quality 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.

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).

Hardness

Hardness is the most common membrane foulant. If ignored, this relatively harmless component of feed water will scale a membrane over time. Use of a softener will reduce the fouling effect on a membrane. One way to detect too much hardness in the feed water is the weight of a membrane installed for a period of time. A fouled membrane(dried) will weigh significantly more than a new membrane. The increase in weight is a result of precipitated hardness inside the membrane.

Iron

Iron is another common membrane foulant. There are a variety of types of iron, some of which cannot be removed by an iron filter. Clear water iron can be removed more effectively by a softener. Particulate iron can be removed more effectively by a 1 micron filter. Organic-bound iron can be removed only by activated carbon or macroporous anion resin. If there is enough iron to exceed the EPA secondary drinking water standard and softening the water is not an option and the iron is soluble, then an iron filter is appropriate. If none of these are an option, then regular replacement of membranes will have to be accepted.

Product Water Recovery

Product water recovery plays an important role in determining membrane and system performance. Recovery refers to the amount of water produced in relation to the amount of water sent to drain. The standard calculation is:

$$\%\text{Recovery} = \text{Prodcut Water} \div (\text{Product Water} + \text{Waste Water}) \times 100$$

The system uses a flow control assembly to restrict the flow of waste water to the drain. This restriction helps maintain pressure against the membrane. The sizing of the flow control assembly determines the recovery rating of the system. The system is manufactured with a recovery rating designed to be more than 50%. Depending on temperature, pressure and tolerances the actual recovery value may be slightly different for each system.

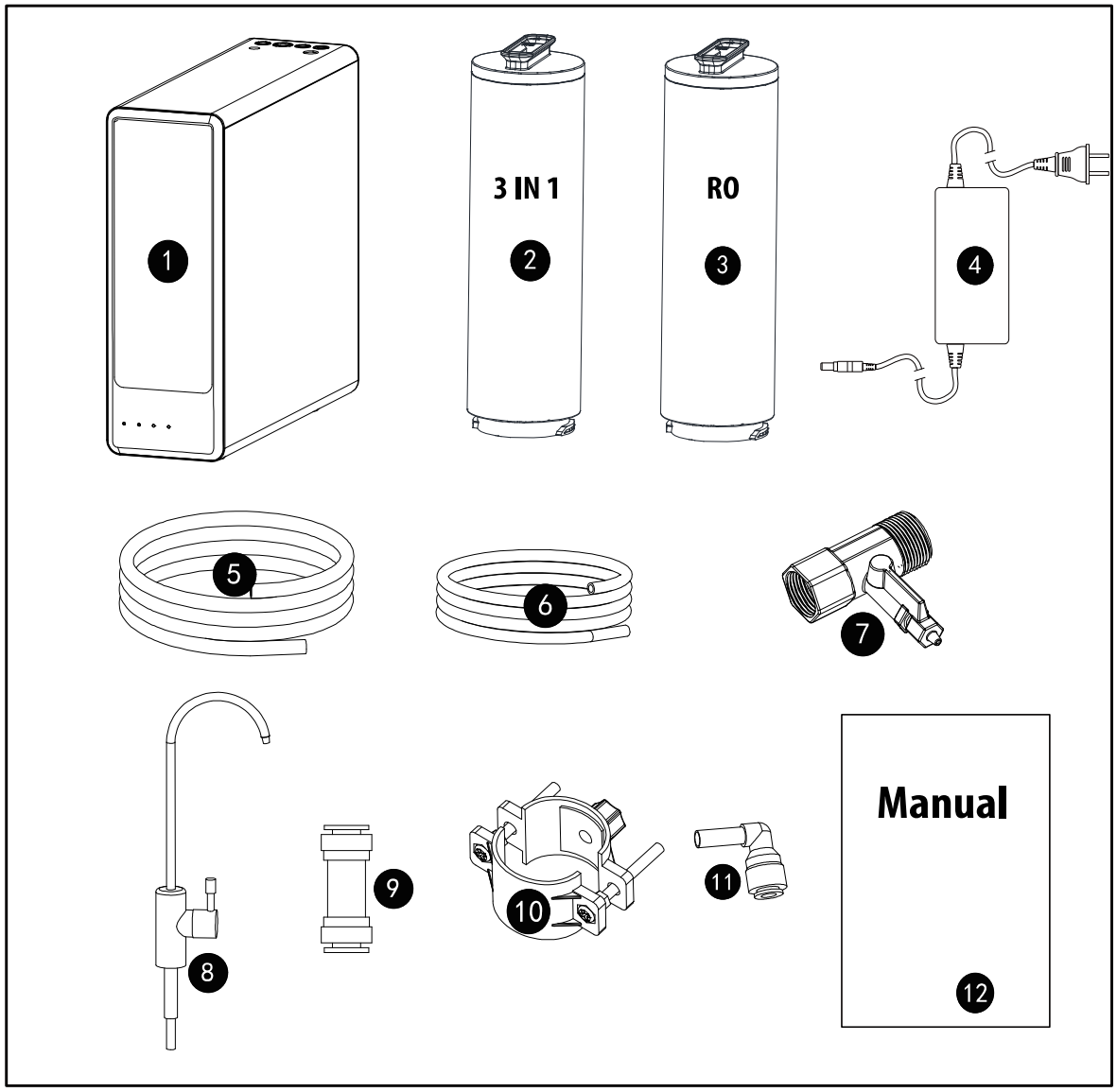
UNPACK & INSPECT YOUR RO SYSTEM

Inspect the RO system for any shipping damage. If damage is found, notify the transportation company and request a damage inspection. Damage to cartons should also be noted.

Handle all components of the system with care. Do not drop, drag or turn components upside down.

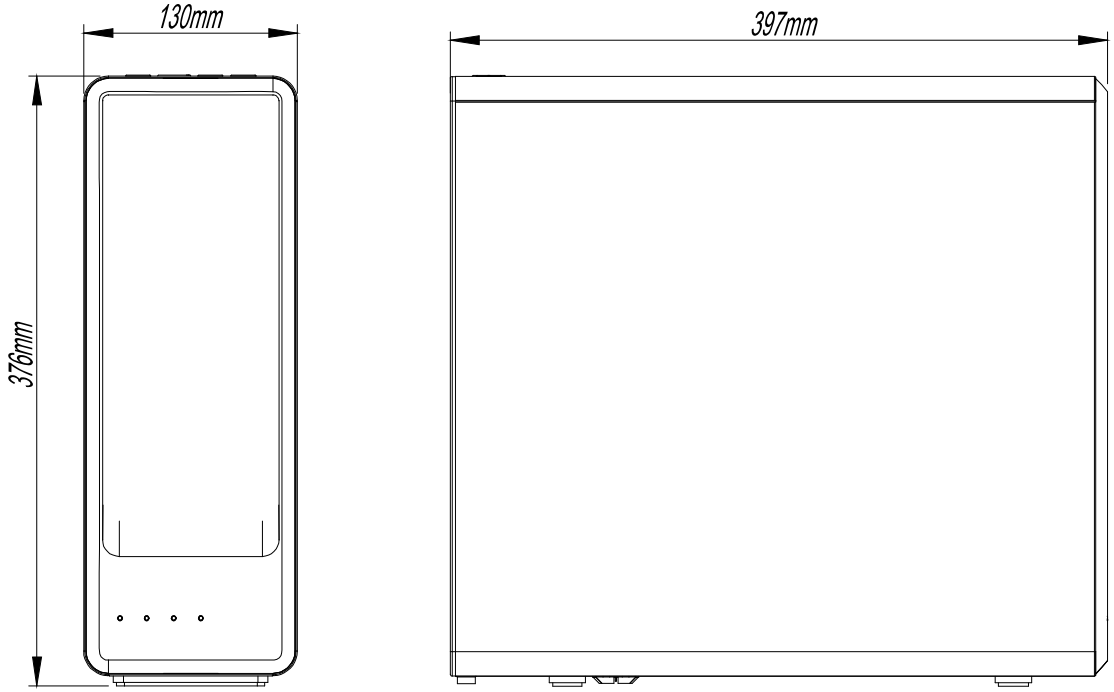
The manufacture is not responsible for damages in transit. Small parts, needed to install the RO system, are in a parts box. To avoid loss the small parts, keep them in the parts bag unitl you are ready to install.

PACKAGE CONTENTS:



1. RO Module Assembly × 1
2. 3 IN 1 Filter Cartridge × 1
3. RO Filter Cartridge × 1
4. Power Transformer × 1
5. 3/8" Tubing × 1
6. 1/4" Tubing × 1
7. Inlet 3-Way Valve(1/2") × 1
8. SS Faucet × 1
9. Faucet QC Connector(1/4") × 1
10. Drain Saddle × 1
11. Drain Saddle Connector(1/4") × 1
12. User Manual × 1

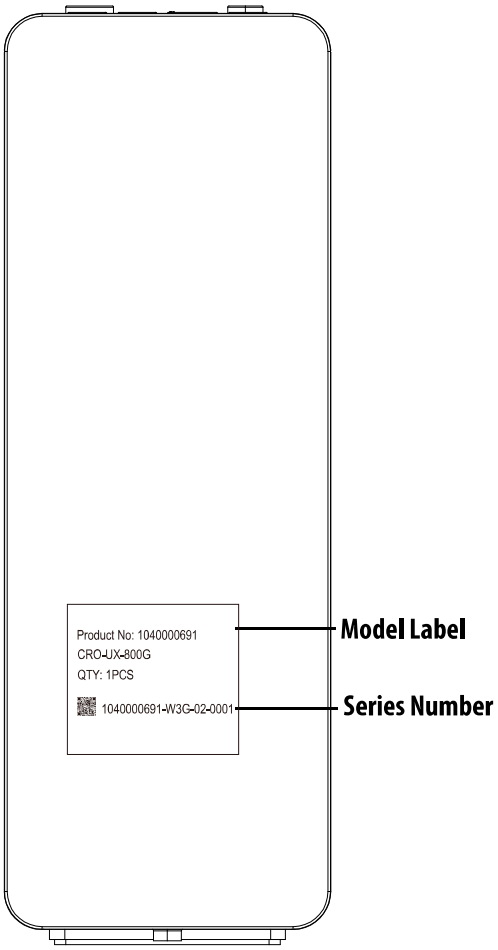
RO SYSTEM DIMENSIONS



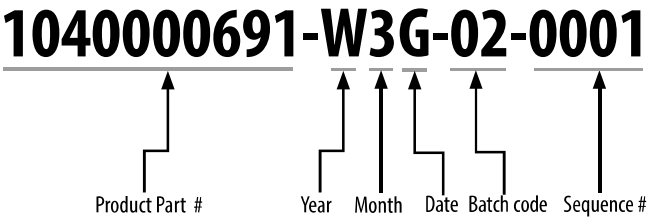
CHECK MODEL LABEL AND SERIAL NUMBER

The model label and serial number is located on the rear of the RO system housing. Check to make sure this RO system matches what you ordered. Serial numbers are important for troubleshooting.

The Model Label shows product number, product model and series number.

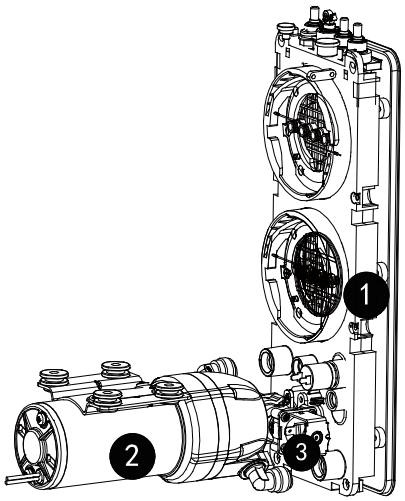


How to Read Series Number?



(1040000691): Product part #
(W)YEAR: "V" stand for year 2021, "W" stand for year 2022, "X" stand for year 2023...
(3)MONTH: 1(JAN), 2(FEB), 3(MAR), 4(APRIL), 5(MAY), 6(JUNE), 7(JULY), 8(AUG), 9(SEP), A(OCT), B(NOV), C(DEC)
(G)DATE: 1 2 3 4 5 6 7 8 9 (A)10 (B)11 (C)12 (D)13 (E)14 (F)15 (G)16 (H)17 (I)18 (J)19 (K)20 (L)21 (M)22 (N)23 (O)24 (P)25 (Q)26 (R)27 (S)28 (T)29 (U)30 (V)31
(02): Batch code
(0001): Sequence #

OVERVIEW OF THE RO SYSTEM'S COMPONENTS



1 RO Manifold Assembly

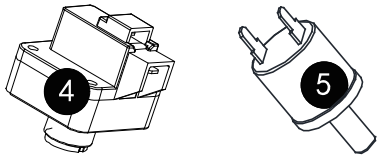
The manifold assembly serves as the functional hub of the RO manifold assembly by directing the flow through each of the system's main components.

2 Booster Pump

The booster pump built inside the manifold assembly improves the production rate and reduction of dissolved substances from water. It runs on electricity.

3 Automatic Solenoid Valve

The automatic solenoid valves are controlled by the program settings, it is used to control the water flow ON&OFF.

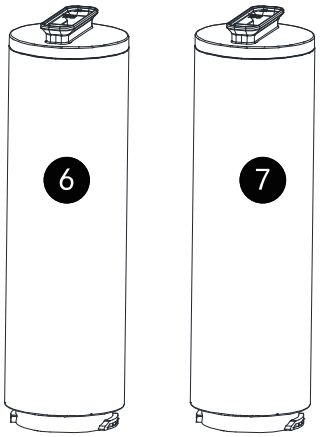


4 Low Pressure Switch

Low pressure switch ensure the boost pump running safely. It will shut off the power to avoid the boost pump " run dry" if feed water presssure is less than 0.5Kg/cm^2.

5 High Pressure Switch

As the faucet is closed, the high pressure switch will shut off the power to stop running the boost pump.

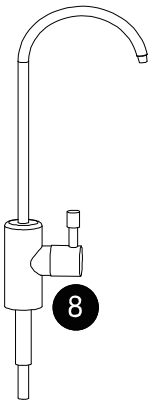


6 3 IN 1 Filter

The 3 IN 1 filter assembly utilize well designed water flow structure to integrate PP filter, pre carbon filter and post cartbon filter into one filter cartridge, sediment filter screens out particulate material, such as dirt, sand, or rust, which may clog the other filters in the system.
The pre carbon filter reduces chlorine which may damage the RO membrane filter. It must be regularly checked and/or replaced to prevent premature membrane failure and poor water quality.
The post carbon filter adsorbs any residual tastes and odors just before the water is delivered through the faucet.

7 Reverse Osmosis Membrane

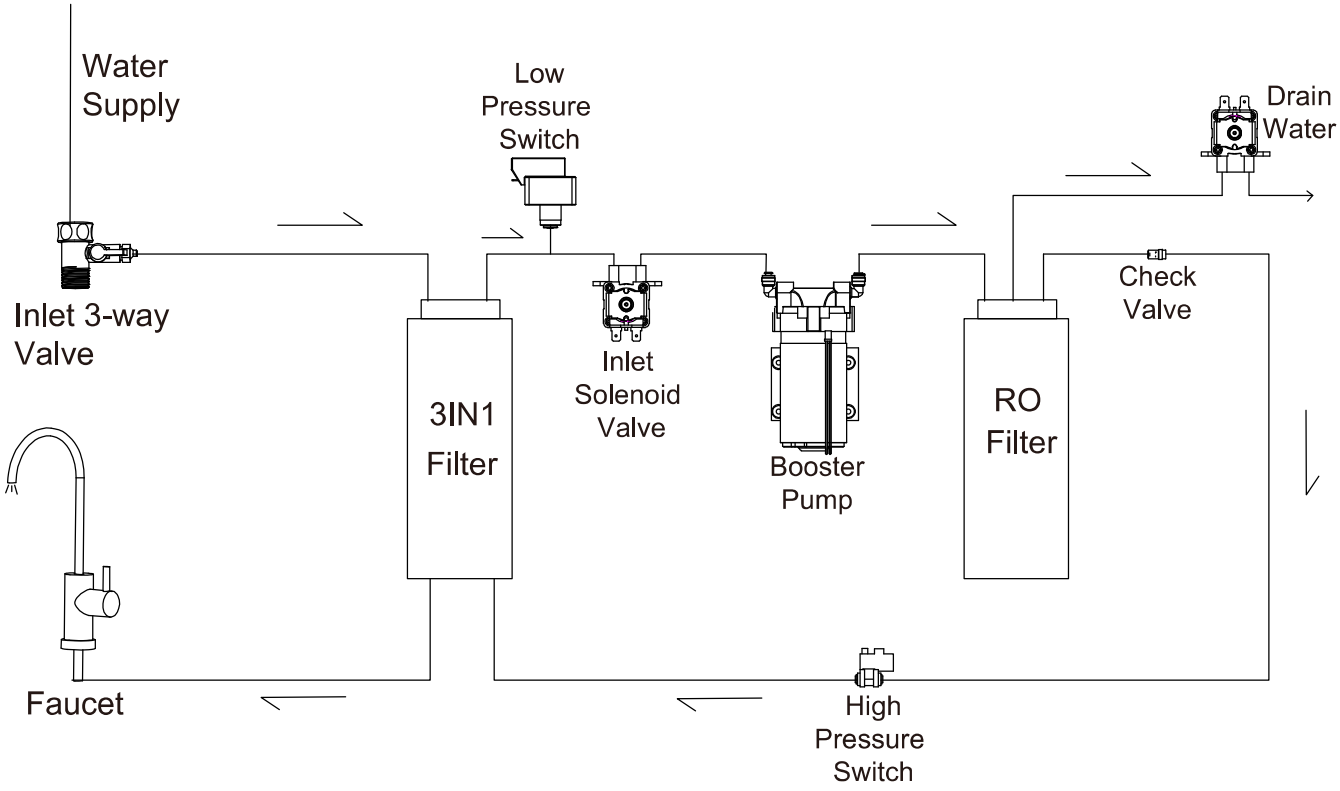
The RO membrane (4) reduces dissolved substances and other microscopic impurities. It consists of a membrane envelope wound around a perforated tube. Product water diffuses through the membrane to the inside of the envelope where it flows to and is collected by the tube. Impurities are flushed away in the drain stream. The RO membrane featured in the RO-UX6 system offers exceptional contaminant rejection, application versatility and long life. The membrane material is sensitive to an attack by chlorine.
The activated carbon filter must be maintained properly to prevent premature failure of the RO membrane.



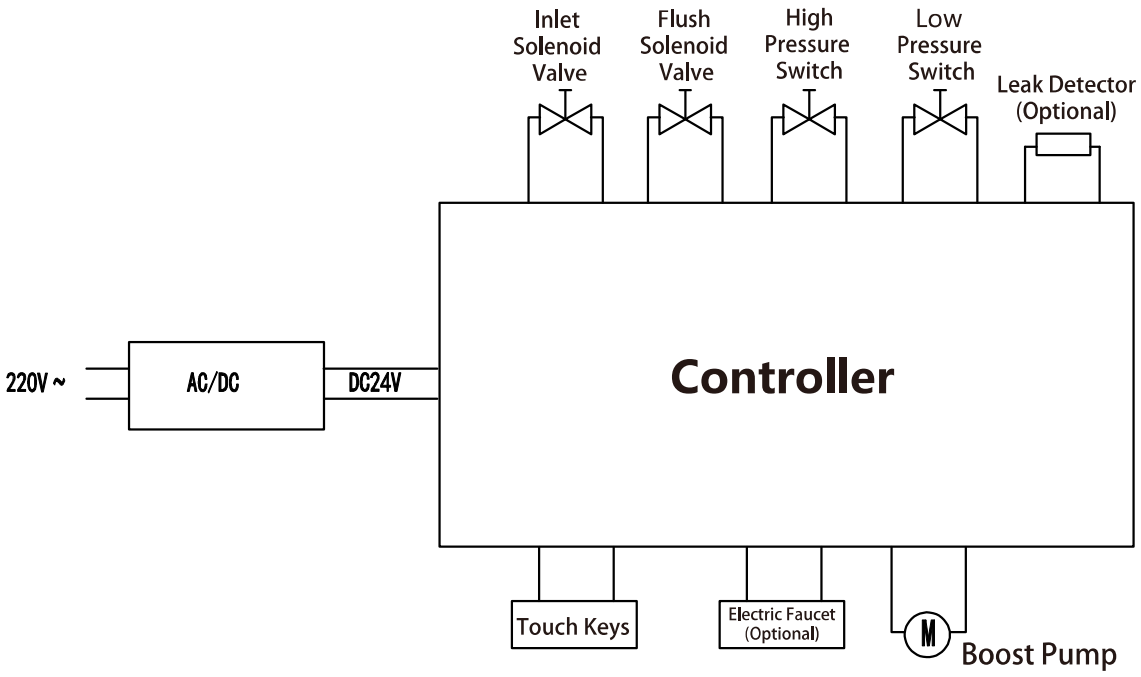
8 Faucet

The faucet allows the product water to be drawn from the system with a simple rotation of the handle.

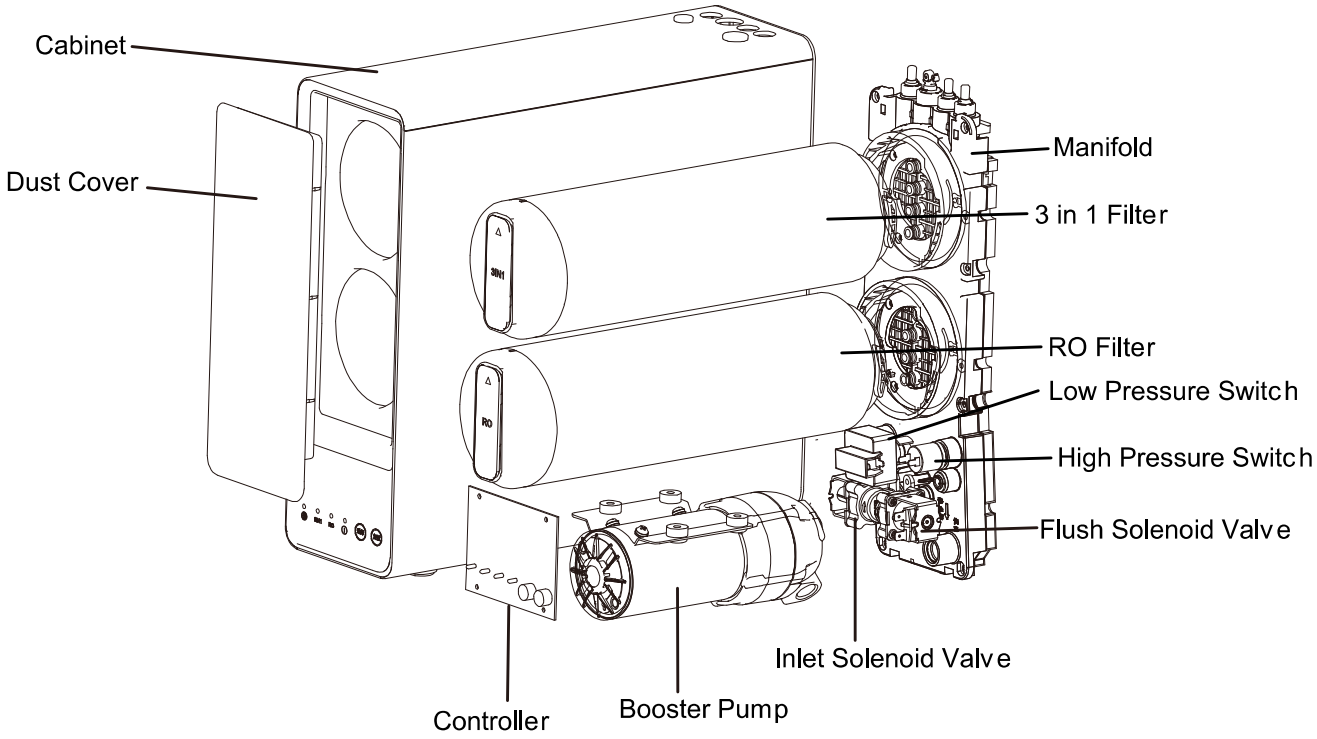
FLOW SEQUENCE



ELECTRICAL SCHEMATIC



PARTS BREAKDOWN



INSTALLATION RO UNIT

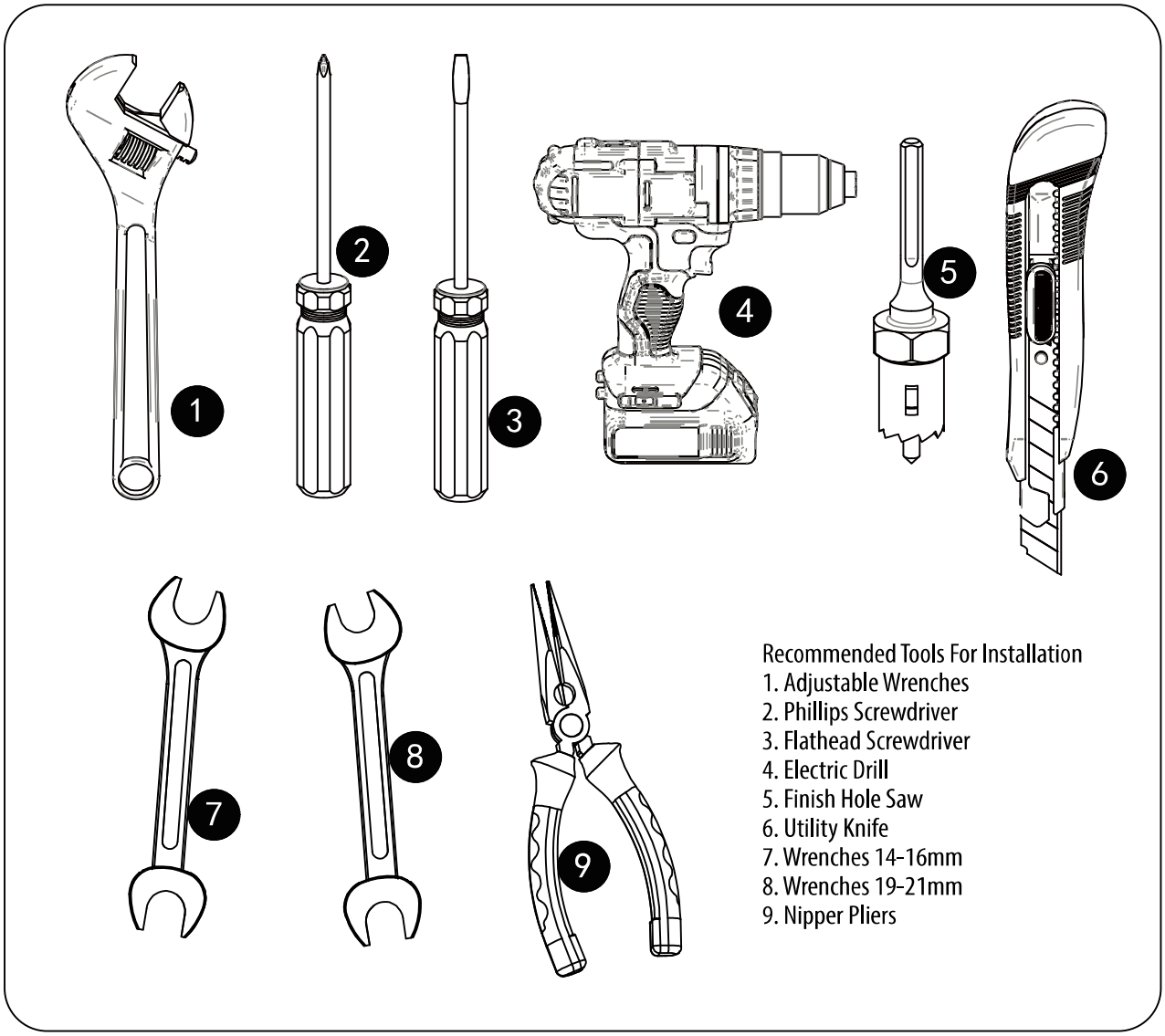
Before Installation

1. Check the accessories in the packing box and confirm if they are complete.

2. Shut off the water supply before installation.

3. Prepare some tools or equipments required for installation.

Suggested Installation Equipment



Recommended Tools For Installation
1. Adjustable Wrenches
2. Phillips Screwdriver
3. Flathead Screwdriver
4. Electric Drill
5. Finish Hole Saw
6. Utility Knife
7. Wrenches 14-16mm
8. Wrenches 19-21mm
9. Nipper Pliers

NOTE As installations may vary, some extra plumbing connection fittings may be required.

Symbols for Tubing Connection

Please familiarize yourself with symbols on the top of RO system:

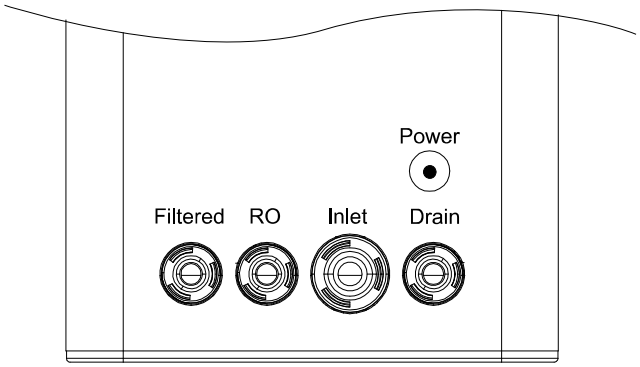
Filtered: Connect to Filtered water faucet.

RO: Connect to RO water faucet.

Inlet: Connect to Feed Water

Drain: Connect to Drain Water

Power: Connect to Power Supply



The following steps will enable you to install the system quickly and orderly. Some variation may be necessary depending on the installation.

Typical installations follow this sequence:

1. Select System Installation Locations
2. Faucet Installation
3. Install T-Adapter Valve on Water Supply
4. Connect System Drain
5. Install Filters Cartridges

Step-1 Select System Installation Locations

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 inlet, faucet, drain connection, or RO module assembly.
- A nearby electrical power socket is required for operation, check the electrical power requirement on transformer.
- The RO system assembly is designed to be installed on counter top or under sink. 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.
- Be sure the floor under the RO system is clean, level and strong enough to support the unit.

Step-2 Faucet Installation

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. A 12mm diameter hole is required.

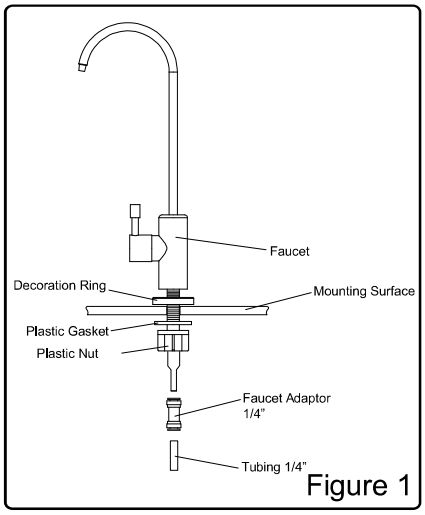


Figure 1

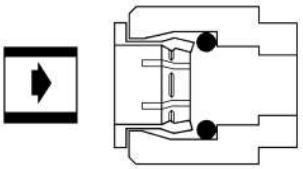
1. Drill a φ12mm hole at a proper location on the mounting surface, then take out the faucet from the accessory bag, install the faucet as the figure 1.

2. Tighten the SS screw and be sure to properly align the faucet.

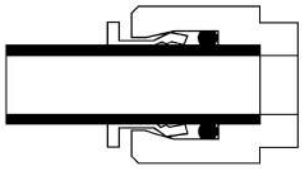
3. Insert the faucet adaptor to the bottom of faucet.

4. Take out the 1/4" tubing from the accessory bag, cut it to proper length, attached one end to the faucet adaptor(1/4"), attach the another end to the "Filtered" port on RO module assembly, make sure the tubings are fully seated.

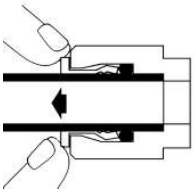
The RO system features reliable and convenient push-to-connect tubing connectors. Tubing is easily connected and disconnected from these fittings as follows.



1. Simply push in tube to attach.



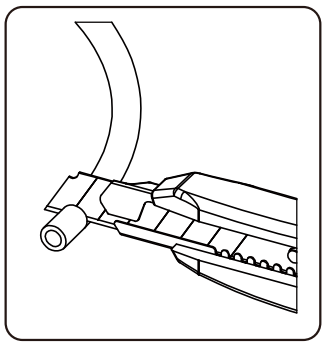
2. Tube is securely in position.



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

NOTE Do not miss the blue secure clip for all tubing connection.

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.



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.

Step-3 Install T-Adapter Valve

1. Turn off the water supply, disconnect the hose pipe. take the inlet 3-way valve out from the accessory bag, install it on the pipe line as the figure 2.

2. Take out the 3/8" tubing from the accessory bag, cut it to proper length, attach one end to the inlet 3-way valve, attach the another end to the "Inlet" port on RO module assembly, make sure the tubings are fully seated.

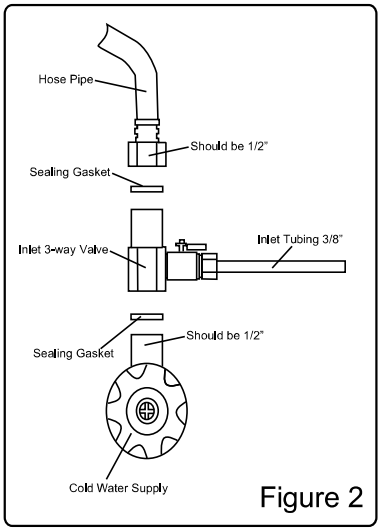


Figure 2

Step-4 Connect System Drain

1. Take out the 1/4" tubing from the accessory bag, cut it to proper length, attach one end to the "Drain" port on RO module assembly and attach the another end to the drain pipe line(Figure 3). Make sure the tubings are fully seated.

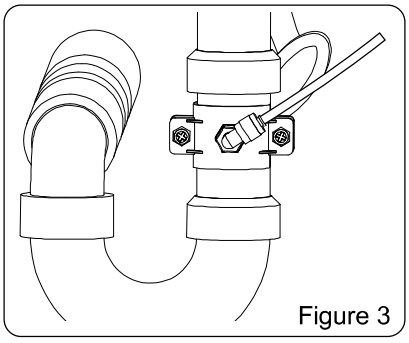


Figure 3

NOTE The installation figures above are only for reference, it may vary from different installation sites and conditions.

Step-5 Install Filter Cartridges

1. Take out the filter cartridges from the carton box.

2. Insert the 3IN1 Cartridge in upper hole, the triangle icon on top of filter element should be pointed at the icon(Figure 4).

3. Gently press the filter element and rotate it 90° clockwise, ensure the triangle icon on top of filter element point at icon(Figure 5).

4. Follow step 2 and 3 to install the RO filter cartridge.

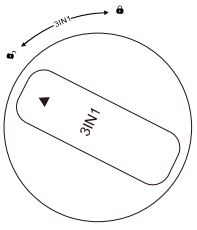


Figure 4

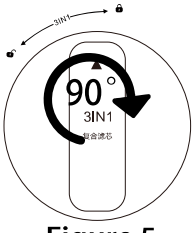


Figure 5

Step-6 Start-Up Instructions

1. Check system to verify all components are correctly installed.
2. Open inlet valve, connect to water supply.
3. Plug in power cord, connect power on.
4. Open the faucet and let the water flow through each filter elements.
5. Flush the filter elements for around 10 minutes. It is normal to see black carbon fines in water.
6. Check system thoroughly for leaks. If any are found, shut off both inlet and power, then correct the issue.
7. After flushing process, close the faucet to make sure the boost pump stops working.
8. Reset the filter elements life following the instructions on Page 17.
9. As all above is done correctly, your RO system is ready to use.

⚠ CAUTION Do not drink water produced by the system until the Start-Up procedure has been followed completely!

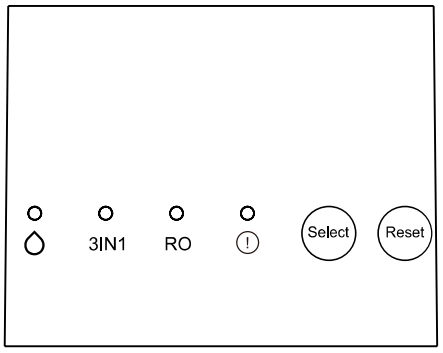
LED DISPLAY & TOUCH KEYS PROGRAMMING GUIDE

As the power is on, all lights will flash 3 times(Blue-red-blue) along with one beep sound, if no error is found, then the system will automatically flush itself for 30 seconds.

At standby status, light "3IN1", "RO" and Error will automatically light off if no key is operated in 1 minutes.

"Select" Key Used For: 1) Select the desired filter element to reset filter life.
2) Press and hold "Select" and "Reset" key for 3 seconds to have an automatic forced rinse.

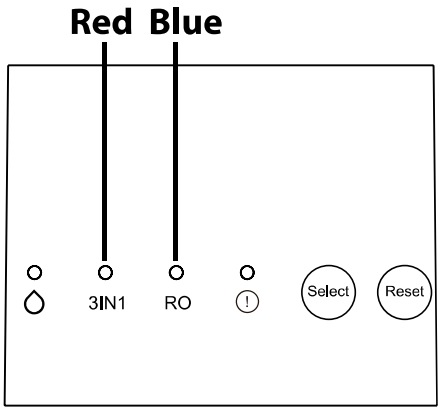
"Reset" Key Used For: 1) Press and hold "Reset" key for 3 seconds to enter Filter Life Reset programming.
2) Touch "Select" key to select the desired filter element that need to reset life. Press and hold "Reset" key for 3 seconds, filter life is reset.



Filter Life Indication:

The filters' life is indicated by 3IN1 light and RO light. The two lights will display blue color as the system is newly installed. As more water being treated, the filter become exhausted and need to be replaced. At this time, the light will display red color. But the system still can work and will not stop the pump.

After the filter is replaced and filter life is reset, the filters' lights will be display back to blue color again. This means filter's life has been reset.



Types of Filter Element Flush:

1.Power on: RO system will automatically have a rinse for 30 seconds when the power is supplied.
2.Forced: Press and hold "Select" and "Reset"key for 3 seconds, RO system will automatically have a rinse for 18 seconds. Press "Select" and "Reset"key again will stop the rinse.
3. After Producing Water: If the system produces water ≥ 1hour and there is no flushing happened during this time, after the faucet is closed, it will automatically rinse for 18 seconds. The system will automatically reset the countdown for 1 hour if there is any flushing process happened.
4.Standby: If the system continuous standby duration reaches 24 hours and there is no rinse happens. The system will automatically have a rinse for 18 seconds.

How to Reset Filter Elements Life?

1. Press and hold "Reset" key for 3 seconds to enter Filter Element Reset program.
2. Touch "Select" key to choose the filter element you are ready to reset life.
3. Press and hold "Reset" key for 3 seconds, after that you will hear two times beep sound, that means the filter element life is reset successfully.

NOTE	In the process of filter reset, if no key is operated for 10 seconds, system will exit Filter Element Reset program.

SERVICE AND MAINTENANCE

Service Schedule
To keep the RO system operating properly, it is necessary to change the filter elements periodically. Typically, this should be done on an annual basis. Service frequency may vary depending on local water conditions. High sediment, chlorine, turbidity, or hardness levels may require more frequent service.

Use the Following as a Guide:

Filter Elements	Service Schedule
3 in1 Filter	6~12 months
RO Filter	12~24 months

Note: Filter life may vary greatly depend on different water quality, RO filter life will be affected by other factors. The service schedule above is only for reference.

NOTE	RO-UX6 is designed only for household use, do not install the system where the water usage demand is high.

Filter Element Should Be Replaced If Following Situations Occur:

1. Produced water quality is poor, taste bad.
2. Product water rate decrease dramatically, 3IN1 filter or RO membrane may clog.(Make sure it is not caused by cold water temperature)
3. Filters are heavily clogged, almost no produced water.

How to Replace Filter Elements?

1. Close the T-adaptor valve to shut off water supply.
2. Open the faucet to release pressure.
3. Turn off power supply.
4. Rotate the old filter element for 90° anti-clockwise quickly, as the triangle icon on top of filter element pointed at icon, take out the old element(As Figure 6).
5. Insert the new filter element into the correct hole of filter manifold, the triangle icon on top of filter element should be pointed at the icon.
6. Gently press the filter element and rotate it 90° clockwise, ensure the triangle icon on top of filter element point at icon(As Figure 7).
7. Turn on the power and water supply.
8. Follow the instructions on **Page 17** to reset filter element life.
9. Flush the new installed filters for 5~10 minutes.
10. Filter element replacement complete.

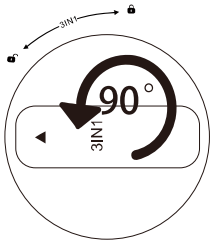


Figure 6

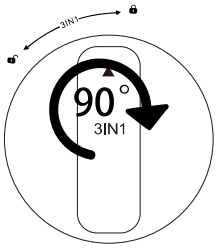


Figure 7

CAUTION Always follow the steps below prior to replace the filters.

1. Shut off water supply. → 2. Open the faucet. → 3. Turn off power supply.

Application Notes:

1.Product Water Rate: Product flow are variable and can be effected by water temperature and pressure. The product flow rate stated in the performance data sheet is tested at standard conditions.

2.Disposal of Replaced Filter Element: The replaced filters can not be recycling and reusing, it is recommended to discard it as household garbage and let professional garbage recycler to treat it.

3.When you are on vocation or not using the system for a long time, please close the T-adaptor valve and turn off power supply.

4.Any of the following occurs, please shut off the water supply and power supply immediately and fix the issue.

4.1 Leakage is found somewhere.

4.2 System's componet is malfunctioning.

4.3 Electric leakage is found somewhere.

4.4 Any other abnormal situation or faulty.

TROUBLE SHOOTING GUIDE

Problem	Possible Solutions
1. Pump Not Running, No Product Water	
A. Power supply is not on.	**A.** Plug in the power supply or wait for restore power.
B. Transformer is damaged.	**B.** Replace the transformer
C. Filter element life expired.	**C.** Replace filter element.
D. Leakage is detected by system.	**D.** Check the leakage and remedy it.
E. System continuously produces water for 60 minutes.	**E.** Unplug the power and replug it.
F. Low incoming water pressure.	**F.** Increase incoming water pressure to allow low pressure switch on.
G. Low pressure switch is malfunctioning, power is not switched to pump.	**G.** Repair low pressure switch or replace it.
H. High pressure switch is malfunctioning and not reset itself.	**H.** Repair high pressure switch or replace it.
I. Pump is damaged.	**I.** Replace the pump.
2. Pump Continuously Running.	
A. Pump is malfunctioning.	**A.** Replace the pump.
B. High pressure switch is malfunctioning.	**B.** Repair high pressure switch or replace it.
3. Pump Continuously On & Off .	
A. Low incoming water pressure.	**A.** Increase incoming water pressure.
B. Low pressure switch is malfunctioning.	**B.** Repair low pressure switch or replace it.
C. High pressure switch is malfunctioning.	**C.** Repair high pressure switch or replace it.
D. Leakage happens somewhere in system.	**C.** Find the leakage and fix it.
4. Not Enough Product Water	
A. Feed water valve is plugged or closed.	**A.** Open valve or unclog.
B. Sediment/Carbon prefilter or Carbon Post Filter is clogged.	**B.** Replace filters.
C. Low incoming water pressure.	**C.** Increase incoming water pressure.
D. Reverse Osmosis Membrane is fouled.	**D.** Make sure incoming water pressure is within operating limits. Make sure drain line is not clogged. Correct cause of fouling and replace RO Membrane.
E. The Faucet is out of adjustment or faulty.	**E.** Repair or replace Faucet.
F. No water to drain. Drain Flow Restrictor is clogged.	**F.** Replace flush solenoid valve.
5. Product Water is High in TDS	
A. Clogged Prefilter.	**A.** Replace Filter.
B. Reverse Osmosis Membrane is expended.	**B.** If Membrane life is unusually short, find and correct the problem. (Average life is 2 years.) Replace RO Membrane.
C. Product water and drain water lines are reversed.	**C.** Correct plumbing.
D. No water to drain. Drain Flow Restrictor is clogged.	**D.** Replace flush solenoid valve.
E. New Carbon Postfilter has not been rinsed completely.	**E.** Open the faucet and flush the post carbon filter for 10 minutes.
F. The incoming feed water TDS has increased.	**F.** An increase in feed water TDS will also give an increase in Product Water TDS.
6. Tastes and Odors in Product Water	
A. Carbon Post Filter is exhausted.	**A.** Replace Post Carbon Filter.
B. Product water and Drain water lines are reversed.	**B.** Correct plumbing.
C. Increase in Product Water TDS.	**C.** Replace RO Membrane.
7. Faucet Leaks or Drips	
A. Water leaks from faucet spout.	**A.** Repair or replace the faucet.
8. External Leakage on Connection	
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.
C. O-rings sealing aging.	**C.** Replace the O-rings.