User Manual

iSpring 5-Stage Reverse Osmosis System #RCC7

Model Number	RCC7	Production Rate	283.88 L/d (75 gpd)
Recovery	31.86%	Efficiency	15.82%
Temperature	40°F - 100°F	Pressure	40-80 psi

System tested and complied with NSF/ANSI Standard 58 for the reduction of substances.

	Influent Challenge Concentration	Maximum Allowable Concentration	Average Percent Reduction
Arsenic (pentavalent)	50 ppb	10 ppb	97.9
Cysts	Minimum 50,000/mL	110 #/mL	>99.99
Fluoride	8.0 mL ± 25%	1.5 mL	96.5
Lead	0.15 mL ± 25%	0.010 mL	98.1
TDS (Total Dissolved Solids)	740	187 mL	96.7

Introduction

Congratulations on your purchase of the iSpring 5-stage RO system. Featuring a five-stage filtration process, the RO technology incorporates polypropylene sediment (PP), granular active carbon (GAC), and carbon blocks (CTO) filters to provide crisp-tasting, bottled-quality water straight from your tap.

When properly maintained, this system will provide you with years of trouble-free service. The next sections contain important information on the proper care and maintenance of your system. Please take a few minutes to read through this information.

The cartridges in this system must be replaced on a regular basis to maintain efficiency and to ensure high water quality. These cartridges work together and must be replaced every 6-12 months. Any significant change in performance of the system should be investigated promptly to avoid secondary damage or deterioration to other parts of the system.

CAUTION: Improperly installed systems could result in water damage due to leaks or flooding. Proper installation of this system requires familiarity with standard sink plumbing and proper use of common hand and power tools. If you are not familiar with standard sink plumbing and proper use of common hand and power tools or have any difficulty with the installation of this system, consult a licensed professional, such as a contractor or plumber.

NOTE: This system has been designed for installation by licensed professionals, such as a contractor or plumber.

Limited Warranty

This Limited Warranty extends to the original purchaser of the system only. This warranty covers all Manufacturer-supplied items only that prove to be defective in material, workmanship or factory preparation. This warranty covers parts only; all labor is excluded from this warranty, including, but not limited to, services related to the removal, replacement, installation, adjustment, maintenance and/or repair of the unit or its components items. excludes all non-Manufacturer labor required for any servicing of the unit, including, but not limited to, servicing related to installation, adjustment, maintenance and repair of the unit. This warranty applies only for the first full calendar year from date of purchase. The following items are excluded from this warranty: membranes, filters, O-rings, and all other parts or components that require regular replacement as a result of ordinary usage.

Disclaimers: This Limited Warranty applies only if the system is installed, used and maintained in compliance with all instructions and requirements enclosed with the system. This warranty will be void for failure to observe the following conditions:

1. The system is to be used with potable water from a municipal water system.
2. Feed water pressure to the unit is no less than 40 PSI and no greater than 80 PSI.
3. The system is to be used on water supplies with chlorine concentrations of 1.0 mg/L (ppm) or less.
4. Feed water temperature to the unit must be no less than 40°F and no more than 100°F.
5. Total dissolved solids in feed water must be less than 2,000 mg/L (ppm).
6. Feed water must have a pH between 4 and 8.
7. Turbidity must be less than 1.0 NTU.
8. SDI must be less than 5.
9. Feed water must be completely free of iron, manganese or hydrogen sulfide.

Do not use with water that is microbiologically unsafe or of unknown quality without adequate disinfection before or after the system.

The Manufacturer does not know the characteristics of your water supply. The quality of water supplies may vary seasonably or over a period of time. Your water usage may vary as well. Water characteristics can also change if the drinking water appliance is moved to a new location. The Manufacturer assumes no liability for the determination of the proper equipment necessary to meet your requirements, and we do not authorize others to assume such obligation on our behalf.

This Limited Warranty does not cover any Manufacturer-supplied items that are defective as a result of the use of improper parts, equipment or materials. This warranty does not cover alterations or modifications of the unit, or failure of a unit caused by such alterations and modifications.

This Limited Warranty does not cover malfunctions of the unit due to tampering, misuse, alteration, lack of regular maintenance, misapplication, fouling due to hydrogen sulfide, manganese or iron, scaling from excessive hardness, turbidity greater than 1.0 NTU, Silt Density
Index (SDI) greater than 5.0 SDI, or excessive membrane hydrolysis due to chlorine levels in excess of 1.0 mg/L (ppm). In addition, damage to the unit due to fire, accident, negligence, act of God, or events beyond the control of the Manufacturer are not covered by this warranty.

Incidental and Consequential Damages Limitation: The Manufacturer will not be responsible for any incidental or consequential damages as a result of the failure of this unit to comply with express or implied warranties or any defect in the unit, including but not limited to, lost time, inconvenience, damage to personal property, loss of revenue, commercial losses, postage, travel, telephone expenditures, or other losses of this nature. Some states do not allow the exclusion or limitation of incidental or consequential damages, so this exclusion may not apply to you.

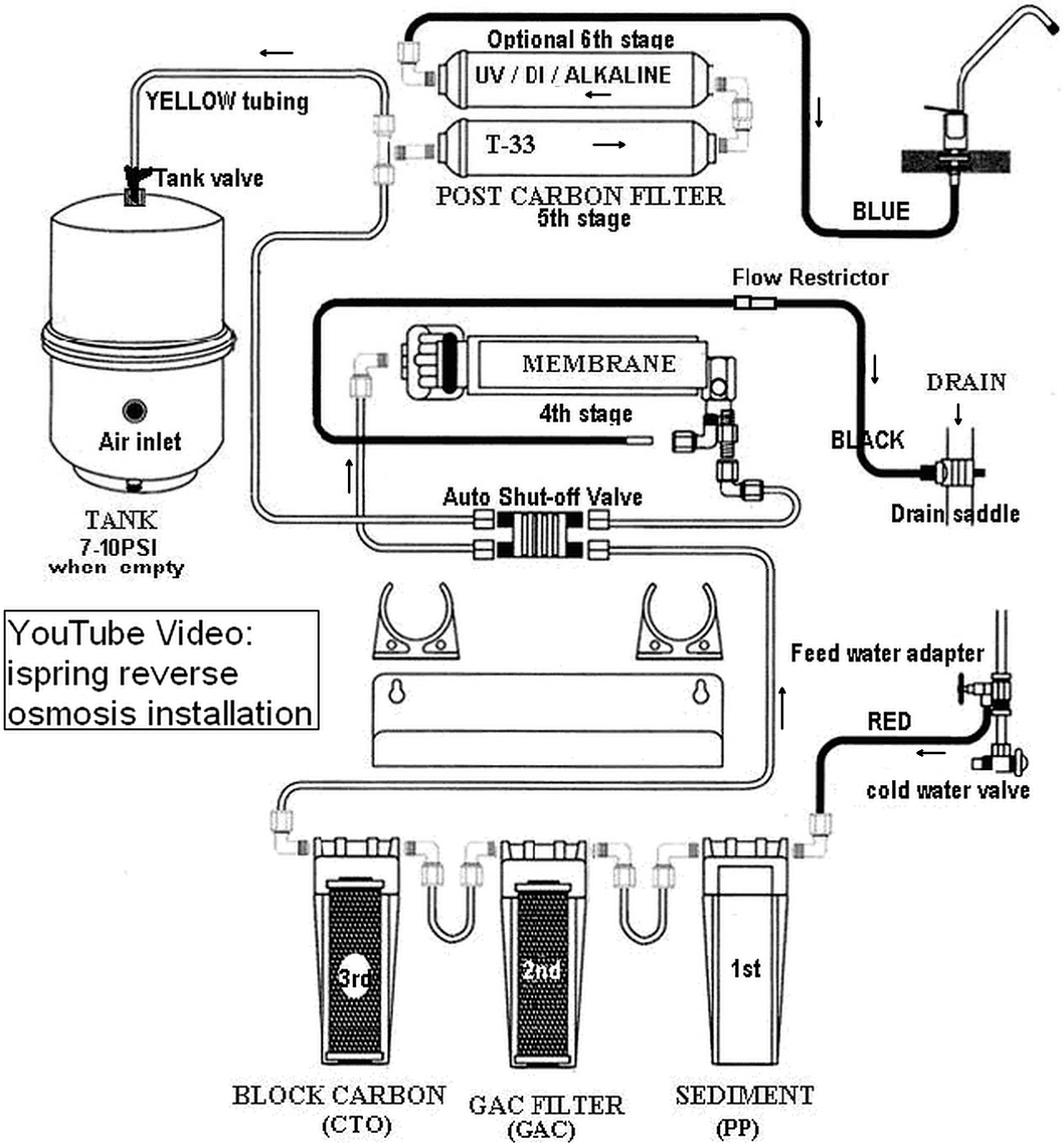
Owner's Warranty Responsibilities: As a condition of this Limited Warranty, the owner must ensure periodic maintenance of the system is performed as described in the literature enclosed with the system. Neglect, improper maintenance, abuse, modification or alteration of the unit will invalidate this Warranty. Should your unit develop a defect or otherwise fail to perform in accordance with this warranty, you should contact the retailer from whom the product was originally purchased.

Implied Warranties: The implied at-law warranties of merchantability and fitness for a particular purpose shall terminate on the date one year after the date of purchase. Note: some states do not allow limitations on how long an implied warranty lasts, so the above limitations may not apply to you.

Other Rights: This Warranty gives you specific legal rights and you may also have other rights which vary from state to state.

Before you begin, it is highly recommended to watch the video "ispring reverse osmosis installation" on YouTube.

System Diagram



Parts Index

0. O-ring seated on top of housing
1. 1st stage transparent housing
2. 2nd stage housing
3. 3rd stage housing
4. 1st stage sediment cartridge
5. 2nd stage GAC cartridge
6. 3rd stage CTO cartridge
7. 4th stage RO membrane housing cap
8. 5th stage Post carbon T33
9. 6th stage Alkaline (optional)
10. RED tubing inlet
11. YELLOW tubing inlet
12. BLUE tubing or ice maker T-fitting inlet
13. To Cold Water Supply Flex Tube
14. To Cold Water Supply Valve
15. Drain saddle
16. Drain saddle sticky pad
17. RO faucet front plate
18. RO faucet back washer
19. Big housing wrench
19a. Membrane housing wrench
20. Tank seat
21. Tank fitting
21a. Tank Shut-off Valve (open)
22. Housing cap with center knob
23. Rubber washer
24. Ice maker kit (optional)

How to Use Quick-Fitting

a.1.1 Viewed from the open end, a quick-fitting starts with the lock sleeve, Lock clip (often in blue color), and Fitting body.
a.1.2 To connect, cut tubing evenly, remove Lock clip, push tubing into quick-fitting all the way, and reinstall lock clip. Pull tubing to check if it is locked in.
a.1.3 To disconnect, remove Lock clip, push in and hold Lock sleeve compressed onto the Fitting body essentially eliminating any gap where the locking clip was occupied, and simultaneously pulling the tubing out. *note* watch our YouTube video 'iSpring RO Quick Fitting'

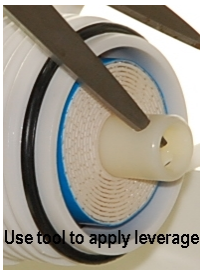
To connect, insert tubing all the way into Lock sleeve until it is locked. To pull out, remove Lock clip, push Lock sleeve towards Fitting body to eliminate Gap behind sleeve until tubing is unlocked.

Tips for Drilling a Hole on Sink or Counter-top

a.2.1 It's recommended to watch YouTube video "how to drill a hole in granite countertop"
a.2.2 Choose half inch Diamond hole saw for granite, and titanium drill bit for steel
a.2.3 Use coolant to disperse heat. Choose water for granite, oil for steel
a.2.4 Use 1-1/2" Suction Base Drilling Ring to hold coolant and prevent drill bit slipping on counter
a.2.5 Start slowly. Be cautious with slipped power drill that damages counter surface
a.2.6 Set variable speed power drill at 100 – 200 RPM. Do NOT use hammer drill on nature stone, glass and ceramic.
a.2.7 Hold drill bit vertically and swirl a little to apply pressure in circle evenly
a.2.8 Be patient and deliberate. It can take 20 – 40 minutes to drill through one inch.

Tips for Changing Filter Cartridges

a.3.1 To ensure system performance and water purity, filter cartridges must be replaced on schedule. Use TDS meter periodically to check water purity
a.3.2 Shut off water supply valve and tank valve, open the spigot to depressurize
a.3.3 Place a basket or towel under the unit for water spills.
a.3.4 Use housing wrench (part no. AWR2) to twist filter housing off in counterclockwise direction looking from the top
a.3.5 Clean the housing using hot water and optional scent-free dish soap
a.3.6 Check condition of the O-ring. They should be replaced every 3 years to prevent leak
a.3.7 Refer to Step 1.1 to install new vertical filter cartridges
a.3.8 Due to suction, RO membrane might be hard to pull out from housing, try using a tool to apply leverage (photo)



a.3.9 The 5th stage has direction. To replace it, remove the tubing and unscrew the fittings, unwrap the new cartridge, replace Teflon tape if necessary, follow the → sign on label, screw the fittings back on, and reconnect the tubing.

- Step 1: Install the Vertical Filters: Stages 1, 2, and 3

1.1 Make sure O-ring is seated on top of filter housings. Food-grade lubricant such as Vaseline or silicon jelly will help O-ring stay in place and seal better.
1.2 Filter cartridges are preserved in plastic wrap. Remove the wrapping and logo sticker.
1.3 When placing the filter cartridge into its housing, make sure the knob protruding from the bottom of the housing is inserted into the hole of the filter.
1.4 Screw the housing, with filters attached, onto the housing caps (caps are pre-attached onto the system). The cap also has a center knob which should be inserted into the hole of filter cartridge. Twist the housing on in clockwise direction by hand, and then use housing wrench to tighten it up for about 1/4 – 1/2 turn. **Do not over tighten. This can cause leaks and make it difficult to unscrew the housing when replacing filters.**
1.5 Follow the steps 1.1 – 1.4 to install the GAC and CTO filters. *note* the second stage GAC is the only filter that must go in a certain way. Make sure the rubber washer on the end of the GAC filter faces toward the top (open end of housing) thereby attaching to the housing cap.

- Step 2: Install Reverse Osmosis Membrane

2.1 RO membrane is sealed and preserved in moisture. Check the seal and remove it from plastic bag.
2.2 Remove the membrane housing screw cap. First, you will need to disconnect the white 1 / 4" tubing from elbow quick-fitting on membrane housing, and then unscrew (counterclockwise) cap from housing (*refer to How to Use Quick-Fitting section*).
2.3 Follow the arrow sign on membrane and firmly insert membrane into housing with the smaller end that has two black O-rings first.
2.4 Screw cap and insert white tubing back on. Tighten up using small plastic housing wrench but do not over tighten.

- Step 3: Install 3/8" Feed Water Adapter (AFW)

3.1 Turn off the Cold Water Line at your sink via the Cold Water Supply Valve (CWSV). Turn on kitchen faucet to release any pressure and make sure water has stopped before proceeding to the next step.
3.2 Get a towel or basket to catch any water drips. Unscrew Cold Water Supply Flex Pipe (CWSFP) from CWSV. Wrap CWSV with Teflon tape and screw on the AFW at the female end with O-ring. Tighten using wrench or pliers. Note, the AFW in iSpring tool kit is 3/8", which fits most common flex pipe in US. However, if yours happen to be in different size, this is usually a size of 9/16", please call us get an adapter from us or Home Depot.
3.3 Reinstall CWSFP on the male end of AFW. Turn the handle of AFW to cross (OFF) position. Turn on CWSV slowly, check and fix any leaks.
3.4 *note* If the T end of the ASV is not a quick-fitting but a compression fitting, unscrew the nut and slip it onto 1/4" **RED** tubing. Insert the tubing into the T fitting, push in firmly and then screw and tighten the nut with your hand. Use wrench for final turns.

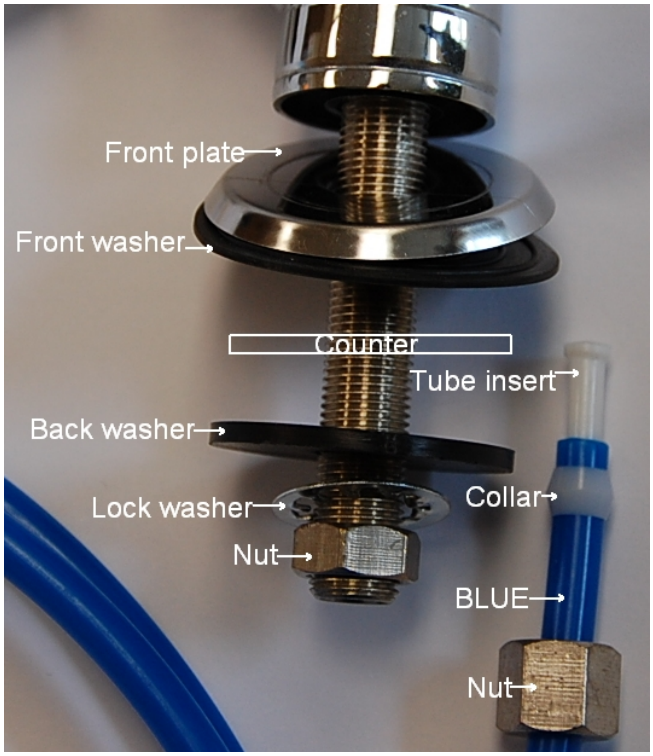
- Step 4: Install RO Drinking Faucet

4.1 If your kitchen sink does not have a spare ½" hole, you will need to drill one. (Refer to accessory: *The Tips for Drilling a Hole on Sink or Counter-top*). Wipe clean and dry the area.

4.2 Remove blue protection film from front plate, slip it on faucet thread, and slip on black rubber washer that has 3 circles. Insert the faucet thread portion into the hole. Optional plumber glue or sealer could be used.

4.3 Under the sink, tighten back rubber washer, small lock washer, and nut.

4.4 Slip the compression fitting nut and collar on BLUE tubing, push the insert into the tubing, insert it into faucet end, and tighten up the nut. Pull the tubing to check if it is secure.



- Step 5: Install Tank Shut-off Valve (TSV)

5.1 Wrap six turns of Teflon tape clockwise onto the valve thread at the top of the tank.

5.2 Screw Tank Shut-off Valve on and tighten up by hand. Do not over tighten.

5.3 Install the **YELLOW** tubing onto Quick-Fitting of TSV.

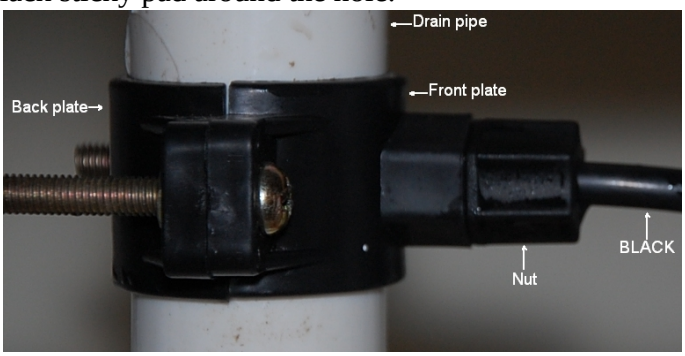
- Step 6: Install Drain Saddle

6.1 Choose a spot on drain pipe that is convenient for installing drain saddle and tubing. Horizontal pipe is recommended to limit sound of drainage water running out from system.

6.2 Drill a 1 /4" hole on drain pipe; paste the black sticky pad around the hole.

6.3 Cut the **BLACK** tubing end a bit to make a 45 degree angle. Slip the plastic nut and front plate on the tubing, insert the tubing into the 1 / 4" hole on drain pipe, install the back plate and tighten two screws with hex nuts while tubing remains in the hole.

6.4 Tighten the nut on Drain Saddle by hand. Pull the tubing to check if it is secure.



- Step 7: Tubing Hook up

7.1 When facing the Water System with the iSpring logo on the front plate, look for the elbow fitting connecting to the vertical sediment filter located on the right hand side (clear housing). Connect the **RED** tubing to this elbow fitting and the other end will connect to the Feed Water Adapter (AFW) on your cold water line.

7.2 Insert the **BLACK** tubing into the flow restrictor, which lays beside the membrane housing and further connects to the drain saddle to flush out the waste water.

7.3 On the right side of the Post Carbon Filter (labeled T33 or FT15), insert the **YELLOW** tubing into the t-fitting. The other end of the YELLOW tube will connect to the ball valve of the Tank.

7.4 Insert the **BLUE** tubing (links to RO faucet) into the elbow fitting at left end of Post Carbon Filter. For the optional Ice Maker Kit, elbow fitting with the T-fitting as shown in photo.

7.5 You may organize the tubings, but make sure to leave enough length so the filter system can be moved around the cabinet easily when replacing filters.

7.6 You may hang the system on the cabinet wall using two 1.5” screws. Furthermore, a basket can be put under the system in case of any leaks, and a Flood Alarm can be used together for greater home and cabinet protection.

- Step 8: System Start Up

8.1 Turn Tank Shut-off Valve to OFF (cross) position.

8.2 Turn on Cold Water Supply Valve and Feed Water Adapter, and check system for leaks.

8.3 Turn on RO Drinking Faucet. Within 5 minutes, RO water should start dripping. Let it run for 5 - 10 minutes. This flushes the system except the tank.

8.4 Shut off RO Drinking Faucet, turn on Tank Shut-off Valve and allow the tank to fill for two hours.

8.5 After two hours, turn on RO Drinking Faucet to flush out all the water in the tank. The water out of the faucet should be much stronger stream since the water is coming from the pressurized tank. The tank has flushed when the water flow has changed back to a real weak flow.

8.6 Repeat the steps 8.3 – 8.5 one to three times until RO water is clear.

8.7 An optional step would be to compare the TDS level between original tap water and RO water. If the tap water is 100, the RO water should be less than 10. Visit 123filter.com to purchase a TDS Meter.

****NOTE: Check for leaks daily for the first week after installation.****

TROUBLE SHOOTING

NOTE: Shut off water supply to the system before servicing

Quick Troubleshooting Guide		
PROBLEM	**POSSIBLE CAUSE**	**SOLUTION**
TDS is not reduced much	1. RO membrane is not installed properly 2. Faulty RO membrane	1. Check if any missing in RO membrane installation step 2. Replace RO membrane
No or low water production	1. Feed water pressure is lower than 40 psi 2. Feed water and Tank valves are off 3. Tubing is kinked	1. A system with booster pump is required 2. Turn on the valves 3. Straighten the tubing
Leak at filter housing	1. Filter cartridge is not installed vertically or housing is not tighten up 2. Damaged or misaligned O-ring 3. Housing has cracks	1. Refer to Step1 to install stage 1 - 3 2. Re-align O-ring or replace 3. Replace housing
Leak at fitting thread	1. Not properly tighten 2. Fitting has cracks	1. Wrap 3 – 6 turns of Teflon tape and tighten it up 2. Replace it
Bad-tasting water	1. Not yet flush the system 2. Tubing connection is incorrect	1. Discharge water from tank 2. Check flow diagram
Milky/Cloudy water	Tiny air bubbles in RO water	This is normal, continue use it for 2 weeks
Noise from drain	1. Drain line is not installed properly	Cut the drain line (BLACK) a bit in 45 degree angle, push the tubing into drain pipe long enough until noise is minimized
Vibrating noise or very loud high pitch noise	1. From the auto shut-off valve 2. Feed water pressure too high	1. If the noise is too unbearable, shut-off, valve should be replaced. 2. Add a flow restrictor or simply turn down water valve
Drain water never shut off	1. Auto shut-off valve is worn out 2. Storage tank low pressure 3. Water supply pressure is near 45 psi or below	1. Replace Auto shut-off valve 2. Recharge tank to 7 psi using a bike air pump through the tank air inlet below the label 3. Increase water pressure or get a system with booster pump
Low water production	1. Clogged filters 2. Kinked tubing 3. Storage tank problem 4. Clog flow restrictor	1. Replace filters 2. Recharge tank to 7 psi 3. Straight the tubing 4. Replace flow restrictor
System has been working well but now water from RO faucet is small	1. Clogged filter cartridges 2. Tank losses pressure	1. Check condition of sediment filter through transparent housing 2. Try lifting the tank to measure amount of water inside. Full: recharge tank to 7 psi Empty: check if tank valve is open (in line) or the system is not making RO water

Testing the Auto-shut-off Valve (ASV)

Draw 2-3 glasses of water from the faucet. That should drop pressure in the tank and the RO System will start making water to fill the tank again. Turn OFF the tank ball valve by simply turning the blue handle 90 degrees to mimic tank full. Wait for 5 minutes, then check to see if the drain water stops running. Check draining brine water by either listening or actually pulling out the drain line to look at it. If drain water stops running, the RO system is shutting off properly and both the ASOV and the Check Valve (CV) are working fine. Stop testing.

If drain water doesn't stop, then either the CV and/or the ASOV is defective. Proceed to the next test.

Testing Auto-shut-off Valve and Check Valve (CV):

Make sure there is some water in the tank (tank not empty). Remove the Black drain line from the drain saddle, so you can check brine water flow drainage.

Turn OFF the Cold feed water supply. Turn ON the tank valve.

Check the BLACK drain line to see if there is any water draining out from this line.
If water does drain out from the black line then this water is coming from the storage tank. This means the Check Valve is broken, it is allowing the water in the tank to back flow out into the drain line. If no water drains out from the black line (no drain water running), that means the CV is OK. The RO system non-shut off condition is caused by a defective ASOV valve, not caused by a defective CV.

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iSpring Warranty Registration Form

Date Item(s) were Received:	**Order ID#:**	**Model:**

Dealer Purchased From:

Model/Serial Number:

Name: _____

Address: _____

City: _____ **State:** _____ **Zip:** _____

Send in this Warranty Registration Form to validate your warranty or visit www.iSpringFilter.com to complete warranty registration form online.

Send To:
iSpring Water Systems
3020 Trotters Pkwy,
Alpharetta, GA 30004
Phone: 1 (678) 261-7611
e-Mail: sales@ispringfilter.com

Plumber's Information (optional)
We like to recommend good plumbers throughout the USA and if you were happy with your installer please give us their information so we can pass it on as a courtesy. Thank you for your time.
Name of Plumbing Company used to install system: _____
Phone #: (_____)-_____ of the Plumbing installer.