

RO500 3-Stage Under Sink Reverse Osmosis System

INSTALLATION INSTRUCTIONS & OWNER'S MANUAL Ver. 05/2021



123 Filter.com
iSpring Water Systems, LLC (since 2005)

Copyright ©2005-2021 ISPRING WATER SYSTEMS, LLC. All rights reserved.



We stand behind our products

Since 2005, iSpring has been dedicated to providing high-quality drinking water to families across the United States. We provide various residential faucets and water filtration systems that purify your water in everyday life and deliver pure, healthy, and tasty water to you and your family.

At iSpring, we strive to develop products to the highest of standards and aim to make excellent drinking water accessible for all households. With affordable pricing, reliable quality, prompt delivery, and top-notch customer service, we hope to assist in bringing you great water for years to come.

Prior to Installation

Read this instruction manual carefully prior to installation.

Keep this manual readily available for future reference.

Table of Contents

User Information.....	3
Component Identification	4
Product Features	5
Product Structure and Size	6
Filter Life Indicator	6

Installation

Preparation.....	7
Feed Water Adapter Installation.....	7
Filter Installation.....	8
System Installation and Setup	9
Faucet Installation.....	11
Connecting Faucet Power Supply and Main Power Supply	12

Using the System

Starting for the First Time	13
Routine Maintenance	13
Fault Codes	14
Filter Service Life Display	14
Machine Function Description	15
Filter Service Life Reset	16
Manual Rinsing Mode	16

Warranty


Warranty	17
Warranty Registration.....	18

User Information

The user must adhere to the installation specifications described in this Product Installation and Operation Manual (hereinafter referred to as the "instruction manual"). iSpring is not responsible for damage, loss, or injury resulting from neglect, improper maintenance, or unauthorized modification of products.

- The unit should be placed only on flat surfaces. Do not mount on a wall.
- This product is designed for residential use only. Contact iSpring customer service to inquire about usage in non-residential settings.
- The operating temperature range is 41°F - 100°F. If the water temperature or ambient temperature falls below 41°F, immediately shut off the inline water supply, turn off the inline water adapter, and drain the remaining water from the system. Failure of the water supply line or water purifier may result in malfunction, damage, and possible injury to the enclosure or water supply line.
- In case of malfunction due to damage or failure of the power supply system, unplug the system immediately and contact iSpring customer service for guidance.
- If leaking occurs, shut off the inline water supply by turning off the adapter. Then unplug the system and contact iSpring customer service.
- Use only authorized iSpring parts and filters. Using unauthorized or aftermarket components will void the product warranty.
- This product is equipped with built-in systems to prevent internal leaks and minimize the risk of water damage. However, it is recommended that users check external fittings and connections regularly to ensure all components are secure and operating properly.
- Unauthorized modification and disassembly are strictly prohibited and will void the warranty.
- Never touch the power cord connector when your hands are wet, as this may result in electric shock.

Component Identification

		
System Body with filters pre-installed	Power Supply	Smart Faucet
		
Feed Water Adapter	1/4" and 3/8" PE Pipe	Drain Saddle
		
1/4" C-Clip	3/8" C-Clip	Instruction Manual and Warranty Card

Product Features

1) Product Scope

- A. For residential use ONLY.
- B. Applicable water quality: municipal.

2) Water Treatment Process

Municipal tap water → composite filter → reverse osmosis filter → post-activated carbon filter → purified water

3) Filtration Performance

Filter	Purpose
Composite filter	Removes unpleasant chlorine, taste, odors, cloudiness and coloring.
	Removes dirt, sand, silt, rust, and scale particles and absorbs THMS and pesticides.
Reverse osmosis membrane	Removes lead (removes up to 98% of lead), chlorine, fluoride, arsenic, hormones, asbestos, calcium, sodium, and more using a 0.0001 (one ten-thousandth) micron membrane.
Carbon block filter	Further enhances the sense and taste of the water.

4) Specifications

Model	Specification
Working Pressure	15 - 70 psi
Working Temperature	41–100°F
Flow Rate of Purified Water	Up to 0.4 gal/min.
Power Specifications	Input: 100-240V AC
	Output: 24 DC

5) Filter Service Life Table:

Filter	Recommended replacement cycle
First stage composite filter	6 months
Second stage reverse osmosis membrane	24 months
Third stage carbon block filter	12 months

- This system works at maximum performance when connected to a municipal water supply with an inlet pressure of 60 psi and a temperature of 75°F.
- The actual water flow rate will vary depending on several factors, such as water quality, high TDS (500 ppm+), low temperatures (below 55°F), and low pressure (below 25 psi). These will limit the performance of the system and reduce the filter's life.

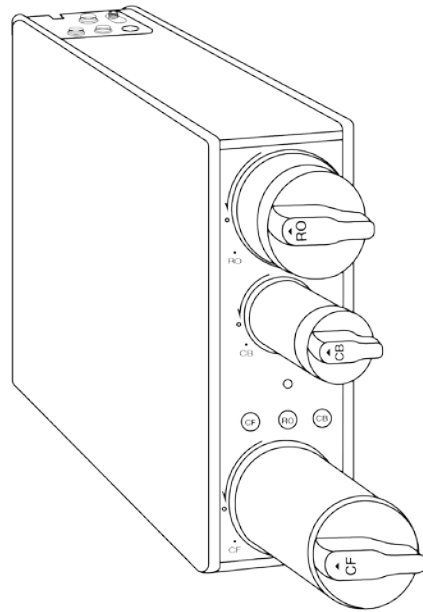
Product Structure and Size

1) Product Overview

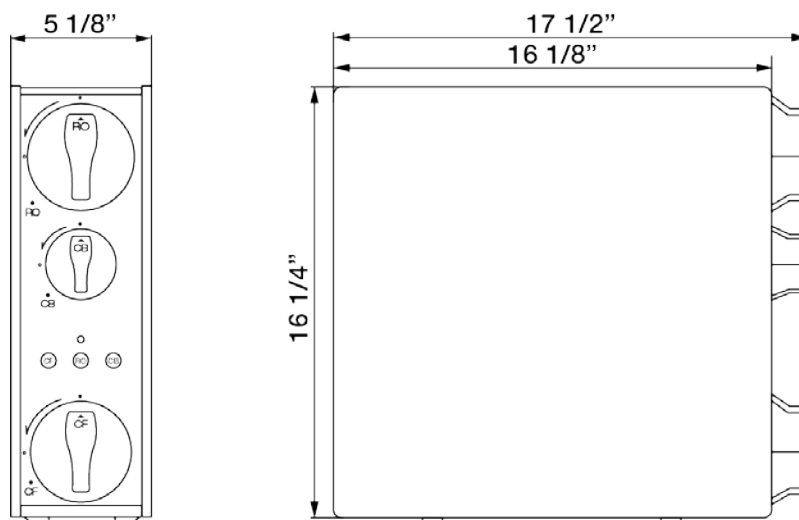
First-stage composite filter (CF)

Third-stage carbon block filter (CB)

Second-stage reverse osmosis membrane



2) Dimensions



Filter Life Indicator

The filter life indicators are controlled by a timer and flow monitor.

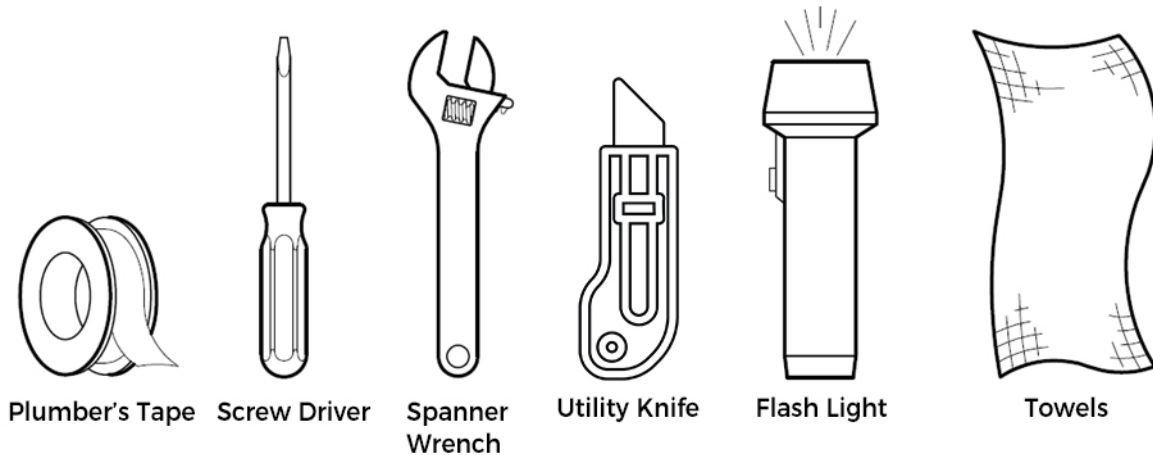
Change the filter when the light runs red. To reset the indicator after filter replacement, see "Filter Serve Life Reset".



Installation

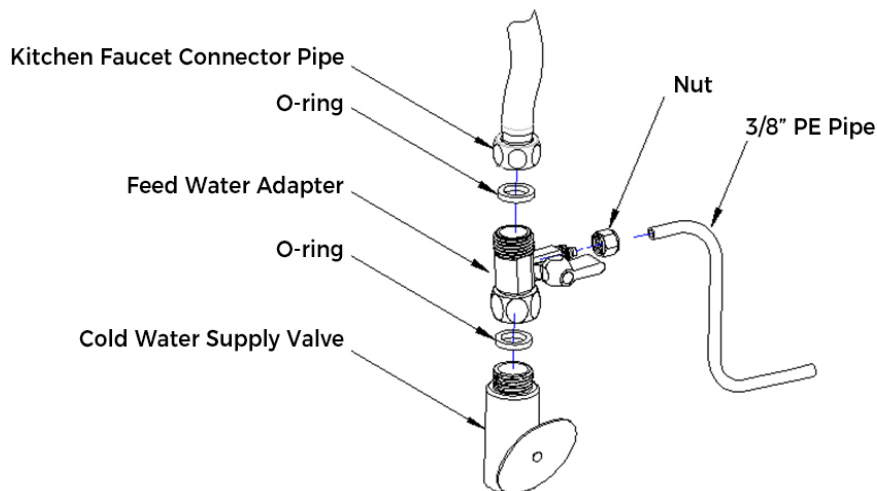
1) Preparation

- A. Choose a suitable location for the system. Again, it cannot be mounted and must be placed on a flat surface.
- B. Check the packing list to confirm all accessories are included in the package. Contact iSpring customer service if any components are missing.
- C. Required tools:



2) Feed Water Adapter Installation

- Close the cold-water supply valve and unscrew the kitchen faucet connector pipe.
- Install the feed water adapter on the cold-water supply valve and tighten with a spanner wrench: (make sure the O-ring is seated inside the adapter).
- Re-install the cold-water hose on the feed water adapter, then tighten with a spanner wrench (make sure the O-ring is seated inside the hose cap).



3) Filter Installation

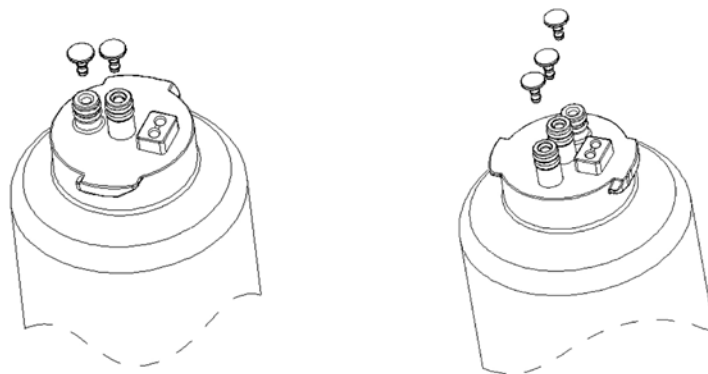
This product features an easy-changing design that allows users to change the filter without shutting off the water supply. To install the filter, follow the steps listed below.

Precautions

- A. Make clean cuts on the tube to ensure a tight, sealed connection.
- B. Always use the C-clips to secure the quick-fitting connections.
- C. After assembly, check to ensure the connection is not leaking.

Step 1

Remove the rubber plugs on the upper end of each filter.

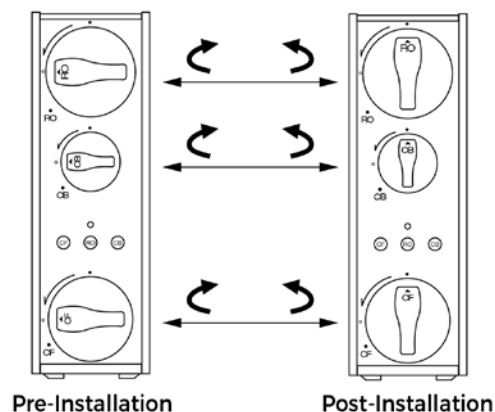


Step 2

Install each filter in the appropriate slot with the name of the filter listed on the side:

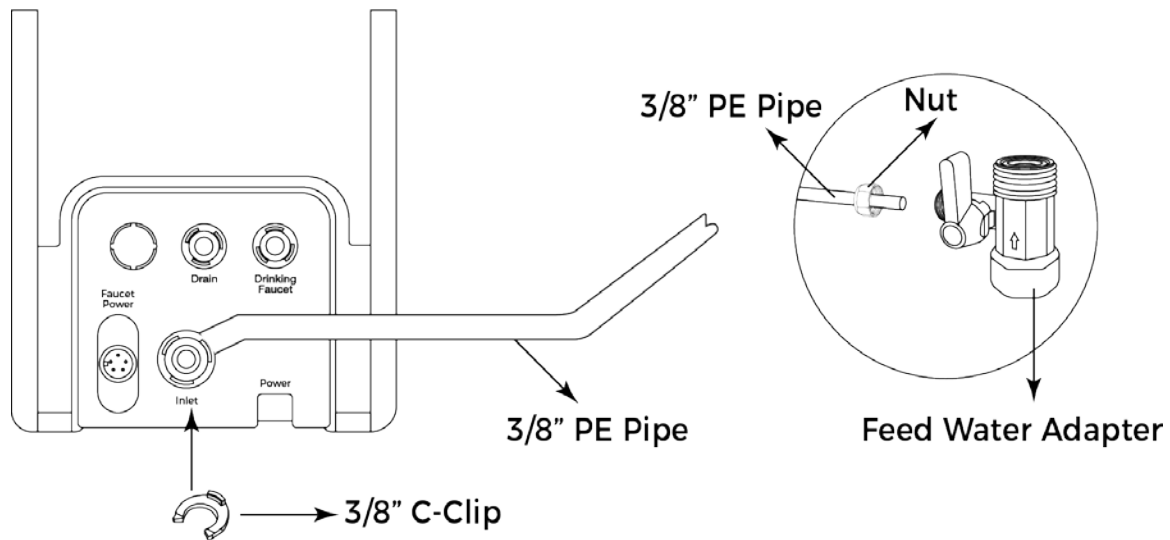
- 1. The composite filter is mounted to the bottom slot.
- 2. The reverse osmosis membrane is mounted to the top slot.
- 3. The post carbon filter is mounted to the slot located in the middle.

Installation: Insert the filters with the handles pointed outward. Align the arrow with the mark on the side of the slot. The filter should fit snugly into the system's fittings. Turn the filters clockwise until the arrow on each filter is aligned with the mark on the top of the slot.

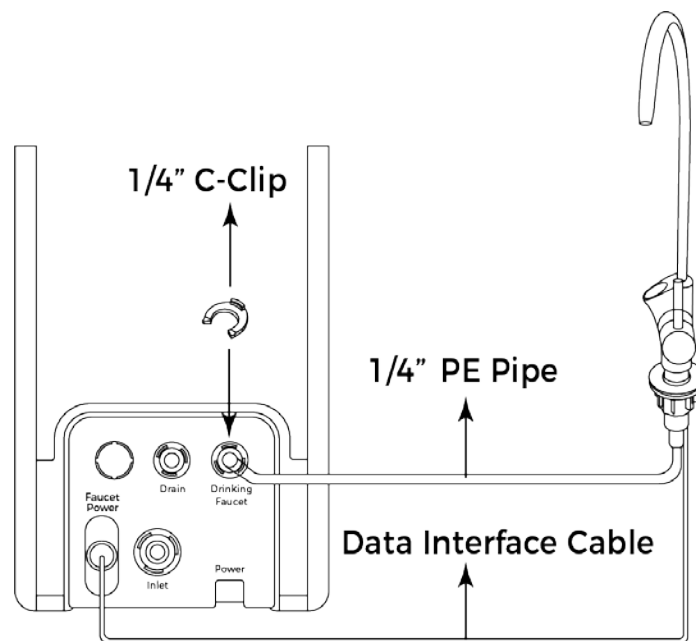


4) System Installation and Setup

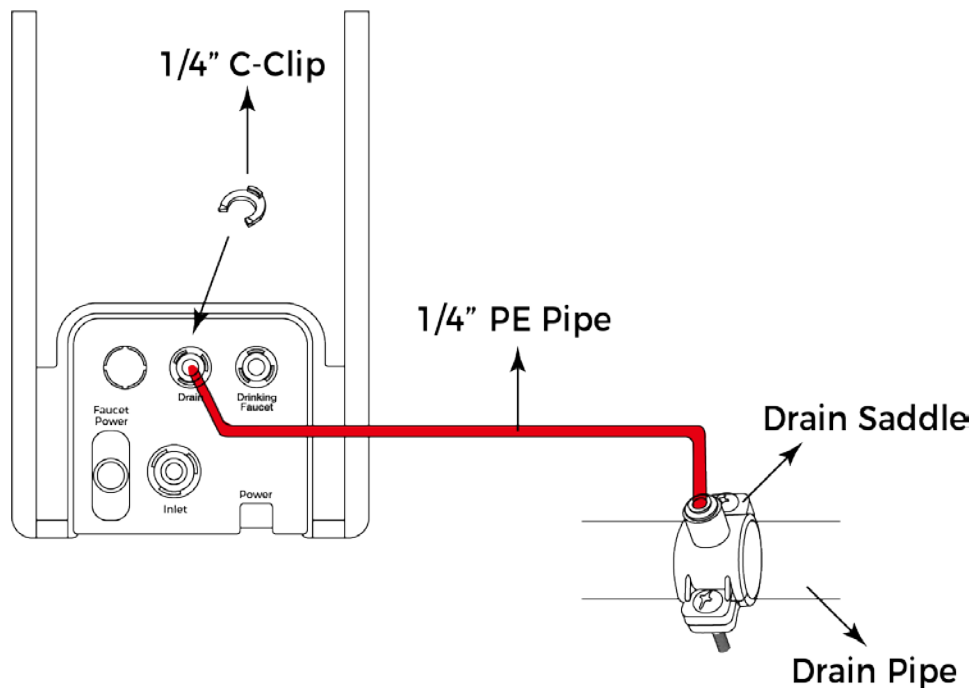
- A. Cut the WHITE 3/8" PE pipe to the appropriate length using a utility knife.
- B. Insert one end of the tube into the feed water adapter. Tighten the nut using a spanner wrench.
- C. Insert the other end of the WHITE tube into the 3/8" port marked "Inlet" at the top of the system. Secure the connection by inserting the enclosed 3/8" C-clip.



- D. Cut the 1/4" WHITE tubing and RED 1/4" red tubing with a utility knife to an appropriate length.
- E. Insert the WHITE tubing into the 1/4" port marked "Drinking Faucet". Insert the RED tubing to the port marked "Drain" at the top of the system. Insert the 1/4" C-clips to lock the connection.
- F. Connect the other end of the 1/4" WHITE tubing to the smart faucet on the waterproof connector that corresponds to the water purifier and tightens the nut. The RED tubing will be connected to the drain saddle.



- G. Choose a spot on the drainpipe that is convenient for installing the drain saddle and tubing. A horizontal pipe is recommended to minimize the dripping sound.
- H. Drill a 1/4" hole in the drainpipe and paste the black sticky pad around the hole.
- I. Cut the 1/4" **RED** tubing end tip to make a 45-degree angle. Insert the tubing through the hole to the drainpipe, install the backplate, and tighten the two screws with hex nuts while the tubing remains in the hole. Pull the tubing lightly to make sure it is secure.



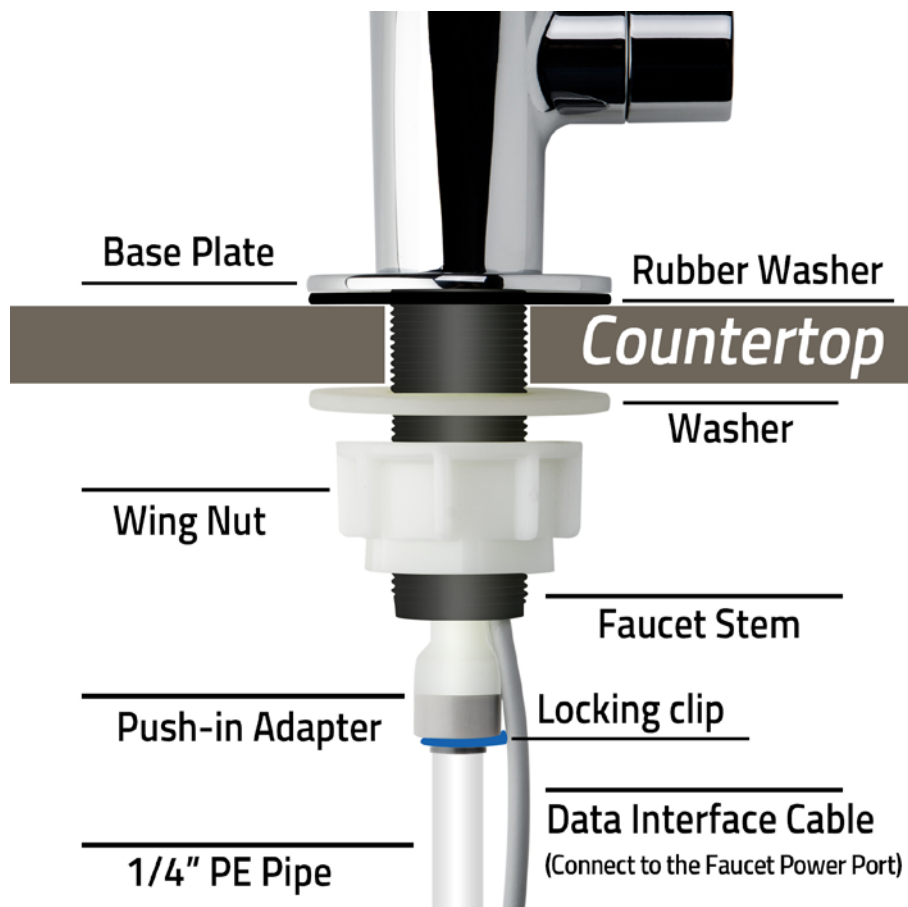
5) Faucet Installation

Choose a suitable location on the sink or countertop and install the faucet on a flat surface, as shown in the image below. You will need to drill a 1" hole (no larger than 1 1/2") if your kitchen sink does not have an existing one.

How to drill a 1" hole in your sink or countertop

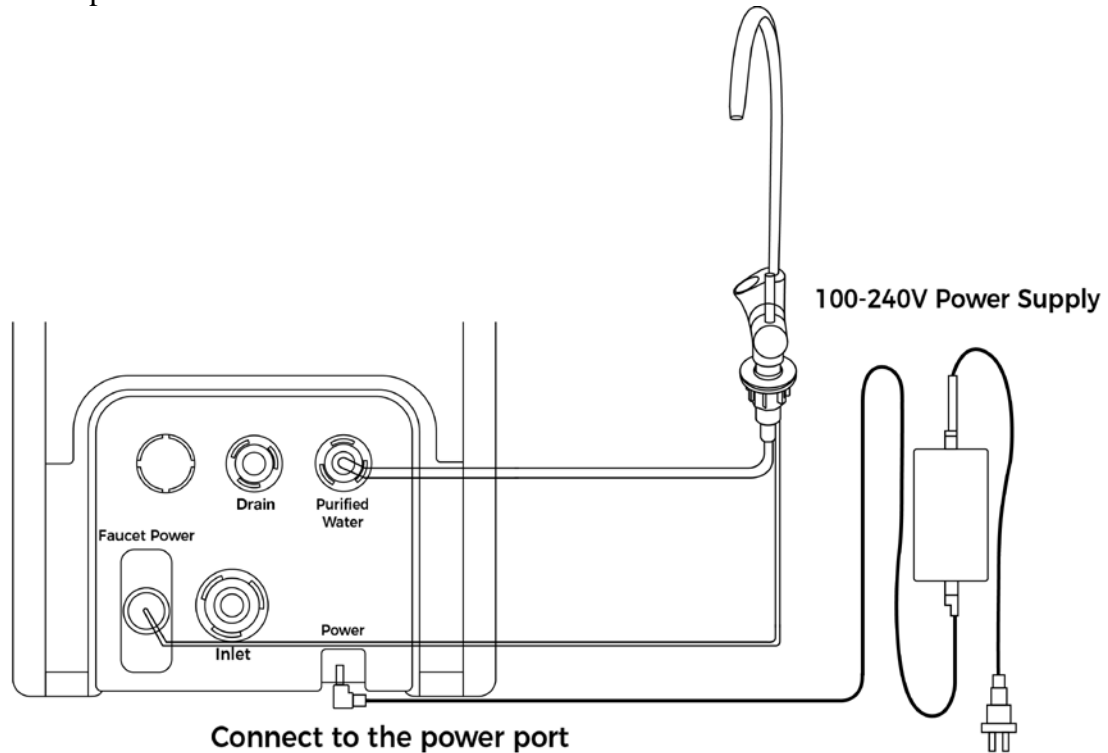
1. It's highly recommended to watch the **YouTube video "How to Drill Faucet Holes"** to get a better understanding of the process. Depending on what kind of countertop you have, you may want to hire an experienced professional to ensure the hole is drilled correctly.
2. Choose a 1/2" Diamond Core Bit for granite and a titanium drill bit for steel. Do NOT use a hammer drill on natural stone, glass, and ceramic.
3. An indent should be made with a punch on steel before drilling to help guide the bit.
4. Use caution when drilling on a Porcelain sink, as it could be easily chipped. Set drill speed on slow. Press the bit downward firmly until breaking through the slippery surface. Some people found it is easier to secure the bit by drilling through a piece of wood that is firmly pressed on the surface.
5. Use coolant to disperse heat. Choose water for granite and oil for steel. Use the Water Suction Cup to hold coolant inside and prevent the drill bit from slipping.
6. Starting at the slowest speed, hold the drill firmly and vertically and prevent the drill bit from slipping on the counter.
7. Once breaking through the smooth surface, swirl the drill a little to apply pressure in a circle evenly.

Be patient and deliberate. It can take 20 – 40 minutes to drill through 1".

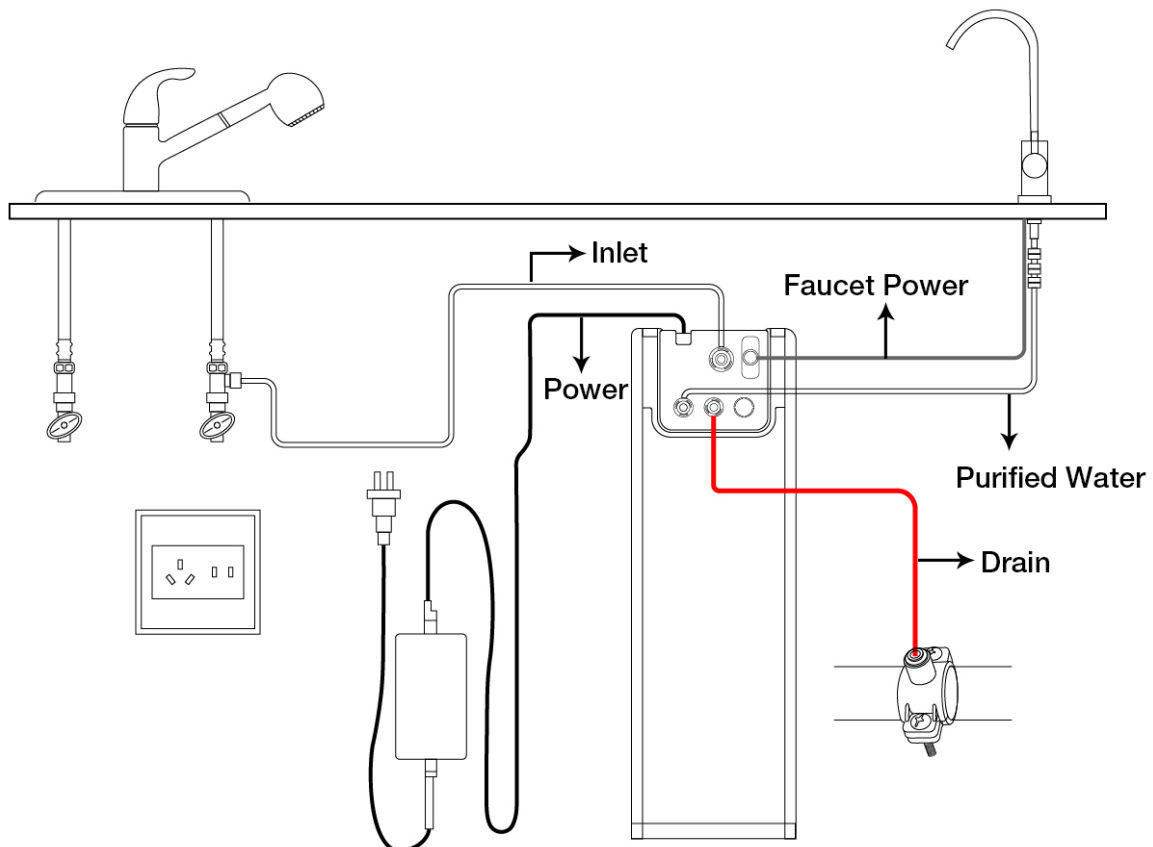


6) Connect Faucet Power Supply and Main Power Supply

Connect the power adapters as shown below. Plug in the main power supply to the "Power" socket on top of the system, then plug the power cable on the faucet to the "Faucet power" socket. **The faucet needs to be plugged in to start the system.** The faucet comes with a build-in TDS (Total Dissolved Solids) monitor, and the screen on the faucet displays in-time TDS level of the purified water.



The completed system connection should be as shown below.



Using the System

1) Starting for the First Time

- A. To start the system, plug it in, turn on the feed water adapter, then turn on the faucet. Vibrations can be expected as the pump starts.
- B. Rinse the RO membrane for 5 minutes.
- C. Turn on the faucet and let it run for at least 30 minutes to flush the system. This should be done each time the filters are changed.
- D. During this time, carefully check all fittings for a secure connection. Use a damp paper towel to wipe clean and verify that no connections are leaking.
- E. Once the rinsing is completed, turn the faucet off and check again for leaks. If no leaks are present, the system is ready for use.

2) Routine Maintenance

- If you will not use the system for two weeks or longer, disconnect the water supply, drain the system, and disconnect the power.
- Follow the recommended filter replacement schedule. Replace the filter any time the indicator is on. Note that the actual filter life depends on the family size and water source quality. Failure to replace the filter at the appropriate times can damage the system and potentially cause health hazards.

Precautions for Changing the Filters

- A. Unscrew the filter to be replaced counterclockwise and relieve the pressure.
- B. Screw the corresponding replacement filter into each slot.
- C. After replacing the filter, flush the system by running the water for at least 30 minutes after installing a new filter(s).
- D. Reset the filter status. Please refer to the "**Filter Service Life Reset**" part.

3) Fault Codes

Type	Reminder		Solution
	Display code	Buzzer	
E1: Water shortage prompt	The fault light flashes red once per second. Filter CF Filter flashes blue once per second.	When the user runs water, the machine will buzz three times.	Once the inlet water pressure returns to normal, the water shortage prompt is automatically reconciled, and the machine resumes regular operation.
E2: Water leakage protection	The fault light flashes red once per second. Filter RO Filter flashes blue once per second.	The buzzer will sound for 3 minutes.	Identify leakage source. Once corrected, the product automatically returns to regular operation.
E3: Timeout protection for continuous pump operation	The fault light flashes red once per second. Filter CB Filter flashes blue once per second.	The buzzer will sound four times.	Reconnect to the power supply.
E4: Start-stop protection for frequent pumping	The fault light flashes red once per second. Filter CF+RO Filter flashes blue once per second.	The buzzer will sound five times.	Reconnect to the power supply.
E5: Low-temperature protection	The fault light flashes red once per second. Filter CB+RO Filter flashes blue once per second.	The buzzer will sound six times.	Reconnect to the power supply.

4) Filter Service Life Display

Service Life Stage	Remaining Life (Days)	Remaining Capacity (net water/liter)	Prompt	
			Indicator Color	Buzzer
Normal	> 15	> 150	Blue	None
Warning	0 - 15	0 - 150	Purple	Sounds twice.
Alarming	0	0	Red	Sounds when water is flowing.

5) Machine Function Description

No.	Function	Operation	Status Indicator
1	Rinsing Prior to the First Use	Rinse RO MEMBRANE for 5 minutes, then flush by running water for 30+ minutes.	1. The water quality indicator is red and flashes once per second. 2. The water quality indicator shows the real-time data within 6-35 minutes of water discharge time and flashes once per second.
2	Rinsing After Powering On	When the machine is powered on, rinse RO MEMBRANE for 20 seconds. If the user turns on the water during the rinsing, the system will switch to its normal mode.	The water quality indicator shows the status before powering off during the rinsing and flashes once per second.
3	Rinsing After Cumulative Use	If the RO pump accumulates water for more than 2 hours, rinse the RO MEMBRANE for 20 seconds. If the user runs water during the rinsing, the system will switch to its normal mode.	The water quality indicator displays the state prior to flushing and flashes once per second.
4	Self-Cleaning Rinsing	If not used after 24 hours, rinse the RO MEMBRANE for 20 seconds. If the user runs water during the rinsing, the system will switch to its normal mode. (Note: Timer will reset after powering off.)	During the rinse, the water quality indicator displays the quality before rinsing and flashes once per second.
5	Rinsing after Filter Change	After replacing each filter: 1. Compound filter: open the faucet to rinse the filter for 30 minutes. 2. RO membrane filter: manual rinse the RO membrane for 5 minutes. 3. Post-carbon filter: open the faucet to rinse the filter for 15 minutes. 4. RO membrane filter is reset simultaneously with the other filters: manual rinse the RO membrane for 5 minutes, then open the faucet to rinse the filter for 30 minutes. 5. If the composite filter and the post-carbon filter are simultaneously reset: manual rinse the RO membrane for 5 minutes, then open the faucet to rinse the filter for 15 minutes.	1. When rinsing RO MEMBRANE, the water quality indicator is lit red and flashes once per second. 2. The rinsing filter water quality indicator shows real-time water quality data and flashes once per second.
6	Running Water	Normal operation.	While running, the water quality indicator displays the water quality status and is always on. After 30 seconds, the water quality indicator displays the real-time water quality data and is always on.
7	Standby	The machine stops operation and enters standby mode.	Water quality indicator off.
8	Powering On	While powering on, multiple display indicators are on at the same time. Each indicator flashes in the order of status (blue, purple, red), and each state is illuminated for 1 second, for a total of 3 seconds.	

6) Filter Service Life Reset

To perform a manual reset, press and hold the "Filter Service Life" button for 5 seconds. This action will be accompanied by a "Beep" sound as the filter is resetting. When the filter service life indicator light lit blue, and the buzzer sound gone, indicating the reset was successful.

7) Manual Rinsing Mode - RO Membrane

Press and hold the corresponding reset buttons CF+RO+CB for 3 seconds. A short "Beep" sound will indicate that the system has entered the manual rinsing mode. The system starts rinsing the **RO membrane** for 5 minutes.

(The water quality indicator shows the state before rinsing and flashes once per second.)

Press and hold the corresponding reset buttons CF+RO+CB for 3 seconds again. Another short "Beep" sound will indicate that the system has exit the manual rinsing mode.

If the user runs water while rinsing, the system will automatically exit the manual rinsing mode.

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 supply only.
2. Feed water pressure to the unit is no less than 45 psi (30 psi for systems with built-in booster pump) and no greater than 70 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 41°F and no more than 100°F.
5. Total dissolved solids (TDS) in feed water must be less than 750 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.

While the testing was performed under standard laboratory conditions, actual performance may vary. 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. In case some states do not allow the exclusion or limitation of incidental or consequential damages, you may choose to return the system. If you choose to keep it, you insist this exclusion STILL apply to you.

Owner's Warranty Responsibilities: As a condition of this Limited Warranty, the owner must ensure that 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: IN CASE SOME STATES DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS, YOU MAY CHOOSE TO RETURN THE SYSTEM. IF YOU CHOOSE TO KEEP IT, YOU AGREE THAT THE ABOVE LIMITATIONS STILL APPLY TO YOU.

Warranty Registration

To register your product for the warranty, visit our website at 123filter.com and go to the "Warranty" tab.

We provide a 30-day money-back guarantee, a 1-year manufacturer warranty, and lifetime tech support for all of our products. However, we do not have the order information from websites other than 123Filter.com (Amazon, Home Depot, etc.), so please be sure to fill in that information upon registration of your system. If you have any questions or concerns about your product, please do not hesitate to call or email us, or put it in the notes/comments upon your warranty registration. Your satisfaction is our business!

If you are happy with our products and service, please show your support by writing a product review on Amazon, even just a single line. It takes you just a minute but means a lot to us. Thank you!



Atlanta, GA USA

iSpringFilter.com

For questions, comments, or technical support, contact us at:

support@123Filter.com

(678) 261-7611

Monday-Friday 8:30 a.m. - 5:30 p.m. EST