



AO Smith AOS-Hero-CHR High Efficiency Reverse Osmosis System Owner's Manual

[Home](#) » [AO Smith](#) » AO Smith AOS-Hero-CHR High Efficiency Reverse Osmosis System Owner's Manual 

AO Smith AOS-Hero-CHR High Efficiency Reverse Osmosis System



Contents

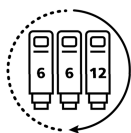
- [1 Congratulations!](#)
- [2 BOX CONTENTS](#)
- [3 INSTALLATION GUIDE](#)
- [4 CARE & SAFEGUARDS](#)
- [5 Specifications](#)
- [6 PERFORMANCE & CERTIFICATIONS](#)
- [7 WARRANTY LIMITED](#)
- [8 Documents / Resources](#)
 - [8.1 References](#)
- [9 Related Posts](#)

Congratulations!

Congratulations on your new purchase. This water filter has been designed to provide you with optimally clean water. The High-Efficiency Reverse Osmosis features SmartFlow™ technology that is engineered to reduce up to 99% of harmful contaminants, while providing you with more pure water, less water waste, and longer filter life than the average reverse osmosis system.

Keep this owner's manual to reference installation, troubleshooting and filter replacement information.

If you need help or have a question, we've got you covered. Give us a call at 877.333.7108



The recommended replacement frequency for the AOS-HERO-CHR is every 6 months for the Carbon Blocks (Stage 1 & 3) and every 12 months for the SmartFlow™ Membrane (Stage 2).



Use only certified, genuine A. O. Smith replacement filters for continued contaminant removal and system performance.

Visit aosmithatlowes.com to find replacements or visit your local Lowe's store.

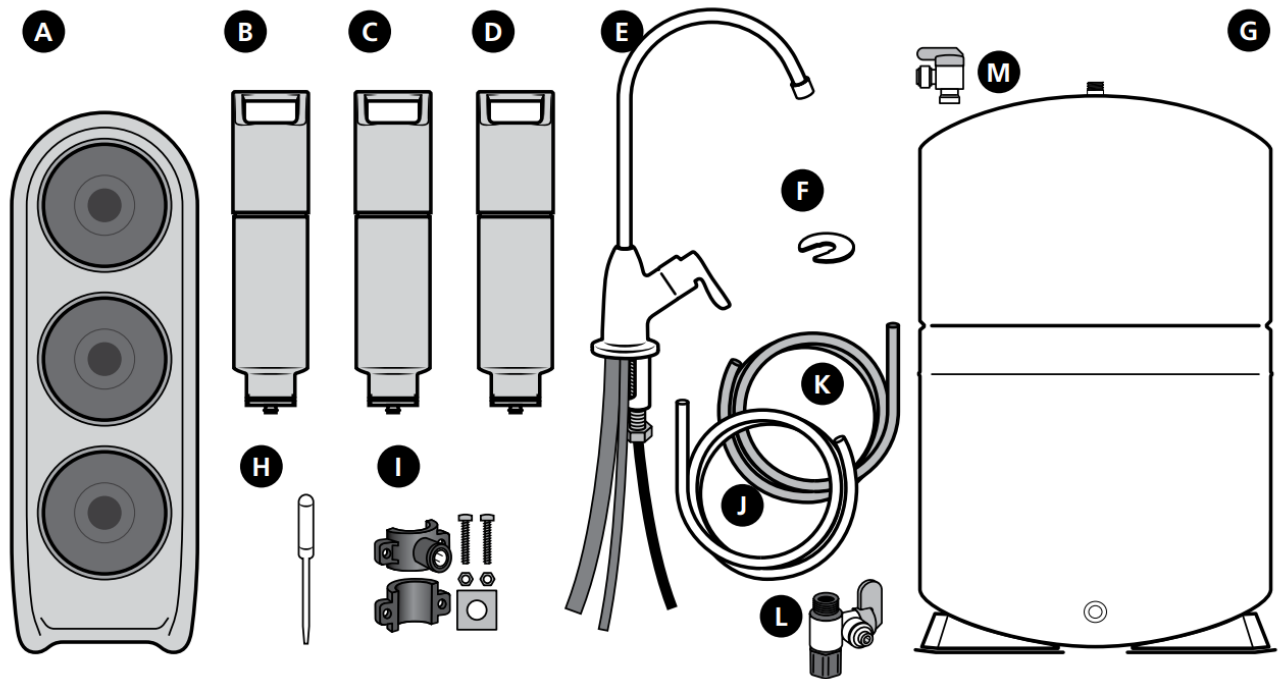
Scan to view the AO-HERO-CHR installation video.



BOX CONTENTS

- **A** SYSTEM MANIFOLD
- **B** STAGE 1: CARBON BLOCK
- **C** STAGE 2: SMARTFLOW™ MEMBRANE
- **D** STAGE 3: ADVANCED CARBON BLOCK
- **E** AIRGAP FAUCET WITH PRE-CONNECTED TUBING
- **F** SLOTTED FAUCET WASHER
- **G** WATER TANK AND STAND
- **H** EYEDROPPER
- **I** DRAIN SADDLE KIT
- **J** TUBING 1/4" WHITE
- **K** TUBING 1/4" YELLOW

- **L** INLET TEE VALVE
- **M** WATER TANK VALVE



Please read entire manual to ensure all parts listed are present before installation.

If any part is missing or damaged let us know by calling 877.333.7108.
Do not attempt to install the system.

Tools recommended for installation

- Tape measure
- Plumber's tape
- Phillips head screwdriver
- Drill with 7/16" bit
- Adjustable wrench
- Bleach
- Safety glasses
- Pencil
- Pan or bucket
- Utility knife

Note: We recommend using a professional if pipe cutting or drilling is required. Basic plumbing knowledge is recommended prior to installing this unit.

INSTALLATION GUIDE

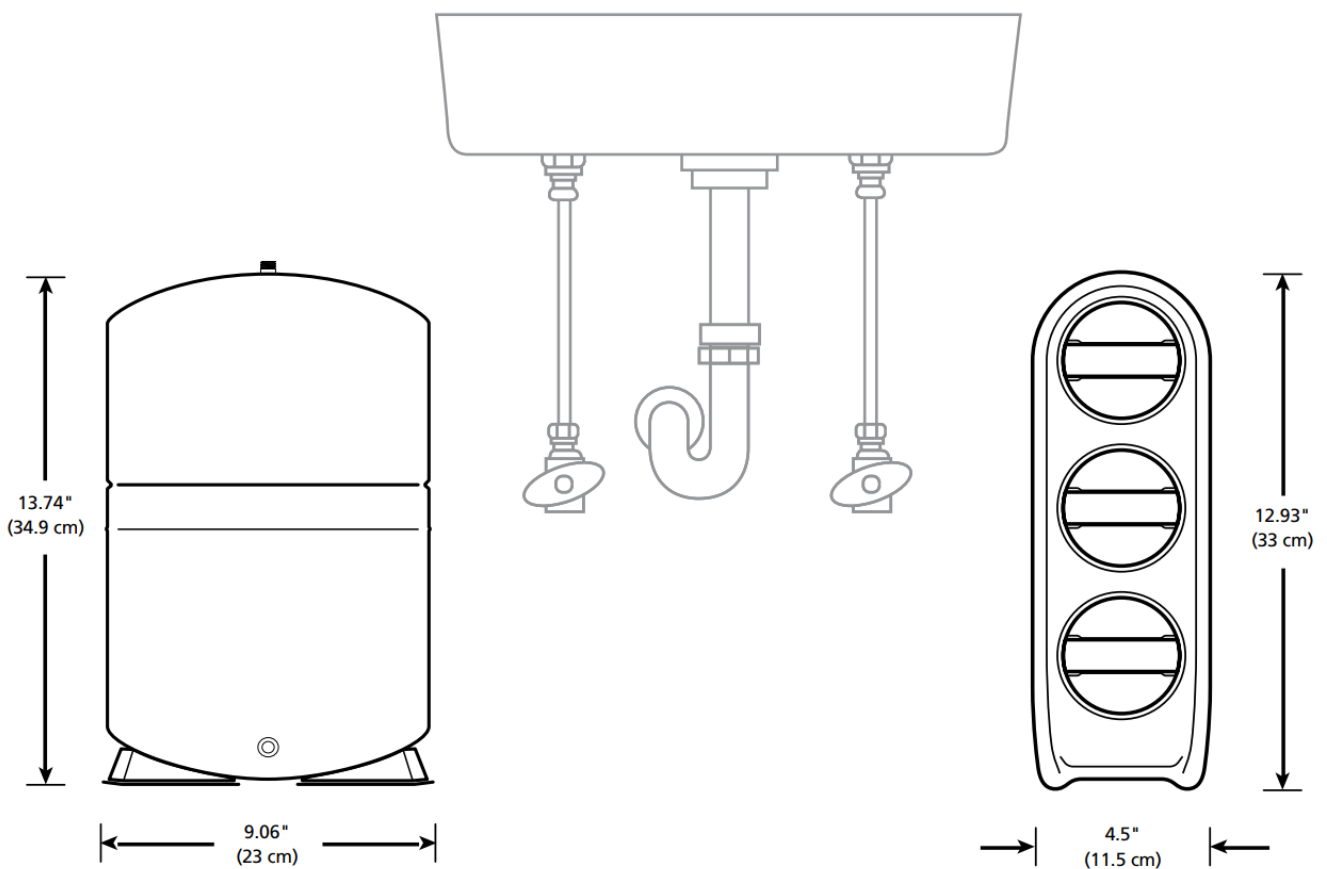
STEP 1 Site Setup

Note: This system requires an existing faucet hole 1" to 1 1/2" in diameter in the sink or countertop to install the supplied dedicated faucet. You may also replace an existing kitchen sink sprayer, soap dispenser, or pre-existing

hole on the sink or countertop.

If drilling a new hole, ensure faucet body will mount flat against surface and there is sufficient tubing between faucet body and system manifold. If drilling, we strongly recommend using a professional. Please wear safety glasses when drilling.

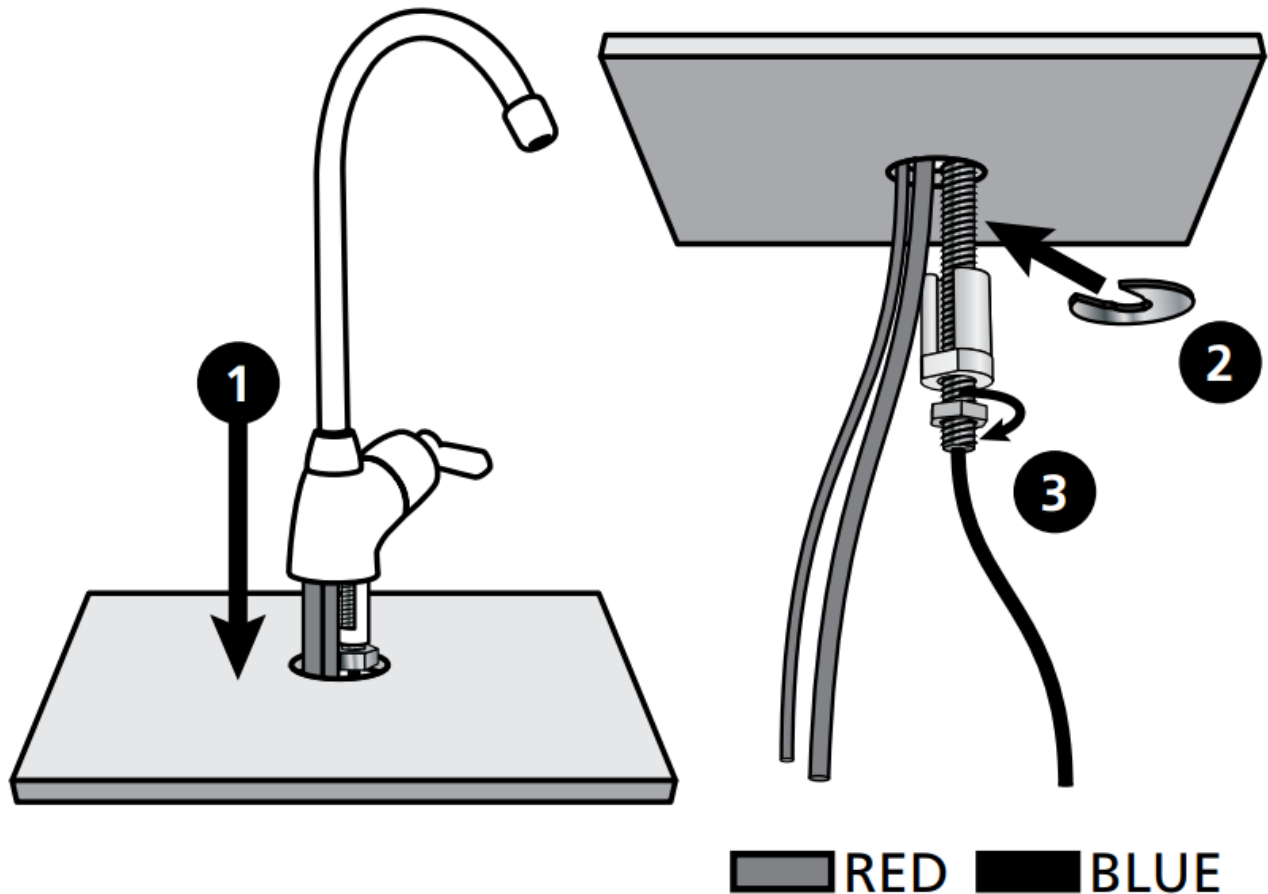
1. Unpack and unwrap box contents.
2. Turn off COLD water supply. Turn on the kitchen faucet to release pressure and allow water to drain from the line.
3. Temporarily place system manifold and water tank into the under sink cabinet or desired location to ensure adequate space and proper positioning.
4. Measure blue and red tubing from faucet hole to system manifold, then measure yellow tubing from the top of the water tank to the system manifold. Ensure all tubing lengths are sufficient for making connections. Do not cut tubing before following next instructions.
5. Remove system manifold and water tank from under your sink to begin installation.



DRAWING NOT TO SCALE, SYSTEM AND TANK ENLARGED

STEP 2 Install Air Gap Faucet

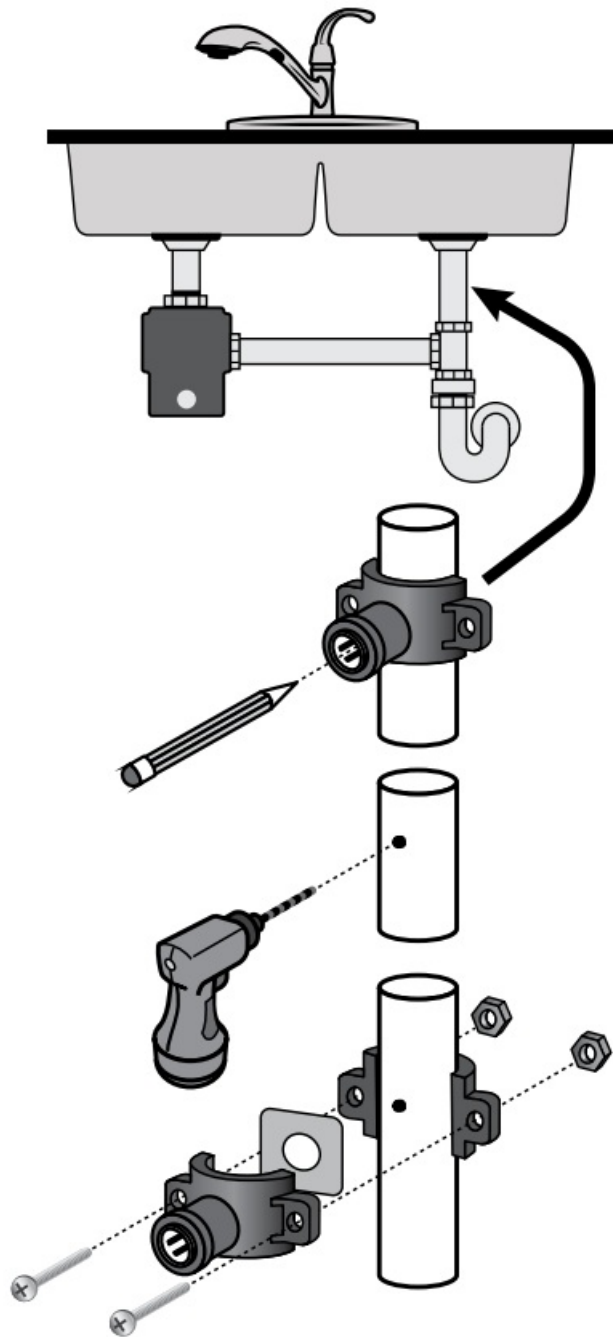
1. Feed pre-connected air gap faucet through countertop hole.
2. Underneath countertop, slide the slotted faucet washer onto threaded base of faucet. Washer should be in between countertop and white plastic spacer. If needed, loosen nut to move spacer down to create enough room for the washer.
3. Tighten nut with adjustable wrench. Do not over tighten.



STEP 3 Install Drain Saddle

WARNING: Ensure all electrical appliances and outlets are turned off at circuit breaker before continuing. Please wear safety glasses when drilling.

1. Identify drain outlet location on drainpipe to install drain clamp. Do not install drain clamp on the same drainpipe as garbage disposal. Mount drain clamp as low as possible on the vertical or horizontal drainpipe tailpiece.
2. Using the drain connector hole as a template, drill a 7/16" hole into the drainpipe. Only drill through one side of the drainpipe.
3. Take the connection half of the drain clamp and attach the foam gasket. Do so by removing the center hole and protective cover from the back of the foam gasket. Align the foam gasket hole with the hole on the inside of the drain clamp. The adhesive side of the foam gasket should be facing the inside of the drain clamp. Press firmly to attach.
4. Insert nuts into the other half of the drain clamp. Place both halves together around the drainpipe, aligning with the hole you drilled. Use drill bit to help align.
5. Tighten nuts and screws to secure the drain clamp halves around the drainpipe. Tighten with screwdriver. Do

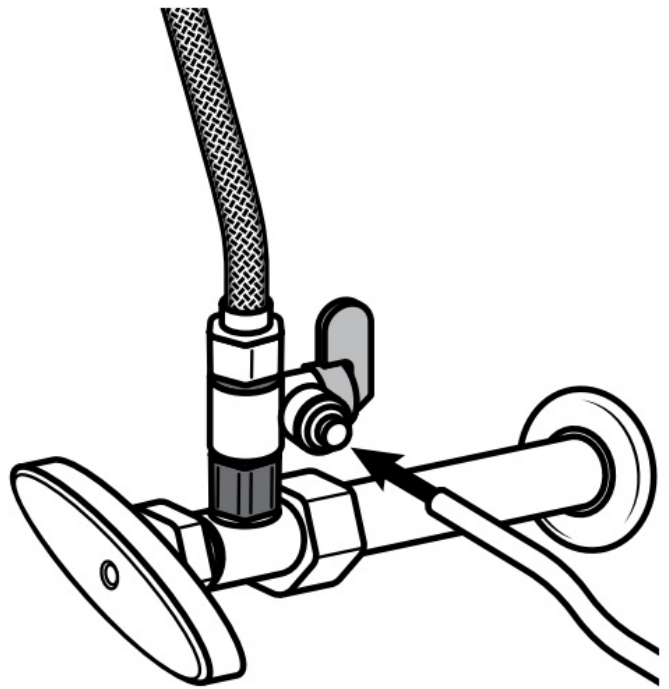
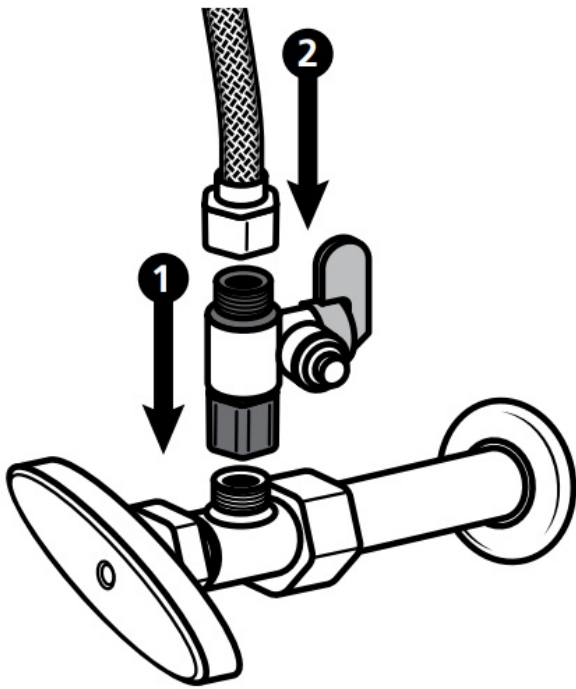


not over tighten.

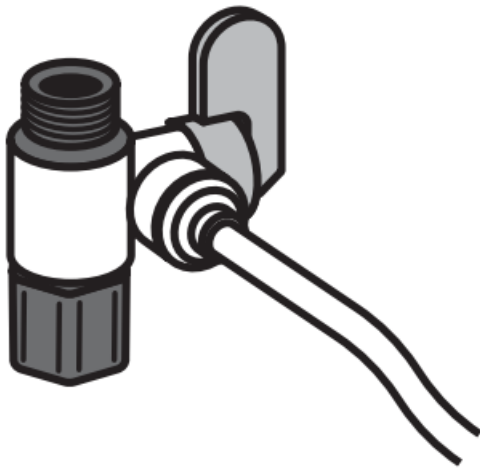
STEP 4 Install Inlet Tee Valve and Tubing

Note: Ensure water valve is turned off before continuing.

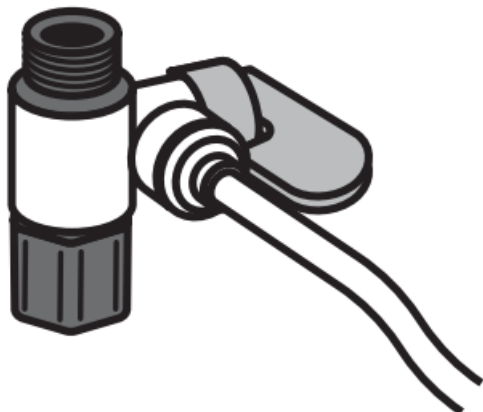
1. Place a pan or bucket under cold water line to catch any excess water. With an adjustable wrench, disconnect COLD water line from the supply line at shut off valve.
2. Attach threaded ends of inlet tee valve to the COLD water line of the shut-off valve. Tighten with wrench. Do not over tighten.
3. Reattach the cold water line to the top of the tee valve.
4. Push white tubing into the open quick connect valve. Ensure inlet tee valve is in the open position.



CLOSED

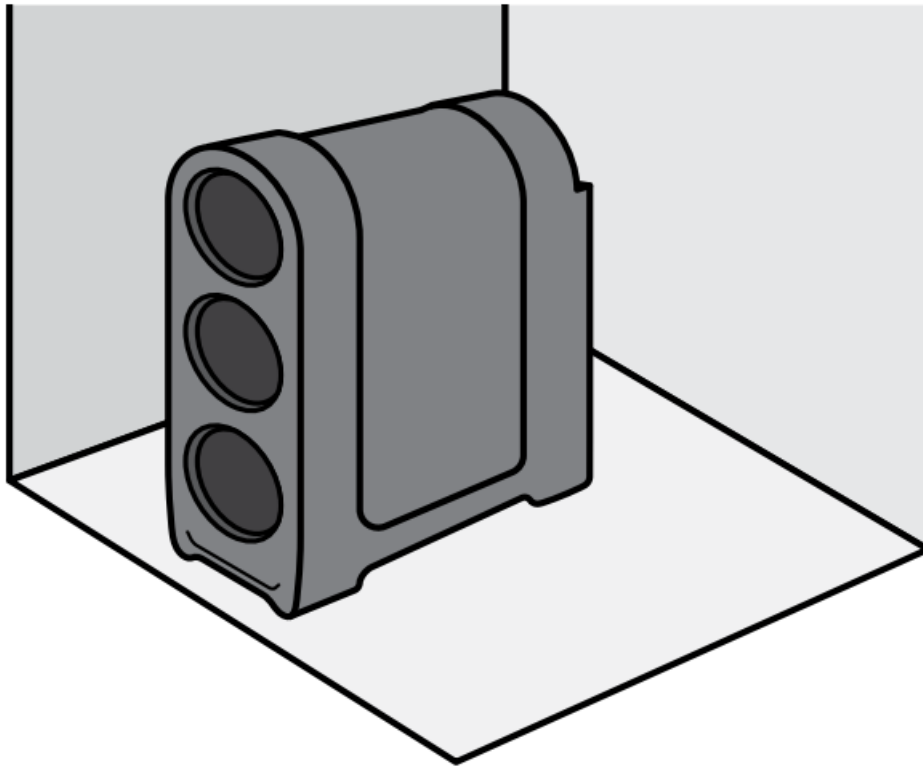


OPEN



STEP 5 Install System Manifold

1. Place system manifold under the sink in a place that will be easy to access for scheduled filter changes. Do not install filter cartridges at this time.



STEP 6 Sanitize and Install Water Tank Valve

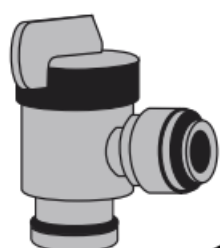
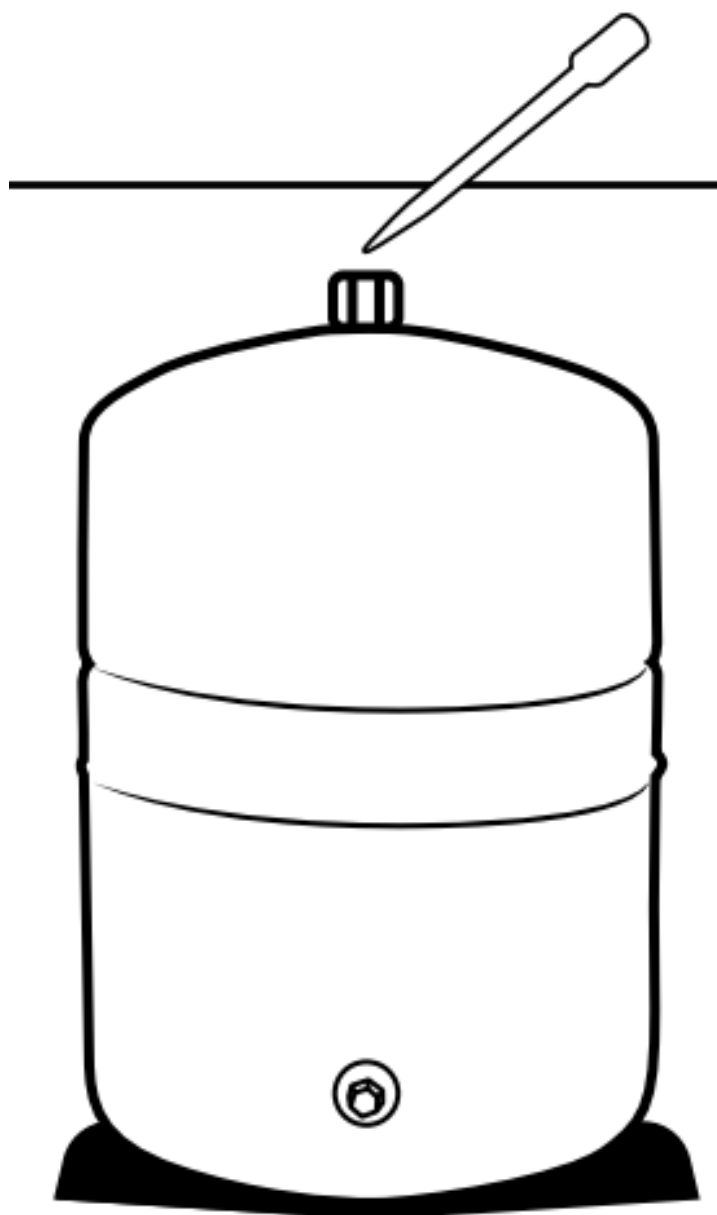
1. Using the included eye dropper, add 3ml bleach into the top of the water tank.

Note: Sanitation step will be completed during the pressure test and flush step of the installation.

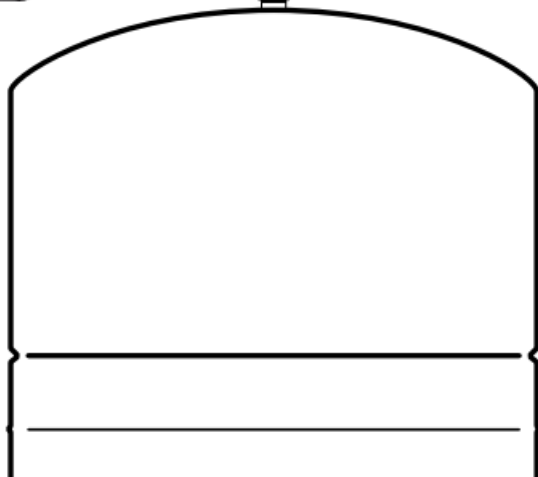
2. From the accessories box, find the water tank valve.
3. Screw the water tank valve onto the stainless-steel connector located on top of the tank.

Note: The valve is pre-wrapped with plumber's tape which will help seal the threads to prevent leaks.

4. Hand tighten water tank valve until secure (be sure not to cross-thread or over-tighten). After you have secured with hand tightening, tighten with wrench a quarter turn to ensure secure fit.



Turn to the right

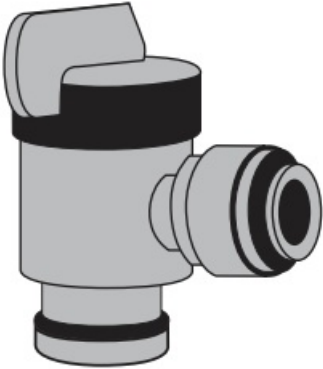


STEP 7 Connect Water Tank to System Manifold

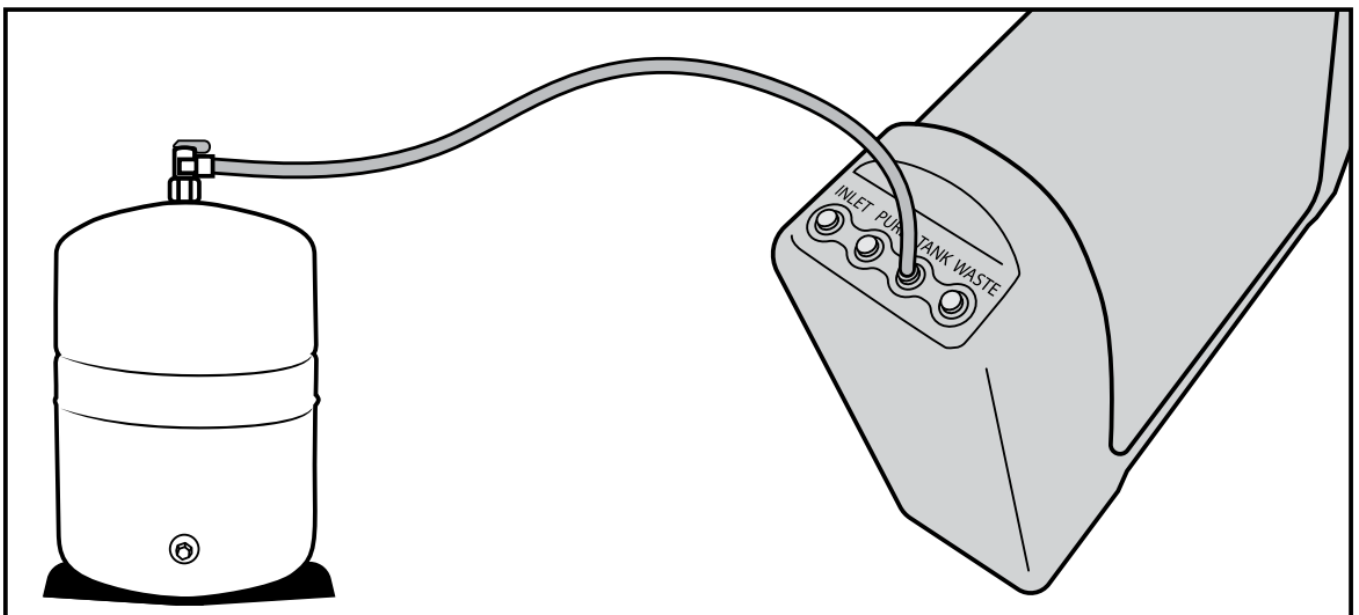
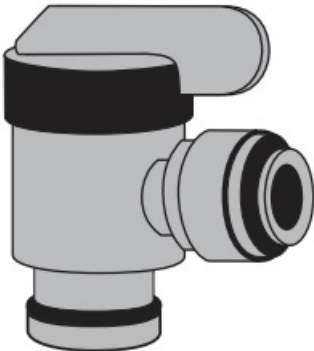
1. Open water tank valve. Valve should be pointing towards the valve port.
2. Insert one end of the yellow tubing into the water tank valve.
3. Place water tank on the tank stand in an area that is near the system manifold.
4. Connect water tank to the system manifold.

Do so by connecting the other end of the yellow tubing to the yellow inlet port on the backside of the system manifold, labeled, 'tank'.

CLOSED



OPEN



STEP 8 Connect Tubings

Notes: Insert tubing completely to ensure connection. A fully connected tube can be inserted up to an inch.

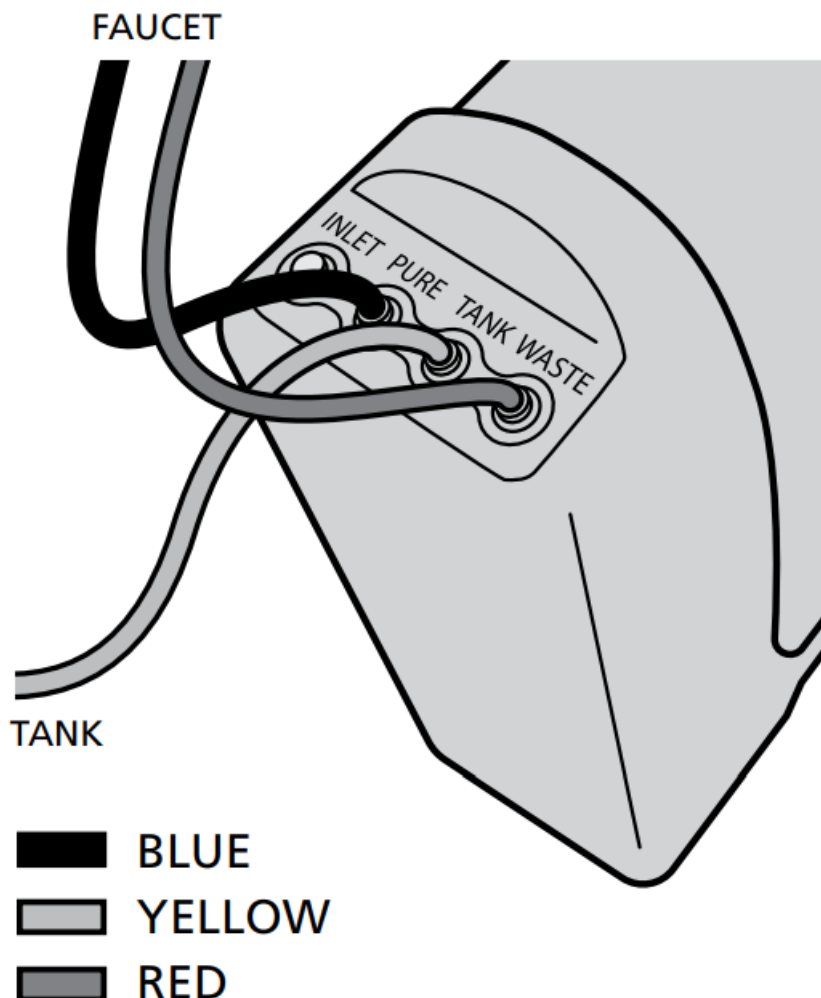
Wet end of tubing for easier insertion.

Connect tubing to system in a way that does not bend, crimp, or kink tubing as this will affect system performance. If tubing is too long, measure and cut to necessary length.

If cutting the tubing due to excess length, cut the tubing straight across, not at an angle.

Faucet Connect

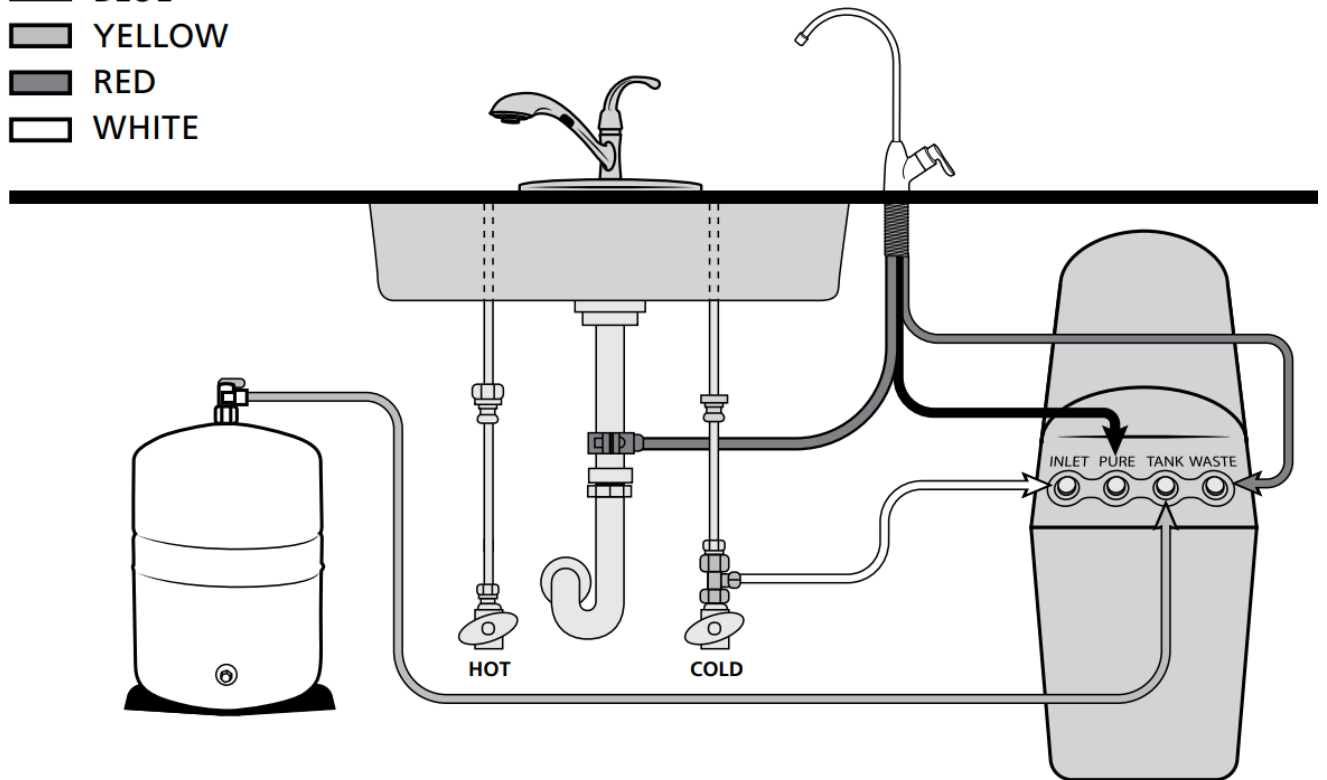
1. Connect the pre-installed 1/4" red tubing (smaller tubing) on the faucet to the system manifold. Push red tubing into the red inlet port on the back of the system manifold, labeled, 'waste'.
2. Connect the pre-installed 1/4" blue tubing on the faucet to the system manifold.
Push blue tubing into the blue inlet port on the back of the system manifold, labeled, 'pure'.
3. Connect the pre-installed 3/8" red tubing (larger tubing) on the faucet to the open port of the drain saddle. Do not allow the tubing to dip below the drain saddle.



Inlet Tee Valve Connect

1. Locate the white tubing connected to the inlet tee valve. Using a utility knife or scissors, cut the white tubing to the length needed to reach the back of the system manifold.
2. Push white tubing into white inlet port on the back of the system manifold, labeled, 'inlet'.

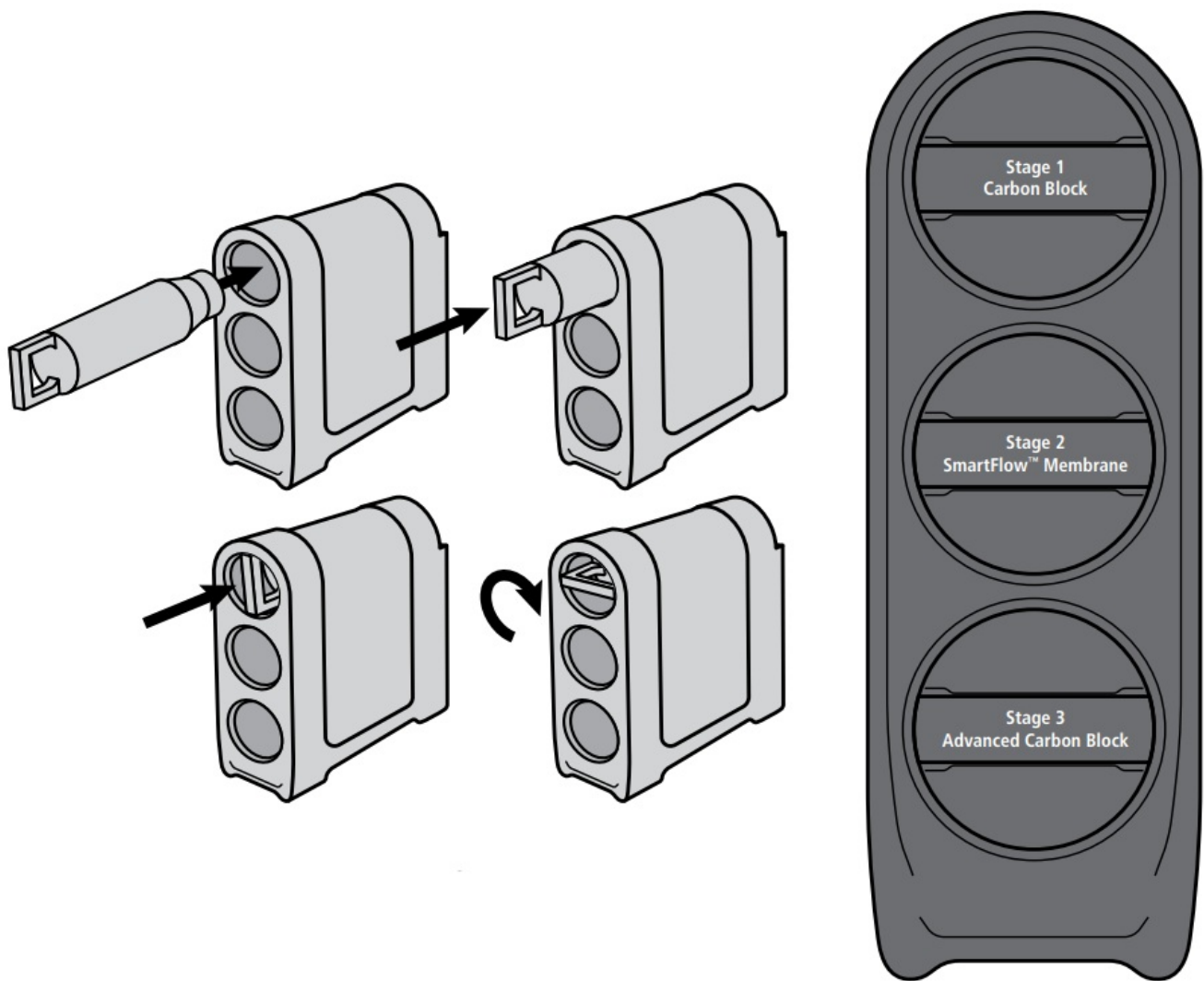
- BLUE
- YELLOW
- RED
- WHITE



STEP 9 Insert Filter Cartridges

1. Insert each filter cartridge into its designated location in the system manifold by turning to the right. Ensure filter cartridge handle is vertical to the system manifold before inserting. The guides on each filter will ensure proper alignment within the system manifold.
2. Once the filter is engaged, push the filter fully in while rotating 90 degrees to the right. Continue this step for each filter.

- Top filter: Carbon Block
- Middle filter: SmartFlow™ Membrane
- Bottom filter: Advanced Carbon Block



STEP 10 Pressure Test, Check for Leaks, and Flush

1. Turn off dedicated faucet.
2. Turn on COLD water supply valve.
3. Turn on kitchen faucet to release air from pipes. Once water is flowing normally, turn off kitchen faucet.
4. Within approximately two hours, pressure will build in the system. During this time, carefully inspect all connections and fittings for leaks.
5. After ensuring all connections and fittings are secured, turn on the dedicated faucet. Let water flush for two hours.

Note: Water flow rate will be slow during initial flush. A bubbling noise can be expected. Do not drink the flushed water.

6. Once flush is complete, turn off the dedicated faucet.

Note: After initial system flush, it will take 1-3 hours for the water tank to fill.

CARE & SAFEGUARDS

Care

To clean the system manifold and tank, wipe exterior with a damp cloth. Do not use any strong or abrasive cleaning agent or solvent cleaner.

NOTICE

Safeguards

- If you experience a tubing connection leak, shut off cold water, disconnect and re-set the tube.
- Do not install this system where the line pressure may exceed 100 psi. The operating pressure range for this system is between 40-100 psi.
- Install on COLD water lines only (40°F-90°F).
- It is recommended that your system be installed inside and out of direct sunlight. The system must be protected from both direct sunlight and freezing temperatures.
- System and installation shall comply with applicable state and local laws.
- Do not operate without the filters installed.
- Do not use with water this is microbiologically unsafe or of unknown water quality without adequate disinfection before or after the system.
- Systems certified for cyst reduction may be used on disinfected waters that may contain filterable cysts.
- This reverse osmosis system contains a replaceable treatment component that is critical for the effective reduction of total dissolved solids. It is recommended to periodically test this reverse osmosis system to verify it is performing properly.
- This reverse osmosis system contains a replaceable component critical to the efficiency of the system. 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.

AOS-HERO-CHR

Replacement cartridge AOS-HERO-S1S3 and AOS-HERO-S2

Membrane TDS Reduction 1 89.6% minimum

TDS Reduction 2 96.4%+ average

Max TDS 1000 ppm

Max water hardness @ 6.9 pH 10 gpg (2.64 g/L)

Max Chlorine in water 3 ppm

Supply water pH limits 4-10

Drain (reject water) Flow 2-4x product flow

Storage Tank Capacity 2 2.5 gallons (9.46 liters)

Supply water pressure limits 40-100 psi (275-686 kPa)

Supply water temperature limit 40-90°F (4-32°C)

Do not use the system on microbiologically unsafe water, or water of unknown quality without adequate disinfection before or after the system. This system is certified for cyst reduction and may be used on disinfected water that may contain filterable cysts.

INSTALLATIONS IN THE COMMONWEALTH OF MASSACHUSETTS: The Commonwealth of Massachusetts requires installation be performed by a licensed plumber and does not permit the use of saddle valves. Plumbing code 248—CMR of the Commonwealth of Massachusetts must be followed in these cases.

Specifications

Efficiency rating is the percentage of the influent water to the system that is available to the user as reverse osmosis treated water. This measurement is taken under operation conditions that approximate typical daily usage. The system's efficiency rating was verified by testing in accordance with Section 6.8 found in NSF/ANSI 58.

Recovery rating is the percentage of the influent water to the membrane portion of the system that is available to

the user as reverse osmosis treated water when the system is operated without a water tank or when the water tank is bypassed.

The system's recovery rating was verified by testing in accordance with Section 6.8 found in NSF/ANSI 58.

Because the performance of a reverse osmosis membrane is highly dependent upon pressure, temperature, and Total Dissolved Solids (TDS), the following should be used for comparison only.

Lower temperatures are directly proportional to slower flow rate. The reverse osmosis system should also not be installed in a location susceptible to freezing. Incoming water temperature should not exceed 90°F (32°C).

The more TDS in the supply water, the more filter time required. Incoming TDS should not exceed 1000 ppm.

Higher water pressure enables a higher flow rate. Pressure must be above 40 psi for proper system operation.

You may consider installing a booster pump if your pressure is below 40 psi.

Flow rate and output are determined by the following factors:

1. Incoming water temperature
2. Total dissolved solids (TDS) present in supply water
3. Incoming water pressure
4. Tank size and amount of water in the tank

Carbon Block and Advanced Carbon Block Replace every 6 months*

The Carbon and Advanced Carbon Blocks are replaceable activated carbon cartridges located in Stages 1 and 3. It is recommended to replace these cartridges at least every 6 months. You may need to replace more often with high water usage or high sediment levels. Timely replacement of these cartridges will protect the RO Membrane from high levels of chlorine and/or sediment. As these filters build up with sediment, you may notice slower water output.

SmartFlow™ Membrane Replace every 12 months*

The SmartFlow™ Membrane is located in Stage 2. This membrane reduces the dissolved solids and organic matter.

Most municipally treated water has a 7.0-7.5 pH, in this case you would need to replace your SmartFlow™ Membrane every 12 months. Membrane life depends on pH and supply water hardness. Higher pH shortens membrane life by causing pin-hole leaks. When output, water quality, and production rate decrease, it is time to replace the filter.

**Filter life depends on water usage and water supply quality*

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 0.05 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 50 ppb (0.050 mg/L) 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 below for further information.

Arsenic Facts

Arsenic (As) is a naturally occurring contaminant found in many ground waters. Arsenic in water has no color, taste or odor. It is 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. Information about arsenic in water can be found on the internet at the U.S. Environmental Protection Agency website:

epa.gov/safewater/arsenic There are two forms of arsenic: pentavalent arsenic (As(V), As(+5), and arsenate) and trivalent arsenic (also called As(III), As(+3), and arsenite). Although both forms of arsenic are potentially harmful to human health, trivalent arsenic is considered more harmful than pentavalent arsenic. In 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.

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 AOS-HERO-CHR system is designed to remove pentavalent arsenic only. It will not convert trivalent arsenic to pentavalent arsenic. This System was tested in a lab. Under testing conditions, the system reduced [0.050 mg/L (ppm)] pentavalent arsenic to 0.010 mg/L (ppm) (the USEPA standard for drinking water) or less. The removal performance of pentavalent arsenic of the system may be limited due to water quality conditions (i.e. iron-containing water or other water quality conditions). Have your treated water tested for arsenic to check whether the system is working properly.

The SmartFlow™ Membrane of the AOSHERO-CHR system must be replaced every 12 months to ensure system will continue to remove prevalent arsenic. The component identification and locations where you can purchase the component are listed in the installation/operation manual.

PERFORMANCE & CERTIFICATIONS

Models	Replacement	Operating temp . range	Recovery rating	Efficiency rating	Daily Production (DPR)
AOS-HERO-CHR	AOS-HERO-S1 S3 AOS-HERO-S2	40-100°F (4-37°C)	42.8%	27.4%	25.7 gpd
Manufactured by: A. O. Smith Corporation 11270 W Park Pl #170, Milwaukee, WI 53224 877.333.7108					



System tested and certified by WQA to NSF/ANSI Standards 42, 53, 58, and 401 for the reduction of the claims specified on the Performance Data Sheet and at www.WQA.com.



This system conforms to NSF/ANSI 53 for VOC reduction. See Performance Data Sheet for individual contaminants and reduction performance.
All claims are verified and substantiated by test data.

For the full list of contaminants filtered, scan to view the AOS-HERO-CHR Performance Data Sheet.



WARRANTY LIMITED

Who is covered:

A. O. Smith and its suppliers, (herein collectively referred to as “Manufacturer”) warrants to the original owner who purchased and installed the system (hereinafter “Owner”).

What is covered:

This Warranty covers defects in materials or workmanship during the limited Warranty period of your of your A. O. Smith Water Filtration System including sub-components purchased with original system (may or may not include faucet and fittings), except as provided below. The water filter is warranted only when it is installed, operated and maintained in accordance with the instructions accompanying the water filter found on aosmithatlowes.com. A water filter should be installed in such a manner that, if the system or any connection thereto should leak, the resulting flow of water will not cause damage to the area in which it is installed. For detailed instructions read the manual accompanying the water filter and review drawings in the manual.

For how long:

This Warranty runs for 24 months (730 days) from the date of purchase by a consumer (hereinafter “Warranty Period”). No Warranty coverage will be provided if the claimant is unable to provide proof of purchase from an authorized A. O. Smith reseller. Estimated lifespan of products is for information only and is based on usage approximations. Water conditions and use rates may limit the functional lifespan of your filter. This Limited Warranty does not extend to the full estimated life span of the system.

What A. O. Smith will do:

1. If necessary, the Manufacturer will provide a replacement that fulfills the remaining estimated lifespan/capacity of your original purchase and send it to you with installation instructions. If industry standards, product improvements or product obsolescence prohibit Manufacturer from furnishing an identical model replacement water filter under this Warranty, the Owner will be furnished with a new water filter of comparable remaining capacity and functionality; however, the Owner will be charged for the additional value of the item(s) which Manufacturer has incorporated in the replacement water filter. The Warranty period for any replacement will run for the balance of the original two years.

Component Part – If any component part proves to Manufacturer’s satisfaction to be defective in material or workmanship within the Warranty period listed on the data plate label, the Manufacturer will furnish the Owner with a replacement for the defective part(s).

Return of Defective Water Filter and Component Parts – Manufacturer reserves the right to examine the alleged defect in the water filter or component part(s), and it will be the Owner’s obligation to return the water filter and/ or component part(s) to the Manufacturer at the Manufacturer’s request.

a. When returning a water filter, it must include all component parts. b. When returning component part(s), they must be individually tagged and identified with the water filter’s model number, date of purchase, and date of installation.

What is not covered:

1. This Warranty does not cover filter cartridges and any systems that were not installed in compliance with the instructions or that have been abused or operated incorrectly.
2. This Warranty applies only to products purchased from authorized A. O. Smith resellers.
3. The Limited Warranty stated herein is in lieu of any and all warranties, express or implied (whether written or oral), including, but not limited to, the implied warranties of merchantability and fitness for a particular purpose.
4. Manufacturer shall not be liable for any incidental, consequential, special, punitive, or contingent damages or expenses, arising, directly or indirectly, from any defect in the water filter or the use of the

water filter, including but not limited to water damage.

5. Manufacturer shall not be liable for any water damage arising, directly or indirectly, from any defect in the water filter or component part(s) or from its use.
6. Manufacturer shall not be liable for any damage or product failures
 - The water filter or any of its component parts have been subject to misuse, alteration, neglect or accident.
 - The water filter has not been installed in accordance with the applicable local plumbing and/or building code(s) and/ or regulations or in their absence.
 - The water filter is not installed, operated and maintained in accordance with the printed Manufacturer's instructions, including if the water filter has any additional aftermarket equipment introduced into the sealed system not approved by the manufacturer.
 - The water filter is exposed to highly corrosive conditions.
 - The water filter is not continuously supplied with potable water.
 - The water filter is not operated within the factory calibrated temperature limits.
 - The water filter is installed in direct sunlight or exposed to freezing temperatures.
 - The water filter or any of its component parts fail due to sediment build-up.
 - Clogging due to purchaser's failure to replace the filter cartridges.
 - Damage caused by fire, flood or acts of God.
 - Damage caused by over-pressurization in the water line.
7. Manufacturer shall not be liable for any claims related to excessive noise, smell, or taste of water.
8. This Warranty does not cover damage caused by the use of parts that are not genuine A. O. Smith parts. This includes, but is not limited to replacement filters, faucets, and/or diverter valves.
9. Except when specifically prohibited by the applicable state law, the Owner, and not the Manufacturer, shall be liable for and shall pay for all charges for labor or other expenses incurred in the removal, repair or replacement of the water filter or any component part(s) claimed to be defective or any expense incurred to remedy any defect in the product. Such charges may include, but are not necessarily limited to:
 - a. All freight, shipping, handling and delivery costs of forwarding a new water filter or replacement part(s) to the owner.
 - b. All costs necessary or incidental in removing the defective water filter or component part(s) and installing a new water filter or component part(s).
 - c. Any material required to complete, and/or permits required for, installation of a new water filter or replacement part(s), and
 - d. All costs necessary or incidental in returning the defective water filter or component part(s) to a location designated by the Manufacturer.

How to get service:

To receive service under this Warranty, you must contact A. O. Smith at 1-877-333-7108 within the Warranty Period to describe the problem to a customer service representative who will verify that the product is under Warranty and determine whether a part or the system will be replaced and whether you must send back the unit. You will be required to provide proof of purchase from an authorized A. O. Smith reseller and proof of proper installation.

Warranty registration: Warranty registration is not required for coverage under the A. O. Smith Limited Warranty. If you purchased from a retailer or an authorized reseller, please complete the online Warranty registration form at www.aosmithatlowes.com/register. Proof of purchase from an A. O. Smith authorized dealer is required. Once registered online, we will have a record of your purchase.

How state law applies:

This Warranty gives you specific rights and you may have other rights which vary from state to state.

Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.



Documents / Resources



[AO Smith AOS-Hero-CHR High Efficiency Reverse Osmosis System](#) [pdf] Owner's Manual
AOS-Hero-CHR High Efficiency Reverse Osmosis System, AOS-Hero-CHR, High Efficiency Reverse Osmosis System, Efficiency Reverse Osmosis System, Reverse Osmosis System, Osmosis System

References

- [Signature Series® Water Heaters Electric & Gas | A. O. Smith](#)
- [Chemical Contaminant Rules | US EPA](#)
- [Owner and Product Registration Forms | A. O. Smith](#)
- [Water Quality Authority – We protect your health by protecting your groundwater.](#)
- [Home - Water Quality Association](#)
- [User Manual](#)