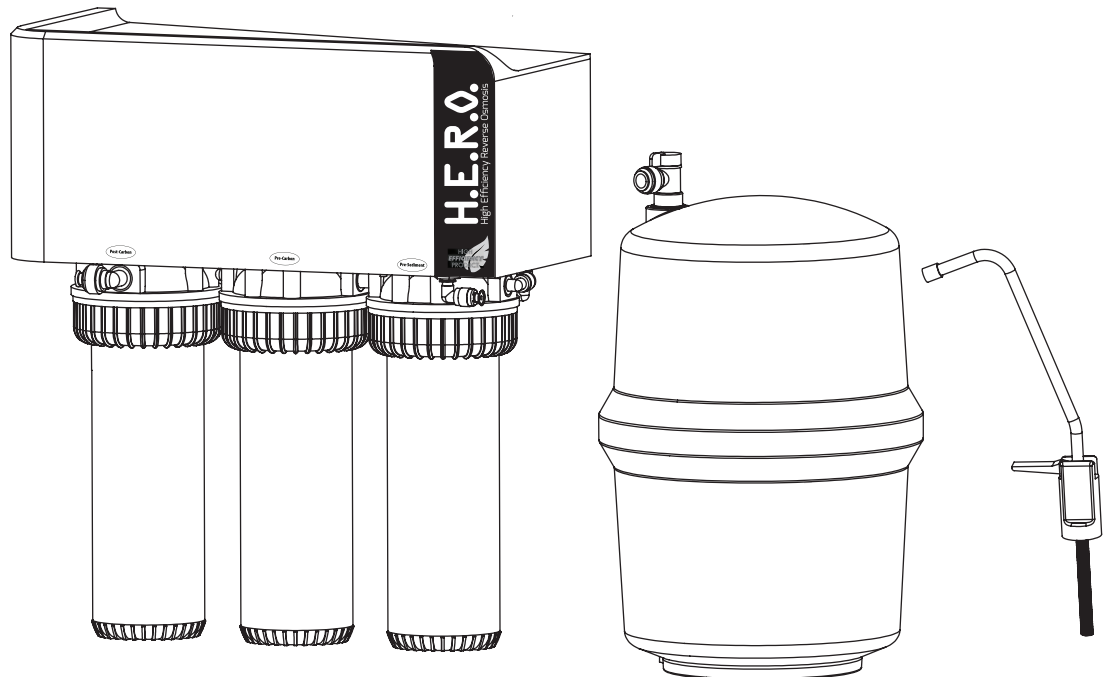
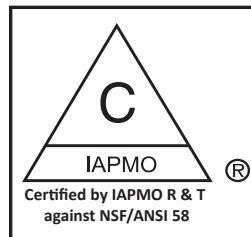
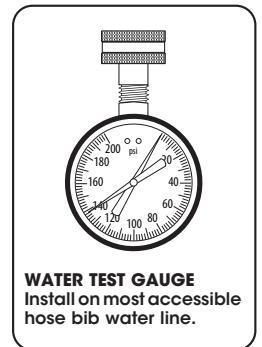


## HIGH EFFICIENCY RO

### Installation, Operation & Service Instructions with Parts List H.E.R.O.™ Drinking Water System



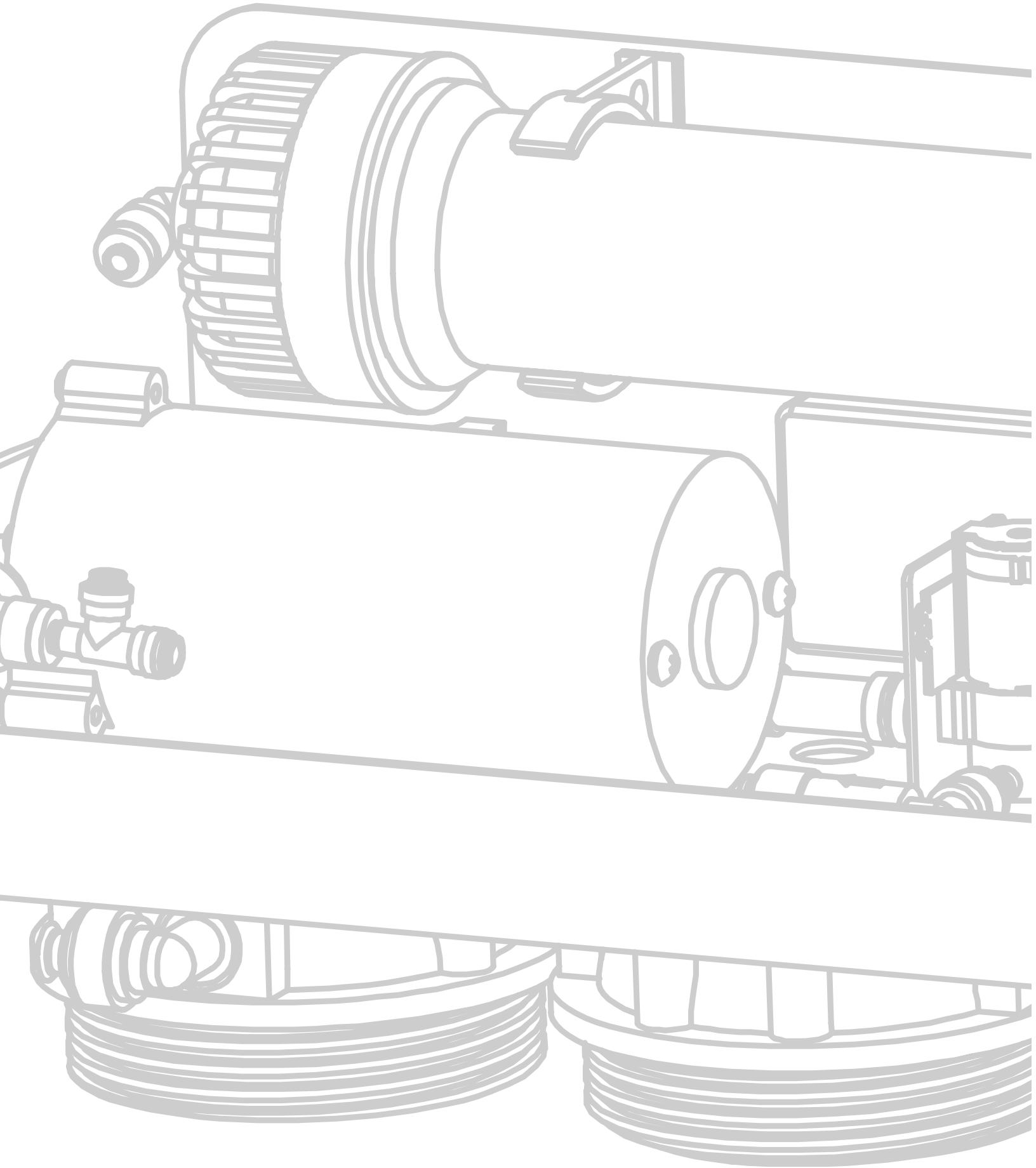
- ▶ Please read carefully before proceeding with installation. Your failure to follow any attached instructions or operating parameters may lead to the product's failure. Keep this Manual for future reference.
- ▶ Do not use with water that is microbiologically unsafe or of unknown quality without adequate disinfection before or after the system.
- ▶ If you are unsure about installing H.E.R.O.™, contact Dealer
- ▶ Test the water periodically to verify that the system is performing satisfactorily. Discard small parts remaining after the installation.
- ▶ Failure to install the system correctly voids the warranty.
- ▶ Handle all components of the system with care. Do not drop, drag or turn components upside down.
- ▶ Be sure the floor under the water filter system is clean, level and strong enough to support the unit.



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

**Canature WaterGroup Canada Inc.**  
855 Park St., Unit 1  
Regina, SK, S4N 6M1  
Toll Free: (877) 288-9888

**Canature WaterGroup U.S.A. Inc.**  
6353 Commerce Drive  
Whitestown, IN, 4607  
Toll Free: (877) 288-9888



### Attention H.E.R.O.™ Customer:

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

Check with your public works department for applicable local plumbing and sanitation codes. Follow your local codes if they differ from the standards used in this manual.

The H.E.R.O.™ Drinking Water System contains a replaceable reverse osmosis membrane filter which is critical for the effective reduction of Total Dissolved Solids. The filtered water should be tested periodically to verify that the system is performing properly.

## Safe Practices

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

### NOTE

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

**NOTE:** used to emphasize installation, operation or maintenance information which is important but does not present a hazard.



### CAUTION!

Disassembly while under pressure can result in flooding.

**CAUTION:** used when failure to follow directions could result in damage to equipment or property.



### WARNING!

**ELECTRICAL SHOCK HAZARD!**  
UNPLUG THE UNIT BEFORE REMOVING THE TIMER MECHANISM OR COVER PLATES!

**WARNING:** used to indicate a hazard which could cause injury or death if ignored.

## Serial Number

The serial number is located on the rear of the R.O. manifold housing. Record this number on the warranty page located at the end of this manual.

### NOTE

Do not remove or destroy the serial number. It must be referenced on requests for warranty repair or replacement.

## Symbols in the Manual

Please familiarize yourself with symbols in the manual:

1. Connect the Faucet



2. Connect the Drain Water



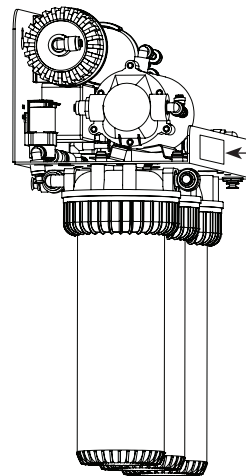
3. Connect the Feed Water



4. Connect the Storage Tank



5. Connect the Inlet Water to the House



Serial # Sticker

40201031A XYZ000T  
X - Year (N: 2017, M: 2018...)  
Y - Month (5: May, 6: June...)  
Z - Day (8: 8th, 9: 9th...)  
000T - Serial# T = (0, 1, 2...)

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.

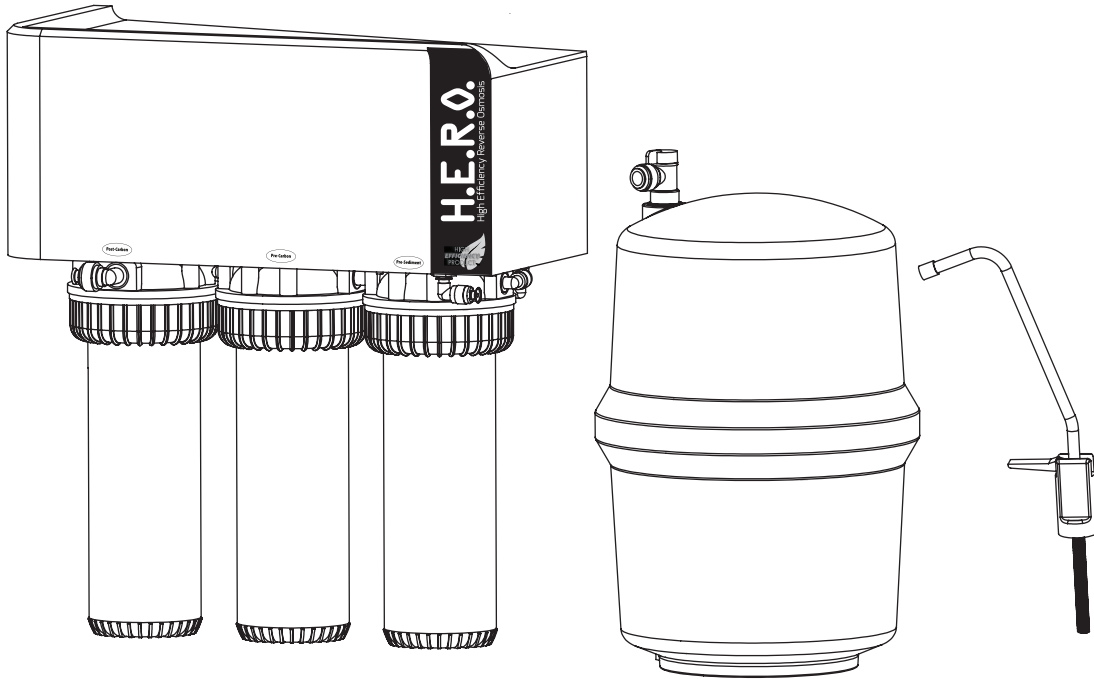


### WARNING!

**IF INCORRECTLY INSTALLED, OPERATED OR MAINTAINED, THIS PRODUCT CAN CAUSE SEVERE INJURY. THOSE WHO INSTALL, OPERATE, OR MAINTAIN THIS PRODUCT SHOULD BE TRAINED IN ITS PROPER USE, WARNED OF ITS DANGERS, AND SHOULD READ THE ENTIRE MANUAL BEFORE ATTEMPTING TO INSTALL, OPERATE OR MAINTAIN THIS PRODUCT.**

# How H.E.R.O.™ Works

H.E.R.O.™ is a very efficient Reverse Osmosis System that doesn't waste water (or waste an extremely small amount of water). It re-circulates the concentrate water back to the whole house water feed, gets diluted with raw water to be used for household purposes



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# Specifications and Performance Data Sheet

| Model #   | Part #   | Stage 1         | Stage 2                       | Stage 3                  | Stage 4                                 | Storage Tank               | Faucet            |
|-----------|----------|-----------------|-------------------------------|--------------------------|---|----------------------------|-------------------|
| H.E.R.O.™ | 20010075 | Sediment Filter | Activated Carbon Block Filter | Reverse Osmosis Membrane | Activated Carbon Block Polishing Filter | Plastic Tank - 3.8 Gallons | Chrome - Standard |

Average Reduction\*\*\*\* %

85%

Efficiency Rating\*\*%

12%

Recovery Rating\*\*\*

21%

Typical System Flow Sequence

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

Sediment Filter (Stage 1). . . . .

5 Micron

Activated Carbon Prefilter (Stage 2)

Activated Carbon Block

Reverse Osmosis Membrane (Stage 3)

Thin Film Composite (75 GPD)

Polishing Filter (Stage 4)

Activated Carbon Block or Carbon Block

Ratio of Product to Flush Flow<sup>2</sup>

Standard Applications 1:0.001

Storage Capacity

Plastic - Capacity 3.0 Gallons (14.36 Liters)

<sup>1</sup> Rating at 50 psi, 77°F, 750 mg/L TDS influent, without storage tank.  
\* BP Stands for Booster Pump

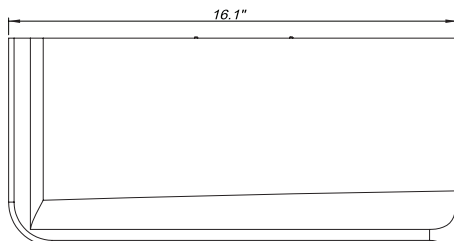
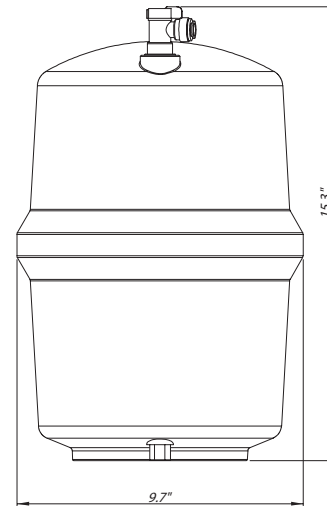
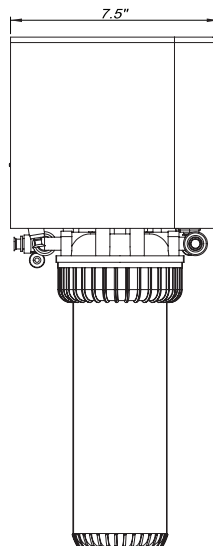
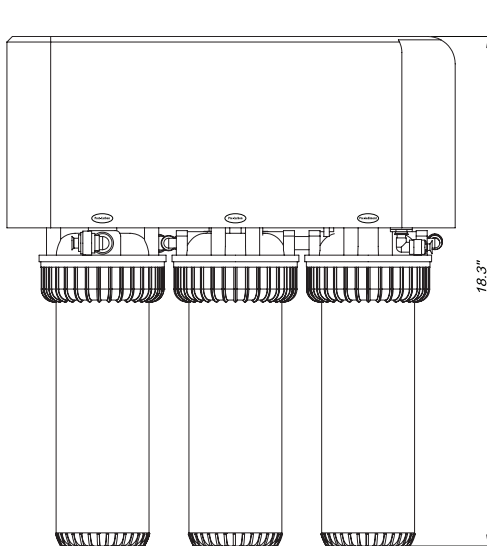
<sup>2</sup> May vary with pressure.

\*\*Efficiency rating means the percentage of the influent water to the system that is available to the user as RO treated water under operation conditions that approximate typical daily use.

\*\*\*Recovery rating means the percentage of the influent water to the membrane portion of the system that is available to the user as RO treated water when the system is operated without a storage tank or when the storage tank is bypassed.

## Dimensions

## Product Water Storage Tank

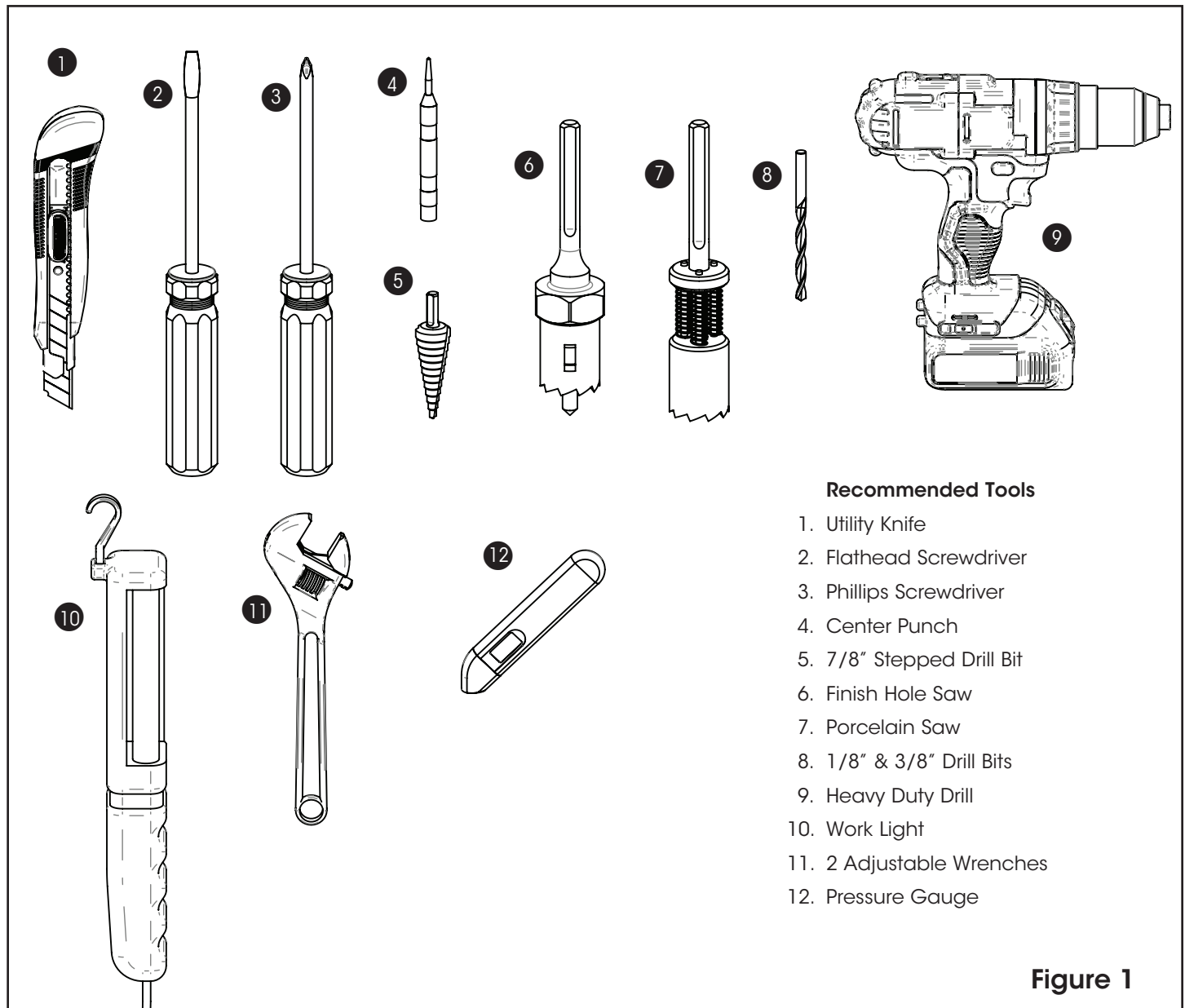


| Recommended Influent Water Characteristic |                              |
|---|------------------------------|
| Pressure                                  | 40 - 70 psi                  |
| Temperature                               | 40 - 77 °F                   |
| Total Dissolved Solids (TDS) <sup>1</sup> | 0 - 1800 ppm (0 - 1800 mg/L) |
| pH  | 5 - 10                       |
| Chlorine <sup>2</sup>                     | 0 - 3 ppm (0 - 3 mg/L)       |
| Chloramine                                | 0 - 3 ppm (0 - 3 mg/L)       |
| Turbidity                                 | 0 - 10 NTU                   |
| Hardness <sup>3</sup>                     | 0 - 10 gpg                   |
| Iron                                      | <0.3 ppm (0.3 mg/L)          |
| Bacterial Quality                         | Potable                      |

- NOTES**
1. The reverse osmosis membrane used in these systems may be damaged by chlorine. These systems include activated carbon filters which protect the membranes by reducing chlorine. Influent chlorine should not exceed 3 mg/L.
  2. A softener is strongly recommended for water over 10 gpg hard. Installing a system without a softener on water with hardness higher than 10 gpg will reduce the life of the membrane.
  3. Additional information on factors that affect RO performance can be found in the "Performance & Technical Information" section.

## Suggested Installation Equipment

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



**Recommended Tools**

1. Utility Knife
2. Flathead Screwdriver
3. Phillips Screwdriver
4. Center Punch
5. 7/8" Stepped Drill Bit
6. Finish Hole Saw
7. Porcelain Saw
8. 1/8" & 3/8" Drill Bits
9. Heavy Duty Drill
10. Work Light
11. 2 Adjustable Wrenches
12. Pressure Gauge

**Figure 1**

# Overview of the H.E.R.O.™ System's Components (Booster Pump Model)

## 1 Manifold Assembly

The manifold assembly serves as the functional hub of the H.E.R.O.™ system by directing the flow through each of the system's main components.

## 2 Sediment Filter

The sediment filter screens out particulate material, such as dirt, sand, or rust, which may clog the other filters in the system.

## 3 Activated Carbon Filter

The activated carbon prefilter 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.

## 4 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 H.E.R.O.™ 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.

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

**NOTE:** This preservative must be flushed from membrane before use. If ingested it may cause irritation of the gastrointestinal tract, colic, diarrhea, or other similar symptoms. The manufacturer recommends discarding all the product water for at least one hour of operation before drinking or use in food preparations. Canature WaterGroup highly recommends discarding the product water for a full 24 hours to flush the preservative and to properly hydrate the membrane for maximum performance.

## 5 Polishing Filter

The polishing filter (5) adsorbs any residual tastes and odors just before the water is delivered through the faucet.

## 6 Drain Line Flow Control

The flow control assembly or concentrate flow control (6) regulates the flow rate of the flushing (drain) stream and to maintain pressure in the RO membrane filter. This is located inside the manifold assembly.

## 7 Automatic Solenoid Shutoff

The automatic shutoff (7) automatically stops the flow of water through the H.E.R.O.™ system when the storage tank is full. This is located inside the manifold assembly.

## 8 Dispenser Faucet

The faucet (8) allows the product water to be drawn from the system with a simple rotation of the handle. There is an option of an air gap style faucet which prevents the unit from siphoning drain water back into the system. It features a built-in siphon break for concentrate discharge as required by most plumbing codes.

## 9 Storage Tank

The storage tank (9) collects and stores the water produced by the RO system. A compressed air diaphragm drives the water to the polishing filter and faucet. The ball valve (11) provides a convenient way to lock water in the tank during transport and filter changes.

## 10 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.

## 11 Shut off Valve

To Control the flow from Manifold, Faucet to the tank.

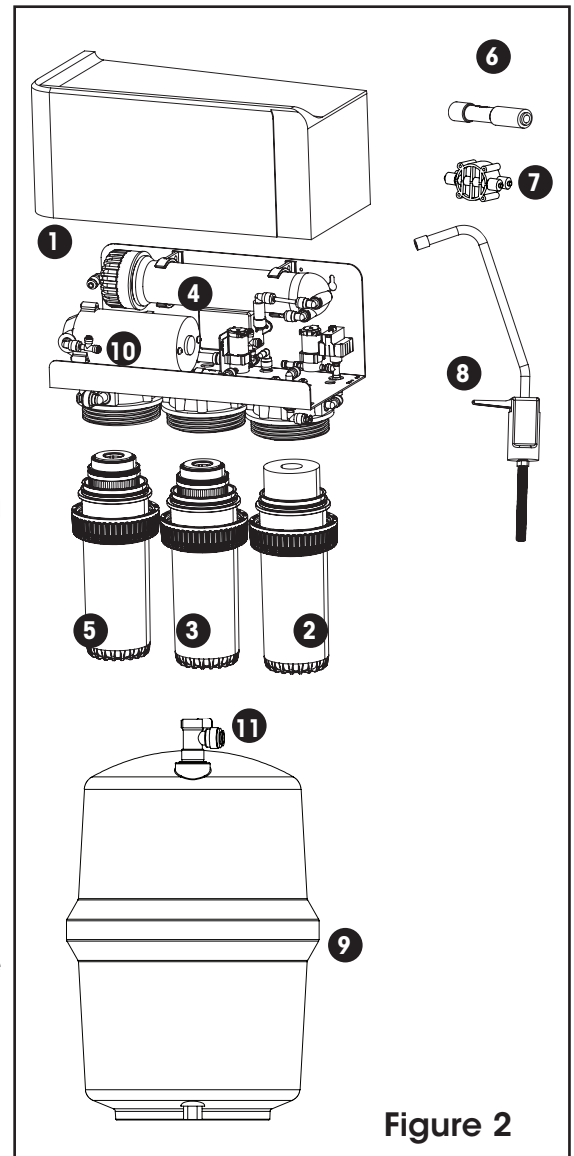
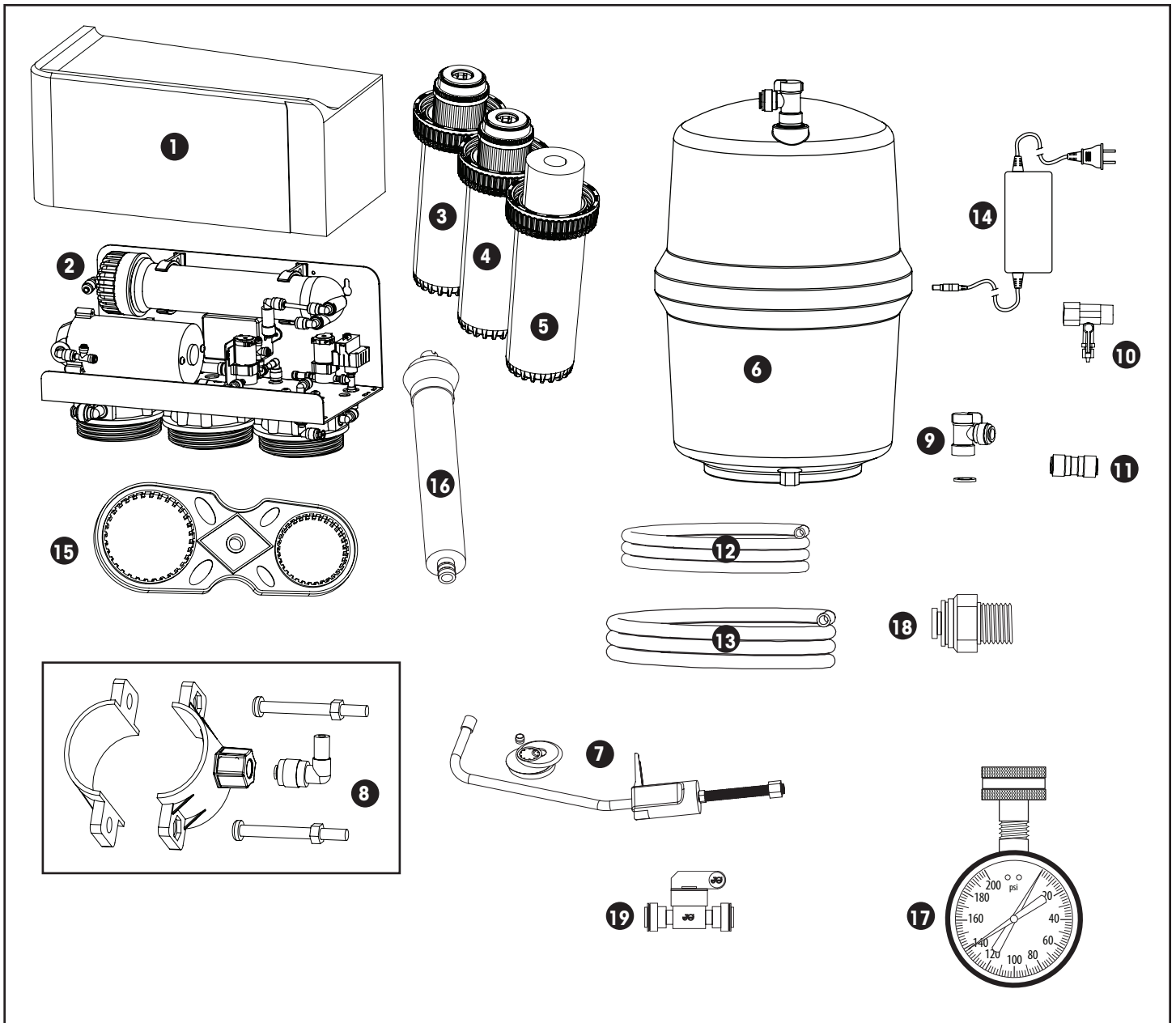


Figure 2

## NOTE

Cleanliness is essential in the Preparation procedure. Be sure to wash your hands thoroughly before handling filters. The use of surgical gloves is strongly recommended.

# Package Contents



**Figure 3**

- |                                |                                       |  |
|--------------------------------|---------------------------------------|--|
| <b>1.</b> RO Manifold Cover    | <b>8.</b> Drain Saddle (1/4" or 3/8") | <b>15.</b> Wrenches                                  |
| <b>2.</b> RO Manifold          | <b>9.</b> Tank Shut-off Valve         | <b>16.</b> RO Membrane                               |
| <b>3.</b> Carbon Filter        | <b>10.</b> Inlet 3-Way Valve          | <b>17.</b> Water Test Gauge                          |
| <b>4.</b> Carbon Filter        | <b>11.</b> Faucet Adapter             | <b>18.</b> Connector, 1/4" JG x 1/4" MIPT            |
| <b>5.</b> Sediment Filter      | <b>12.</b> 1/4" Tubing (20 ft. White; | <b>19.</b> Connector, Speedfit Ball Valve JG 1/4" OD |
| <b>6.</b> Plastic Storage Tank | <b>13.</b> 3/8" Tubing (20 ft. White; |  |
| <b>7.</b> Faucet and Hardware  | <b>14.</b> Transformer                |  |



# Product Information

This manual covers the technical aspects of the H.E.R.O.™ drinking water systems. It is important to read this manual thoroughly so that you can properly apply, install, and service these systems.

The substances reduced by this system are not necessarily in the customer's untreated water.

## Warranty

A limited warranty is extended to the original end user from Canature WaterGroup. This warranty is printed on the back cover of the Owner's Guide.

## Application Guidelines

The system is designed for use on potable water supplies meeting the guidelines outlined in Table 1. The system should be installed on a home's cold water line.

## Package Content

The H.E.R.O.™ system is shipped from the factory in carton:

**NOTE**  
The filter elements are shipped in their own sealed packaging. This will help to simplify preparation of the system and to maximize the shelf life of the RO membrane element.

## Preparation

### Water Test Gauge

24 hours in advance of installation connect water test gauge to an accessible hose bib (EG laundry faucet or outside faucet). The red indicator dial will stay at the highest pressure, please compare this reading with the information on page 20 titled \*pressure\*.

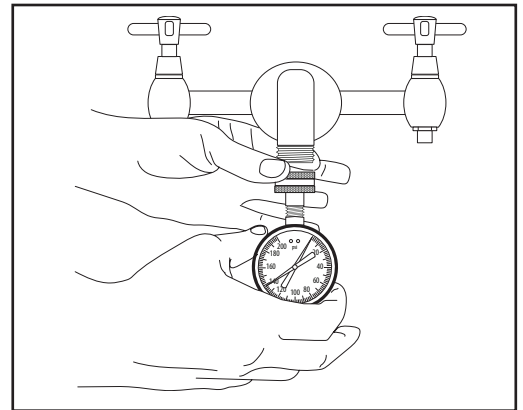


Figure 4

**Quick-Connect Fitting**  
Insertion & Removal of Plastic or Copper Tubing

1. Simply push in tube to attach.
2. Tube is secured in position.
3. Push in collet from both sides to release tubing.

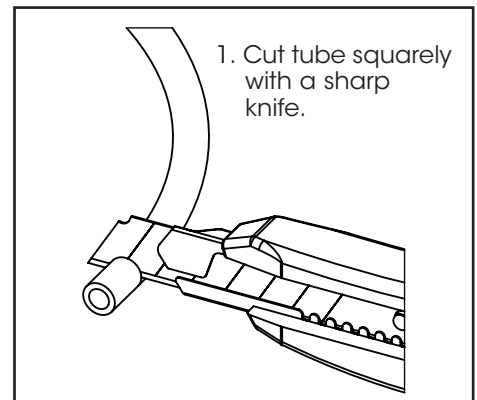
Three line drawings illustrating the steps of a quick-connect fitting. The first shows a tube being pushed into a fitting. The second shows the tube secured in position. The third shows a collet being pushed in from both sides to release the tubing.

## Tubing Connectors

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

### 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.

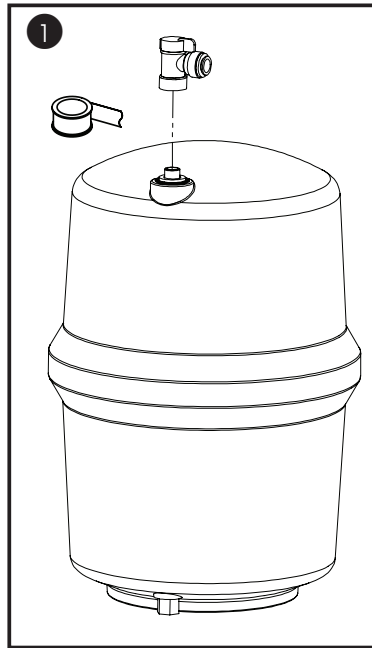
Push-to-connect tubing connectors grip the outside diameter of the tube. To help assure a reliable connection, it is important to use high quality tubing with a consistent outside diameter.

**Storage Tank Preparation: Plastic Tank**

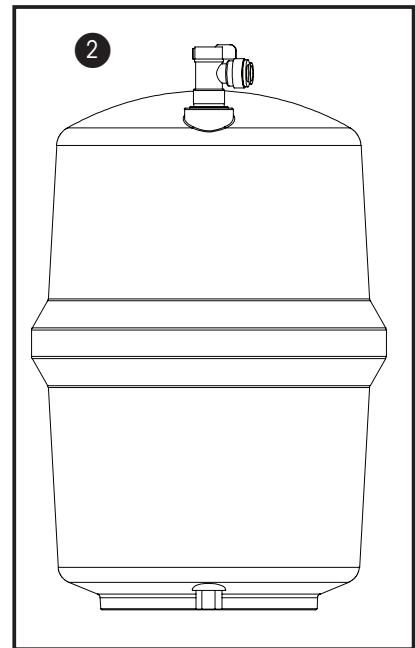


**WARNING!**

**DO NOT USE THE TANK BALL VALVE TO LIFT OR CARRY THE TANK.**



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



**WARNING!**

**EXCESSIVE TEFLON TAPE CAN CAUSE THE FITTING TO EXPAND AND BREAK.**

**NOTE**

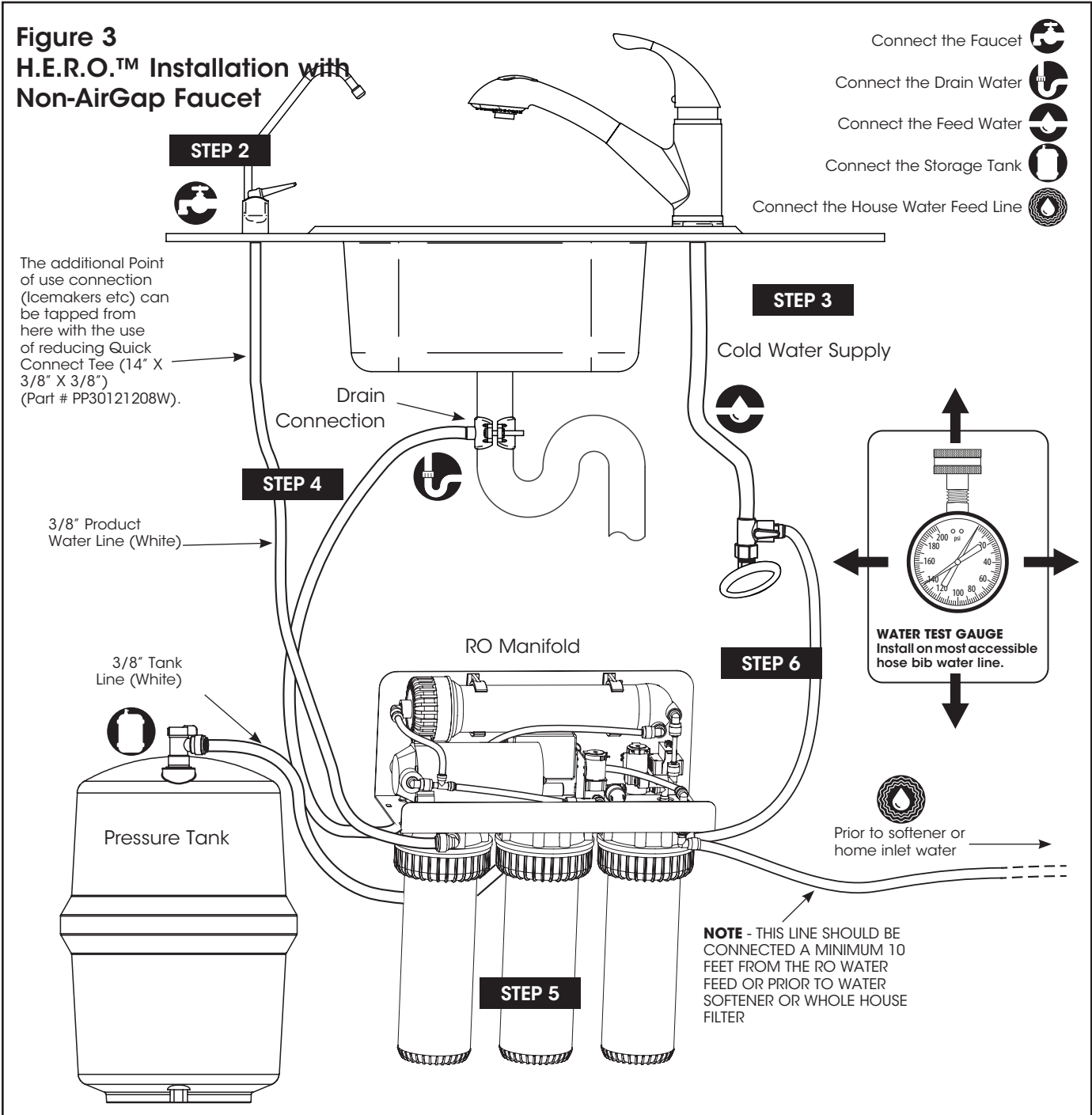
Changing the air pressure will alter the amount of water stored in the tank. Increasing the pressure will decrease capacity while decreasing pressure will increase capacity.

# Installation: H.E.R.O.™ Unit

The exact placement of the components will vary by installation. Although shown beneath a sink, it may be installed in a basement, crawl space, or in an adjacent cabinet. Regardless of where the system is installed, the flow sequence described by (figure 3) must be observed.

The H.E.R.O.™ drinking water system is designed to be mounted near a sink for easy access to cold water and drain lines. Lengths of 1/4-inch and 3/8-inch OD plastic tubing will be required to make this installation.

Evaluate the installation site to determine the easiest path for the plumbing to follow. Take care to make the installation as neat as possible.



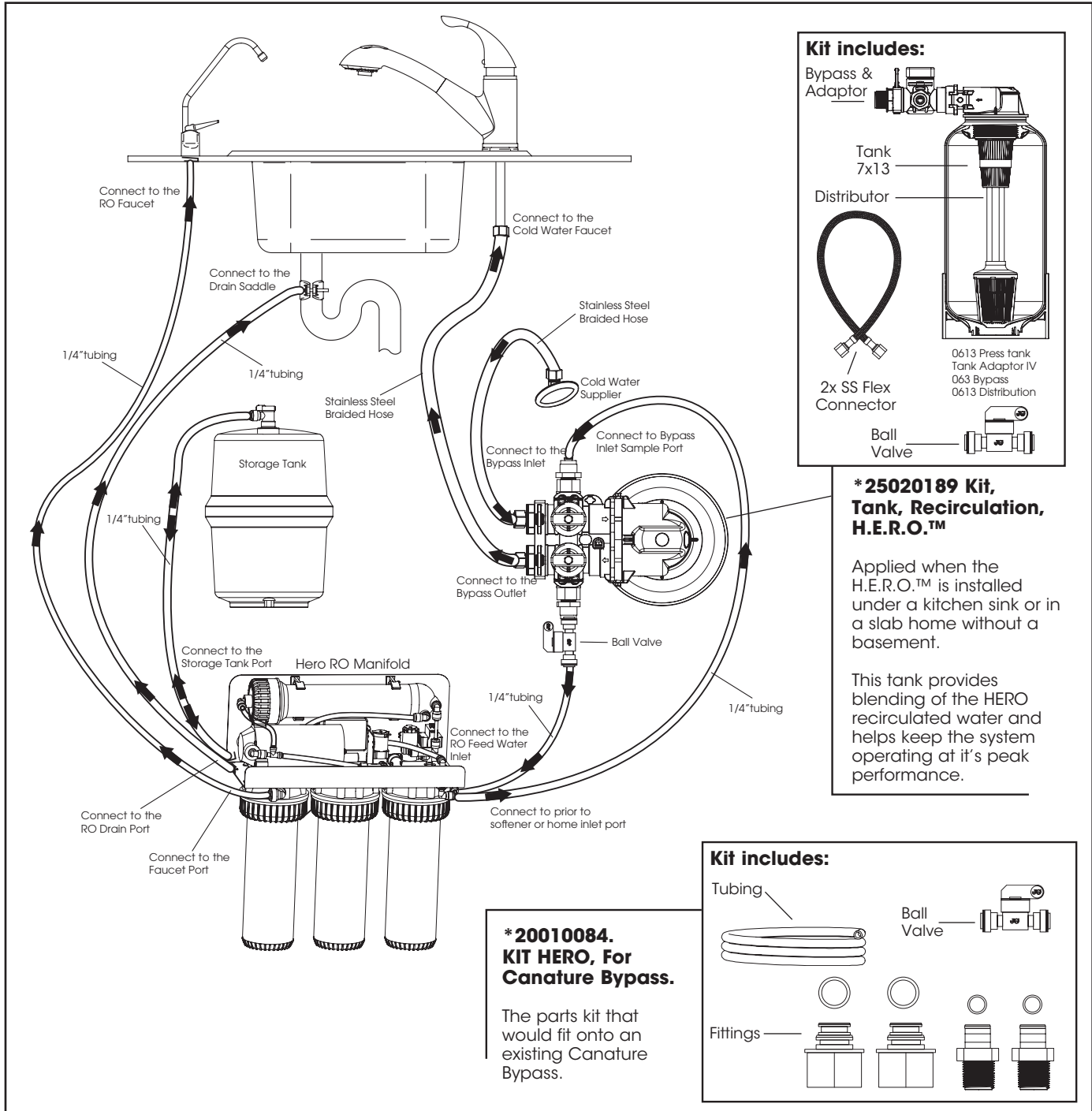
**NOTE**  
 Install the 3/8" white drain line from the air gap faucet to the drain adapter so that it runs downward with no loops or low spots. Otherwise the unit will overflow at the air gap siphon break built into the faucet, or make irritating gurgling sounds. For standard faucet (non-air gap) installations simply route the drain line directly to the drain connection.

# Installation: H.E.R.O.™ Unit with Auxiliary Tank

The exact placement of the components will vary by installation. Although shown beneath a sink, it may be installed in a basement, crawl space, or in an adjacent cabinet. Regardless of where the system is installed, the flow sequence described by (figure 3) must be observed.

The H.E.R.O.™ drinking water system is designed to be mounted near a sink for easy access to cold water and drain lines. Lengths of 1/4-inch and 3/8-inch OD plastic tubing will be required to make this installation.

Evaluate the installation site to determine the easiest path for the plumbing to follow. Take care to make the installation as neat as possible.

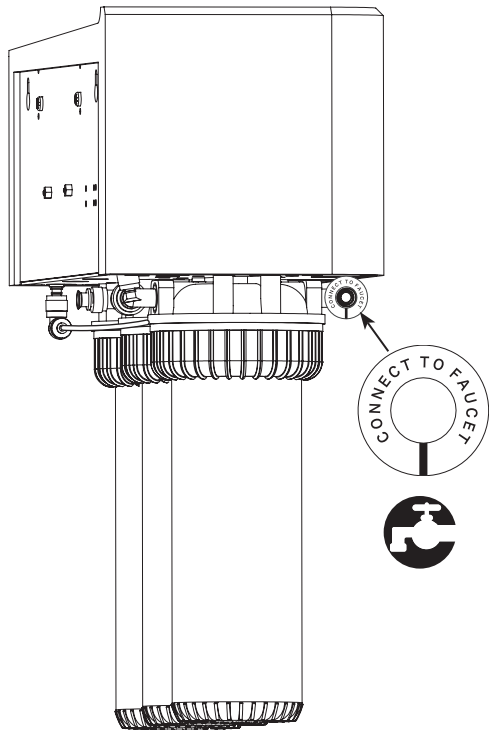


\*Kits not included with H.E.R.O., can be bought separately.

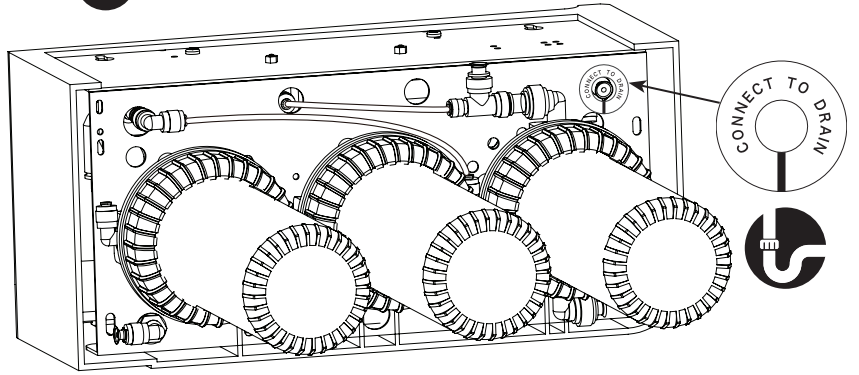
**NOTE**

Install the 3/8" white drain line from the air gap faucet to the drain adapter so that it runs downward with no loops or low spots. Otherwise the unit will overflow at the air gap siphon break built into the faucet, or make irritating gurgling sounds. For standard faucet (non-air gap) installations simply route the drain line directly to the drain connection.

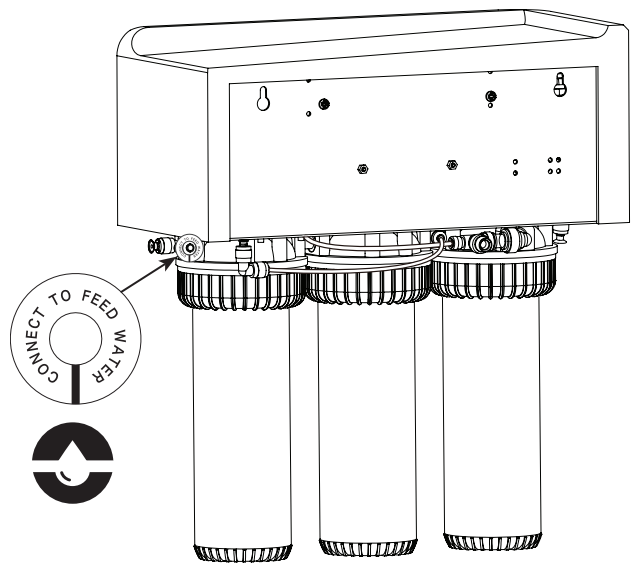
**1** Connect the Faucet



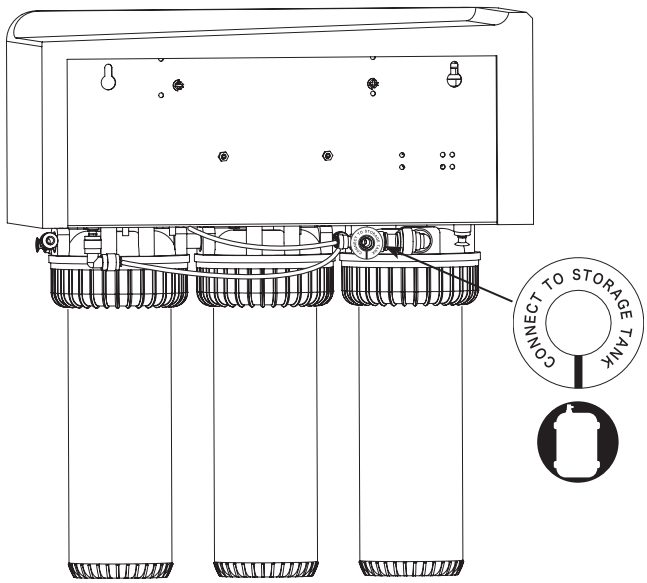
**2** Connect the Drain Water



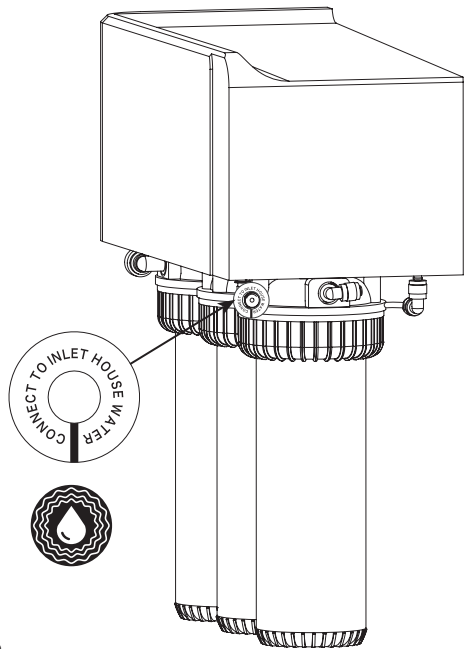
**3** Connect the Feed Water

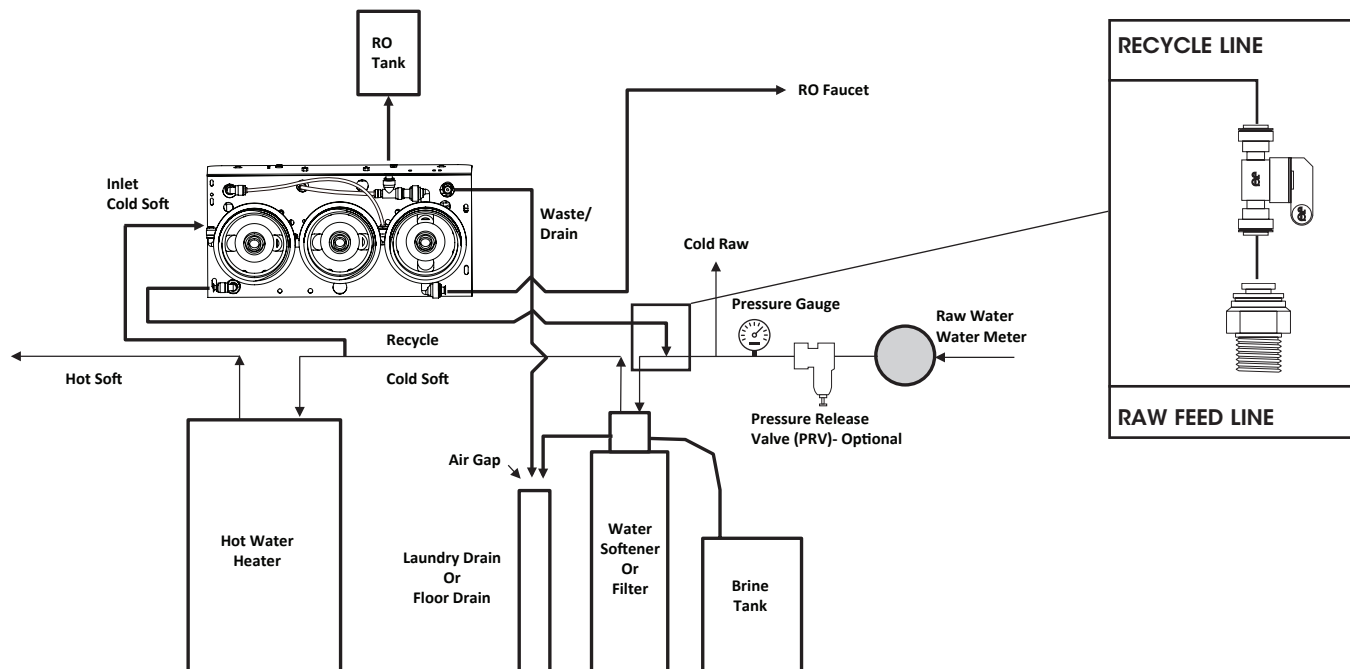


**4** Connect the Storage Tank



**5** Connect the House Water Feed Line





The following steps will enable you to install the system quickly and orderly. Some variation may be necessary depending on the installation. See page 4 for a check list of tools and materials.

### Typical installations follow this sequence:

1. Select Component Installation Locations
2. Faucet Installation
3. Install Adapter Valve on Water Supply
4. Connect System Drain
5. Install Reservoir Tank
6. Install Filter System Assembly
7. Start-Up

## Step 1 – Select Component Installation Locations

- **Dispenser Faucet** – The faucet is designed to be mounted on the rear lip of the sink. It may be installed in an existing sprayer attachment hole or in a hole drilled at the time of installation. It may also be mounted to an adjacent counter top. It should be positioned so that water is dispensed over the sink. A 7/8" diameter hole is required.
  - **Important considerations:**
    - Access to the bottom (undersink) of the faucet is required for attachment of product water line.
    - There should be no undersink obstructions which would prevent smooth tubing runs to the drain connection, or RO module assembly.
    - A 115V electrical outlet is required for operation. - See page 17 for Power Transformer hook up.
    - **Filter System Assembly** – The filter system assembly is designed to be mounted on any rigid vertical surface such as a cabinet sidewall, sheetrock in exposed stud. It should be positioned such that there is access to an inlet water source and drain. The installation should also allow convenient access for servicing.
  - **Inlet Water Supply Connection** – Once a location is chosen for installation of the filter system assembly, select a nearby cold water line to provide the water source for the system.
- NOTE**

Follow all local plumbing codes when connecting to service water.
- **The Reservoir Tank** – Position the reservoir tank near the faucet for optimum convenience. The reservoir tank will weigh about 28 pounds (13 kg) when full of water, so it must be positioned on a stand. The reservoir operates best in the vertical position, but it will operate on its side.
  - **Drain Connection** – The most convenient entry to the drain is directly above the P-trap of the kitchen sink. However, the drain water from the system can be connected to adjacent sinks or a floor drain. Extra care should be taken when entering drains near dishwashers or food waste disposals as back flow may occur through the air gap and cause flooding.
- NOTE**

Follow all local plumbing codes when connecting to drain.

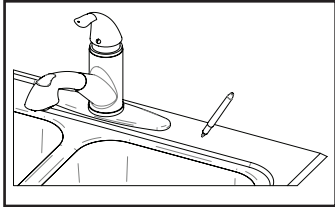
## Step 2 – Faucet Installation

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

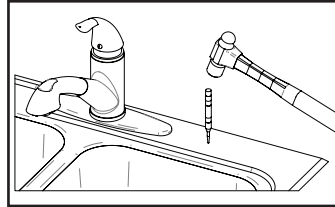
**NOTE**  
It is recommended retaining the services of a professional counter top craft person when a hole is needed in granite or other specialty counter top materials.

### Sink Drilling Instructions

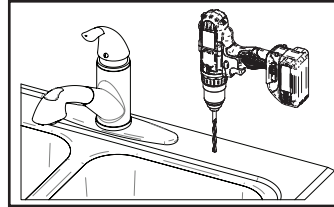
#### Stainless Steel Sink



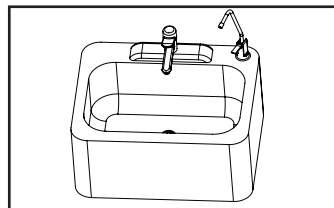
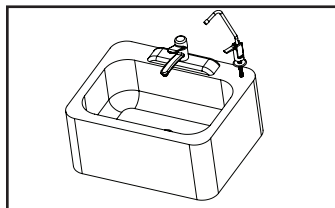
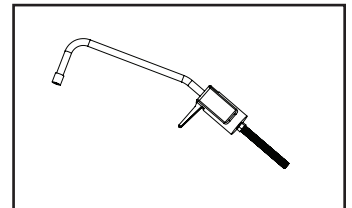
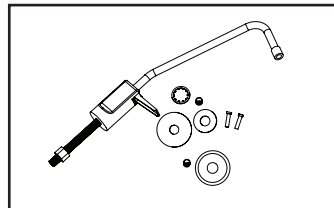
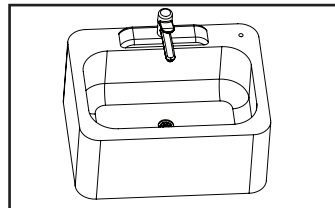
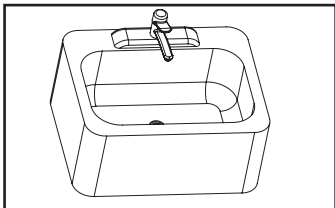
1. Select and mark the proper faucet location.



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



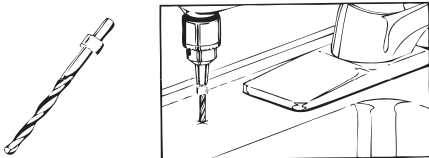
3. Drill a 7/8" hole in the sink using a stepped 7/8" drill bit. If no stepped bit is available, start by drilling a 1/4" hole. Using this hole as a starting point progressively drill larger holes. Increase drill size by 1/8" until you reach a 7/8" hole.



#### Porcelain Enamel Sink

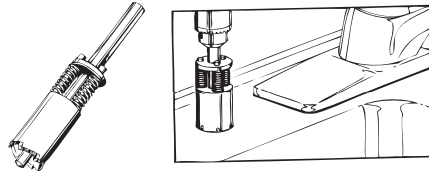
Follow these basic guidelines when drilling a porcelain sink:

Pilot Drill



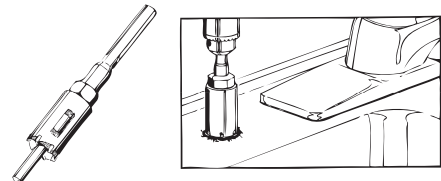
Penetrate the porcelain to the base material.

Spring Loaded Porcelain Saw



Protect the surrounding porcelain material.

Finish Hole Saw



Use the appropriate tool to drill the base material.

One proven tool is the Relton porcelain cutter kit when used with a slow speed drill (300-400 rpm).

- Drill a pilot hole through the porcelain and base material with the carbide tip drill.
- Build a putty dam around the drill area. Add enough water to lubricate cutters and reduce cutting noise.
- Insert the porcelain cutter into the drill. Place the drill tip in the pilot hole. Check for free movement.
- Apply light pressure to the cutter tool and start the drill motor at low speed (300-400 rpm). When the initial cut has been made in the porcelain, speed may be increased. After a complete ring has been cut through the porcelain, change over to the metal cutter. Avoid contacting the outer rim of cut porcelain when drilling.
- Use a slow speed and light pressure to cut away the porcelain.
- Stop when you reach the metal under the porcelain. Remove the cutter and clean the porcelain chips from the surface. Continue cutting through the metal.



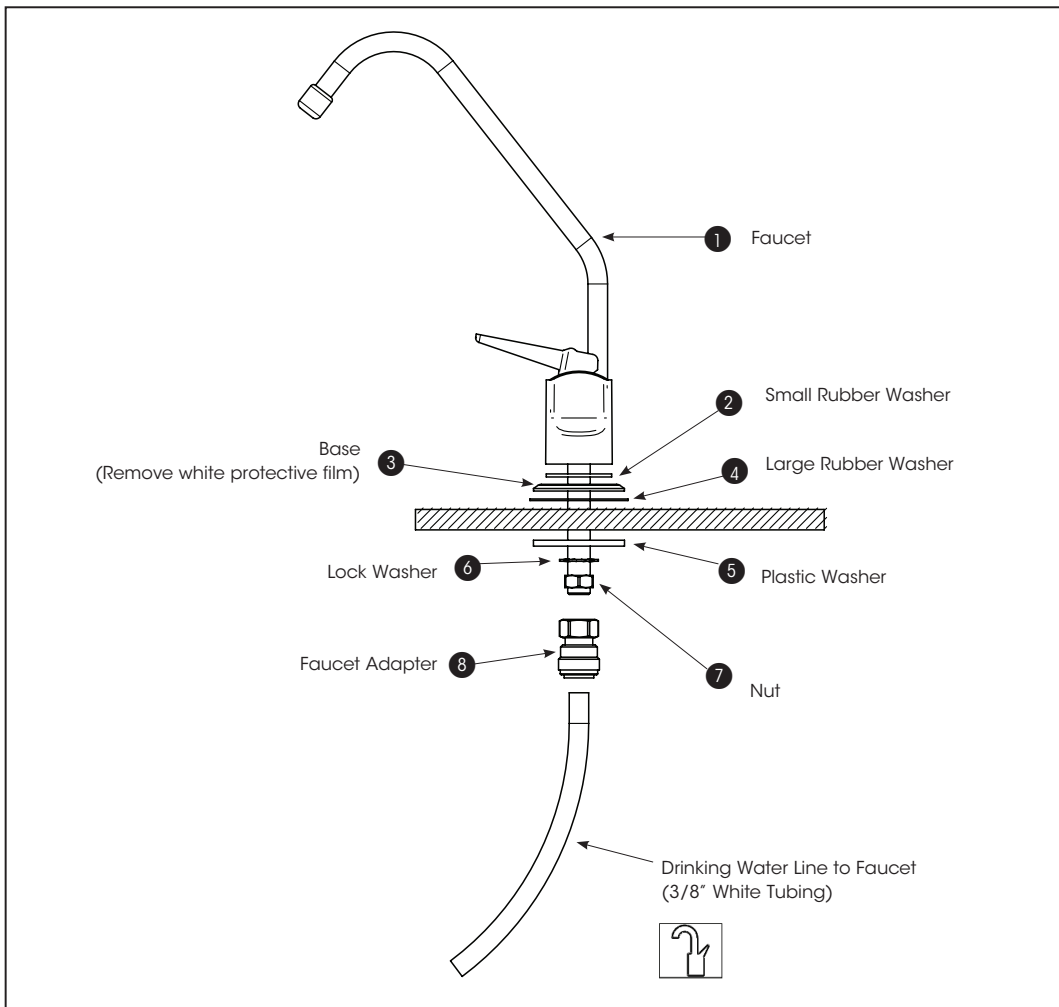
## CAUTION!

Avoid high drill speed during penetration of porcelain. A single speed drill can be used at a slow speed by switching it on and off quickly.

## NOTE

Ceramic tile counters should be treated like porcelain when penetrating the surface, then treated as metal to complete the hole with carbide drills. Formica countertops can be drilled with a high-speed wood drill.

## Non Air Gap Faucet (Supplied With the Product)



## Standard Faucet Installation

1. Remove white protective film from faucet base. Install faucet body, small rubber washer, metal base, and large rubber washer above sink (items 1-4).
2. Install plastic washer, lock washer and nut (items 5-7) onto faucet stem below sink and tighten. Be sure to properly align the faucet.
3. Install the faucet adapter (item 8). Connect the 3/8" white tubing to the faucet adapter.

## NOTE

If installing a standard faucet the red 1/4" drain line will be installed directly to the drain.

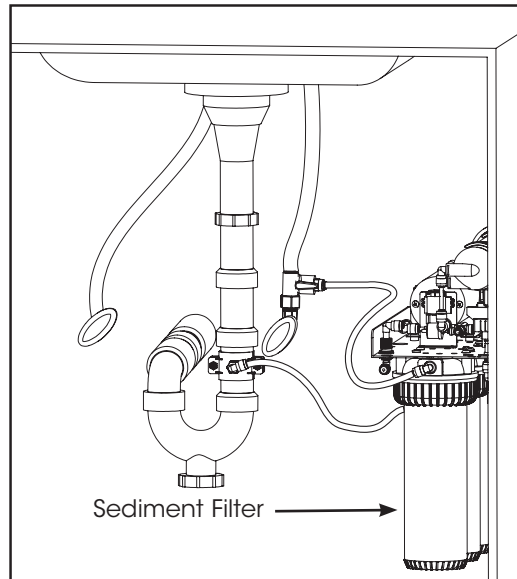
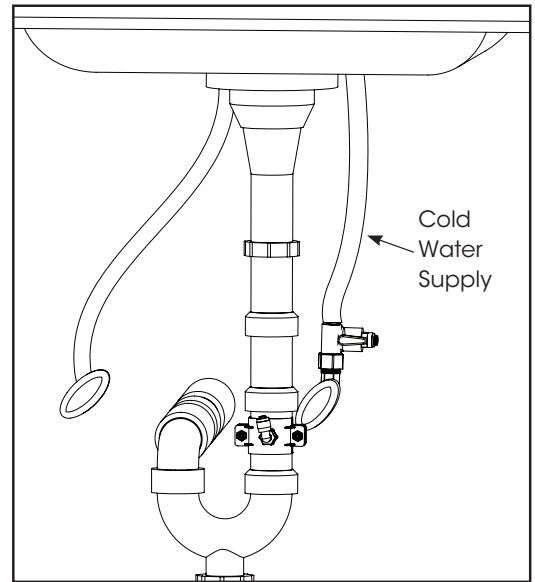
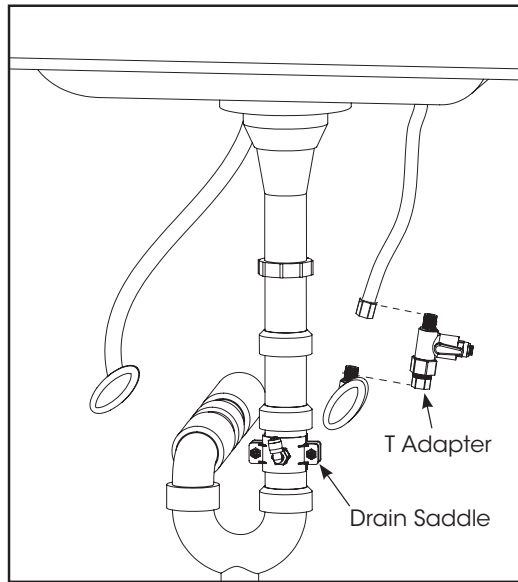
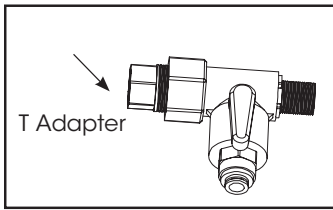


## WARNING!

DO NOT OVER TIGHTEN!



### Step 3 – Install T Adapter Valve on Water Supply



**CAUTION!**

The Adapter valve should be connected to cold water supply only. Connection to hot water supply will damage the system and will void all warranty.

Many homes are equipped with disposals and dishwashers. Special care must be taken when these appliances are present to prevent improper air gap performance. Home drain plumbing must be free of any blockage since this may cause a backup of dishwasher and disposal waste into the air gap outlet tube and result in improper air gap performance.

To perform a simple drain check, fill the sink basin with several inches of water, pull the plug, and observe the drainage. If water backs up into the second sink (if present), or if drainage is slow or there is excessive gurgling, drain blockage may be present.

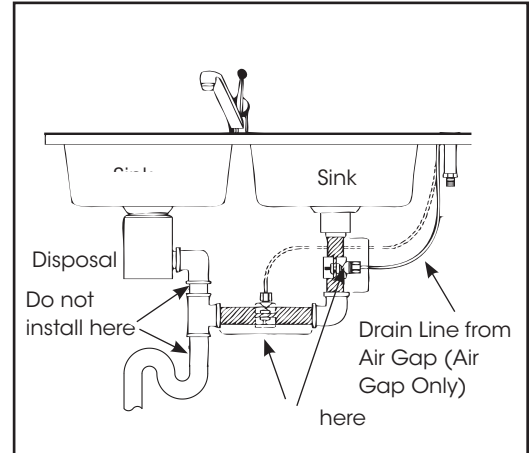
Undersink drain plumbing usually resembles one of the following descriptions. In all cases, the drain tubing from the air gap (RO outlet) should run downward, free of dips and loops. The air gap outlet must not be connected to the effluent side of the trap. This can vent sewer gas, which will produce foul odors.

**Single basin sink without disposal**

- Connect the RO outlet to the tailpiece directly beneath the sink.
- If a dishwasher drain connection is present, the RO outlet must be connected above it.

**Single basin sink with disposal**

- Connect the RO outlet to the dishwasher drain port on the disposal if available.
- If the dishwasher drain port is not available, other arrangements must be made such as running the RO outlet to a basement sump.
- Do not connect the RO outlet to the plumbing below the disposal.



**Double basin sink with disposal, single trap**

- The fitting which joins the drains from the disposal and second sink should be directional. If not, then we recommend that it be replaced.
- Connect the RO outlet to the tailpiece just below the second sink.
- If a dishwasher drain is present and cannot be relocated, the RO outlet must be connected above it.
- Do not connect the RO outlet to the horizontal plumbing between the two sink drains.

**Double basin sink with disposal, double trap**

- Connect the RO outlet to the tailpiece just below the second sink.
- If a dishwasher drain is present and cannot be relocated, the RO outlet must be connected above it.

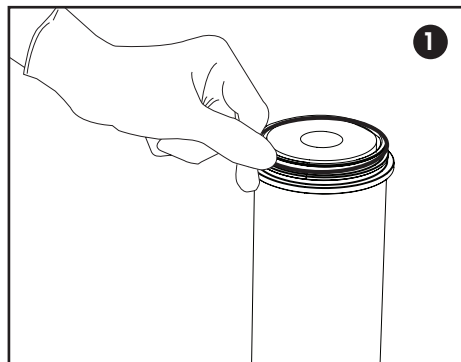
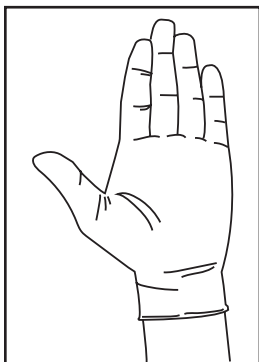
**Step 5 – Install Filters and Membrane**

Place the reservoir tank in the location previously selected.

**Install Filter Cartridges**

Wear Gloves

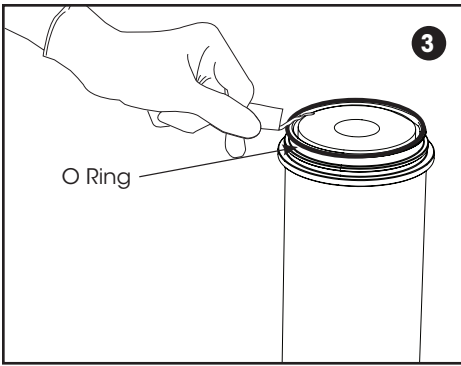
Carbon Block Filter with Sump and O Rings



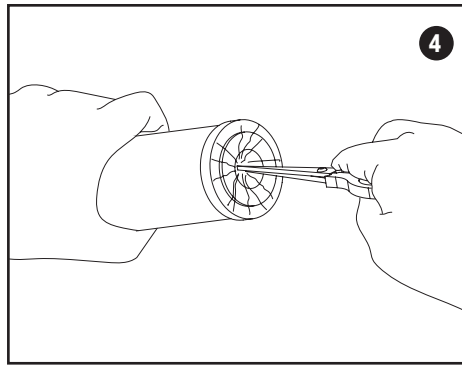
1. Check O Ring



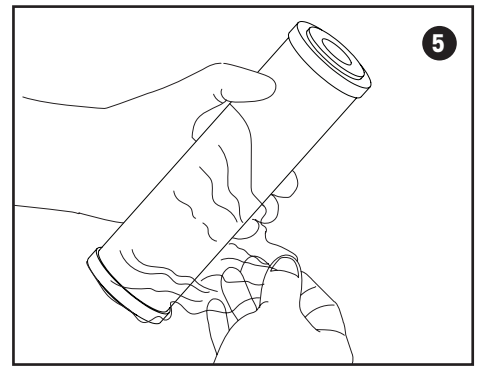
2. Cut Lube package



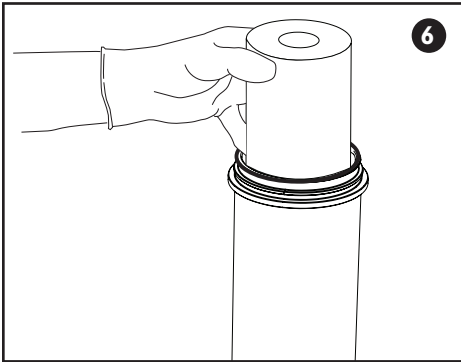
**3.** Apply Lube to O Ring



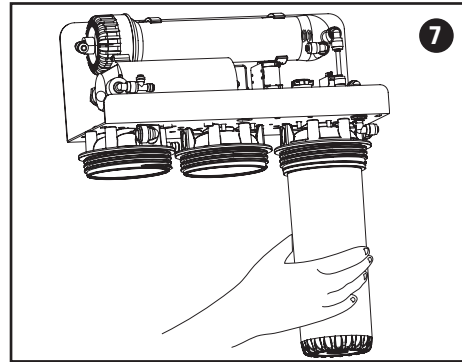
**4.** Pierce Plastic Wrap with scissors



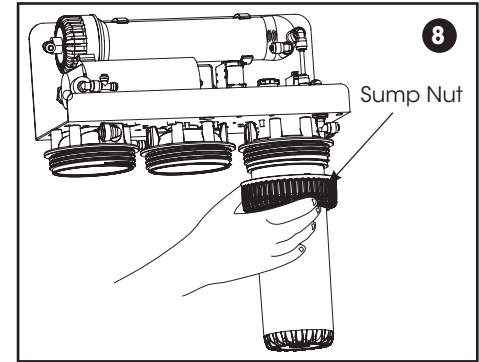
**5.** Remove Plastic Wrap from Filter



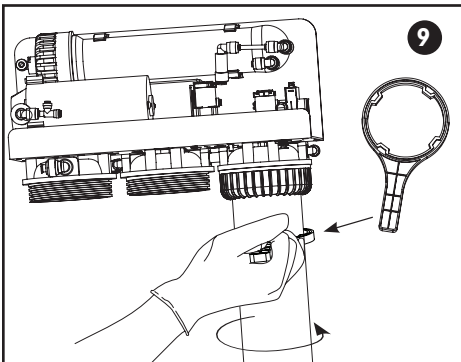
**6.** Insert Filter into Sump



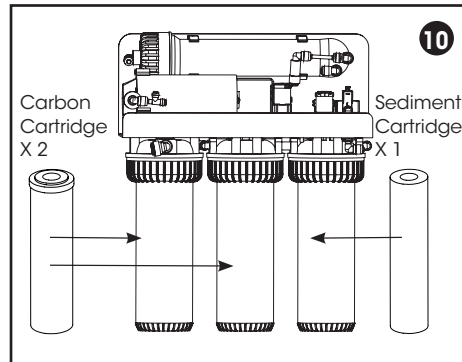
**7.** Attach Sump to Manifold



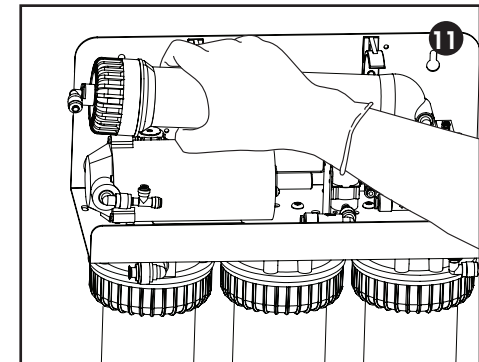
**8.** Attach the Sump Nuts



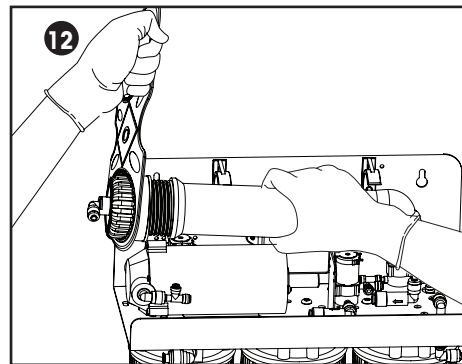
**9.** Tighten the Sump with Wrench



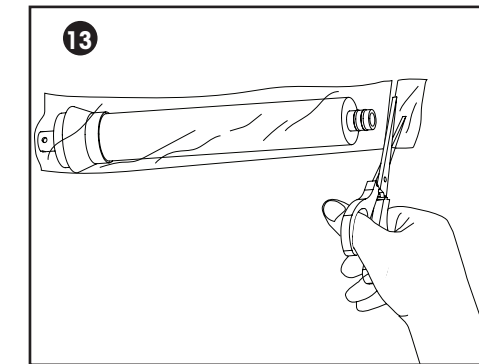
**10.** Attach other Cartridges



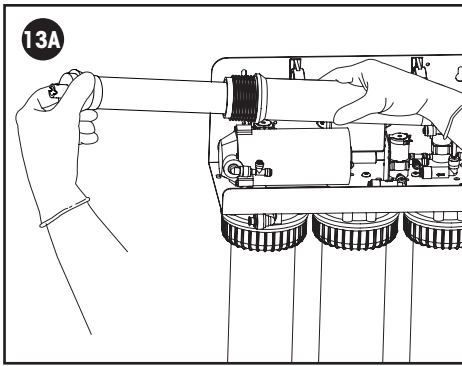
**11.** Unsecure the RO Membrane Housing



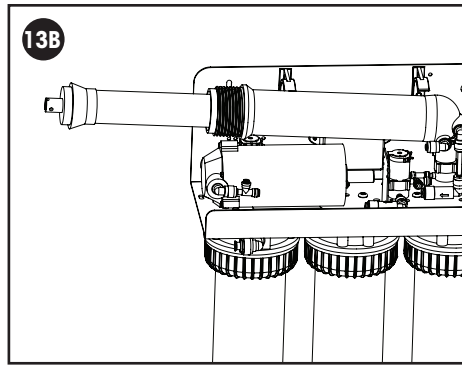
**12.** Remove Membrane Cap with the help of wrench



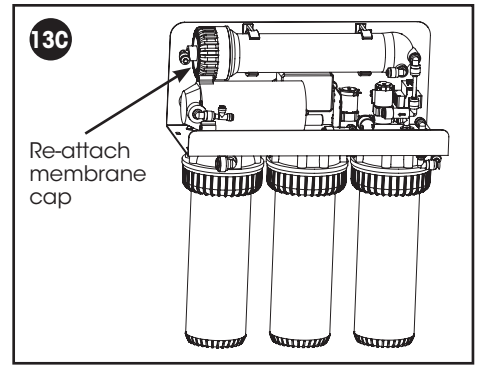
**13.** Remove Wrapping from Membrane



**13A.** Insert RO Membrane as shown in 15B

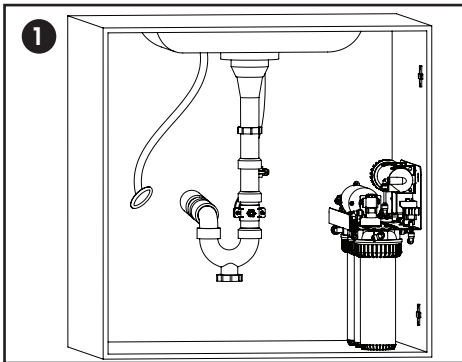


**13B.**

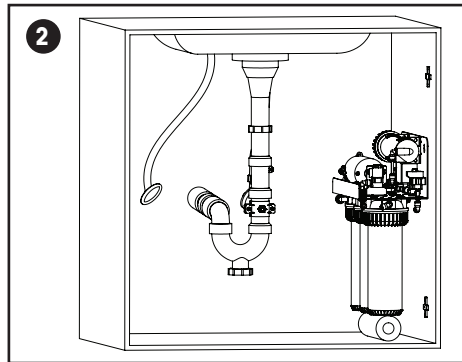


**13C.** Your system is ready to install.

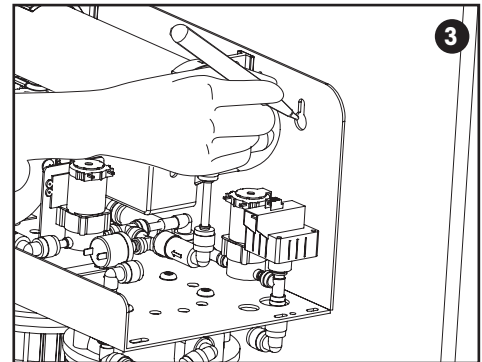
## Install RO Manifold Under the Sink



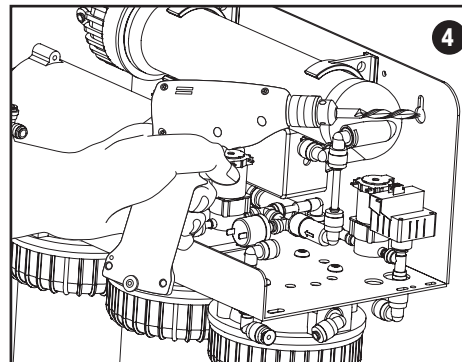
**1.** Find a suitable place for manifold and check to make sure it fits



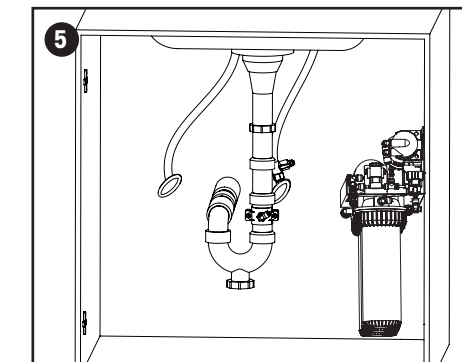
**2.** Raise the manifold by 2 inches



**3.** Mark the holes with Pencil ...

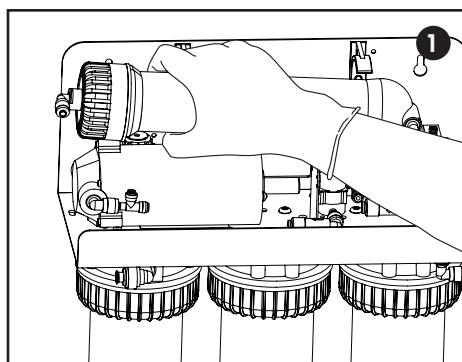


**4.** ... Drill holes

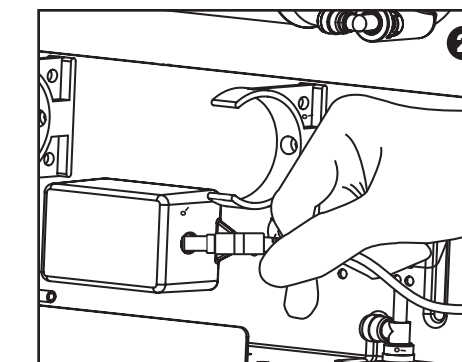


**5.** Hang the manifold

## Connect Power Transformer

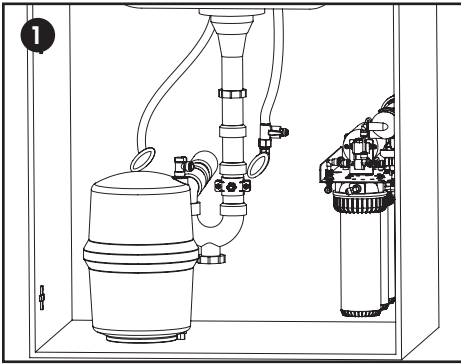


**1.** Unsecure the RO Membrane Housing



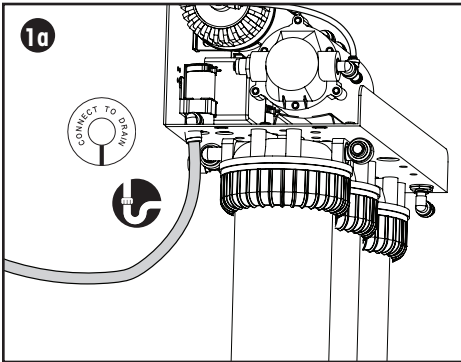
**2.** Insert the Power Transformer plug end to Controller Box - connect to 115V electrical outlet

## Install Tank

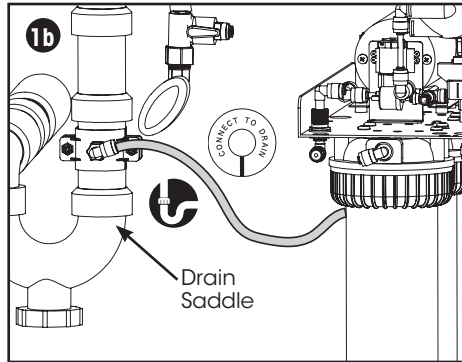


1. Place Tank under the sink. The Shut off valve is already installed in the early steps

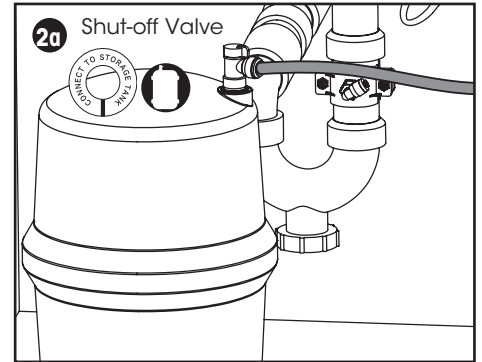
## Connect the Tubing (Non AirGap Version)



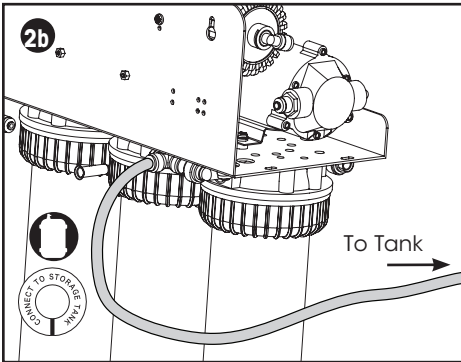
**1a.** Attach the drain water tubing



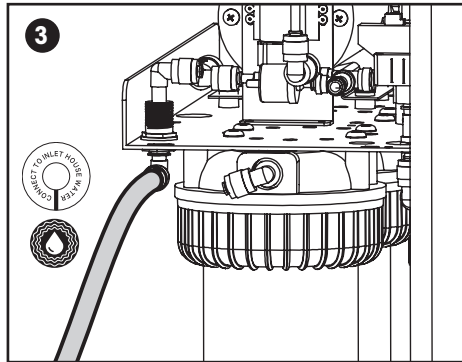
**1b.** Attach the other end of the 1/4" tubing to the drain saddle



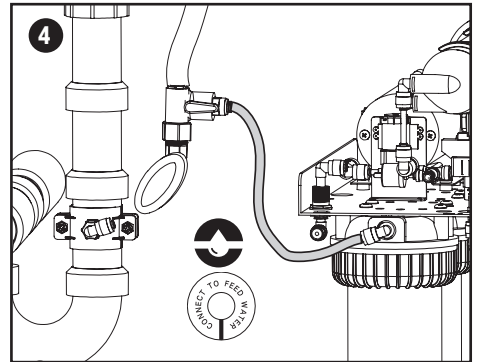
**2a.** Attach Tubing to Tank Shut-off Valve



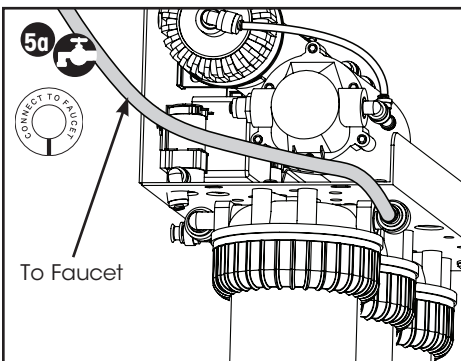
**2b.** Attach Tubing from tank to connection at back of RO unit



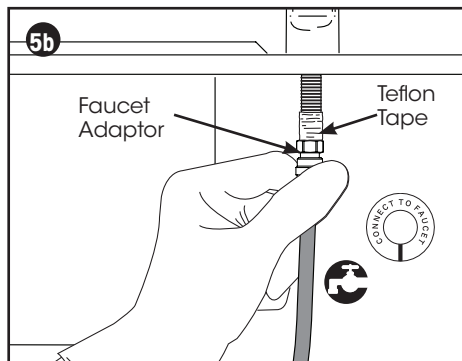
**3.** Connect to house inlet water prior to water softener or whole house filter OR minimum 10 feet from RO inlet



**4.** Connect Tubing from T-Adaptor to RO Inlet

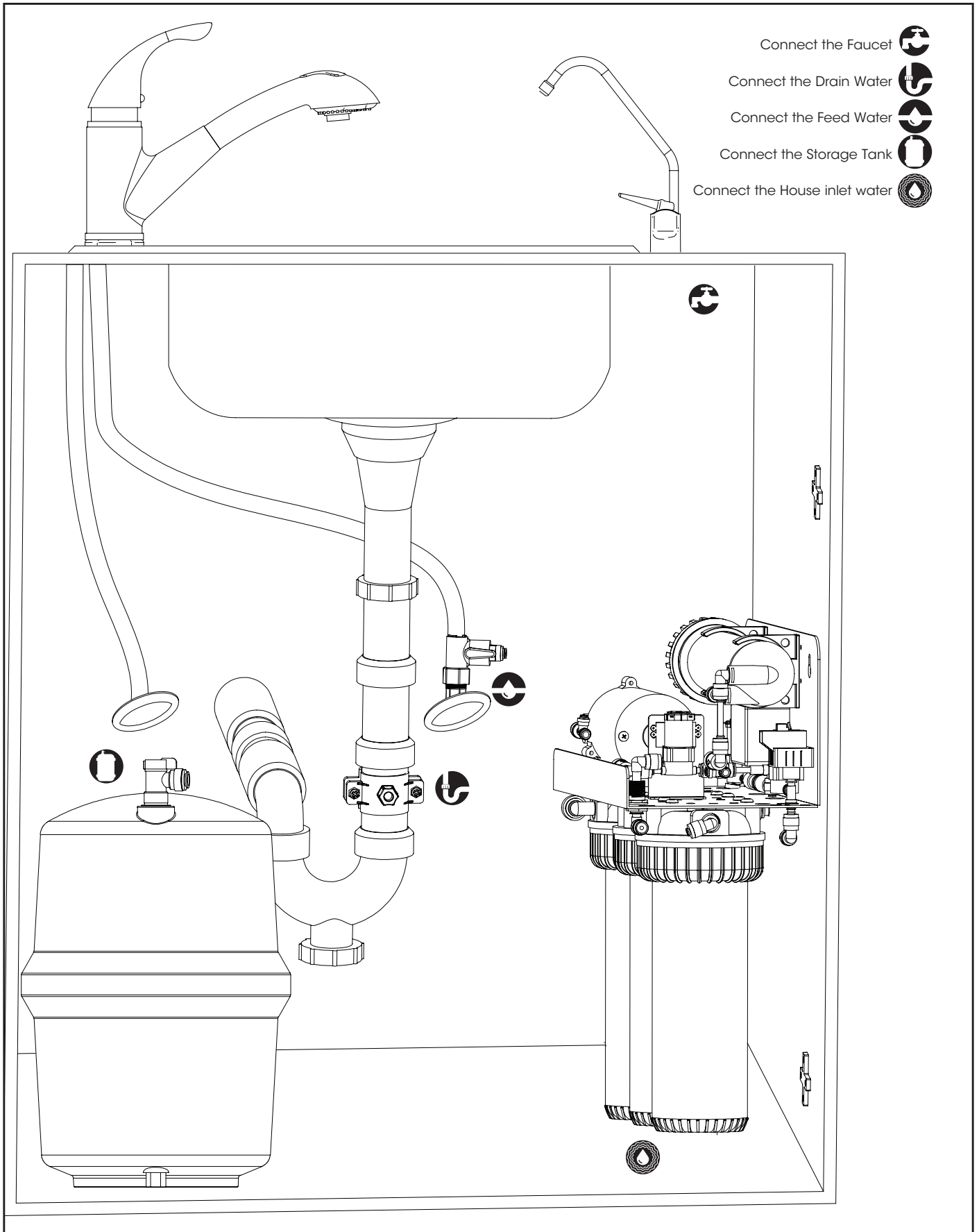


**5a.** Attach 3/8" Tubing to Faucet



**5b.** Attach Tubing to Drinking Water Faucet

# Tube Connections on Non Air Gap Faucet



## Step 7 – Start-Up

1. Sanitize the storage tank (see page 29 for sanitization procedure).
2. Check system to verify all components are correctly installed
3. Open inlet valve and tank valve.
4. Check system thoroughly for leaks. If any are found, shut off both inlet and tank valves and correct the issue.
5. Plug in power cord.
6. Allow system to run & fill tank for 1-2 hours. You will hear the booster pump running during this time. When booster pump stops running the tank will be full.
7. Open faucet to flush carbon fines & sanitization solution. Once the flow begins to slow down (around 20 minutes after opening) turn off the faucet.
8. Allow the tank to fill completely again.

**NOTE:** This preservative must be flushed from the membrane before use. If ingested it may cause irritation of the gastrointestinal tract, colic, diarrhea, or other similar symptoms. The manufacturer recommends discarding the first two full tanks of water. If no objectionable tastes are noticed after second tank draining, the RO processed water is ready for use. Otherwise, drain tank and refill for a third time.

9. System is ready to use

### NOTE

It is normal if the air gap faucet makes gurgling noises and drips small amounts of water during start-up procedure. This should subside once start-up procedure is complete.



### WARNING!

**DO NOT DRINK WATER PRODUCED BY THE SYSTEM UNTIL THE START-UP PROCEDURE HAS BEEN FOLLOWED COMPLETELY!**

## Performance & Technical Information

The performance of the H.E.R.O.™ system can be characterized and judged by the quality and quantity of the water produced by the system. By measuring the contaminant removal performance and flow rates of the system, its operating status can be easily evaluated.

### Factors Which Affect Performance

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

#### Pressure

Water pressure affects both the quantity and quality of the water produced by the RO membrane. Generally, the more water pressure, the better the performance of the system. Be careful not to go below 40 psi or exceed 70 psi, the minimum and maximum operating pressure of the system.

#### Temperature

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

#### Total Dissolved Solids

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

#### 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.

**NOTE**  
 Increased weight of the RO cartridge may be a foulant other than hardness.

## Service and Maintenance

### Service Schedule

To keep the H.E.R.O.™ system operating properly, it is necessary to change the filters and sanitize the system 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.

#### As needed

Clean the faucet with a soft cloth, avoid abrasive cleaners.

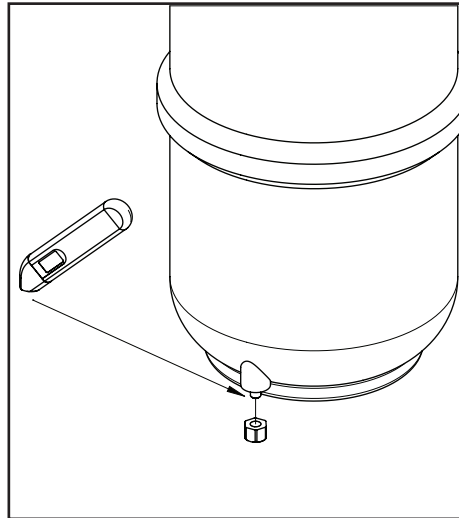
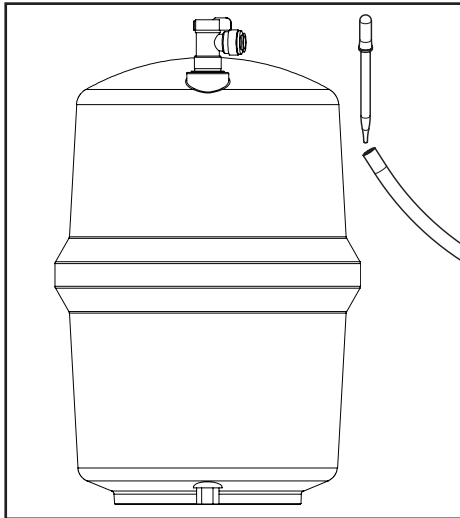
| At least once in 6 months  |                     |
|--|---------------------|
| Replace <ul style="list-style-type: none"> <li>• <b>Stage 1</b> Sediment Filter</li> <li>• <b>Stage 2 &amp; 4</b> Carbon Block Pre-Filter</li> </ul> |                     |
| At least once in 12 months   |                     |
| Check <ul style="list-style-type: none"> <li>• TDS of incoming and product water</li> <li>• Tank Pressure</li> </ul>                                 | Sanitize the system |

**NOTE**  
 The reverse osmosis membrane (Stage 4) Part is recommended to be changed once every three years or as needed.



# Plastic Tank Sanitization Procedure

## Tank Pressure Check



1. Turn off water supply to your RO system by turning off the adapter valve. Open the faucet to drain the storage tank.
2. Once the tank has emptied. Disconnect the tube from the ball valve on the storage tank.

3. Using a clean eye dropper insert 1/2 teaspoon of hydrogen peroxide or common household bleach into the tube.
4. Reconnect the tube to the ball valve. Follow the start up procedure and drain the first two full tanks of water.

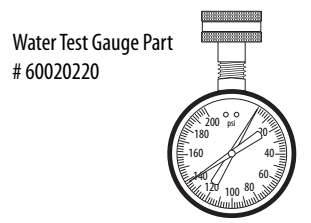
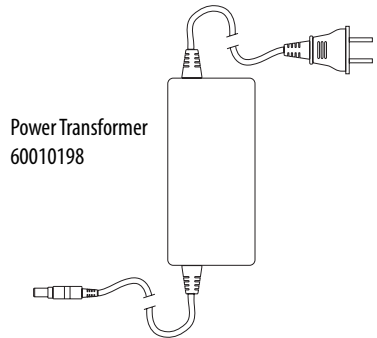
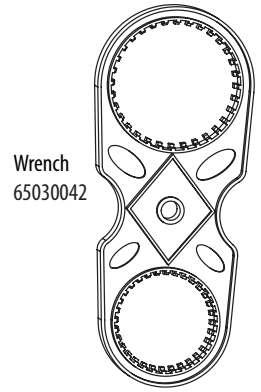
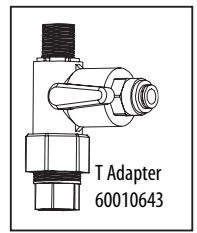
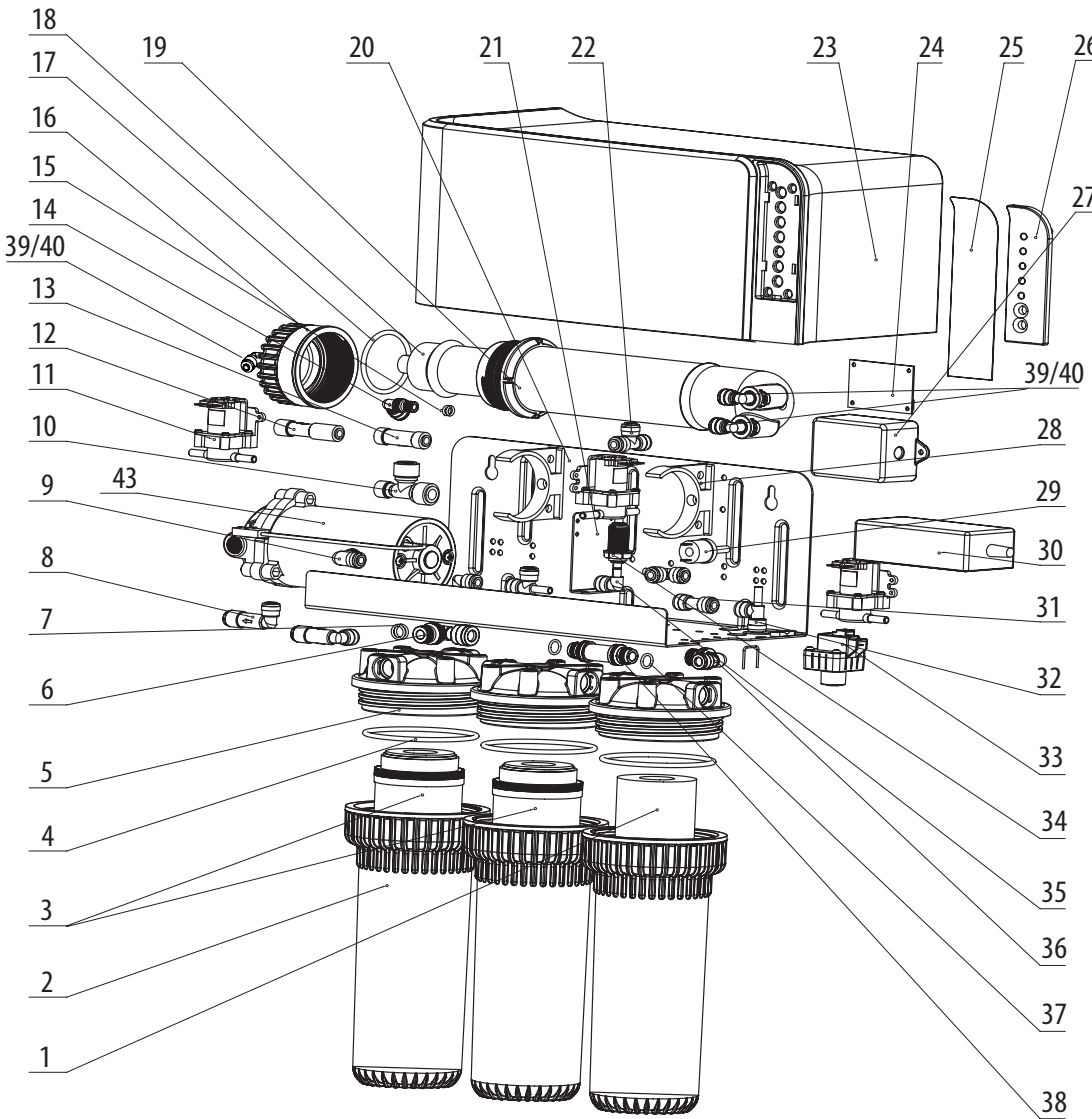
1. Turn off incoming water supply to RO.
2. Open RO Faucet and allow water to drain from the tank until it is completely empty.
3. Check that air pressure is between 5-7 psi using an air pressure gauge.
4. If the pressure is low use a bicycle pump to increase pressure to 5-7 psi.
5. Follow startup procedure.

## Sanitization of RO

**Turn off the water supply of the RO and shut the valve on the tank. Then open the faucet to depressurize the system.**

1. Depressurize the first sump
2. Add Sani System RO Pack (Part # 50035) to the first sump and screw the sump back
3. Turn on the water and open the tank valve and close the faucet. When tank is full, open the faucet to flush the system

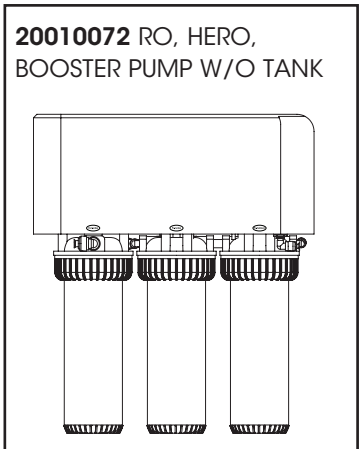
# H.E.R.O.™ Parts Breakdown



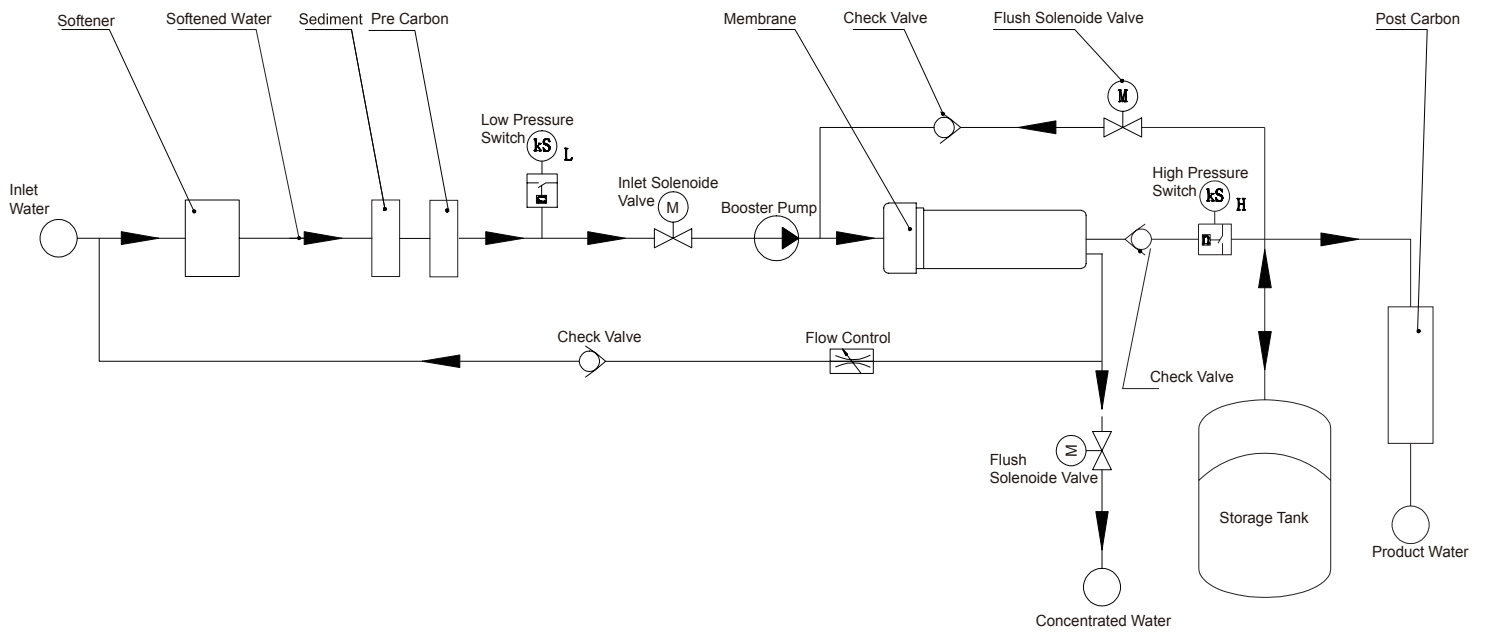
| No. | Part #   | Part Description           | Qty |
|-----|----------|----------------------------|-----|
| 43  | 70030035 | Booster Pump               | 1   |
| 42  | 60010198 | Power Transformer          | 1   |
| 41  | 65030042 | Wrench                     | 1   |
| 40  | 60095654 | Clip 1/4"                  | 1   |
| 39  | 60090034 | Elbow 1/4"/c/w O-ring      | 1   |
| 38  | 60095647 | Connect Tube               | 1   |
| 37  | 60095739 | Connect Tube O-ring        | 2   |
| 36  | 80010090 | Elbow 1/4" For Housing     | 2   |
| 35  | 60095740 | Elbow 1/4"                 | 4   |
| 34  | 60095741 | 1/4" Connector             | 1   |
| 33  | 60010199 | Low Pressure Switch        | 1   |
| 32  | 60095742 | T-Connector 1/4"           | 4   |
| 31  | 60095750 | Straight Connector 1/4"    | 1   |
| 30  | 60095645 | Power Transformer 24V 2.5A | 1   |
| 29  | 60095743 | High Pressure Switch       | 1   |
| 28  | 60095653 | Large Clamp                | 2   |

| No. | Part #   | Part Description         | Qty |
|-----|----------|--------------------------|-----|
| 27  | 60095640 | Controller Box           | 1   |
| 26  | 60095744 | Cover of Indicator Light | 1   |
| 25  | 60095745 | Face label               | 1   |
| 24  | 60095746 | RO Controller Board      | 1   |
| 23  | 60095747 | Cover                    | 1   |
| 22  | 60095748 | T-Connector 1/4"         | 1   |
| 21  | 60095749 | Solenoid Valve Bracket   | 1   |
| 20  | 60095646 | Bracket BNT-R075-C04     | 1   |
| 19  | 70030043 | RO Membrane Housing      | 1   |
| 18  | 92022    | RO Membrane              | 1   |
| 17  | 60020145 | Housing Cap O-ring       | 1   |
| 16  | 70030044 | RO Membrane Housing Cap  | 1   |
| 15  | 60010731 | QC O-ring                | 6   |
| 14  | 60010202 | Union Elbow 1/4          | 3   |
| 13  | 1/45CV   | Check Valve 1/4"         | 1   |

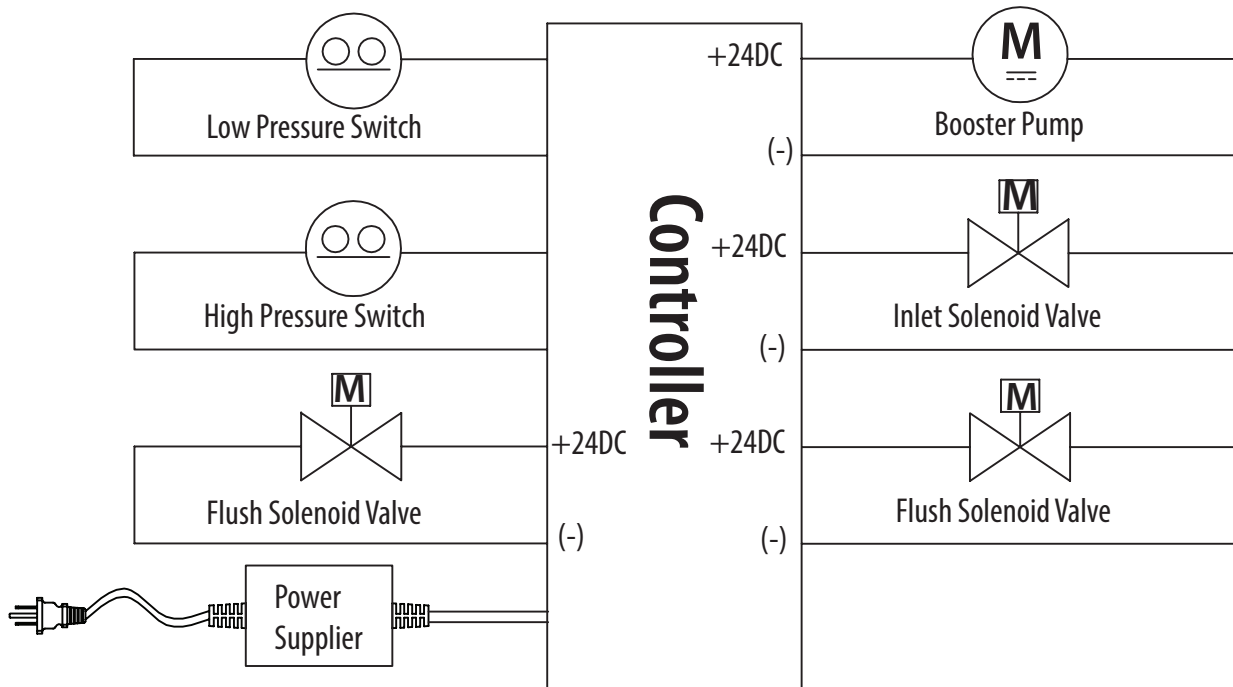
| No. | Part #   | Part Description              | Qty |
|-----|----------|-------------------------------|-----|
| 12  | 60095751 | Flow Control 1500cc           | 1   |
| 11  | 60010201 | Inlet Solenoid Valve          | 3   |
| 10  | 60095752 | T-Connector                   | 1   |
| 9   | 60095753 | Elbow Connector               | 2   |
| 8   | 60095754 | L-Style Check Valve           | 2   |
| 7   | 60095755 | Union Elbow O-ring            | 8   |
| 6   | 80010094 | Union Elbow 3/8"              | 2   |
| 5   | 65021121 | Housing Cap                   | 3   |
| 4   | 60020146 | Cartridge Housing O-ring      | 3   |
| 3   | 36012    | Carbon Block Filter Cartridge | 2   |
| 2   | 65021122 | Cartridge Housing-10          | 3   |
| 1   | 36198    | Sediment Filter Cartridge     | 1   |



# Flow Sequence



# Electrical Schematic



# Troubleshooting Guide

If a problem cannot be corrected through the use of this troubleshooting guide please have the following information ready prior to calling the 1-800 number on the back of this manual:

- Serial #
- Model #

| Problem   | Possible Cause                                   | Remedy   |
|---|--|--|
| 1. Insufficient quantity of product water available to service. | a. Service greater than unit's specified output. | a. Use optional large tank for more storage capacity.  |
|   | b. Insufficient feed water flow.                 | b. 1. Clogged shut-off valve or feed tubing; clean out or replace.<br>2. Clogged prefilter; replace.<br>3. Clogged manifold; clean or replace. |
|   | c. Insufficient feed water pressure              | c. 1. Same as (b) above.   |
|   | d. Increase in feed water TDS.                   | d. 1. Same as (a) above.   |
|   | e. Reduced feed water temperature.               | e. Same as above.  |
|   | f. Plugged prefilter.                            | f. Replace filter element.   |
|   | g. Plugged polishing filter.                     | g. Replace polishing filter.   |
|   | h. RO membrane fouled with sediment.             | h. Replace RO membrane and prefilter elements.   |
|   | i. Shutoff malfunction.                          | i. Clean or replace shutoff.   |
| 2. Poor product water quality.                                  | a. All of (1) above except (a) and (e).          | a. All of (1) above except (a), (e), and (g).  |
|   | b. RO membrane filter worn out.                  | b. Replace RO membrane.  |
|   | d. Shutoff malfunction.                          | d. Replace shutoff.  |
| 3. Bad tasting product water.                                   | a. Decrease in product quality; see (2) above.   | a. Same as (2) above.  |
|   | b. Foreign matter in storage tank.               | b. Clean, sanitize, and flush storage tank.  |
|   | c. Polishing filter exhausted.                   | c. Replace polishing filter  |
|   | d. Plugged capillary tube.                       | d. Replace capillary tube; replace prefilter, if necessary.  |
|   | e. Storage tank bladder is ruptured.             | e. Replace storage tank and check recharge pressure.   |

| <b>Problem</b>                                   | <b>Possible Cause</b>   | <b>Remedy</b>  |
|--|---|--|
| 4. External leakage.                             | a. Tubing not fully seated in fitting   | a. Check all fittings for tightness.   |
|  | b. Tubing abraded in seal area.   | b. Recut tubing and redo connection.   |
| 5. Overflow at faucet air gap (gurgling sounds). | a. Concentrate tubing plugged.  | a. Clean concentrate tubing of debris.   |
|  | b. Air gap plugged.   | b. Clean with vinegar and/or soap.   |
|  | c. Concentrate tubing not in continuous downward slope.   | c. Eliminate loops or low spots in tubing.   |
|  | d. Obstructed home drain pipe.  | d. Free obstruction.   |
| 6. Foaming at faucet tip.                        | a. Storage tank is positioned on side (Dissolved air cannot escape.)  | a. Place tank in vertical position.  |
| 7. Foaming at air-gap                            | a. Concentrate tubing connected to same drain line as dishwasher, etc.  | a. Find different drain for system.  |
|  | b. When sink is full of soapy water and plug is pulled, can back up at air-gap.   | b. Obstructed home drain, free obstruction.  |
|  | c. Obstructed home drain.   | c. Free obstruction.   |
| 8. Bad smell from product water.                 | a. Polishing filter exhausted.  | a. Replace polishing filter.   |
|  | b. Prefilter element.   | b. Replace filter element.   |
|  | c. Unit needs disinfection.   | c. Sanitize unit.  |
| 9. Fast flow to drain.                           | a. Defective flow control assembly.   | a. Replace flow control assembly.  |
| 10. Black specks in product water.               | a. Carbon fines.  | a. Flush polishing filter.   |
| 11. Low faucet pressure.                         | a. Inadequate pre-charge pressure in storage tank.  | a. Determine the minimum pressure using the 70% guideline.   |
|  | b. Polishing filter plugged.  | b. Replace polishing filter.   |
| 12. Flow control plugging.                       | a. Excessive turbidity.   | a. Install another 5 micron filter in series with existing one or substitute carbon block filter for granular activated carbon filter. |
|  | b. Iron fouled.   | b. Pretreat for iron removal.  |
|  | c. Iron-bacteria fouled.  | c. Sanitize plumbing.  |
| 13. Pump short cycling on & off.                 | <p>If the ball valve on the storage tank is closed the pump on the H.E.R.O. RO system will cycle on and off. This is normal. The ball valve on the storage tank must remain open for proper operation of the pressure/check valves on the H.E.R.O. RO.</p> <p>Cycling of RO is normal when the ball valve on the storage tank is closed, because the water in the product tubing is minimal and gets used up quickly on the drain line causing RO to start the booster pump and make product water again.</p> |  |

# Canature Watergroup Guarantee

Subject to the conditions and limitations described below, Canature WaterGroup warrants its H.E.R.O.™ Drinking Water Treatment Systems (excluding membrane and cartridge filters), when installed in accordance with the specifications, to be free from defects in materials and workmanship under normal use within the operating specifications for a period of Two (2) years from the date of purchase (with bill of sale). This warranty shall apply to the original end-user of the system only.

Other than the membrane and cartridge filters, any part found defective within the terms of this warranty will be repaired or replaced by Canature WaterGroup. If any part is found defective, Canature WaterGroup also reserves the right to replace the drinking water appliance with a comparable Canature WaterGroup drinking water system of equal or greater quality. You pay only freight for repaired or replaced parts from our factory.

This warranty shall not apply to any part damaged by accident, fire, flood, freezing, Act of God, bacterial attack, membrane fouling and/or scaling, sediment, misuse, misapplication, neglect, alteration, installation, or operation contrary to our printed instructions, or by the use of accessories or components which do not meet Canature WaterGroup specifications. If the drinking water system is altered by anyone other than Canature WaterGroup the warranty shall be void.

ALL IMPLIED WARRANTIES, INCLUDING WITHOUT LIMITATION WARRANTIES OF MERCHANTABILITY AND FITNESS FOR PARTICULAR PURPOSE, ARE LIMITED TO THE DURATION OF THE PERIOD SPECIFIED ABOVE FOR THE PARTS DESCRIBED IN THIS LIMITED WARRANTY.

As a manufacturer, we do 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. For these reasons, we assume no liability for the determination of the proper equipment necessary to meet your requirements, and we do not authorize others to assume such obligation for us. Further, we assume no liability and extend no warranties, express or implied, for the use of this product with a non-potable water source or a water source which does not meet the conditions for use as described in this Owners Guide.

CANATURE WATERGROUP'S OBLIGATIONS UNDER THIS WARRANTY ARE LIMITED TO THE REPAIR OR REPLACEMENT OF THE FAILED PARTS OF THE DRINKING WATER SYSTEM, AND WE ASSUME NO LIABILITY WHATSOEVER FOR DIRECT, INDIRECT, INCIDENTAL, CONSEQUENTIAL, SPECIAL, GENERAL OR OTHER DAMAGES, WHETHER FROM CORROSION OR OTHER CAUSES.

Some states do not allow limitations on how long an implied warranty lasts, so the above limitations may not apply to you. Similarly, some states do not allow the exclusion of incidental or consequential damage, so the above limitation or exclusion may not apply to you. This warranty gives you specific legal rights, and you may have other rights that vary from state to state.

## INSTALLATION INFORMATION

Serial Number: \_\_\_\_\_

Installation Date: \_\_\_\_\_

Installed By: \_\_\_\_\_

# Reverse Osmosis Drinking Water System Maintenance Record

Installation Date: \_\_\_\_\_

Use this chart to record the dates of any cartridge changes. It is meant to assist you in keeping track of this maintenance.

| <b>Sediment Cartridge</b> | <b>Carbon Cartridge</b>   | <b>TFC RO Membrane</b> | <b>Sanitization Procedure</b><br>(refer to instructions) |
|---------------------------|---------------------------|------------------------|--|
| <b>3 Sump Models</b>      | <b>3 Sump Models (x2)</b> | <b>Refer to Model</b>  | <b>All Models</b>  |
| Every 6-12 months         | Every 6-24 months         | 24-36 months*          | Every 6-12 months  |
|                           |                           |                        |  |

\* The replacement frequency of the R.O. membrane is somewhat dependent on the feed water quality. If the product water quality has decreased or the production of water had dropped off, the membrane requires replacement.

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