January 2025

WRO3000 Installation Guide

wash water
where water has no limits

READ THIS PAGE BEFORE STARTING INSTALLATION

- You must read and understand the contents of this manual before installing or operating your WRO3000 system.
  Personal injury or property damage could result if you fail to follow instructions in this manual.
- This system and its installation must comply with all appropriate water byelaws.
- This RO system must be operated between water pressures of 1bar and 4bar. If the water pressure is higher, use a pressure reducing valve in the water supply line to the RO system.
- This unit must be operated at temperatures between 5-38°C (41-110°F)
- Do not use this RO system on hot water supplies.
- Do no install this unit where it may be exposed to wet weather, direct sunlight, or temperatures outside the range specified above.
- Do not use water that is microbiologically unsafe and without adequate disinfection before or after this system.
- This publication is based on information available at the time of printing. Continuing design refinement could cause changes that may not be included in this publication.
- This system can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning the use of this system in a safe way and understand the hazards involved.
- Children should not play with the appliance.
- Cleaning and user maintenance shall not be completed by children.

WRO3000 SYSTEM SPECIFICATIONS

Model		WRO3000
Water Supply		Potable Water
Feed Line Pressure		1bar to 4bar
Product Flow	Pure Faucet	2L/min
Salt Rejection		≥93%
Recovery		≥65%
Feed Water Temperature		5-38°C
Ambient Humidity		≤90%
Sound Level		≤55dB
Electrical	Input	100-240V AC 50/60Hz 3A
	Output	DC24V 5A
	Power Used	120W
Membrane	Type	Thin Film Composite Membrane
	Rating	800us-gpd
Connections	Pure	1/4” Speedfit
	Inlet	3/8” Speedfit
	Drain	1/4” Speedfit
	Power	Quick Connect Power Cable
Accessories		Faucet and Installation Kit Included
Gross Weight		15Kg
Product Dimensions (WxDxH)		130*397*376mm
Carton Dimensions (WxDxH)		358*476*440mm

- Salt rejection and product flow are variable and can be affected by temperature and feed water conditions.

Model	Stage 1	Stage 2	Stage 3	Stage 4	Faucet
WRO3000	Sediment Filter	Pre Carbon-Block Filter	Reverse Osmosis Membrane	Post Carbon Block Filter	SS Steel
	5 micron	CTO	800us-gpd	CTO	

PERFORMANCE & TECHNICAL INFORMATION

The performance of the WRO3000 system can be characterised and judged by the quality of the water produced by the system. By measuring the contaminant removal performance and flow rates of the system, its operating status can be easily evaluated.

Factors which affect performance

Performance of the reverse osmosis membrane is affected by several factors which must be considered when judging the condition of the system. The main factors which affect the systems performance are pressure, temperature, total dissolved solids (TDS) levels, 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.

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 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 (TDS)

The minimum driving force which is necessary to stop or reverse the natural osmosis process is termed osmotic pressure. As the TDS levels increase in the water, the amount of osmotic pressure increases and acts

as back pressure against reverse osmosis processes. Osmotic pressure becomes significant with TDS levels are above 500mg/l (ppm).

Hardness

Hardness is the most common membrane foulant. If ignored, the relatively harmless component of feed water will scale a membrane over time. The use of a softener will reduce the fouling effect on the membrane. One way to detect too much hardness in the feed water is the weight of a membrane installed for a period. 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 is a range of iron types, some 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 1micron filter. Organic-bound iron can be removed only by activated carbon or macroporous anion resin. If there is enough iron to exceed 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 help with this issue.

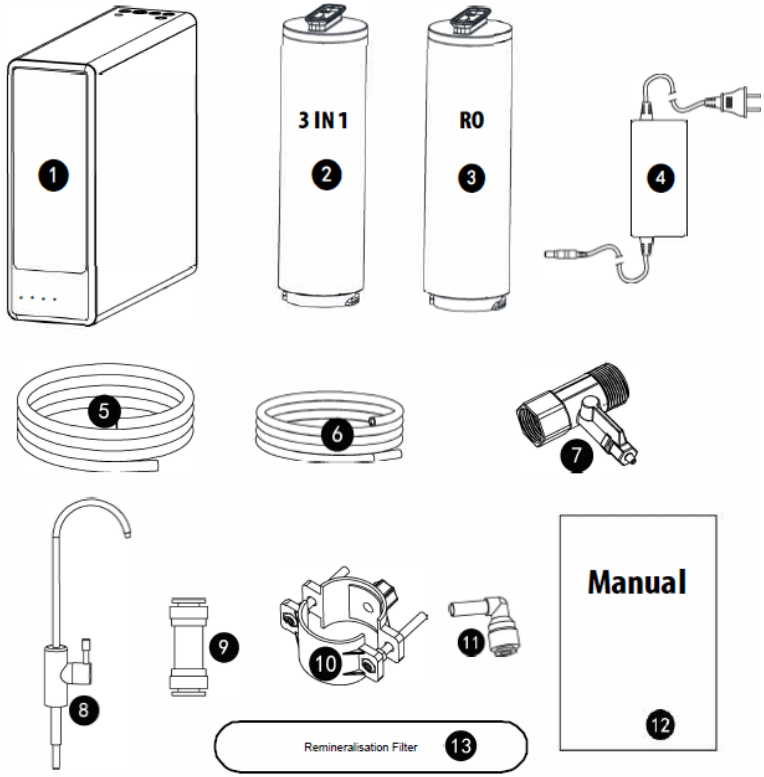
Product Water Recovery

Product water recovery plays an important role in determining membrane and system performance. Recovery refers to the amount of water produced in relation to the amount of water sent to drain. The standard calculation is. Recovery % = Product Water / (Product Water + Wastewater) x 100.

The system uses a flow control assembly to restrict the flow of wastewater the drain. This restriction helps maintain pressure against the membrane. The sizing of the flow control assembly determines the recovery rating of the system. The system is designed with a recovery

rating higher than 36%. Depending on temperature, pressure and water quality, the actual recovery value may be slightly different on each system.

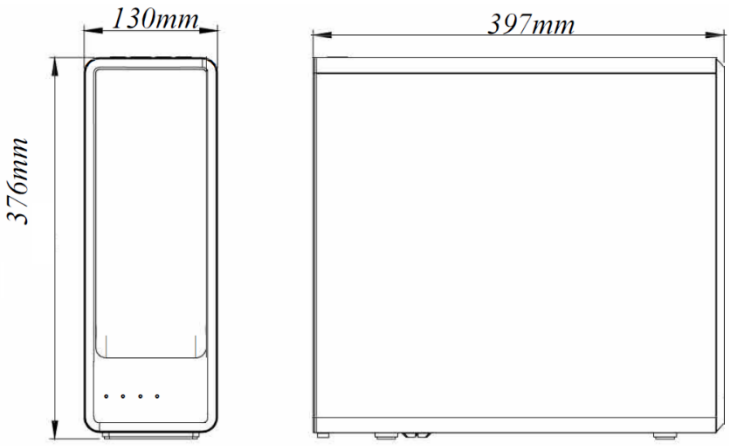
PACKAGE CONTENTS



1. RO Module Assembly	6. 1/4” Tubing	11. Stem Elbow
2. 3 in 1 Filter Cartridge	7. Three-Way Valve	12. Manual
3. RO Filter Cartridge	8. Faucet	13. Remineralisation Filter
4. Power transformer	9. Faucet Connector	
5. 3/8” Tubing	10. Drain Clamp	

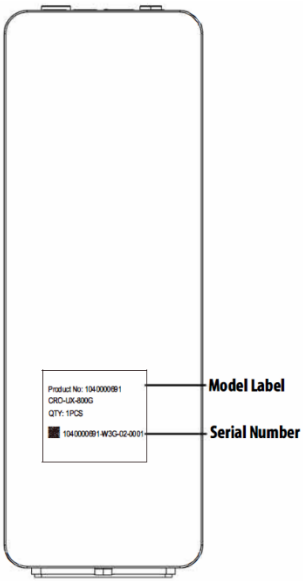
SYSTEM DIMENSIONS AND SERIAL NUMBER

Dimensions

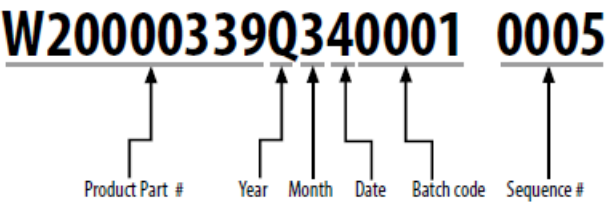


Serial Number

The serial number is located on the rear of the WRO3000 system.



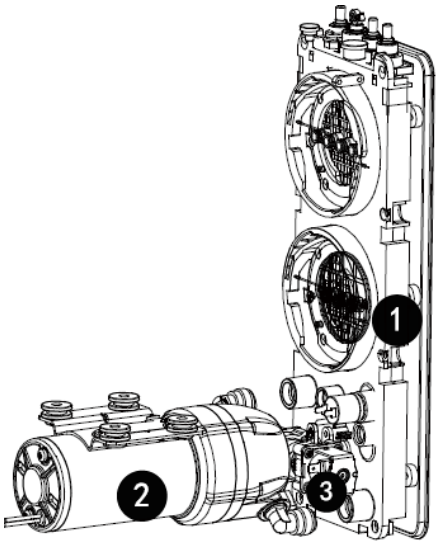
How to read your serial number:



(W20000339): Product part #
(Q)YEAR: "Q" stand for year 2020,"P" stand for year 2019, "O" stand for year 2018, "N" stand for year 2017, "M" stand for year 2016...
(3)MONTH: 1(JAN), 2(FEB), 3(MAR), 4(APRIL), 5(MAY), 6(JUNE), 7(JULY), 8(AUG), 9(SEP), A(OCT), B(NOV), C(DEC)
(4)DATE: 1 2 3 4 5 6 7 8 9 (A)10 (B)11 (C)12 (D)13 (E)14 (F)15 (G)16 (H)17 (I)18 (J)19 (K)20 (L)21 (M)22 (N)23 (O)24 (P)25 (Q)26 (R)27 (S)28 (T)29 (U)30 (V)31
(0001): Batch code
(0005): Sequence #

SYSTEM OVERVIEW

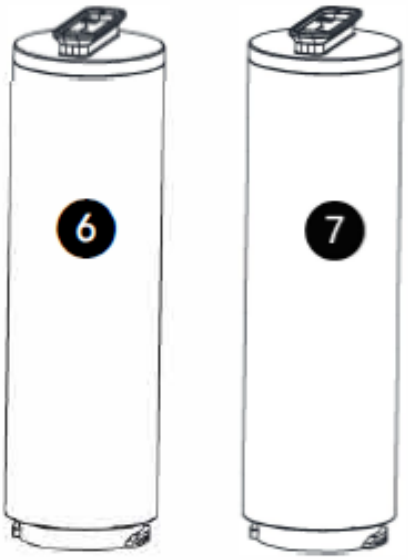
1. **RO Manifold Assembly**
   The manifold assembly serves as the functional hub of the WRO3000 system by directing the flow through each of the system's main components
2. **Booster Pump**
   The built-in booster pump improves the production rate and reduction of dissolved substances from the water.
3. **Automatic Solenoid Valve**
   The automatic solenoid valves are controlled by the program settings, they are used to control the flow of water.



4. **Low Pressure Switch**
   The low-pressure switch ensures the booster pump runs safely. It will shut off the power to avoid the booster pump 'running dry' if feed pressure is less than 0.5bar.

5. **High Pressure Switch**
   As the faucet is closed, the high-pressure switch will shut off the power to stop the booster pump from running.

6. **3 in 1 Filter**



The 3 in 1 Filter assembly integrates the PP filter, pre-carbon filter and post carbon filter into one cartridge. The PP sediment filter screens our particulate material, such as dirt, sand, or rust, which may clog the other filters in the system.

The pre-carbon filter reduces chlorine which may damage the RO membrane filter. It must be checked regularly to prevent premature membrane failure and poor water quality.

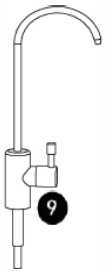
The post carbon filter absorbs any residual bad tastes and odours just before the water is delivered through the faucet.

7. **Reverse Osmosis Membrane**

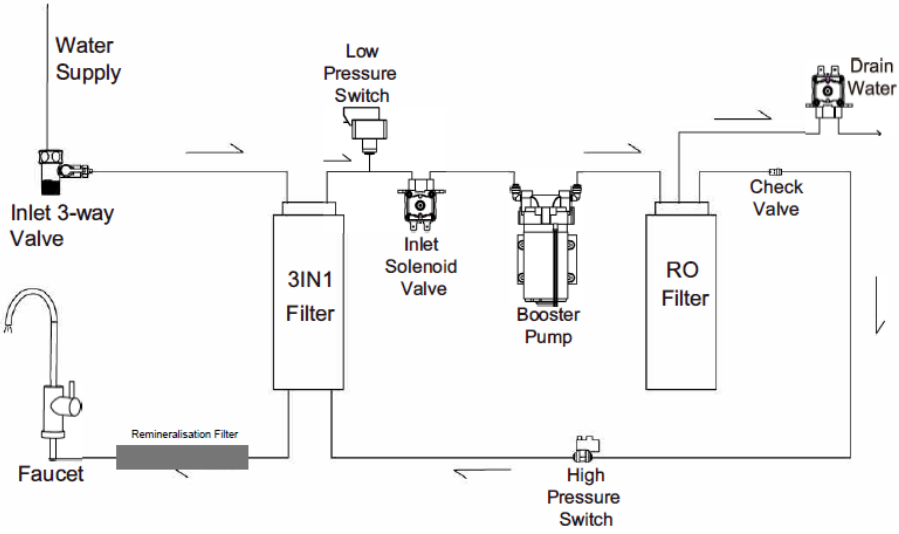
The RO membrane reduces dissolved substances and other microscopic impurities. It consists of a membrane envelope would around a perforated tube. Product water diffuses through the membrane to the inside of the envelope where it flows to and is collected by the tube. Impurities are flushed away via the drain. The RO membrane in the WRO3000 system offers exceptional contaminant rejection, application versatility and long-life expectancy. The membrane is sensitive to attach by chlorine, therefore it is imperative the 3 in 1 filter is maintained properly to prevent premature failure of the RO membrane.

8. **Remineralisation Filter**
   The remineralisation filter adds essential minerals back into the water produced by the RO system. Helping improve taste and helps maintain pH level.

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

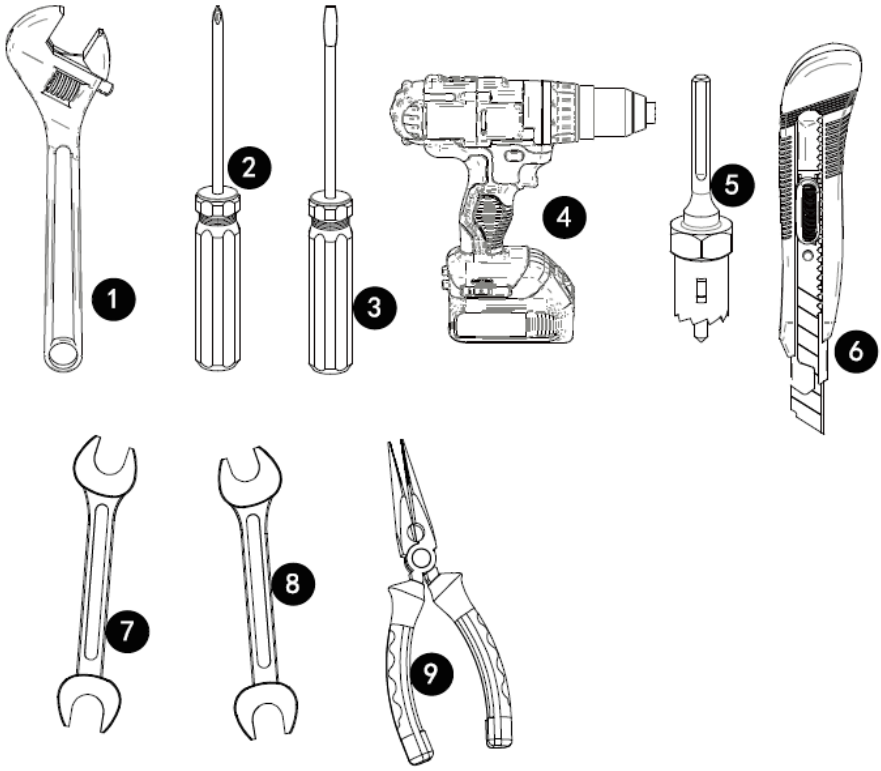


Flow Sequence



INSTALLATION

Suggested Installation Equipment



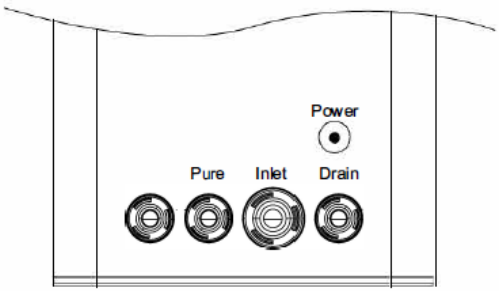
1. Adjustable Wrench
2. Phillips Screwdriver
3. Flathead Screwdriver
4. Electric Drill
5. Hole Saw
6. Utility Knife
7. Wrench – 14-16mm
8. Wrench 19-21mm
9. Pliers

NOTE	Installations may vary, some extra connection fittings may be required.

Tubing Connections

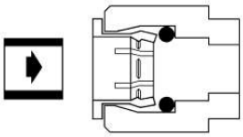
Familiarise yourself with the tubing connections on the manifold of the RO system.

1. **Pure** – Pure water to the remineralisation filter and faucet
2. **Inlet** – Inlet from the main water feed
3. **Drain** – Drain water from the RO system
4. **Power** – Power supply connection

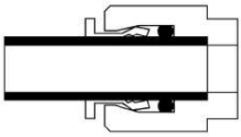


The following steps will enable you to install the system quickly and orderly. Some variations may be necessary depending on the installation.

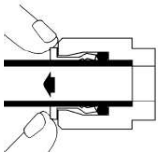
The WR3000 system features reliable and convenient speedfit tubing connections. Tubing is easily connected and disconnected from these fittings as follows.



1. Firmly push the tube in to attach, you should feel it pass the O ring.



2. Tubing is securely in place



3. Push in collar from both sides to release the tubing

NOTE	Use the blue securing clips for all tubing connection

Selecting WRO3000 Installation Location

When selecting the location for your RO system, please ensure there is access to the bottom of the faucet for the attachment of the water tubing.

There should be no under sink obstructions which could prevent smooth tubing runs to the inlet, faucet, remineralisation filter, drain connection, storage tankas and RO module assembly.

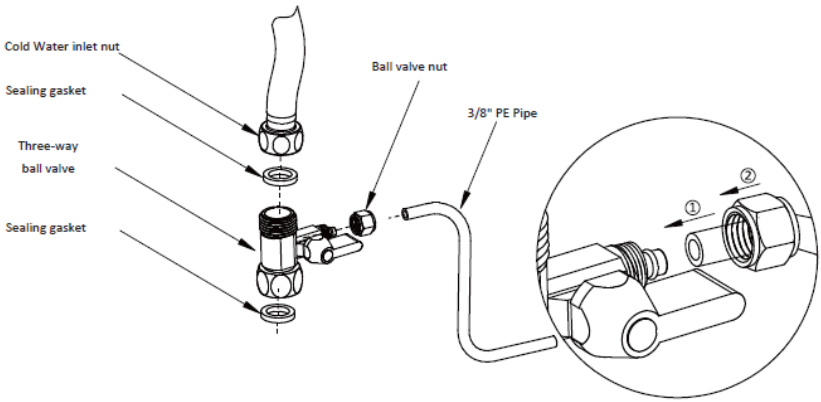
The RO system assembly is designed to be installed on the countertop, or under the sink. It should be positioned such that there is access to an inlet water source and drain. **The installation should also allow access for servicing and the replacement of filters.**

Be sure the floor under the RO system is lean, level and strong enough to support the unit.

Installing the Three-Way Valve

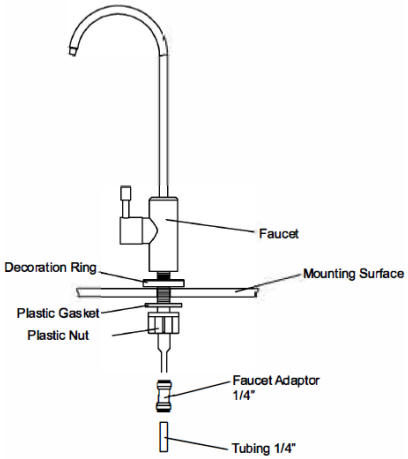
1. Turn off the water supply and open a cold water tap to release any water pressure in the pipe.
2. Disconnect the hose pipe and install the three-way valve on the cold pipe, using an adjustable wrench to tighten it securely (avoid over-tightening and damaging the pipe).
3. Connect the cold-water hose to the three-way valve and tighten it with an adjustable wrench (avoid twisting or damaging the seal on the cold-water hose during installation).
4. Insert the 3/8" tube (supplied) through the compression nut fitting on the three-way valve and press it onto the quick connect fittings on the cold-water pipe. Pushing it firmly until it reaches the end. Then, tighten the compression nut on the valve with an adjustable wrench.
5. Cut the 3/8" tubing to the required length. Chamfer and grease the other end and firmly insert into the INLET connection on the

WRO3000 system. Firmly pressing into the connection, approx. 1.5cm.



Faucet Installation

1. The faucet is designed to be mounted on the rear lip of the sink. It may be installed in an existing sprayer attachment hole (if the hole is the correct size), or a new hole can be drilled. It should be positioned so that the water is dispensed over the ink.
2. Make sure the surface is clean and level. Using a suitable 12mm drill bit, drill a hole in the desired location.
3. Install the tap as per the diagram below.

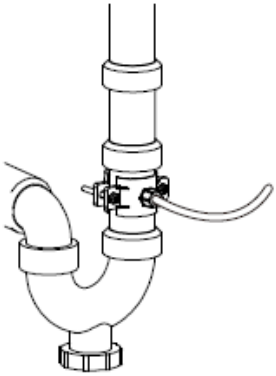


4. Tighten the nut until the faucet is securely held in place.
5. Grease the stem of the tap and take the faucet adaptor. Firmly push the adaptor on to the stem (approx. 1.5cm).
6. Select a location for the remineralisation filter, using 2 of the screws and bracket attach this too the wall.
7. Cut a piece of blue 1/4” tubing to go from the outlet of the remineralisation filter to the faucet adaptor. Make sure the tubing is chamfered and greased before firmly pushing it in to the speedfit connections (approx. 1.5cm)
8. Cut another piece of 1/4” tubing to go from the inlet of the remineralisation filter to the PURE port on the WRO3000 system. Make sure the tubing is chamfered and greased before connecting to the speedfit fittings.

Waste Water Connection

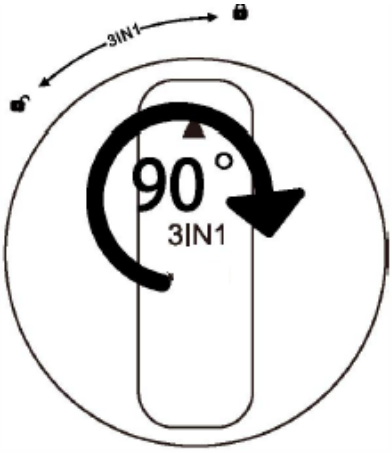
1. Connect the drain clamp to the waste pipe (40mm), ensure the tube connection is **NOT** at the bottom of any horizontal pipe.
2. Mark the pipe where the waste hole is to be drilled. Remove the clamp and drill the waste hole using a 6mm drill bit, making sure you do not go through both sides of the pipe.

3. Clear any debris and align the hole in the drain clamp with the hole you have drilled. Hold in position and tighten the drain clamp.
4. Chamfer and grease one end of the ¼" red tubing and insert this into the drain outlet on the WRO3000 system.
5. Use a pipe cutter to cut a suitable length of the ¼" red tubing, chamfer and grease the end and insert into the connection (Approx 1.5cm) on the drain clamp.



Installation Filter Cartridges

1. Remove the cartridges from the box and any other packaging.
2. Insert the 3 in 1 cartridge in the top hole, with the triangle icon pointing left, near the unlocked padlock
3. Gently press the filter element and rotate the filter 90°, until the triangle points at the locked padlock .



4. Follow the above steps for the RO membrane cartridge, but this is to be inserted into the bottom hole.

Start-up Procedure

1. Double check all connections are secure and in position.
2. Open the three-way valve.

3. Check the system thoroughly for leaks, if any found, shut the three-way valve and rectify.
4. Plug in the power cord and connect the power. Turn the unit on, it will start an initial flush for 30 seconds.
5. Open the faucet and let water flow through each filter element.
6. Flush the filters for 10minutes (leave the faucet open). It is normal to see black carbon fines in the water.
7. Close the faucet, make sure the pumps turn offs.
8. Check for leaks.
9. Reset the filter life by following the steps below.

Resetting the Filter Life Indicators

1. Press and hold the 'Reset' button for 3 seconds to enter the reset mode.
2. Press the 'Select' button to choose the filter element you are resetting.
3. Press and hold 'Reset' for 3 seconds, you will hear 2 beep sounds. This means the filter element life indicator has been reset.
4. Repeat this for both the 3 in1 and RO Membrane filters upon initial setup.

NOTE	If no button is pressed for 10 seconds, the system will exit the filter reset programme.

LED Display and Programming Guide

As the power is switched on, all lights will flash 3 times (Blue-Red-Blue) along with one beep sound. If no error is found, the system will start an automatic 30 second flush.

If the system is in standby mode, the lights will automatically switch off if the buttons are not operated for 1 minute.

Select button is used for:

1. Select the desired filter element to reset the filter life indicator
2. Press and hold 'Select' and 'Reset' button for 3 seconds to initiate an automatic 18 second flush.

Reset button is used for:

1. Press and hold 'Reset' button for 3 seconds to enter the filter life reset programme.
2. Press the 'Select' key to select the desired filter element life indicator you want to reset. Press and hold 'Reset' for 3 seconds to reset the filter life.

Filter Life Indicator

The filters life is indicated by the 3 in1 and RO lights on the front of the WRO3000 system. The lights will be blue when the filters are newly installed and still have life. As more water is treated, the filters will become exhausted. At this time, the light will turn red. The system and pump will continue to operate with a red light.

After the filter is replaced and the filter life is reset, the lights will turn back to blue.

Types of Filter Element Flush

1. **Power On** – RO system will automatically perform a 30 second flush when the unit is turned on
2. **Forced** – Press and hold ‘Select’ and ‘Reset’ buttons for 3 seconds. RO system will automatically flush for 18 seconds. Press ‘Select’ and ‘Reset’ buttons again to stop the flush.
3. **After Producing Water** – If the system produces water continuously ≥ 1 hour, there is no flush during this time. Once the faucet is closed, an automatic 18 second flush will happen. The system automatically resets the 1-hour countdown when any flush happens.
4. **Standy** – If the system is on standby for 24 hours, it will start an automatic 18 second flush.

SERVICE AND MAINTENANCE

Service Schedule

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

Filter Element	Service Schedule
3 in 1 Filter	6-12 Months
RO Membrane	12-24 Months

NOTE	Filter life may vary greatly depending on your water quality. The above schedule is only for reference.

NOTE	The WRO3000 is designed for household use only. Do not install the system where water usage is high.

When to replace your filters

When the water quality and taste is bad

TDS of the produced water is high

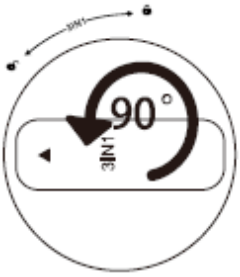
Product water rate decreases dramatically. 3 in 1 Filter or RO membrane may be clogged.

Filters are heavily clogged, almost no water is produced.

HOW TO REPLACE YOUR FILTERS

Replacing your filters

1. Close the Three-way valve to shut off the water supply.
2. Open the faucet to release any pressure.
3. Turn off the power supply.
4. Rotate the old filter element 90° anticlockwise and remove the old filter.
5. Insert the new filter into the correct hole on the manifold. The triangle symbol should face left initially.
6. Gently press the filter element and rotate 90° clockwise, ensure the triangle is facing the locked symbol .
7. Turn the power and water supply back on.
8. Flush the new filter for 10 minutes (leave the faucet open). It is normal to see carbon fines in the water at this stage.
9. Reset the filter life indicators by pressing and holding the ‘Reset’ button for 3 seconds to enter the filter life reset programme.
10. Press the ‘Select’ button to select the desired filter element life indicator you want to reset. Press and hold ‘Reset’ for 3 seconds to reset the filter life.



Additional Notes

Product flow rates are variable and can be affected by water temperature and pressure.

Disposal of the replaced filters should be in your general household waste. Filters cannot be recycled or reused.

TROUBLESHOOTING

Problem	Possible Solutions
1. Pump Not Running, No Product Water	
a. Power supply is not on	**a.** Plug in the power supply and wait for power to be restored
b. Transformer is damaged	**b.** Replace the transformer
c. Filter file is expired	**c.** Replace the filters
d. Leak detection by the system	**d.** Check the leak and rectify
e. System continuously produced water for 60 minutes	**e.** Unplug the power and re-plug it in.
f. Low incoming water pressure	**f.** Increase incoming water pressure to allow the low-pressure switch to activate
g. Low pressure switch is malfunctioning, power is not switched to pump.	**g.** Repair low-pressure switch or replace it
h. High pressure switch is malfunctioning and has not reset itself.	**h.** Repair high pressure switch or replace it
i. Pump is damaged	**i.** Replace the pump
2. Pump Continuously Running	
a. Pump is malfunctioning	**a.** Replace the pump
b. High pressure switch is malfunctioning	**b.** Repair or replace high pressure switch
3.Pump Continuously On & Off	
a. Low incoming water pressure	**a.** Increase the incoming water pressure
b. Low pressure switch is malfunctioning	**b.** Repair or replace low pressure switch
c. High pressure switch is malfunctioning	**c.** Repair or replace high pressure switch
d. Leak has been detected in the system	**d.** Find and fix the leak
4. Not Enough Produced Water	
a. Feed water valve is plugged or closed	**a.** Open the valve or unclog
b. 3 in 1 filter is clogged	**b.** Replace the filter
c. Low incoming water pressure	**c.** Increase incoming water pressure
d. RO membrane is clogged	**d.** Replace RO membrane
e. Faucet is faulty	**e.** Repair or replace the faucet
f. No water to drain, drain flow restrictor is clogged	**f1.** Replace the flush solenoid valve **f2.** Repair or replace the drain flow restrictor
5. Product Water has High TDS	
a. Clogged 3 in 1 filter	**a.** Replace the filter
b. RO filter is exhausted	**b.** Replace RO membrane
c. Pure water and drain line are reversed	**c.** Correct installation
d. No water to drain, drain flow restrictor is clogged	**d.** Replace flush solenoid valve

e. New 3 in 1 filter has not been flushed properly **f.** The incoming water TDS has increased	**e.** Open the faucet and flush for 10 minutes **f.** An increase in feed water TDS will also give an increase pure water TDS
6. Bad Taste and Odours in Water **a.** 3 in 1 filter is exhausted **b.** Pure water and drain line are reversed **c.** Increase of pure water TDS	 **a.** Replace 3 in 1 filter **b.** Correct installation **c.** Replace RO membrane
7. Faucet Leaks or Drips **a.** Water leaks from faucet spout	 **a.** Repair or replace faucet
8. External Leak on Connections **a.** Tubing not fully seated in fittings **b.** Tubing abraded in seal area **c.** O ring seals are aging	 **a.** Check all fittings are secured **b.** Recut and reattach connections **c.** Replace O Rings

WASH WATER WRO3000 GUARANTEE

We offer a 12-month parts only warranty on all reverse osmosis (WRO) units from the date of purchase, covering manufacturing and material and material defects when used as instructed. We will replace or repair defective components, but installation and on-site technician costs are not covered.

PLEASE NOTE – The guarantee has the following conditions, and is not covered by the following:

- Damage caused by high water pressure. A 5bar pressure limiting valve is required on the inlet where daytime static pressure exceeds 3.5bar.
- The WRO3000 is only suitable for potable water.
- Callouts due to incorrect installation. If you have any questions when installing, please call Wash Water on +44 (0) 1379 873 070.
- The use of any other hoses/tubing than those supplied with the unit.
- Improper use that violates the instructions provided in this manual and causes damage.
- Damage or malfunction caused by using the product beyond its specified operating conditions.
- Intentional or unintentional damage caused by the user.
- Damage caused by force majeure events (such as natural disasters, flood etc).
- Machines that have been repaired by unauthorised professionals.
- The use of parts or filters from a supplier other than Wash Water.
- Filters are not covered under guarantee. – Filter replacement plans are available.
- Any callouts within the warranty period that are due to external influences affecting the operation of the unit will incur a charge.

The above does not affect your statutory rights.

For Full Terms and Conditions visit our website – www.wash-water.uk/termsandconditions

CARTRIDGE PLANS

Save time and money and never miss a filter change by signing up to one of our cartridge plans. Contact Wash Water on +44 (0) 1379 873 070 or visit our website www.wash-water.uk to see the cartridge plans we have available.