APLOS

Instruction Manual
5 Stage Reverse Osmosis
Drinking Water System, 50gpd

Manufactured for EPS Group
aplos.ie

CE UK CA

Contents

1. Introduction

This drinking water system utilizes most advanced renowned reverse osmosis technology to purify water. It relies on the artificial reversing of the naturally occurring osmosis phenomena. The reverse osmosis membrane with a pore size of 0.0001 micron (0.1 nm), can effectively reduce bacteria, viruses, heavy metals, pesticide residue, lead, fluoride and other harmful substances. Produced water is fresh, pure and suitable for direct use.

NOTE:
Please read through the instructions carefully before using or installing the product. Ensure that the manual is kept in a safe place for reference.
The system must be properly installed and serviced in accordance with the instructions. We recommend that the system is installed by a trained professional.

Unpumped Model RO-N5050	**Pumped** Model RO-5050
For households with inlet water pressure from 3-6 bar	For households with inlet water pressure <3 bar

2. Feed Water and Operations Requirements

To achieve the optimal performance, it is highly recommended to use this system within the following operational parameters.

1	Water Supply	Municipal or pre-treated well water
2	Main Pressure (no booster pump), bar	3 - 6
3	Main Pressure (booster pump installed), bar	2 - 4.5
4	Pressure Tank, bar	0.4 - 0.6*
5	Inlet Water Temperature, °C	+4 - +30**
6	Water Supply Connection	1/2" Thread
7	Product dimensions, HxWxD (basic assembly) mm	350x450x150

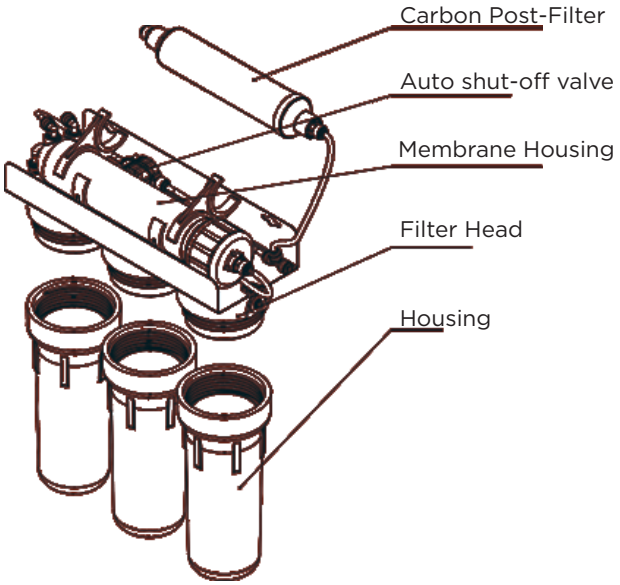
**If feed water pressure is below the requirements, pumped reverse osmosis should be installed. If the feed water pressure is above the limits pressure valve needs to be installed on the mains supply.*
***It is needed to pump up or release the pressure if it is outside the limits*

	Feed Water Quality Requirements	
1	Hydrogen Ion (pH)	6.5 - 8.5
2	TDS	<1500 ppm
3	Hardness	<500 ppm CaCO3
4	Free Chlorine	<0.5 ppm
5	Iron	<0.3 ppm
6	Manganese	<0.1 ppm
7	Chemical oxygen demand	<5 ppm O2
8	Total bacterial count	<50 CFU/mL
9	E. coli	<3

NOTE:
Do not use with water that is microbiologically unsafe or of unknown quality without adequate disinfection before or after the system.
If water supply does not meet the requirements, service life of membrane and/or pre-filter cartridges may be shortened.

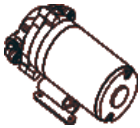
3. Product Specification

1) System Rack



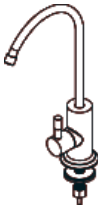
Options:

Booster Pump



2) Pressure Tank

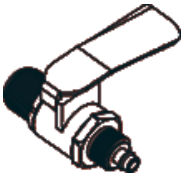
3) Drinking Water Faucet



4) Feed Water Adapter

3. Product Specification

5) Feed Valve

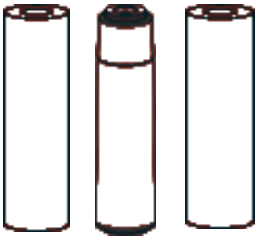


6) Tank Valve

7) Set of coloured tubes

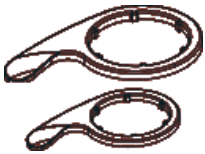
8) Drain Saddle

9) Set of pre-filter cartridges

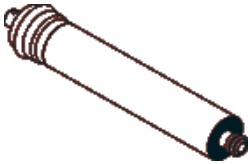


PP5 GAC PP1

10) Housing Wrenches



11) Reverse Osmosis 50 GDP membrane

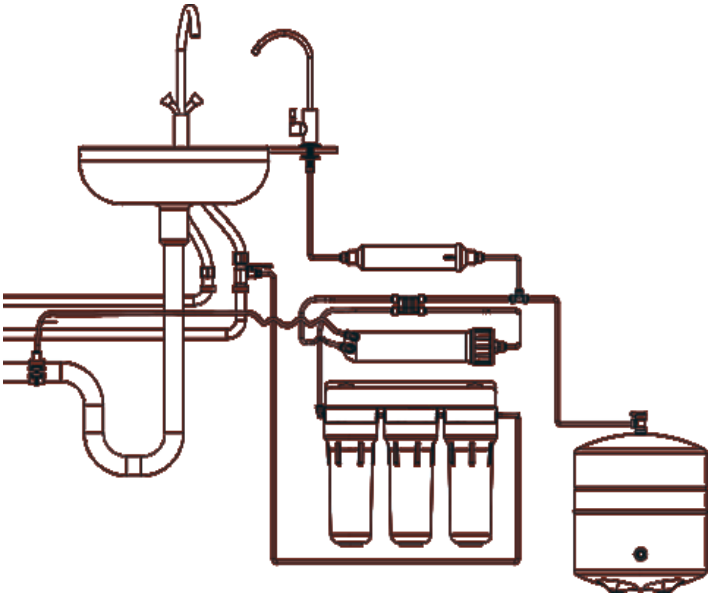


12) Flow Restrictor

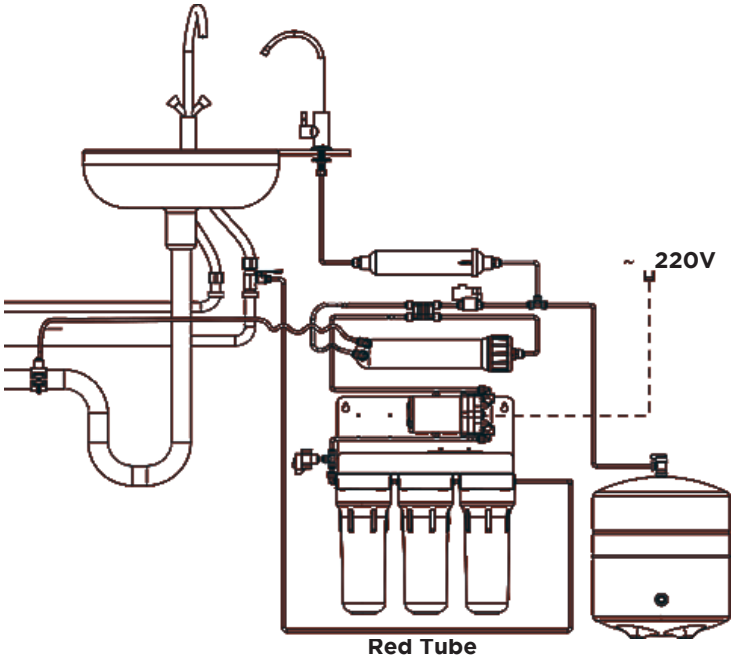
13) Locking clip: accessory securing push-fit connections from inadvertent disconnection in easily accessible locations

4. Installation Diagram

1) Model RO-N5050 Non Pumped 5-Stage Reverse Osmosis Drinking System



2) Model RO-5050 Pumped 5-Stage Reverse Osmosis Drinking System



5. Installation Instructions

BEFORE INSTALLATION CAREFULLY READ INSTRUCTIONS

This product should be used with cold water supply only!

1) Check that all parts are in the package.

2) Before installation, please check incoming water pressure, tank pressure and inlet water temperature. In certain installations the use of a PRV valve and surge vessel may be required.

3) Make sure feed water quality complies with the requirements from section 2. If feed water quality does not meet the requirements, consult with a water treatment specialist.

4) Before installing the system, make sure there is enough space for both the filter rack and the pressure tank under the sink. In case there is not enough available space, pres- sure tank can be placed in separately. Yellow tube's length is sufficient to connect it to the rest of the system.

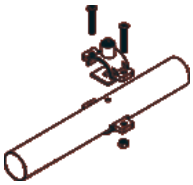
5) Electrical safety notice: This appliance should be connected into a circuit with an RCB installed. Please note voltage requirements. The unit is to be supplied with single-phase 230 VAC, 50 Hz electrical power.The system is supplied with power cord and can be connected to a properly installed IEC 60884-1 compliant socket.

6) Once installation has been completed and operational ensure that all fittings, pipework, and unit has been checked for any drips and leakage.

Always ensure unit is fitted in a safe and correct manner as outlined by this manual

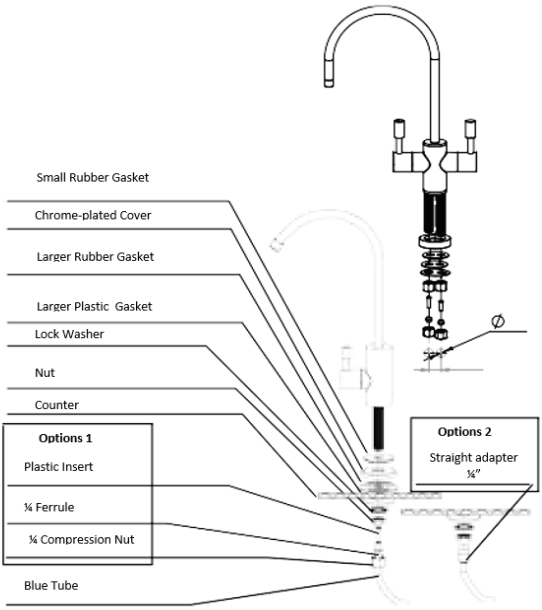
NOTE: ***This system has been tested by the manufacturer for leaks, so within the system the presence of residual water is allowed. This system should be installed away from direct sunlight and heating appliances.***

6. Installation Steps

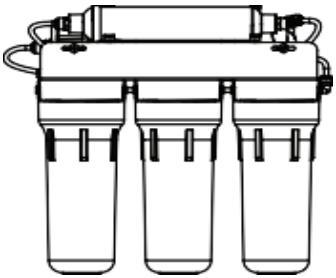
1	Shut off water supply in your kitchen or whole home and open water tap where you are about to install the system (on your kitchen sink) for 1 minute to relieve pressure in the system, and then close it.
2	Screw the feed water adapter **4** into the cold water plumbing. Screw the feed valve **5** into the feed water adapter **4**. To help prevent water leaks use plumber sealing tape.
3	Unscrew the compression nut from the feed valve **5** and put it on the red tube. Push the red tube on the end of feed valve's fitting and screw on the compression nut. Connect the free end of the red tube with the quick connect fitting of the first (rightmost) housing in the rack.
4	Connect the drain saddle 8 with drain pipe from the kitchen sink. The drain saddle is compatible with most standard drain pipes. Drill a hole of 5.0 mm (0.2") diameter in the kitchen sink drain pipe, apply rubber gasket with sticky base (included in the package). Install the drain saddle 8 on the drain pipe over the hole. Tighten screws on drain saddle with a screwdriver. Insert black tube into the connection on the clamp (figure 4). Connect the other end of the black tube with concentrate outlet of membrane housing.  **CAUTION! Check if the flow regulator 12 is installed in the black tube in the end connected to membrane housing.**
5	Add 5-6 wraps of plumber tape to tank knob and hand tighten tank valve – do not overtighten. Close the tank valve. **IMPORTANT! Check air pressure in empty tank. Tank should be pressurized to 0.4-0.6 bar (5.8-8.7 psi). If necessary, use a pump with a pressure gauge to increase the pressure or push the core of the valve stem to relieve pressure.**

6. Installation Steps

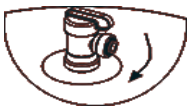
6	Tap Installation
6.1	To install drinking water faucet drill 12.5 mm (1/2”) diameter hole for single way tap in a convenient location at the sink or countertop. **Caution! metal shavings can damage your unit, remove them carefully as soon as you have drilled the hole. If the mounting surface is ceramic or stone, you may need a special carbide drill.**
6.2	Mount the faucet on the sink or countertop as shown on the figure. Nut, lock washer and plastic washer on the faucet shank must fix the faucet firmly on the surface.
6.3	Take the blue tube, put on compression nut, ferrule, and put plastic insert inside, in that order.
6.4	Push the blue tube as deeply as possible into the bottom of the faucet’s shank, ensuring the compression ring is in the joint. Screw on the compression nut in order to join the tube to the faucet.



6. Installation Steps

7	Select spot where you are going to install the filter andmake two holes. The distance between the holes in the wall must precisely correspond to that between the holes in the bracket. Allow for at least 100 mm (3.9”) gap between the bottom of the filter and floor. Install screw anchors if necessary and screw in two screws (not included). The distance between the holes is 272 mm (10.7”). **272 mm (10.7”)** 
8	Insert cartridges into the first and the second housings in the direction of water flow (leftwards).
9	Tighten all the three sumps by hand.
10	Unplug the tube that connects the third housing (in the direction of water flow) with the auto shut-off valve from the valve.
11	Open the water tap 5 and let through the first two pre-filters with cartridges 5-7 liters (1.5-2 gallons) of water to wash off the carbon fines (black in colour) that may appear in cartridges during shipping. Then close feed water valve before installing the third cartridge. **CAUTION! This water will pour through the tube disconnected from auto shut-off valve, prepare a vessel to collect it.**
12	Insert the cartridge into the third housing along water flow direction and attach the housing back again. Connect the free end of the tube back to the auto shut-off valve.
13	Install the membrane 11 into the membrane housing. **CAUTION! Cut the plastic bag to install the reverse osmosis membrane. Install the membrane without first unpacking it by pushing it into the housing directly from the bag. Avoid touching the membrane and only hold it covered with the bag.**

6. Installation Steps

14	Leave the feed valve 5 and purified water faucet 3 open for 30 minutes. Then open the tank valve 6. Close the faucet 3 and carefully check all connections for leaks. **CAUTION! The first week after installation, check the system daily for leaks, do it periodically in the future. If you are leaving for a long time such as for a business trip or vacation, shut off the water supply**.   A(1.1)  A 
15	Let the water tank get filled (you will hear the water stop flowing). Depending on the water pressure in your water mains may take 1.5 to 3 hours. After that drain all water from the tank by opening the faucet **3** until the flow goes to a drip or slow dribble. After the tank has been emptied, close the faucet **3** so that the tank starts re-filling. Depending on the pressure in your water mains, it may take 1.5 to 3 hours. After the tank is filled for the second time, you can use purified water. In the models of filters with a mineralizing post-filter the purified water can be slightly turbid after installation. Drain several additional tanks of purified water.
16	Initially your water may appear cloudy which is due to air in the system. If you leave the glass of water for a few minutes, the water will become clear as the air escapes. This is normal and will eventually clear as the air is eventually flushed out of the filters.

7. Operational Guidelines

When using the system for the first time, let purified water drain from the full water pressure tank.

It is highly recommended to replace filter cartridges regularly to ensure high quality of water purification.

It is recommended that you use the system at least twice a week to prevent microbiological contamination caused by the equipment lying idle for an extended period of time, which in turn might cause odors in the water.

If you did not use the system for a longer period (more than a week), before using purified water, follow the below steps:

1) turn off water inlet
2) cut off electricity
3) empty the water storage tank
4) turn on the inlet water and electricity

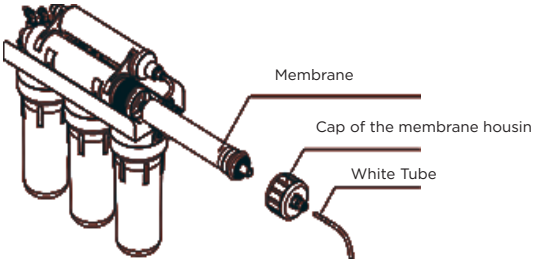
The system will begin reverse osmosis purification. If you did not use the system for long periods (i.e 1-2 months), replace the filters before using the machine.

Recommended Filter Replacement Schedule		
Stage 1	Sediment Filter PP5	6 months
Stage 2	Granular Activated Carbon Filter GAC	6 months
Stage 3	Sediment Filter PP1	6 months
Stage 4	RO Membrane	12 months
Stage 5	Post Carbon Filter	12 months

8. Filter Replacement Guide

1.	Shut off feed valve **5** and tank valve **6.** **CAUTION! Dissemble while under water pressure can result in flooding!**
2.	Wash your hands with antibacterial soap.
3.	Unscrew with the sump wrench 10 first and second sumps in water flow direction (right to left). Be careful as the sumps are filled with water.
4.	Remove the used filter cartridges.
5.	Wash housings with soap and a clean sponge, then rinse thoroughly with water.
6.	Insert the new cartridges in the first and second sumps by water flow direction.
7.	Disconnect the tube stemming from the third sump from the auto shut-off valve.
8.	Open the feed valve **5** and let through the first two installed cartridges 5-7 liters (1.5-2 Gallons) of water to rinse the coal dust that may be produced in cartridges during shipping. **CAUTION! This water will pour through the tube disconnected from auto shut-off valve, prepare a vessel to collect it.**
9.	Remove the third pre-filter's sump from filter head. Be careful as it is filled with water.
10.	Remove the used filter cartridge and wash the sump with unflavored soap and a clean sponge, then rinse thoroughly with water.
11.	Insert new cartridge into the third sump. Screw the sump back on and let through at least 4 more liters of water to flush the coal dust. Close the feed valve 5 and connect the previously separated tube with the auto shut-off valve.
12.	Open the tank valve 6.
13.	Open the feed valve 5.

9. Membrane Replacement Guide

1.	Turn off water supply to the system (feed valve **5**), shut off the tank valve **6**.
2.	Open the purified water faucet 3 to relieve permeate pressure.
3.	Disconnect the white tube from the inlet in membrane housing cap.
4.	Unscrew the membrane housing cap.
5.	Remove the used reverse osmosis membrane **11** (remember which end of the membrane goes where). 
6.	Lubricate rubber seals of the fresh replacement membrane and membrane housing cap sealing. **CAUTION! To avoid damage to the membrane, only use food grade glycerol as lubricant.**
7.	Install the fresh membrane into the housing, observing its direction and position of the tube. **CAUTION! Ensure to wear latex gloves when installing the reverse osmosis membrane. Avoid direct contact with the membrane.**
8.	Screw on the housing cap.
9.	Connect the white tube to the membrane housing inlet.
10.	Close drinking water faucet 3.
11.	Open the tank valve 6.
12.	Open the feed valve 5.
13.	Once the tank is full (you will hear the water stop flowing), drain all water from the tank into the sink by opening faucet 3. When the water stops running, close the purified water faucet 3 so that the tank starts to re-fill. Depending on the pressure in your water mains, filling may take 1.5 to 3 hours. After the second tank re-fill, you can safely use the purified water.

10. Troubleshooting

Problem	Cause	Solution
Fitting leak	Tube is not joined tightly	Remove and rejoin the tube
Drain saddle leak	Drain saddle is not installed properly	Reinstall drain saddle as described in paragraph 4.2 in this manual
Pre-filter sump leak	O-ring seal is missing or misaligned	Check that the O-ring seal is properly aligned in the groove inside sump
	Housing is not joined tightly	Tighten the housing till snug
Water runs too slowly from the faucet or slows down substantially a few seconds after the faucet is opened	Pre-filter cartridges are clogged	Replace pre-filter cartridges
	Membrane is clogged	Replace the membrane
	A tube is kinked	Straighten the tube
	Pressure tank is deflated	Pressure in the empty tank should be 0.4-0.6 bar (6-9 psi). Charge the tank to the above pressure
High noise	Air in the auto shut off valve	The problem will remedy itself after a while in operation.
	Water supply pressure too high	Check your water supply pressure. If necessary, install a pressure gauge or contact a specialist
Auto shut-off valve is making noise	Pressure surges in water mains	Install a check valve on the main pipe in your kitchen or at the point of entry of your home's water supply. Contact a specialist

10. Troubleshooting

Problem	Cause	Solution
The system is constantly in operation mode (water is drained continuously)	Pre-filter cartridges are clogged	Replace pre-filter cartridges
	Membrane is clogged	Replace membrane
	Missing or misplaced flow restrictor	Flow restrictor must be installed in the tube running from membrane housing to drain. Flow restrictor must face membrane housing. If it faces drain saddle fitting, clean it and swap ends of the tube so that it is placed at the outlet of membrane housing. If flow restrictor was not installed, install one
	Failure of auto shut-off valve.	The RO system operating ceaselessly while the tank is full may be due to automatic shut-off valve failure.
	Failure of check valve in the transition fitting installed at membrane housing permeate outlet	Pressure in the empty tank should be 6-9 psi (0.4...0.6 bar). Pump the tank to the above pressure if necessary
	Pressure tank is deflated	Open drinking water faucet and let some water out. It is normal for the system to stand idle when the pressure tank is full of water
The system will not turn on (no water runs to sink drain)	Pressure tank is full	Open drinking water faucet and let some water out. It is normal for the system to stand idle when the pressure tank is full of water.
	Flow restrictor is clogged	Clean or replace flow restrictor
	Drain saddle fitting is not centered on drain pipe hole	Correctly position the drain saddle

11. Warranty

We hope that this product will serve you long and let you and your family enjoy high quality pure drinking water.

Product warranty period is 12 months from the date of purchase.

We guarantee that reverse osmosis water drinking system does not contain workmanship and material defects and no such defects will arise within warranty period from the date of purchase.

Warranty only applies if the system is installed, used and maintained in compliance with instructions and requirements enclosed with this system.

The warranty does **not** cover:

- replaceable elements (cartridges, reverse osmosis membrane, carbon post-filter, or other consumables included in the package);
- electrical equipment in ungrounded electrical systems or lack of voltage regulator where it is required;
- components that require replacement because of normal wear and tear;
- faults and problems that have arisen due to untimely replacement of consumable elements recommended in this manual.

All claims related to taste, smell, and other quality indicators of water purified by this system should only be filed with a water test report issued by an accredited laboratory.

Notes

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