



Ecosoft reverse osmosis system installation and operation manual

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1. Product data

Nomenclature

List of models

MO 5-36		MO 5-50		MO 5-75		MO 5-100	
MO 5-36P		MO 5-50P		MO 5-75P		MO 5-100P	
MO 6-36M		MO 6-50M		MO 6-75M		MO 6-100M	
MO 6-36MP		MO 6-50MP		MO 6-75MP		MO 6-100MP	
MO 6-36UV		MO 6-50UV		MO 6-75UV		MO 6-100UV	
MO 6-36UVP		MO 6-50UVP		MO 6-75UVP		MO 6-100UVP	
MO 7-36UVM		MO 7-50UVM		MO 7-75UVM		MO 7-100UVM	
MO 7-36UVMP		MO 7-50UVMP		MO 7-75UVMP		MO 7-100UVMP	

Table 1

MO *_** ***

1 **2** **3** **4**

1 - Filter type. **MO** stands for reverse osmosis.

2 - Number of stages.

3 - Nominal membrane flow rate. Ecosoft MO series systems are fitted with 36 gpd (gallons per day) 50 gpd, 75 gpd, or 100 gpd membranes (130 Lpd, 190 Lpd, 280 Lpd, or 380 Lpd respectively).

4 - Symbols for additional equipment:

«**M**» - system is additionally equipped with a remineralizing filter

«**P**» - system is additionally equipped with a pressure booster pump

«**UV**» - system is additionally equipped with a UV lamp

For example, model name MO 7-75 MUVP denotes a reverse osmosis system with 7 stages of treatment equipped with 75 gallons per day (11,8 L/h) membrane, additionally equipped with a remineralizing filter, a UV lamp and a pressure booster pump.

Note

Filter installation should be carried out by a specialist with appropriate qualifications and experience.

Table 2

Technical characteristics

Parameter	Value
1. Supply pressure, bar	3-6
2. Temperature of supply water, °C	+4...+30
3. System weight, kg	6
4. Ambient temperature, °C	+5...+40
5. Connection to water supply line	½" thread
6. Overall dimensions (H x W x D), mm	350×450×150
7. Tank dimensions (H x W x D), mm	410×270×270
8. Usable tank volume, L	≤10

System assembly checklist

1. Filter rack
2. Pressure tank
3. Faucet
4. Feed adapter
5. Feed water valve
6. Tank valve
7. Set of colored flexible tubes (4 pieces)
8. Drain saddle
9. Bowl wrench for pre-filters
10. Filter cartridges (may be packaged or pre-installed)
 - 10.1 Sediment cartridge
 - 10.2 Carbon cartridge
 - 10.3 Fine cartridge
 - 10.4 Coconut shell carbon post-filter
 - 10.5 Reverse osmosis (RO) membrane
11. Union tee
12. Automatic shutoff valve
13. PTFE tape
14. Flow restrictor (inserted in the black tube)
15. Remineralizing filter (**M** models only)
16. Pressure booster pump (**P** models only)
17. Ultraviolet disinfecting unit (**UV** models only)

The manufacturer reserves the right to modify the design and composition of the product without deterioration of its quality and performance.



Figure 1



7. Set of colored flexible tubes (4 pieces)



8. Drain saddle



9. Bowl wrench for pre-filters



10.1 Sediment cartridge



10.2 Carbon cartridge



or



10.3 Fine cartridge



10.4 Carbon post-filter



10.5 RO Membrane



11. Union tee



12. Automatic shutoff valve



13. PTFE tape



14. Flow restrictor

Figure 1

Options:



15. Re mineralizing filter



16. Pressure booster pump



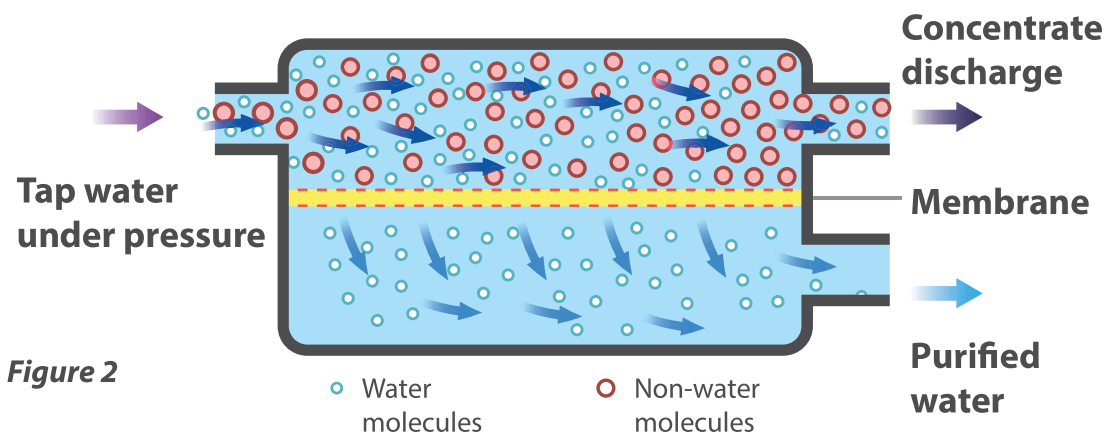
17. Ultraviolet disinfecting unit

Figure 1.1

2. Principle of operation

Reverse osmosis uses a special kind of semi-permeable membrane designed to function similarly to living cell's membrane. The membrane can be conceived of as having tiny pores, 200 times finer than virus particle and 4000 times finer than most bacteria. The principle of reverse osmotic water purification is modelled after living cell's natural water cycle. It allows to remove all noxious impurities from water including nitrate, microorganisms, and anthropogenic pollutants. Only certain types of molecules pass through the membrane filter.

Standard model MO 5-50 filtration system operates the following way.



Filter rack 1 is connected to cold water line by installing feed adapter 4 and feed water valve 5 (see Figure 3.1). Red tube connects feed water valve with pre-filter **10.1** in the filter rack 1 so that feed water first undergoes the three stages of pre-treatment in pre-filters **10.1, 10.2, 10.3**. Inside the pre-filters, water is stripped of suspended solids, chlorine and organochlorines, rust, and other impurities that can foul or damage the RO membrane.

Outlet of pre-filter **10.3** is connected to feed inlet of the automatic shutoff valve 12, which is a four-way valve fastened to the frame of filter rack. Automatic shutoff valve controls switches the whole RO system on and off by opening feed when there is not enough water in the pressure tank 2 (e.g. when some water is taken from the faucet) and closing feed when pressure tank is full.

Feed outlet of the automatic shutoff valve is connected to the inlet in membrane housing on top of the filter rack, which contains the RO membrane **10.5**. Membrane housing has two outlets — one for purified water (permeate), and the other for water containing the retained impurities (concentrate). Water flowing into the RO membrane undergoes reverse osmosis and separates into the two streams. Concentrate is discharged into drain pipe, and permeate is accumulated in the pressure tank 2 and dispensed from the faucet on demand.

Permeate outlet of the membrane housing is fitted with a check valve to prevent backflow and wasting purified water. It is connected with permeate inlet in the automatic shutoff valve 12, and permeate outlet of the shutoff valve is connected with union tee 11. Another

outlet of the union tee is connected to the pressure tank (by means of yellow tube running to the tank valve 6), and the third outlet of the tee is connected to carbon post-filter **10.4**. All described components are connected to one another with flexible tubes.

The purpose of the pressure tank 2 is accumulating and storing purified water, the need for which arises due to slow nature of reverse osmotic purification of water. For instance, if the system is fitted with a 50 gpd membrane, 200 ml cup will take over 1,5 minutes to fill if the membrane was directly connected to faucet without a tank. In order to compensate for the small production rate, drinking water is purified in advance and stored in the tank, which is pressurized so the water will run at an ample rate. When completely drained, the pressure tank takes about 1,5 hours to fill.

Concentrate with the retained impurities is discarded from the second outlet in membrane housing, connected with the drain saddle 8 with the black tube. In order to operate properly, the system requires a backpressure on concentrate line, which is created by flow restrictor 14 — a plastic insert with calibrated throttle orifice. Flow restrictor is inserted in the black tube and must face the membrane housing when the tube is connected.

When faucet is opened, purified water is drawn from the pressure tank through the post-filter **10.4**. Post-filter is a coconut shell activated carbon filter. Its purpose is to remove any taste and odor imparted to purified water while in the tank, especially if stored for longer periods of time and/or at warmer temperatures. Carbon taste and odor filter outlet is connected to the faucet 3 by means of blue tube.

Additional equipment

Booster pump 16 for reverse osmosis system is an option. It is purposed to increase feed water pressure in the system in case supply pressure is not sufficient to operate the system with the specified rate of drinking water production. We recommend that you fit your system with a booster pump or purchase an RO system with a booster pump if the pressure in your water supply line is less than 3 bar.

UV disinfection unit 17 is an option. The unit is necessary when protection against emergence of downstream microbial contamination is essential.

Re-mineralizing filter 15 is an option and is included in models that produce mineral-enriched water alongside regular reverse osmotic water. Mineral composition of water (approximate) after re mineralizing is specified on product label.

3. Product installation diagram

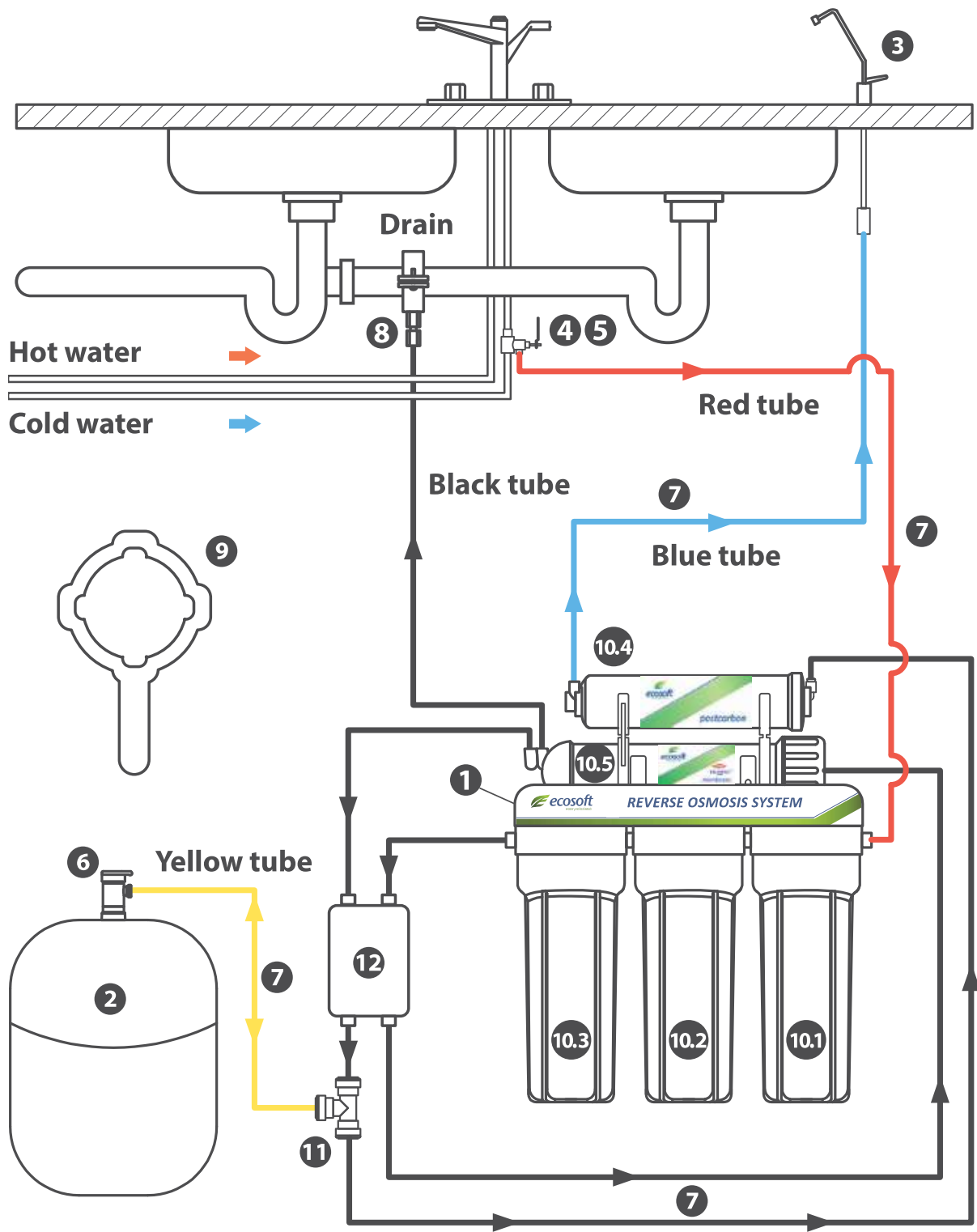


Figure 3.1 Installation diagram for standard reverse osmosis system

1. Filter rack; 2. Pressure tank; 3. Faucet; 4. Feed adapter; 5. Feed water valve; 6. Tank valve; 7. Colored tubing; 8. Drain saddle; 9. Wrench for pre-filters; 10.1 Sediment cartridge; 10.2 Carbon cartridge; 10.3 Fine cartridge; 10.4 Carbon post-filter; 10.5 Membrane; 11. Union tee; 12. Automatic shutoff valve

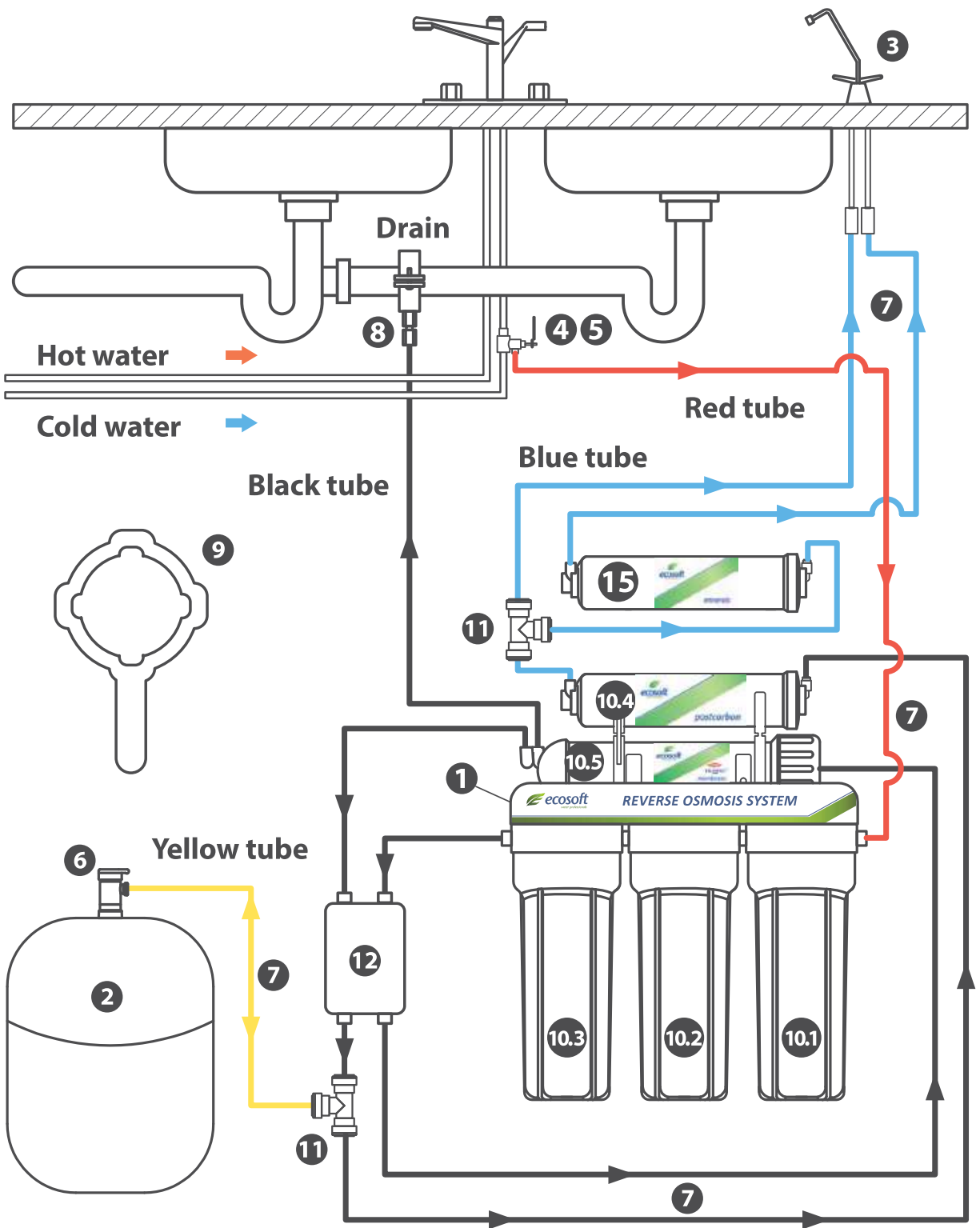


Figure 3.2 Installation diagram for reverse osmosis system with re-mineralizing filter

1. Filter rack; 2. Pressure tank; 3. Faucet; 4. Feed adapter; 5. Feed water valve; 6. Tank valve; 7. Colored tubing; 8. Drain saddle; 9. Wrench for pre-filters; 10.1 Sediment cartridge; 10.2 Carbon cartridge; 10.3 Fine cartridge; 10.4 Carbon post-filter; 10.5 Membrane; 11. Union tee; 12. Automatic shutoff valve; 15. Re-mineralizing filter.

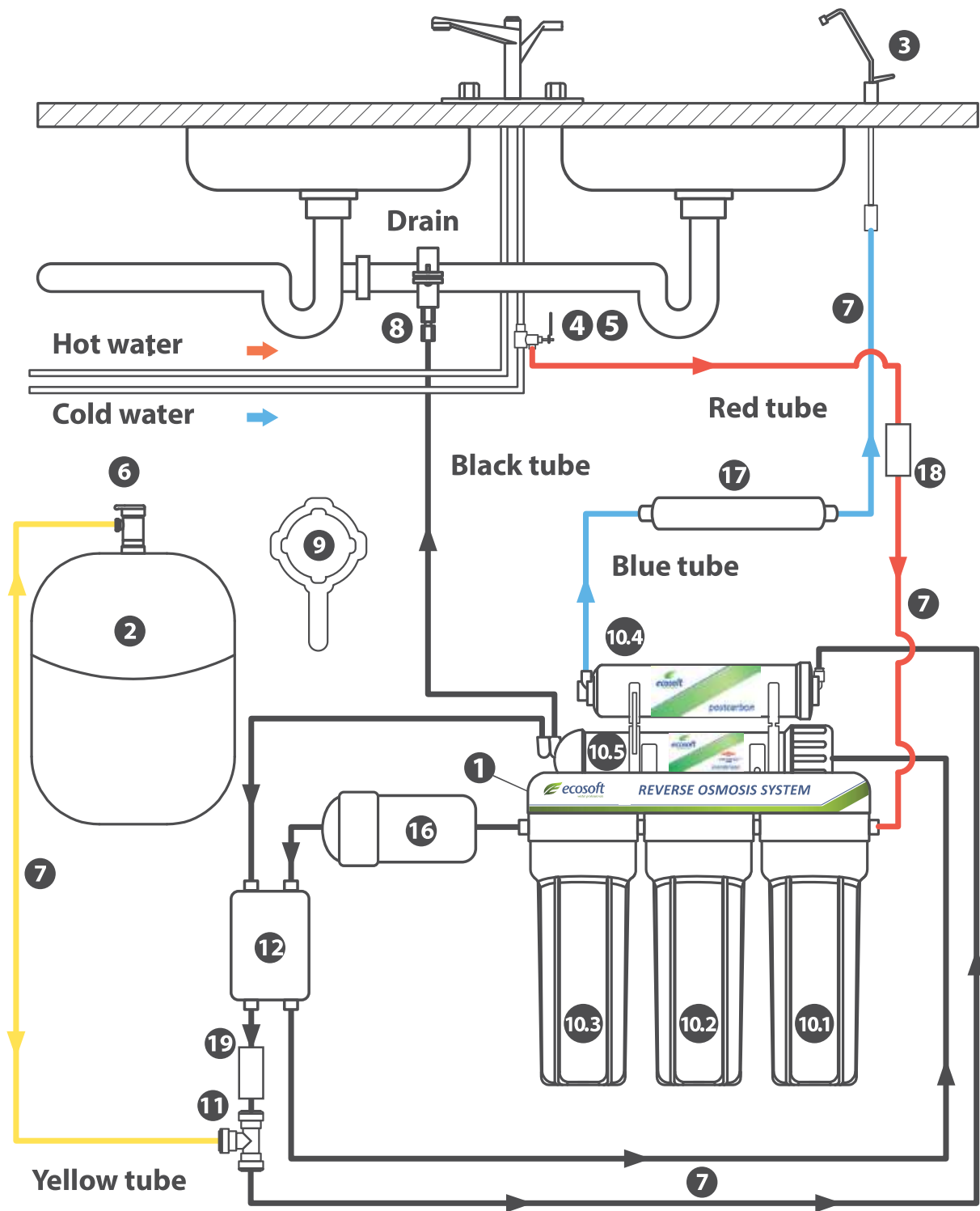


Figure 3.3 Installation diagram for reverse osmosis system with booster pump and/or UV disinfection unit

1. Filter rack; 2. Pressure tank; 3. Faucet; 4. Feed adapter; 5. Feed water valve; 6. Tank valve; 7. Colored tubing; 8. Drain saddle; 9. Wrench for pre-filters; 10.1 Sediment cartridge; 10.2 Carbon cartridge; 10.3 Fine cartridge; 10.4 Carbon post-filter; 10.5 Membrane; 11. Union tee; 12. Automatic shutoff valve; 16. Booster pump; 17. UV disinfection unit; 18. Low pressure switch; 19. High pressure switch.

4. Filter installation

Before installing the system, it is necessary to prepare a place under the kitchen sink. Make sure that there is sufficient space for the system and the pressure tank. In case there is not enough empty space under the kitchen sink it is acceptable to install the pressure tank separately from the system within yellow tube stretching distance.

Note

It is preferable to install the system in places protected from direct sunlight.

1. Remove the RO system from its packaging and check the assembly.
2. 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.
3. Install the feed adapter into the cold water line, take feed water valve from the set and join it to the feed adapter.

Note

Feed adapter is ½" sized. If your pipe is a different size, use an appropriate reducer fitting.

4. Unscrew the coupling nut of the feed water valve connection and put it on the red tube. Insert the red tube into the outlet of the valve and screw the coupling nut back on. Connect the other end of the red tube to the quick connect fitting of the first pre-filter.
5. Connect the drain saddle with drain pipe from the kitchen sink. The drain saddle is compatible with most standard drain pipes. Drill a hole of 5,0 mm diameter in the kitchen sink drain pipe, apply rubber gasket with sticky base (included in the kit). Install the drain saddle on the drain pipe over the hole. Tighten nuts on drain saddle with a wrench. Insert black tube into the connection on the clamp (figure 4). For instruction on using quick connect fittings, read chapter 6.
6. Put a few turns of PTFE tape on the thread on tank outlet. Screw the tank valve onto the tank outlet. Close the tank valve.
7. Install the faucet according to the instructions in chapter 5.
8. Select spot where you are going to install the filter and make 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 gap between the bottom of the filter and floor. Install screw



Figure 4

anchors if necessary and screw in two screws (not included).

9. Connect the flexible tubes. Layouts for each system model are given in figures 3.1, 3.2, 3.3.

10. Install cartridges in the first and second bowl per water flow direction as in Figure 5. Screw the bowls back on. Bowl should be turned with hands, do not use wrench.

11. Disconnect the tube that connects the third bowl (per water flow direction) with the automatic shutoff valve.

12. Open the feed water valve and flush 5-7 liters of water through the first two bowls with cartridges.

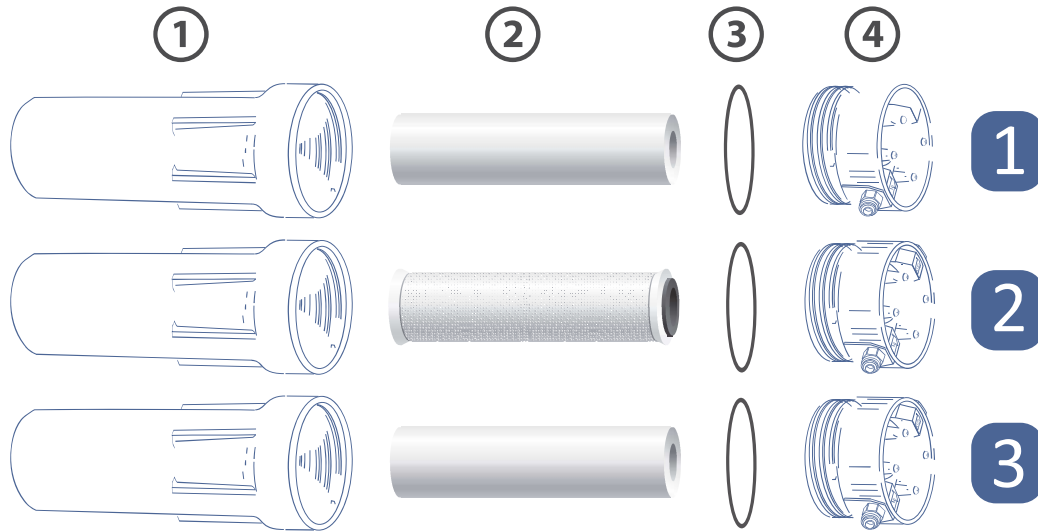


Figure 5

1. Bowl; 2. Cartridge; 3. O-ring seal; 4. Rack.

Note

Water may spill from the free end of the tube, prepare a container to collect it.

13. Insert the cartridge into the third bowl (per water flow direction), screw the bowl into the filter and repeat washing procedure as described in the above paragraph with at least 4 more liters of water to wash the coal dust. Close the feed water valve and connect the free end of tube back to the automatic shutoff valve.

14. Install the membrane (if it was not pre-installed at factory) in its housing on top of the filter rack in accordance with the scheme in Figure 6.

15. Slowly open the feed water valve with the faucet opened. After squeezing the air out of system, check if the water flows freely from the faucet.

Note

The air trapped in the system can take as long as 3 days to purge completely, in the meantime of which the system may produce milky/cloudy drinking water or water with dust-like film on its surface. This is caused by tiny bubbles of air that had dissolved into the water and is not a malfunction.

16. Leave the feed water valve open for 30 minutes. Close faucet and carefully check all connections for leaks. Turn the tank valve open.

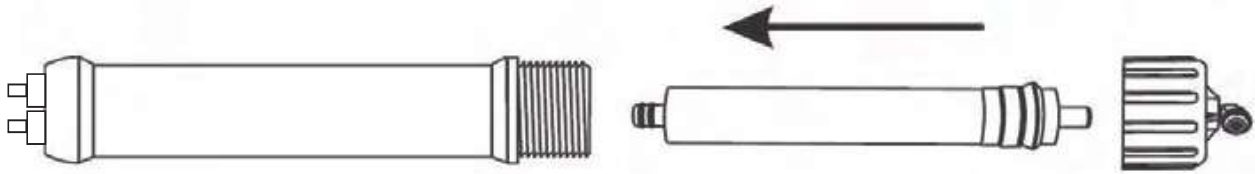


Figure 6

Note

During the first week of use check the system for leaks daily. It is also recommended to check it routinely afterwards. If you have to leave for extended periods of time, such as a business trip or a vacation, shut off water supply to your system.

17. When the tank is full (and you cannot hear water flowing in the system any longer) drain all the water from the tank into the kitchen sink by opening the faucet. When water pressure is released, close the faucet to refill the tank. Depending on supply water pressure, filling the tank can take 1,5 to 3 hours. When the tank is filled for the second time, the water in it can be used.

5. Faucet installation

1. To prepare for installing the faucet drill a hole with a diameter of 12,5 mm in a suitable spot on the kitchen sink or counter.

Caution

Metal chips can damage the sink, it is necessary to remove them carefully immediately after the hole is drilled. If you are installing the faucet on a ceramic or stone fixture, use a special carbide drill bit.

2. Mount the faucet on the counter top as shown on the scheme in Figure 7. Put the rubber gasket on top of the hole and seat the faucet in it. Put on plastic gasket, lock washer, and nut on the shank of the faucet sticking through at the bottom side of the hole. Screw the nut all the way up until the faucet is firmly fixed on the counter top.

3. Take the blue tube, put compression nut on it, then put on compression ring, then put plastic insert inside the blue tube.

4. Push the blue tube as deep 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.

After you have completed installation, faucet must be firmly fixed at the counter top, and the blue tube firmly joined to the shank of the faucet.

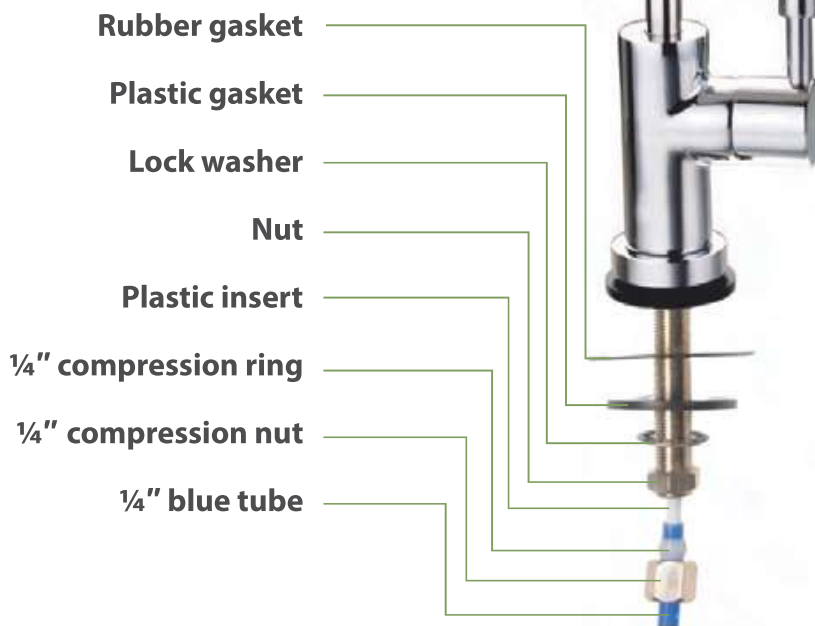


Figure 7

6. Using quick connect fittings

Connecting the tubing does not require using any tools. The entire system is connected together as shown on figures 3.1, 3.2, 3.3, depending on your model.

To release tube (or a plug) from a quick connect fitting, first remove the locking clip (horseshoe-shaped red plastic clip), push the collet back against the body of the fitting and then gently pull out the tube, while keeping the collet depressed (see figure 8). If the tube does not yield, you may not be pushing the collet deep enough. Make sure you push the collet evenly and strongly enough toward the body of fitting.

In order to join a tube or plug to the fitting simply push the tube all the way into the fitting. After joining the pipe to the fitting, put on a locking clip under the collet to secure the connection as shown in figure 9. To check the connection you have made try to pull the tube outwards as shown in figure 10.



Figure 8



Figure 9



Figure 10

7. Supply water quality requirements *

Table 3.

Supply pressure, bar	bar	3-6
	psi	40-90
pH		6,5-8,5
TDS	ppm	<1500
Hardness	°dH	<30
	ppm CaCO ₃	<500
Chlorine	ppm	<0,5
Iron	ppm	<0,3
Manganese	ppm	<0,1
COD	ppm O ₂	<5
Total microbial count	mL ⁻¹	<50
E. coli	mL ⁻¹	<3

* If quality of water supplied to the system does not meet the specified requirements, service life of membrane and cartridges may be reduced.

** If pressure of your water supply is lower than required, purchase a system with a booster pump or fit RO system that you already own with one. If pressure in your water supply is higher than the specified maximum pressure, a pressure reducing valve should be installed before the RO system.

If you use wellwater to supply your household utilities, it is advisable to perform chemical analysis of your water before installing an RO filtration system. If any of the parameters exceed the limit, consider using a water treatment system to bring supply water quality to within specification. To select proper equipment, refer to specialists or companies professionally engaged in water treatment.

8. Maintenance

Ecosoft reverse osmosis system can only be used with cold water supply.

Pre-filter cartridges should be replaced in a regular and timely manner, once in 3 months or more often. Failure to do so will increase fouling load on the membrane and may cause it to wear out prematurely. Generally, if your RO system takes significantly more time to refill the tank (before switching off) than it would take with new cartridges and membrane, the membrane and pre-filter cartridges may need to be replaced.

If you are resuming after a prolonged (more than 2 weeks) period of non-use, first drain all stored water. Open the faucet 3, wait until water stops running, then close the faucet and wait until the tank is full again. When the tank is refilled, you may resume using the water.

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 Chapter 4
Bowl leak	O-ring seal is lacking or misaligned	Check that the O-ring seal is properly aligned in the groove
	Bowl is not joined tightly	Tighten the bowl till snug
High noise	Air in the automatic shutoff valve	The air will go away by itself with continued use of the system
	Water supply pressure too high	Check your water supply pressure. If necessary, install a pressure regulator or refer to a specialist
Water runs too slowly from the faucet or slows down after a few seconds of dispensing	Water supply pressure too low	This RO system requires at least 3 bar to function properly. If necessary, install a pressure booster pump or refer to a specialist
	Pre-filter cartridges are clogged	Replace pre-filter cartridges
	Membrane is clogged	Measure flow of product water by closing the tank valve and opening the faucet. Use a measuring cup to check if the time it takes to produce 1 L drinking water is as follows: - 8 minutes with 50 gpd membrane; - 5-6 minutes with 75 gpd membrane; - 4 minutes with 100 gpd membrane. If it took twice as long or more to produce 1 liter of water, the membrane may need to be replaced (exclude other possible causes first)
	A tube is kinked	Straighten the tube
	Loss of air from the pressure tank	Pressure in the empty tank should be 0,5-0,7 bar (7-10 psi). Charge the tank to the above pressure
The system is always on (water is drained continuously)	Water supply pressure too low	This RO system requires at least 3 bar to function properly. If necessary, install a pressure booster pump or refer to a specialist
	Pre-filter cartridges are clogged	Replace pre-filter cartridges
	Membrane is clogged	Measure flow of product water by closing the tank valve and opening the faucet. Measured flow rate should correspond to nominal membrane flow rate.
	Failure of automatic shutoff valve	The RO system operating ceaselessly while the tank is full may be due to automatic shutoff valve failure. Contact your retailer if other possible causes are exhausted
	Failure of check valve at the permeate outlet	The RO system operating ceaselessly while the tank is full may be due to check valve failure. Contact your retailer if other possible causes are exhausted

The system will not turn on (no water is drained)	Flow restrictor is clogged	Clean or replace flow restrictor
	Drain saddle fitting is not centered on drain pipe hole	Correctly position the drain saddle
Drinking water has a milky or cloudy appearance that goes away in a few minutes	Air in the system	Air will normally be present in the system for a few days after the system was installed. In some cases, air bubbles may appear due to a significant difference between supply water temperature and room temperature
Water has a taste and/or odor	Post-filter has expired	Replace the Post-filter
	Preservative solution in the membrane has not been flushed out	Drain all the water from the tank and let the system refill it
	Pressure tank is contaminated	Replace (or sanitize) the tank.
Pressure tank holds too little water	Tank is overpressurized	Pressure in the empty tank should be 0,5-0,7 bar (7-10 psi). Make sure pressure in your tank is in line with the above figures
No water is dispensed from faucet	Tank is underpressurized	Pressure in the empty tank should be 0,5-0,7 bar (7-10 psi). Make sure pressure in your tank is in line with the above figures
	Tank valve is closed	Open tank valve if necessary

9. Cartridge replacement

Stage in the system	Cartridge type	Service life
1	3-pack (pre-filter cartridges stages 1,2,3) for Ecosoft RO system	3 months
2		3 months
3		3 months
4	2-pack (membrane + Post-filter stages 4,5) for Ecosoft RO system	1 year
5		1 year
6	Re-mineralization filter	1 year
7	Lamp for UV disinfection unit	1 year

Procedure for replacing pre-filter cartridges 10.1, 10.2, 10.3

Caution

Wash your hands thoroughly with antibacterial soap before performing any maintenance on your filter. Only use clean tools and make sure to sanitize the workplace beforehand using detergent or bleach.

1. Shut off feed water valve and close the tank valve.
2. Remove the bowls of first and second pre-filters using bowl wrench if necessary. Be careful: the bowls are full of water, make sure to have a container at hand to catch any spillage.

3. Remove the expired cartridges.
4. Wash bowls thoroughly with washing liquid and rinse with water.
5. Insert new cartridges in the first and second bowls per direction of water flow. Consult figure 5. Screw the bowls back on by hand.

Caution

Bowls should be screwed on by hand, do not wrench-tighten!

6. Disconnect the tube that connects the third bowl (along water flow direction) with automatic shutoff valve from the valve.
7. Open feed water valve and pass 5-7 liters of water through the first two bowls with cartridges.

Caution

Water will pour out of free end of tube, prepare a container for collecting it.

8. Remove the bowl of the third pre-filter using wrench if necessary. Be careful as the bowl is full of water.
9. Remove the expired cartridge.
10. Wash bowls thoroughly with washing liquid and rinse with water.
11. Put new cartridge in the third bowl. Screw the bowl back on by hand and let through 4 more liters of water to wash out carbon dust.
12. Connect the separated tube with the automatic shutoff valve.
13. Open tank valve and feed water valve. The system is ready for use

Note

It is advisable to check membrane health after replacing worn pre-filter cartridges. Under normal conditions a new 50 gpd membrane will produce 1 liter of purified water in about 8 minutes. Use a measuring cup and a watch to measure time that the system takes to dispense 1 liter with the tank valve closed. If it takes over 16 minutes, membrane is worn out and needs to be replaced.

Procedure for replacing the membrane

(refer to a specialist)

Caution

Wash your hands thoroughly with antibacterial soap before performing any maintenance on your filter. Only use clean tools and make sure to sanitize the workplace beforehand using detergent or bleach.

1. Close the feed water valve.
2. Close the tank valve (turn 90°)
3. Open the faucet to release pressure from the system.
4. Disconnect the tube from the membrane housing inlet.
5. Screw off the membrane housing cap.

6. Remove the used membrane (note its orientation and position inside).
7. Grease new membrane's rubber sealing rings and membrane housing sealing ring with silicone grease.
8. Install the new membrane into the housing, observing orientation as per step 6.
9. Screw on the membrane housing cap.
10. Connect the tube to the inlet in membrane housing cap.
11. Close the faucet.
12. Open the pressure tank valve.
13. Open the feed water valve.
14. When the tank is full (and water stops flowing through the system) drain all the water from the tank into the kitchen sink by opening the faucet.
15. When water pressure is released, close the faucet to refill the tank. Depending on supply water pressure, filling the tank can take from 1,5 to 3 hours. When the tank has been refilled for the second time, drinking water may be used.

Carbon post-filter replacement procedure

Caution

Wash your hands thoroughly with antibacterial soap before performing any maintenance on your filter. Only use clean tools and make sure to sanitize the workplace beforehand using detergent or bleach.

1. Close the feed water valve.
2. Close the tank valve (by turning it 90°)
3. Open the faucet to release the pressure.
4. Pull out the tubes connecting the post-filter to adjacent units.
5. Remove the used filter from the plastic brackets.
6. Install the new post-filter in place of the expired one observing the flow direction as indicated by the arrows.
7. Connect the post-filter back to the union tee(s) and the faucet (step 4 in reverse).
8. Open the faucet. Open the pressure tank valve.
9. Flush water to the drain for 10-15 minutes.
10. Close the faucet.

Re-mineralizing filter replacement procedure

Caution

Wash your hands thoroughly with antibacterial soap before performing any maintenance on your filter. Only use clean tools and make sure to sanitize the workplace beforehand using detergent or bleach.

1. Close feed water valve.
2. Close tank valve.
3. Open the faucet to release the pressure.
4. Pull out the tubes that connect the re-mineralizing filter to adjacent units.
5. Remove the used re-mineralizing filter from the plastic brackets.
6. Install new re-mineralizer in place of the used one observing the arrows indicating water flow direction.
7. Reconnect the free ends of tubes to re-mineralizing filter (step 4 in reverse).
8. Open the faucet. Open the pressure tank valve.
9. Flush water to the drain for 10-15 minutes.
10. Close the faucet.

UV lamp replacement procedure

(refer to a specialist)

Recommended service life of UV lamp type used in drinking water RO systems is 9000 hours (equivalent to approximately 1 year of continuous work).

Note

Using UV lamp beyond the recommended service life is disapproved, since the intensity of UV radiation and its germicidal efficiency will be reduced.

1. Disconnect the UV lamp power supply.
2. Shut off feed water valve, tank valve and the faucet.
3. Remove the black PVC cap through which the electric cable passes
4. Remove the lamp from the quartz sleeve by pulling on its base. Do NOT touch the bulb!
5. Disconnect the power plug holding the lamp by its base.
6. Insert the new lamp half way into the quartz sleeve.
7. Properly connect the power connector.

Caution

UV lamps should be handled with care and only held by the ceramic ends, because contaminating the quartz surface will reduce germicidal efficiency and shorten service life. Use cotton gloves while handling UV lamps.

8. Push the lamp all the way into the housing and put the PVC cap back on.
9. Restore the supply of water to the unit and check for tightness and absence of leaks.
10. Plug the adapter into a socket and verify that the new UV lamp is working properly.
Ensure green indicator light in power supply adapter is on.

Caution

It is strongly forbidden to turn on the UV lamp power when the lamp is not in metal housing, and to look at a glowing lamp. This can lead to eye damage and result in deterioration or loss of vision.

When replacing the UV lamp it will also be useful to clean the quartz sleeve.

Do not use abrasive materials to clean the sleeve, as this may decrease transparency of the sleeve to UV radiation, thereby reducing the efficiency of disinfection.

Be careful when removing the quartz sleeve from the housing to avoid damaging or scratching the sleeve.

Carefully remove sealing rings from the ends of the sleeve. The rings serve to protect the lamp and electrical connections from water leaks.

Sanitization of filter rack

(perform when replacing pre-filter cartridges)

Caution

Wash your hands thoroughly with antibacterial soap before performing any maintenance on your filter. Only use clean tools and make sure to sanitize the workplace beforehand using detergent or bleach.

1. Shut off feed water valve.
2. Open faucet and drain all water from the tank.
3. Shut off tank valve.
4. Disassemble pre-filters and remove pre-filter cartridges, carbon post-filter, and remineralizing filter. Discard used filter parts.

Caution

Bowls and housings will be full of water.

5. Unscrew cap of membrane housing and remove membrane using needlenose pliers if necessary. Put the membrane into a tight bag and store in refrigerator at +2...+5°C.
6. Screw on pre-filter bowls 10.2 and 10.3, screw on membrane housing cap and connect the tube running from the faucet directly to the union tee bypassing carbon post-filter.
7. Pour 50 ml of ordinary non-flavored household bleach into the bowl of pre-filter 10.1 and screw the bowl on the pre-filter.
8. Open the faucet.
9. Turn up feed water valve and let water into the filter.
10. When water running from the faucet will begin to smell like chlorine, close the faucet and the feed water valve.
11. Leave the filter for 2 to 3 hours.
12. Open faucet and feed water valve and let water run until bleach odor is gone.
13. Disassemble pre-filters 10.1, 10.2, 10.3, install new pre-filter cartridges, and put pre-filters back together. Install new membrane in membrane housing. Install any post-filters. Open tank valve and feed water valve.
14. Drain first two tankfuls of water before continuing to use the filter. If bleach odor persists, refill and drain until the odor is gone.

Sanitization of tank

(replace carbon post-filter when sanitizing tank)

Caution

Wash your hands thoroughly with antibacterial soap before performing any maintenance on your filter. Only use clean tools and make sure to sanitize the workplace beforehand using detergent or bleach.

1. Shut off feed water valve.
2. Open faucet and drain all water from the tank.
3. Shut off tank valve.
4. Disassemble pre-filters and remove pre-filter cartridges.

Caution

Bowls and housings will be full of water.

5. Screw back on the bowls 10.2 and 10.3.
6. Disconnect the yellow tube (that runs from the tank) from the union tee and connect it directly to pre-filter 10.3 outlet.
7. Pour in the bowl 10.1 10 ml of ordinary non-flavored household bleach and screw the bowl on the pre-filter.
8. Open tank valve.
9. Open feed water valve for 5 minutes.
10. Shut off tank valve and leave it for 1 to 2 hours.
11. Disconnect the yellow tube from pre-filter 10.3, dip the end in the sink or a bucket and open the tank valve to let water out of the tank. After the tank is emptied, restore the proper tubing connection (use schematic in chapter 3 if necessary).
12. Install the cartridges back in the pre-filters. Open the tank valve. Restore water supply.
13. Drain the first few tankfuls of water until no chlorine odor remains.