

# RO KPRO COMPACT

**DIRECT FLOW MANUAL** 



### water systems

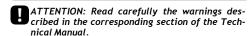
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## USER Manual

#### 1. INTRODUCTION

Congratulations. You have acquired excellent equipment for commercial HORECA Use.

#### 2. PRIOR WARNINGS



Water treatment equipment requires periodic maintenance carried out by qualified technical personnel, in order to guarantee the quality of the water produced and supplied.

#### 1.1 USE OF THE EQUIPMENT

When you are going to be absent for more than a week, close the water inlet tap to the equipment, drain it and disconnect it from the power supply. When you return, connect the power supply to it, open the inlet valve and the tap. Let the water run out for at least 5 minutes before using the water.

#### 2. BASIC OPERATION

The mains water to be treated enters the equipment through the sediment and carbon filter. In this filtration stage, suspended particles, chlorine, its derivatives and other organic substances are retained.

The flow of water into the equipment is controlled by a solenoid valve.

The water, after being treated at the filtration stage, is directed towards the reverse osmosis membranes. The equipment incorporates a pump to increase the pressure, since the pressure of the water on the membrane makes the re- verse osmosis process possible.

The treated water flows out of the equipment for consumption. Reject water or water with excess salts and other dissolved substances is directed to the drain for disposal.

When you stop the installed device the equipment stops its operation by means of a maximum pressure switch. This equipment incorporates a minimum pressure switch as a safety system, which protects the pump from inlet pressure loss, stopping the pump and preventing it from operating without water.

#### 3. INTERFACE WITH THE USER

ATTENTION: This equipment incorporates an electronic controller that will efficiently manage

the functionality and status indications, as well as the different security systems.

The equipment's technical data sheet describes the states in which the system can be found and the information provided by it.

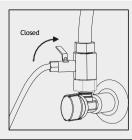
#### 4. MAINTENANCE

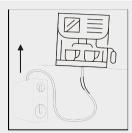
In order to guarantee the quality of the water supplied by your equipment, regular maintenance should be carried out.

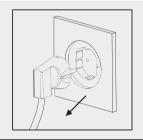
Read the corresponding section of the Technical Manual to see the recommended maintenance frequency. states in which the system can be found and the information provided by it.

#### 5. TROUBLESHOOTING

TROUBLE	POSIBLE CAUSE	SOLUTION
1. Leak to the outside the equipment.	· Several possible causes.	• Call for service.
2. Zero production.	There is no water supply. There is no power supply. Leaking sensor activated.	Wait for the supply to return. Check the electrical supply of the location. If the problem is not solved, call the technical service. Leaking sensor activated. If the leak is not visible, dry the bottom of the equipment and the leaking sensor well. If it reoccurs, call the technical service.
3. Low production.	Inlet tap partially closed.     Filters / membrane in poor condition.	Open it completely. Call for service.
4. Excessive production.	<ul> <li>Excessive chlorine entry into the membrane.</li> <li>Blocked rejection valve, flow rate less than 1 liter per minute.</li> <li>Excessively high supply water temperature &gt;38°C.</li> </ul>	Replace membrane. Change of reject valve. The water temperature must be reduced below the limits. Check general installation of the enclosure, to eliminate heat sources.
5. Unpleasant taste and smell.	Several possible causes.	• Call for service.
6. White colored water.	Air in the system. Microbubbles of air that disappear after a few seconds.	<ul> <li>It is not a problem. The appearance will disappear as the air inside the equipment is expelled.</li> </ul>
7. Continuous dripping noise in drain.	Several possible causes.	• Call for service.
8. The equipment does not start.	There is no water supply. There is no power supply. Leaking sensor activated.	<ul> <li>Check the general condition and the inlet of the equipment.</li> <li>Check the general power supply. If the problem is not solved, call the technical service.</li> <li>If the leak is not detected, dry the bottom of the unit together with the leaking sensor. If it reoccurs, call the technical service.</li> </ul>
9. The equipment stops and starts constantly	Several possible causes.	• Call for service.
10. The equipment never stops expelling water to the drain.	Inlet solenoid valve damaged.     Deteriorated production check valve.	Check and replace. Check and replace.







# TECHNICAL MANUAL

#### 1. MAIN FEATURES

#### APP

#### Water treatment

Reverse osmosis for Commercial Use (HORECA) Modifications for reduction or contribution

- -Water treatment by reverse osmosis is capable of reducing concentrations of salts and other substances in high percentages.
  - -Minimal reduction \* of certain compounds and parameters:

Sodium: 85%. Calcium: 90%. Sulphate: 90%. Chloride: 90%. Total hardness: 90%. Conductivity: 90%.

#### **OPERATING LIMITS**

Pressure (max/min): 4 bar - 1 bar (400kPa-100kPa).

TDS (max): 1500ppm. Temperature (max/min): 38  $^{\circ}$ C - 5  $^{\circ}$ C. Hardness (max): 150 ppm

ATTENTION: If you have any questions about the installation, use or maintenance of this equipment, contact the technical assistance service of your distributor.

#### 2. WORKING CONDITIONS

#### 2.1 CONDITIONS FOR A CORRECT OPERATION

- The equipment should not be supplied with hot water (T>  $38^{\circ}$ C).
- $\boldsymbol{\cdot}$  The ambient temperature must be between 4° and 45°C.
- For waters with salinities higher than 1500 ppm, consult your distributor.

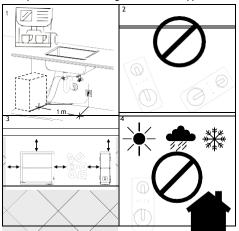
It is recommended that the water to be treated be de-calcified or with a maximum hardness of 150 ppm in order to obtain optimum performance from the equipment. In the event that the water to be treated has a hardness greater than 150 ppm, this could cause a reduction in the life of the membrane and in the performance of the equipment, hence a softener is required.

If the inlet water contains a concentration higher than 1.2 ppm of total chlorine, the installation of an activated carbon filter is recommended to reduce the chlorine concentration in the water and thus protect and extend the life of the equipment components.

<sup>\*</sup> Depending on the characteristics of the water to be treated (at the membrane outlet). These values may vary in depending on the type of post-filter that the equipment incorporates and / or regulation of the mixing valve (if it is included).

In case the water to be treated contains:

- High concentrations of iron and manganese (Greater than 1ppm measured in the rejection of the machine).
   Prolonged hyperchlorination in time. Sludge or turbidity greater than 3 NTUs.
- A nitrate concentration greater than 100 ppm.
- · A sulphate concentration greater than 250 ppm.



#### 3. EQUIPMENT INSTALLATION

- In the event that the Commercial installation has to be modified in order to install the equipment in the planned place, it must be carried out in accordance with the national regulations for indoor installations of water and electrical supplies.
- This equipment requires an electrical outlet less than 1 meter away (1).
- This equipment must not be installed either lying down or inclined (2), otherwise the leaking sensor will be disabled.
- The equipment when filled with water weighs more, the distribution of weight in the installed position could cause some connection element to be under strain which could cause a malfunction, damage to equipment components, or loss of water.
- The place planned for its installation must have enough space for the appliance itself, its accessories, connections and for conveniently carrying out maintenance (3).
- Under no circumstances should the equipment be installed outdoors (4).
- The environment where equipment is installed must be kept to adequate hygienic-sanitary conditions.
- The appliance must only be powered at a 100-240 VAC 50/60 Hz.
- Avoid external drips on the equipment coming from pipes, drains, etc.

- ATTENTION: The equipment must not be installed next to a heat source or directly receiving a flow of hotairover it.
- The new hose-sets supplied with the appliance are be used and that old hose-sets should not be reused.
- 3.1. COMMISSIONING AND MAINTENANCE
- ATTENTION: This water treatment equipment needs periodic maintenance carried out by qualified technician, in order to guarantee the quality of the water produced and supplied.
- New tubes supplied with the appliance must be installed and old tubing must not be reused.
- Consumable items must be replaced with the frequency indicated by the manufacturer.
- The equipment must be sanitized periodically and prior to commissioning.
- After commissioning, water quality may vary during the first 30 minutes of use.
- Maintenance must be carried out by qualified technical personnel with appropriate hygienic conditions and knowledge, in order to reduce the risk of internal contamination of the appliance and its hydraulic system.

#### 4. UNPACKING

• It is important that before installation and start-up, you check the box and the condition of the equipment, in order to ensure that it has not been damaged during transport.

Remove the equipment and accessories from their cardboard packaging, removing the corresponding protections.

ATTENTION: Properly dispose of and keep plastic bags out of reach of children, as they can be a danger to them.

Inside you will find: Water treatment equipment, installation accessories and documentation. The materials used in the packaging are recyclable and must be disposed of in the appropriate selective collection containers or in the specific local centre for the recovery of waste materials.



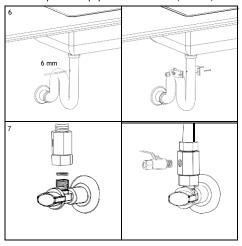
• This product cannot be disposed of along with common urban waste. When the useful life of the equipment has ended, it must be delivered to a specific local clean-up point or centre for the recovery of materials, indicating that it has electrical and electronic

components. The correct collection and treatment of unusable appliances contribute to preserving natural resources and to avoid potential risks to public health.

#### 5. INSTALLATION

- The installation of your osmosis equipment must be carried out by personnel who are sufficiently qualified to do so. Read this manual beforehand.
- The most frequent place for the installation of the equipment is usually under the kitchen counter or in

an adjoining piece of furniture. Install the production outlet, drain collar and inlet adapter and connect them to the respective equipment connectors (6 and 7).

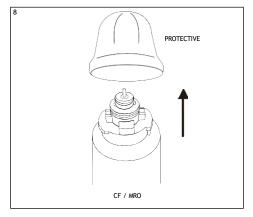


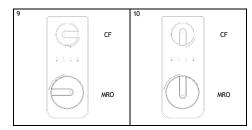
See hydraulic diagram on page 13.

ATTENTION: Some of the installation accessories may vary depending on the model and the region in which the equipment is distributed.

#### 5.1. FILTER INSTALLATION

- Remove the plastic wrapping and remove the protector before installing the filters (as shown in figure 8).
- Install the CF filter in the first stage of the Horeca machine (upper position), the RO membrane in the second stage of the Horeca machine (lower position).
- To install the filters, present each filter in its respective housing with the handle in a horizontal position, as shown in figure 9.
- Insert firmly all the way and turn the handle 90 degrees clockwise. After installation, the two filters should be as shown in figure 10.





#### 6. START-UP

#### 6.1. FILTER RINSING

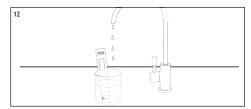
It is necessary to eliminate the dust of the carbon filter that is generated during the transport and handling of the equipment. This dust must be eliminated since it could partially or completely obstruct the membrane as well as cause a malfunction of the equipment. The equipment will automatically perform a wash when re- placing the filters.

#### 62. SYSTEM TIGHTNESS, STOP AND START

 Close the outlet of the unit and keep the equipment hydraulically or electrically powered and performing a visual inspection of the system to ensure that there are no leaks (for approx.15min.).

#### 63. RINSE AND CLEAN

• Open the outlet connection of the equipment and measure the quality of the water that is being produced. With a conductivity or TDS meter, check that the reduction of salts obtained is adequate with respect to the water to be treated (12).



#### 7. MAINTENANCE

ATTENTION: Some components of your equipment, such as the pre-filters and the membrane, are consumables that have a limited life.

 The duration will depend on the quality of the local water, consumption, type of use and specific aspects of the water to be treated such as extreme turbidity, high chlorination, excess iron, etc.

#### RECOMMENDED MAINTENANCE

CF pre-filter: at least every 6 months or 8000 l\* RO osmosis membrane: Every 3 years approx or 20.000 l for water less than 150 ppm of hardness. "linked to the selected Program.

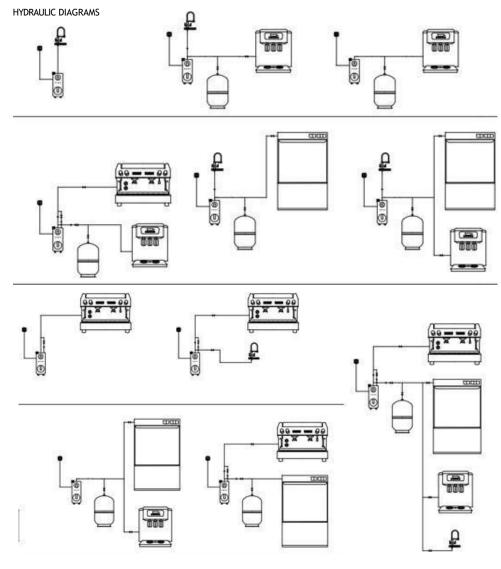
Sanitization: At start-up. At least every 12 months de-pending on use. Every time components in contact with water in

the equipment are accessed or no water has been consumed for more than a month.

\* Depending on the intended use and characteristics of the water to be treated.

ATTENTION: All consumables are supplied in individual packaging specially designed to guarantee hygienicstorageandtransportconditions. Exercisehygiene precautions after removing the consumables from their packaging and when handling the various connectors and components.

• Carry out the filter change properly. Ensure the tight- ness of the joints and the original hydraulic configuration of the system as recommended in this technical manual.



## **TECHNICAL DATA SHEET**

#### 1. MAIN FEATURES

Pressure (max/min): 4 bar - 1 bar (400kPa-100kPa).

1500ppm. TDS (max): Temperature (max/min): 38 ℃ - 5 ℃. Hardness (max): 150 ppm

Control type: Maximum pressure switch. Inlet control

solenoid valve. Flushing solenoid valve.

Α

C

В

Electronic leaking sensor. Water Security system: quality control. Maintenance

indications.

3/8".

456 x 155 x 401 mm. Dimensions (A x B x C in mm): 12.

Weight (in kg, including all

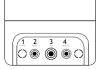
accessories): Inlet connection:

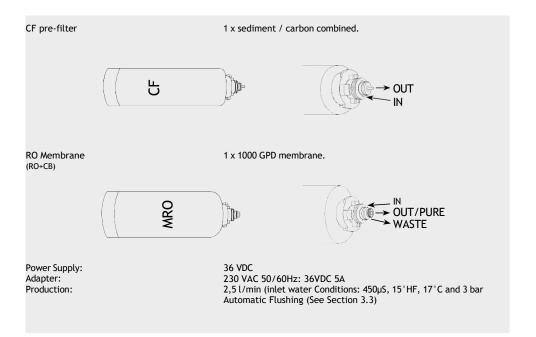
1/4". Drain connection: 1/4". Tap connection: 3/8" M-F. \*\*\*\* Wall adapter:

Drain collar: Pipe clamp 40mm drain. 1. Filter/Bypass Connection

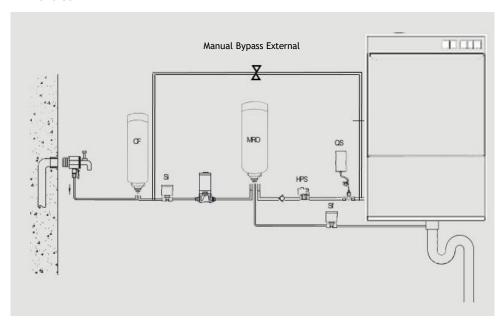
Outlet Connection
 Inlet Connection

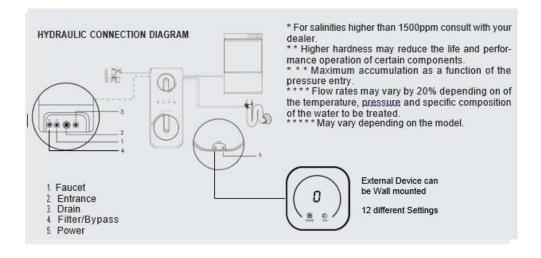
Drain Connection





#### HYDRAULIC SCHEME





#### 2. OPERATION OF THE EQUIPMENT

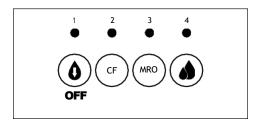
• The mains water to be treated enters the equipment through the pre-filtration stage that incorporates a GAC (CF) turbidity and carbon filter. In this filtration stage, suspended particles, chlorine, its derivatives and other organic substances are retained.

- The passage of water into the equipment is controlled by a cut-off solenoid valve (Si).
- The water, after being treated in the filtration stage, is driven towards the reverse osmosis (MRO) membrane. The equipment incorporates a pump (P) to increase the pressure. The pressure of the water on the membrane makes the reverse osmosis process possible.
- Before leaving the System, the water passes through the carbon post-filter (part of MRO), which improves the taste.
- Reject water or water with excess salts and other dissolved substances is directed to the drain for disposal.
- Direct flow equipment controls start and stop by means of a pressure switch (HPS).
- The equipment incorporates different functional and / or security systems, managed by a state-of-the-art electronic module:
- Electronic leak detection system (L). When the system detects this situation, it blocks the equipment by emitting an acoustic and light signal alarm. The equipment will remain blocked until the detection probe is dry.
- Probe for reading the conductivity of the produced water to evaluate the state of the membrane and its components (Q). When dispensing water from the tap, the system will measure the conductivity of the produced water.

user that adequate maintenance must be carried out to guarantee the quality of the water dispensed.

#### 3. INTERFACE, SYSTEM STATE

Display:



- 1. Working indicator
- 2. CF filter life indicator/pusher
- 3. RO membrane filter life indicator/pusher
- 4. Failure / quality water indicator

#### 3.1. COLORS OF THE WATER QUALITY INDICATOR

Blue: TDS≤200ppm\*

Purple: 200ppm <TDS ≤ 300ppm\*

Red: TDS> 300ppm\*

\*Linked to the selected Program

#### 3.2. OPERATION INDICATOR

It will remain illuminated in blue while the equipment is dispensing water.

#### 3.3. FUNCTIONALITIES

3.3. FUNCTIONALITIES		
FUNCTION	ACTION	STATUS OF THE LIGHTS
1. Functional flushing for the first use or	The machine will flush the RO membrane for 5 minutes.	During washing, the water quality light is flashing at 1Hz.
2. Flushing when turning on the machine.	Whenever the system is started it will flush the RO membrane for 20 seconds. If the user use Water, the machine will stop flushing and go into normal mode.	When flushing is in progress, the water quality light shows the previous on status.
3. Flushing when accumulating operating time.	Every time the accumulated working time reaches 2 hours, the system will flush the membrane for 20 seconds. If the user use Water, the machine will stop flushing and go into normal mode.	When flushing is in progress, the water quality light shows the previous flushing status.
4. Daily flushing.	When the machine has not been running for 24 hours, the system will flush the membrane for 20 seconds. If the user use water, the machine will stop flushing and go into normal mode.	When washing is in progress, the water quality light shows the previous flushing status.
5. Flushing after filter change.	CF: By changing the CF pre-filter and resetting its usage counter, the system will initiate a flushing of the CF filter and RO membrane for 5 minutes.  RO: By changing the RO membrane and resetting its usage counter, the system will start a 5 min flush. There will be a low Flow during this process.	When the CF pre-filter or RO membra- ne is being flushed, the water quality light shows red and will flash at 1Hz.
6. Start the Device.	The system starts up normally.	During the first 30 seconds, the water quality light shows the latest quality status and is always on.  For the next 30 seconds, the water quality light displays real-time quality data and is always on.
7. Stop the device.	The system stops producing water and goes into standby.	The water quality light turns off.
8. Turning on the system.	The system starts up.	After connecting the power supply, a beep sounds and all the lights turn on and blink at the same time, changing from blue to purple to red. Each colour is displayed for 1 second.

#### 3.4. BUG IDENTIFICATION AND RESOLUTION

TYPE	TIMER		SOLUTION
	DISPLAY	ACOUSTIC	
1. Leak inside the machine.	Water quality indicator, CF and MRO flashing red	Beeps for 3 minutes.	When the leak is eliminated, the alarm is deactivated and it returns to the normal state.
2. Protection by pump time.	CF and MRO indicator flashing red	4 beeps.	The pump has been working between 30 and 33 minutes. Disconnect and reconnect the electrical connection
3. Protection by pump start / stop.	CF and MRO indicators flashing in purple	5 beeps.	Disconnect and reconnect the electrical connection.
4. Low temperature protection.	Water quality indicator and CF flashing n red	5 beeps.	Disconnect and reconnect the electrical connection.

When you detect that the equipment is in any states described, contact the maintenance Service to make an appointment to or displaying carry out the required maintenance alarm.

See the corresponding section in the technical manual.

Contact our technical service if the equip-

ment does not stop production after several hours of continuous operation, without extraction of water.

Contact your technical service if the equipment is repeatedly blocked due to lack of mains water pressure at the entrance to it and there is pressure in the rest of the network.

Contact your technical service if after using water the equipment is not dispensing water to the device without any type of alarm.

Contact your technical Service to reset counters after changing the filters.

#### 3.5. FILTER LIFETIME DISPLAY

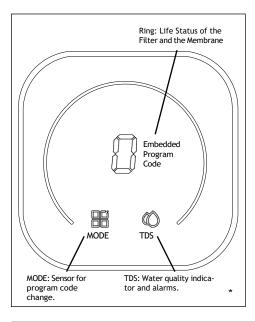
PERIOD OF LIFE	TIME OF LIFE REMAINING (DAYS)	LITERS OF CAPACITY REMAINING	TIMER DISPLAY	ACOUSTIC
Normal.	> 15	> 150	Permanent blue.	No alarm.
Little left.	0 < X ≤ 15	0 < Y ≤1 50	Permanent Lilac.	Double beep when there is little time of life of the filters.
Exhausted.	≤ 0	≤ 0	Permanent red.	Beeps when water is dispensed.

#### 3.6. STATUS OF THE SYSTEM

TYPE	Pump time protection		Leak inside the system	Low temperature protection
	Light	Light	Light	Light
	•	• <del>*</del> <del>*</del> •	• 🔆 🔆	•
	OFF MRO	OFF	CF MRO	CF MRO
WARNING	Blink red 1 Hz	Blink Purple 1 Hz	Blink red 1 Hz	Blink red 1 Hz
1) RED 2) BLUE		,		
3) PURPLE	3	5	3	5
	minutes	beeps	minutes	beeps

#### 3.7. 3.6. SMART DEVICE STATUS INDICATORS

The smart device replicates on its outer ring the status of the filters that are seen on the equipment display (CF, MRO). The droplet symbol replicates the status of the water quality indicator LED.



CODE CHANGE IN INTERFACE (Code Table see next page):

To change the appliance's program, proceed as follows:

- Keep the device without production or active washing.
- Hold down the "MODE" logo for 5 seconds, until for the central code to flash, then release.
- Press on the same key until the desired code is displayed.
- Release the "MODE" key and allow the interface to reset automatically.
- \* Keep in mind that the sensor on the "MODE" key is a touch system, and there may be situations in which this sensor is not highly sensitive, so you may have to position your finger correctly in front of it.

DISPENSED WATER QUALITY



BLUE / LILAC / RED

BLUE: right TDS in dispensed water. LILAC: medium TDS in dispensed water. RED: high TDS in dispensed water.

FLUSHING



**BLINKING BLUE** 

Blinking indicator while the unit is flushing the membrane.

FILTER LIFESPAN STATUS

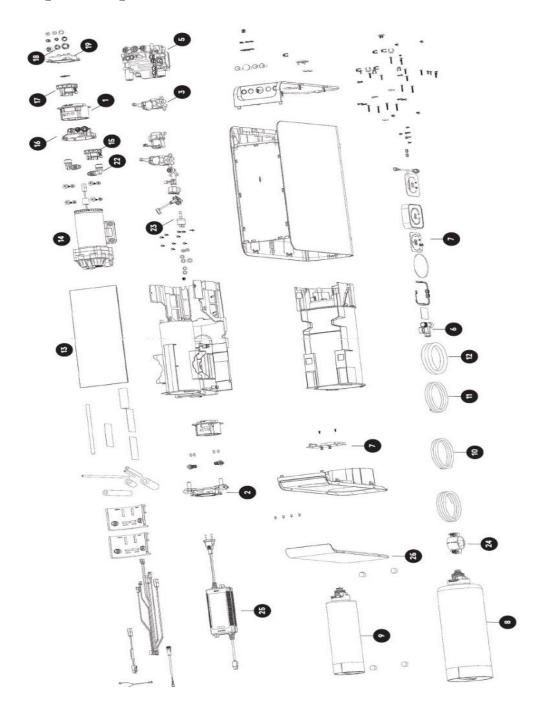


BLUE / LILAC / RED

LILAC: a maintenance will be required soon. RED: the span life of some filter has expired.

PROGRAM NUMBER	PRETREATMENT DESCRIPTION	LED QUALITY INDICATOR	FILTER LIFETIME
0	No pre-treatment with TDS inlet water 0-750ppm	Blue: TDS ≤200ppm Lilac: 200ppm < TDS ≤300ppm Red: TDS > 300ppm	Prefilter CF: 6 month or 8000lts Membrane RO: 36 month or 20000lts
1	No pre-treatment with TDS inlet water 750-1000ppm	Blue: TDS ≤266ppm Lilac: 266ppm < TDS ≤399ppm Red: TDS > 399ppm	Prefilter CF: 6 month or 8000lts Membrane RO: 36 month or 20000lts
2	No pre-treatment with TDS inlet water 1000-1250ppm	Blue: TDS ≤332ppm Lilac: 332ppm < TDS ≤498ppm Red: TDS > 498ppm	Prefilter CF: 6 month or 8000lts Membrane RO: 36 month or 20000lts
3	No pre-treatment with TDS inlet water > 1250ppm	Blue: TDS ≤400ppm Lilac: 400ppm < TDS ≤600ppm Red: TDS > 600ppm	Prefilter CF: 6 month or 8000lts Membrane RO: 36 month or 20000lts
4	With carbon pre-filter with TDS inlet water 0-750ppm	Blue: TDS ≤200ppm Lilac: 200ppm < TDS ≤300ppm Red: TDS > 300ppm	Prefilter CF: 9 month or 12000lts Membrane RO: 36 month or 20000lts
5	With water softener + Car- bon pre-filter with TDS inlet water 0-750ppm	Blue: TDS ≤200ppm Lilac: 200ppm < TDS ≤300ppm Red: TDS > 300ppm	Prefilter CF: 12 month or 16000lts Membrane RO: 36 month or 20000lts
6	With carbon pre-filter with TDS inlet water 750- 1000ppm	Blue: TDS ≤266ppm Lilac: 266ppm < TDS ≤399ppm Red: TDS > 399ppm	Prefilter CF: 9 month or 12000lts Membrane RO: 36 month or 20000lts
7	With water softener + Car- bon pre-filter with TDS inlet water 750-1000ppm	Blue: TDS ≤266ppm Lilac: 266ppm < TDS ≤399ppm Red: TDS > 399ppm	Prefilter CF: 12 month or 16000lts Membrane RO: 36 month or 20000lts
8	With carbon pre-filter with TDS inlet water 1000- 1250ppm	Blue: TDS ≤332ppm Lilac: 332ppm < TDS ≤498ppm Red: TDS > 498ppm	Prefilter CF: 9 month or 12000lts Membrane RO: 36 month or 20000lts
9	With water softener + car- bon pre-filter with TDS inlet water 1000-1250ppm	Blue: TDS ≤332ppm Lilac: 332ppm < TDS ≤498ppm Red: TDS > 498ppm	Prefilter CF: 12 month or 16000lts Membrane RO: 36 month or 20000lts
10	With carbon pre-filter with TDS inlet water > 1250ppm	Blue: TDS ≤400ppm Lilac: 400ppm < TDS ≤600ppm Red: TDS > 600ppm	Prefilter CF: 9 month or 12000lts Membrane RO: 36 month or 20000lts
11	With water softener + car- bon pre-filter with TDS inlet water > 1250ppm	Blue: TDS ≤400ppm Lilac: 400ppm < TDS ≤600ppm Red: TDS > 600ppm	Prefilter CF: 12 month or 16000lts Membrane RO: 36 month or 20000lts

## **Spare parts list**



DWG. No	Article Number	Part name
1	100-2511	POSITIONING PAD
2	100-2512	CARTRIDGE SEAT
3	100-2513	INLET SOLENOID VALVE
4	100-2514	HYDRAULIC SET
5	100-2515	ELECTRONIC CARD
6	100-2516	ADAPTER "T"
7	100-2517	SMART DISPLAY
8	100-0009	MEMBRANE
9	100-0008	RO COMBI SEDIMENT CARBON BLOCK
10	100-2518	TUBE 1/4 RED
11	100-2519	TUBE 1/4 WHITE
12	100-2521	TUBE 3/8 WHITE
13	100-2522	TOP DECK
14	100-2523	BOOSTER PUMP
15	100-2524	ROTATION VALVE
16	100-2525	CARTRIDGE HOLDER ADAPTER
17	100-2526	ROTARY VALVE MEMBRANE
18	100-2527	CONNECTOR HEAD QUICK CONNECTOR
19	100-2528	MEMBRANE SEAT
20	100-2529	DOMESTIC RO RUBBER
21	100-2530	MEMBRANE POSITIONING PAD
22	100-2531	ELBOW
23	100-2532	HIGH PRESSURE SWITCH
24	100-2533	DRAIN COLLAR
25	100-2534	TRANSFORMER
26	100-2510	FRONT COVER BLACK

