

Reverse osmosis

 **KBO 50/75/100**



AQUAVIE®

Please read this manual carefully before use.

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Reverse osmosis



Thank you for choosing the AQUAVIE reverse osmosis unit.

BENEFITS OF USING CONDITIONED WATER AFTER REVERSE OSMOSIS

Tap water, although potable, is not always suitable for aquariums. It may contain chlorine, chloramine, nitrates, phosphates, heavy metals, and high mineral content, all of which can be harmful to fish and aquatic ecosystems.

Thanks to the reverse osmosis process, up to 99% of these undesirable substances are removed. The resulting osmosis water is therefore ideal for all types of aquariums, whether freshwater or marine. It helps reduce hardness for sensitive species such as discus and limits nitrates and heavy metals that promote algae growth in marine environments.

BASIC PRINCIPLES

A reverse osmosis unit operates using a semi-permeable membrane subjected to tap water pressure (minimum 2.7 bar). Under this pressure, only pure water molecules pass through the membrane, while nitrates, phosphates, and other impurities are retained.

This process produces very pure water, up to 99%, as well as a separate stream of waste water that is discharged. Since osmosis water is low in essential minerals, it must be remineralized before use in an aquarium. Appropriate treatment is therefore recommended; your specialist retailer can advise you on suitable solutions.

MEMBRANE TECHNICAL DATA

MEMBRANE

Type – TFC (Thin Film Composite)

Material – PA (Polyamide)

Charge – Negative

Configuration – Spiral-wound elastic element

PERFORMANCE (NOMINAL)

THEORETICAL flow rate (4.5 bar at 25°C):

KBO50: 190 liters/day

KBO75: 285 liters/day

KBO100: 380 liters/day

Salt rejection – 96%

Performance data recorded after 30 minutes of operation under the following conditions:

Concentration – 250 ppm NaCl

Pressure – 60 psi

Temperature – 25°C

Recovery – 15%

pH – 6.5 ~ 7.0

OPERATING LIMITS

Maximum operating pressure – 125 psi (0.86 MPa)

Maximum feed flow rate – 2 gpm (0.45 m³/hour)

Maximum operating temperature – 45°C

pH – 3.0 ~ 10.0

Chlorine concentration < 0.1 ppm

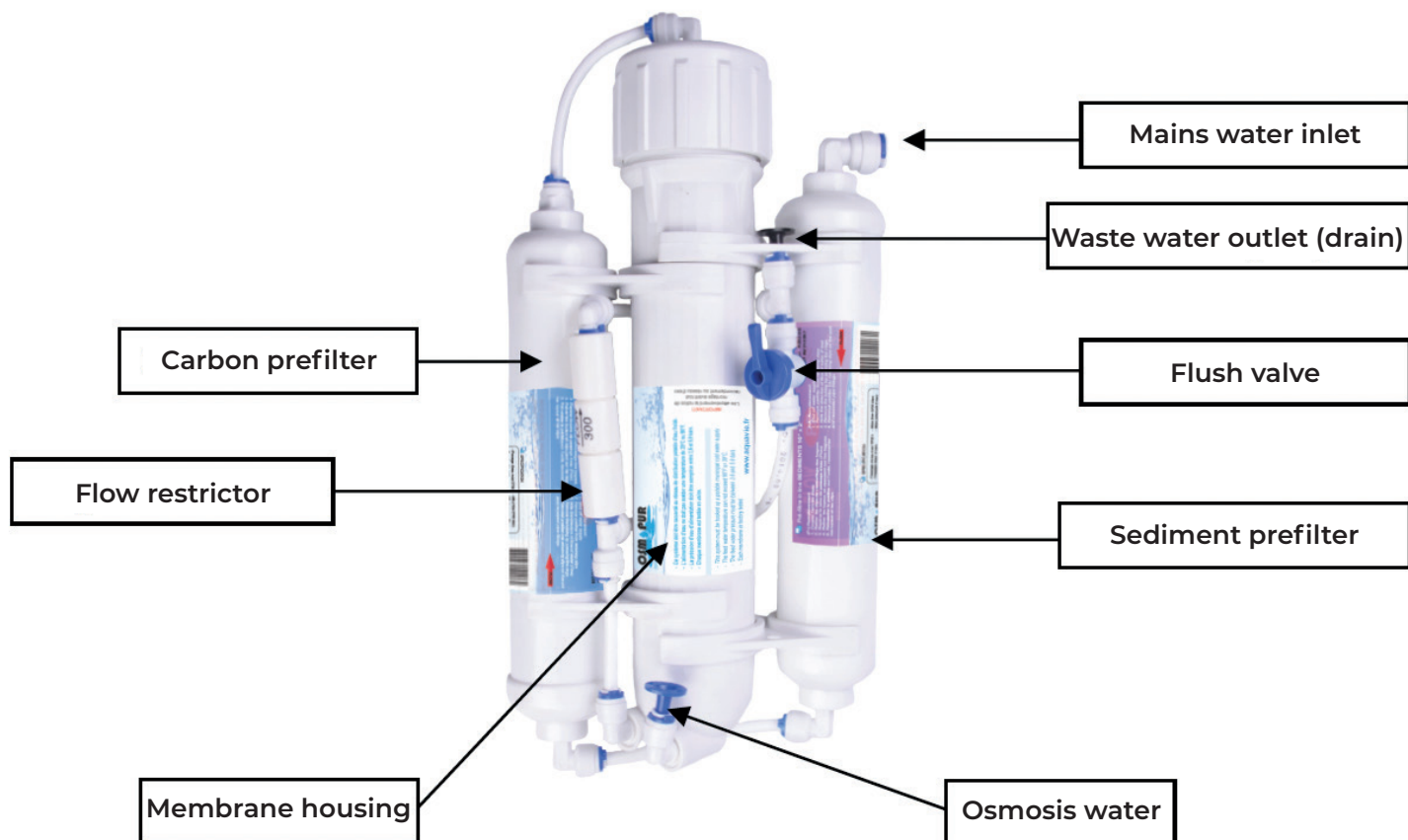
INFORMATION

The permeate flow rate is based on standard test conditions and may vary depending on the quality of the feed water.

Permeate flow elements may vary by ±30%.

NOTE

At start-up, the water produced by reverse osmosis may contain preservation solution residues. Discard the produced water until the end of the first use.



Membrane

Keep the membrane in its packaging. Remove only for installation.

Filter

A sediment prefilter and an activated carbon prefilter are supplied as standard. They remove impurities, chlorine, and chemical derivatives.

INSTALLATION ET OPÉRATION

Membrane installation

1. Disconnect the tube from the membrane housing cap fitting. To do this, remove the small safety clip from the fitting, then press on both sides of the upper collar while pulling out the tube.
2. Unscrew the membrane housing cap.
3. Install the membrane with the wide rubber seal facing upward. Ensure that the other end is fully inserted into the socket at the end of the membrane housing.
4. Screw the membrane housing cap back on, reconnect the tube (this time without pressing the collar), then replace the safety clip on the fitting.

Mounting the unit

1. Remove the two mounting clips from the osmosis unit. Install the clips on a solid vertical surface, facing each other, leaving sufficient space (approximately 100 mm). Keep in mind that the unit will be heavier once filled with water during operation.
2. Engage the unit into the clips, ensuring that the screw cap of the membrane housing is positioned as high as possible.
3. Measure the distance between the osmosis unit and the water supply tap to which it will be connected. Cut the supplied tubing (3 m) to the required length. Do the same for the waste water drain tube and the purified water outlet tube leading to the appropriate container.

Note: the osmosis unit is supplied with a standard 3/4 (20/27) fitting for connection to a garden-type tap.

However, two other connection types are available as options:

Self-piercing tap connector for direct tapping into a pipe

(Ref.: AV042208)

Tap adapter 1/4 - 3/4 (Ref.: AV042209)

WARNING!

The waste water is highly concentrated with impurities. It may be collected and used for other purposes (ideal for watering plants, for example), but **MUST NEVER BE INGESTED OR CONSUMED**.

Start-up of the unit

1. Slowly open the water supply and allow water to flow through the unit. Check all connections and ensure the unit is leak-tight. Tighten leaking connections BY HAND if necessary.
2. Once watertightness is confirmed, fully open the tap water supply.
3. Let the unit run for 30 minutes to flush the membrane of preservation agents and discard the collected water.
4. The unit is now operational.

Stopping the unit

To stop the production of osmosis water, close the tap water supply without allowing the membrane to dry out. Each time the unit is restarted, open the flushing valve (see diagram above) for 5 minutes.

If the unit is stopped for more than 7 days, it should be restarted and allowed to operate for 30 minutes before collecting filtered water. If the unit is to be stopped for a longer period, we strongly recommend connecting the waste water tube to the filtered water tube. This will prevent bacteria from entering the unit and keep it filled with water, avoiding membrane drying. The unit must then be flushed for at least 30 minutes before being put back into service.

MAINTENANCE

Replacing carbon and sediment prefilters

The sediment prefilter (Ref. AV042207) and the carbon prefilter (Ref. AV042206) must be replaced every 6 to 12 months depending on the quality of the tap water.

A significant drop in flow rate indicates clogged prefilters.

1. Turn off the water supply
2. Disconnect the tube from the prefilter to be replaced and remove the prefilter from the clips
3. Remove the adapter fittings from the prefilter being replaced and install them on the new prefilter. Teflon tape may be used on threaded connections
4. Reinstall the prefilter in the unit clips and reconnect the tubes

Membrane replacement

If a significant reduction in water flow of more than 50% persists after replacing the prefilters, and provided there have been no other changes in operating parameters (feed pressure, operating pressure, etc.), it may be necessary to replace the main membrane. Depending on tap water quality, this replacement may be required between two and eight years, provided the prefilters have been replaced regularly.

1. Shut off the water supply
2. Disconnect the tube above the membrane housing
3. Unscrew the membrane housing cap
4. Carefully remove the used membrane from the housing, noting its orientation. Use pliers if necessary
5. Lightly lubricate the two O-rings of the new membrane with silicone grease or an equivalent product. This will ease installation and ensure proper sealing between waste water and filtered water
6. Install the new membrane with the wide rubber seal facing upward, in the same position as the old membrane
7. Reinstall the membrane housing cap and reconnect the tubes
8. Reassemble the rest of the unit following the initial installation instructions

SPARE PARTS AND ACCESSORIES

Replacement membrane:

AV042203 (KBO50), AV042204 (KBO75), AV042205 (KBO100)

Replacement sediment prefilter: AV042207

Replacement activated carbon prefilter: AV042206

Connection kit: AV042208

Tap adapter: AV042209

WARRANTY

AQUAVIE provides a 24-month warranty for this product from the date of purchase against defects in materials and workmanship. The membrane is covered by a 3-month warranty.

The warranty does not apply in cases of proven improper or inappropriate installation, use, or handling.

Prefilters are not covered by this warranty. To claim the warranty, the product must be returned to an authorized AQUAVIE retailer along with a copy of the purchase receipt showing the purchase date.

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