

## Operation manual GB



**Reverse osmosis unit for the desalination of tap water. Daily capacity: 75 - 90 / 120 - 150 litres.**

With this unit, you can remove the inorganic and organic substances, dissolved in your tap water, to a percentage of about 95 - 98% (nitrate and silicate approx. 70%) without adding any chemicals.

In the aquarium, you prevent overfertilization of the water from the tap. The growth rate of diatoms and other microalgae is reduced. Residues of pesticides and other toxic substances do not get into the aquarium.

**Please read the manual carefully. This prevents failures and complaints!**

## 1. Product description

The AB Aqua Medic **reverse osmosis unit Premium Line 90/150** is a compact and highly efficient unit with a daily capacity of 75 - 90 / 120 - 150 litres. It consists of the following parts:

- Sediment prefilter, 10" with 5 µm pore size (6/10)
- activated carbon filter (7/11)
- 1 reverse osmosis module with a first class synthetic membrane (Polyamide/Polysulfon, TFC) which has a capacity of 75 - 90 / 120 - 150 litres (5)
- flushing valve: at this valve (3), the permeate/concentrate ratio is adjusted to 1:2,5 - 1:3
- tap water connection fitting (3/4") with 3 m pressure tube

## 2. Set-Up

The system is delivered ready-to-use on a mounting unit. Fix it directly on the wall - preferably near a water tap.

Then, remove plugs from the fittings and connect the tubes. To avoid any failures, follow the instructions carefully:

### Tube Fittings:

- First of all, remove the plugs.
- Put the nut and the small ring on the tube (flushing valve).
- Push the tube tight into the fitting and fix the nut.

The connections of the unit are (see Fig. 1):

1. Tap water inlet - into the sediment pre-filter (1)
2. Concentrate outlet (waste water) at flushing valve (3)
3. Pure water (permeate) (2)
4. Tap water connection

Fix the water connection piece to a 3/4" water tap (cold water). If it does not fit, use a reduction piece (not included in shipment).

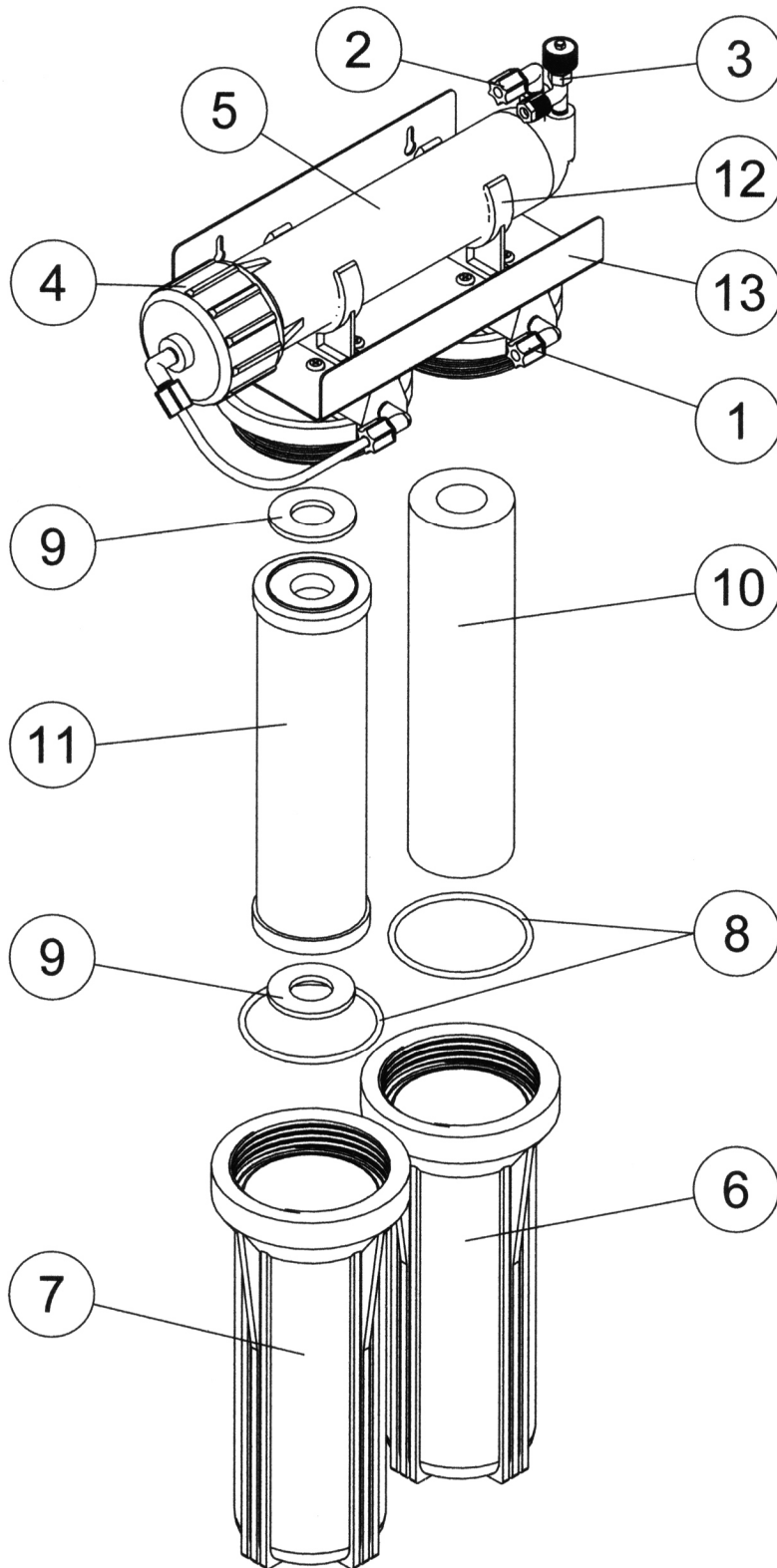
## 3. Starting

When all connections are tight, you can open the water tap. The minimum water pressure for the unit is 3 bar. The nominal capacity is reached at 4 bar. If the pressure drops below 3 bar, the production capacity is reduced, below 2 bar it reduces also the reduction rates.

First of all, check all connections on water tightness. If leakage occurs, tighten the fittings or the housing.

Now, the concentrate flows out of the outlet (3). After some minutes, also the purified water flows out of the permeate outlet (11), however, at a lower flow rate. The flow rate of pure water is approx. 2.5 - 4 / 4 - 6 l/h, the flow rate of waste water is approx. 12 - 15 / 15 - 18 l/h (at 4 bar and 15 °C). Lower pressure or temperatures reduce the pure water capacity.

The pure water produced within the first 2 hours has to be discarded, because it may contain residues of disinfection liquid which has been filled in the module for storage. After 2 hours of operation, the water can be used.



1. Water inlet
2. Pure water connection
3. Flushing valve
4. Cap of module housing
5. Reverse osmosis module incl. membrane
6. Pre-filter housing for fine filter
7. Pre-filter housing for activated carbon filter
8. O-rings
9. Flat gasket
10. Fine filter element
11. Activated carbon filter element
12. Holding clip for module's housing
13. Mounting bracket

**Premium Line 90/150**

#### 4. Maintenance

- **Flushing:** In order to flush the membrane, only the flushing valve has to be opened. Then, the water flows with high speed through the narrow channels in the membrane and takes most of the residuals with it. This flushing also cleans the flushing valve itself.

After 15 - 20 minutes, the valve must be closed again - tear only handtight. If you tighten the valve too hard, the valve and membrane will be destroyed. A minimum water flow (approx. 12 - 15/ 15 - 18 l/h) has to be guaranteed.

- **Pre-filter:** If the tap water is not extremely polluted, a yearly replacement of both pre-filters will be sufficient. If the water is higher polluted, the filters have to be changed more often - as required. If the pre-filter is blocked, the water production will slow down.

- **Membrane:** The membrane has a lifetime of several years. Afterwards, it has to be replaced.

- **Flushing valve:** The flushing valve is a part with limited lifetime. In case of a decrease of adjusted water flow, the valve is encrusted with calcium and can be cleaned using acid (e.g. acetic acid). If the water flow increases, the valve has to be replaced.

#### 5. Failures

- **Waste water flow rate is too high:**

Try to close the flushing valve. If this is not possible, the flushing valve must be replaced and check the membrane power.

- **Waste water flow rate is too low:**

Check if the pre-filter is blocked. The water pressure at the pressure gauge behind the pre-filters must not be much lower (at the most 0.5 bar) than the water supply pressure. Maybe change the pre-filter.

- **Pure water flow rate is too low:**

Check the waste water flow rate. If it is too low too, change the pre-filter.

- **Tap water pressure is too low:**

If you are connected to a municipal water supply, you are not able to have an influence on the water pressure. For the reverse osmosis unit, a minimum water pressure of 3 bar is required.

- **Module is blocked or used up:**

The membrane has to be replaced.

As spare parts, all standard „18“ membranes with a daily capacity of 75 - 90 / 120 - 150 l can be used. Only TFC-membranes made of Polyamide/Polysulfone should be used. We recommend to use original AB Aqua Medic TFC-membranes only. If you want to use a membrane with a different capacity, you have to change also the flushing valve.

- **Rejection rate is too low:**

Check the water flow rates (waste water, pure water).

If the water flow is ok, flush the unit for approx. 60 min. If the rejection rate increases, go on flushing until the value is acceptable. If the rate does not improve, change membrane.

#### 6. Important Notes

- **Connection:** Connect the reverse osmosis unit to cold water supply only. Higher temperatures increase pure water production but at temperatures more than 40 °C, the membrane will be destroyed.

- **Stopping the unit:** If you stop the unit, always close tap water supply. Never put a valve into pure water. If you run the unit automatically with a solenoid valve, switch the valve between pre-filter and module. Take care that waste water and pure water can flow away freely.

- **Disconnection of the unit:** If you want to disconnect the unit for a longer period than 6 weeks, you should add AB Aqua Medic disinfection liquid into the module housing. If the unit is started again, flush it for 15 to 20 minutes. We recommend flushing also after shorter periods of stopping, if no disinfection liquid has been used.

- **Storage:** The unit has to be stored at temperatures above 0° C. Freezing would destroy the membrane.

## **7. Warranty**

Should any defect in material or workmanship be found within twelve months of the date of purchase AB Aqua Medic GmbH undertakes to repair or, at our option, replace the defective part free of charge – always provided the product has been installed correctly, is used for the purpose that was intended by us, is used in accordance with the operating instructions and is returned to us carriage paid. The warranty term is not applicable on the all consumable products.

Proof of Purchase is required by presentation of an original invoice or receipt indicating the dealer's name, the model number and date of purchase, or a Guarantee Card if appropriate. This warranty may not apply if any model or production number has been altered, deleted or removed, unauthorised persons or organisations have executed repairs, modifications or alterations, or damage is caused by accident, misuse or neglect.

We regret we are unable to accept any liability for any consequential loss.

Please note that the product is not defective under the terms of this warranty where the product, or any of its component parts, was not originally designed and / or manufactured for the market in which it is used.

These statements do not affect your statutory rights as a customer.

If your AB Aqua Medic GmbH product does not appear to be working correctly or appears to be defective please contact your dealer in the first instance.

Before calling your dealer please ensure you have read and understood the operating instructions. If you have any questions your dealer cannot answer please contact us.

Our policy is one of continual technical improvement and we reserve the right to modify and adjust the specification of our products without prior notification.

**AB AQUA MEDIC GmbH - Gewerbepark 24 -49143 Bissendorf/Germany**

- Technical changes reserved – 10/2009