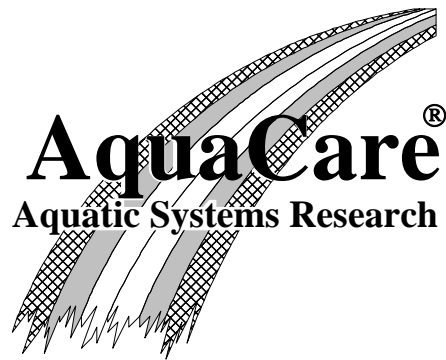
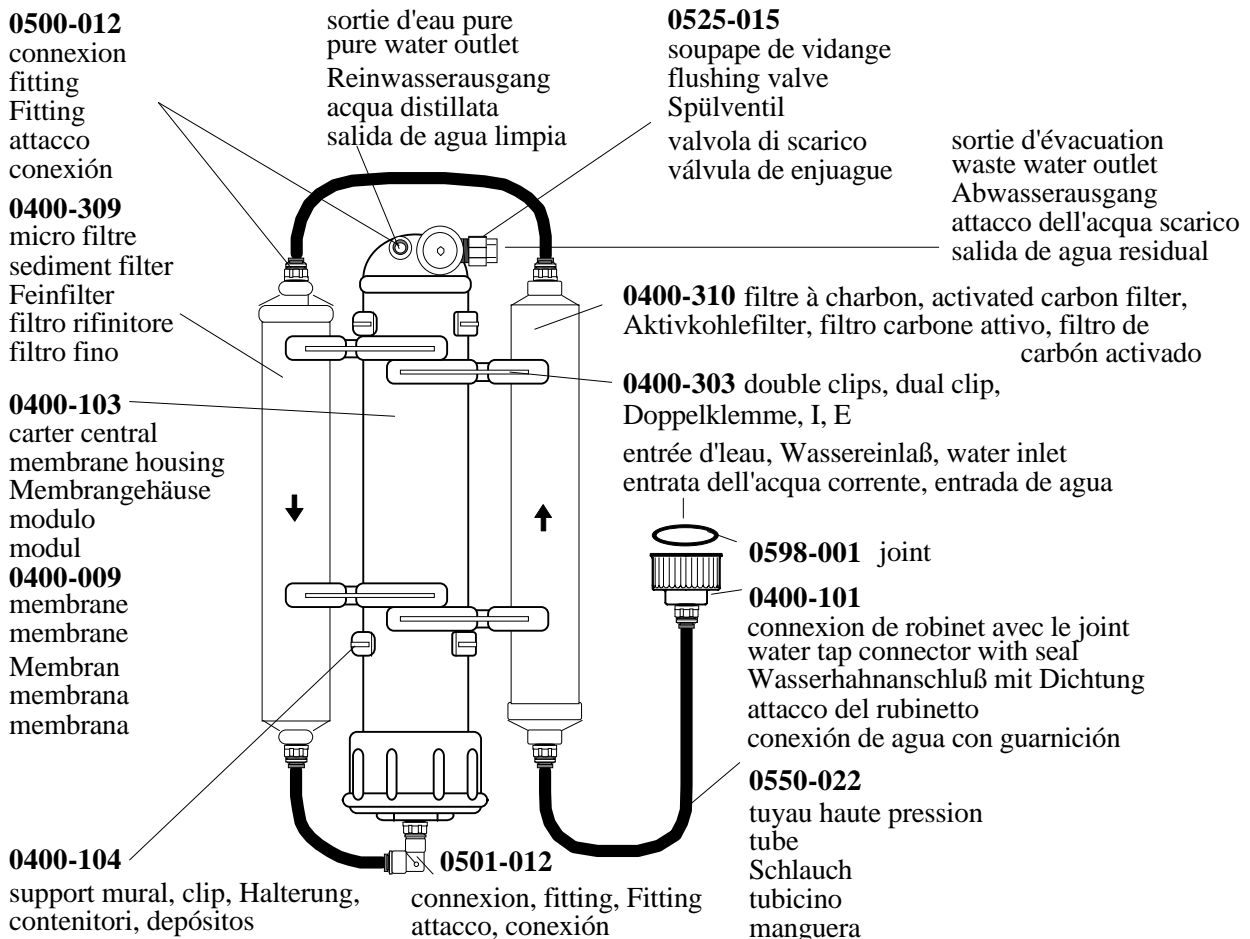


Systems for Aqua Culture,
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Instruction Manual for Reverse Osmosis Unit Classic 30 - Classic 90



Reverse osmosis is an efficient membrane filtration technique which reliably removes hardness and detrimental substances such as nitrate, phosphate, silicic acid, and organic matter such as pesticides and traces of pharmaceuticals from drinking water. With help of the water

pressure the drinking water is cut into two water streams:

1. the pure water (permeate), that is cleaned from substances to approximate 95% and
2. the waste water (brine), that contains all removed substances.

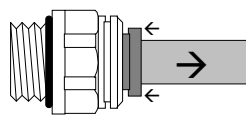
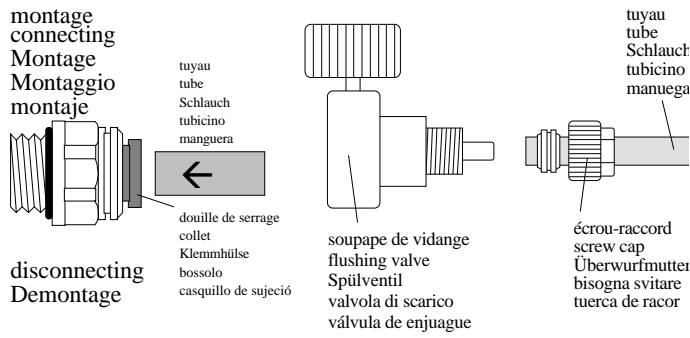


illustration 2; plate 2;
Abbildung 2, fig. 2,
ilustración 2

illustration 3,
plate 3,
Abbildung 3,
fig. 3,
ilustración 3

conductibilité: $\mu\text{S/cm}$ electrical conductivity: $\mu\text{S/cm}$ Leitfähigkeit: $\mu\text{S/cm}$ conductibilit�: $\mu\text{S/cm}$ conductividad: $\mu\text{S/cm}$		duret� de l'eau water hardness Wasserh�rte durezza durezza	
l'eau de conduite tap water Leitungswasser acqua corrente agua del grifo	l'eau pure pure water Reinwasser acqua pura agua limpia	l'eau de conduite tap water Leitungswasser acqua corrente agua del grifo	l'eau pure pure water Reinwasser acqua pura agua limpia
100	10 - 3	2	0,2 - 0,1
200	20 - 6	5	0,5 - 0,2
500	50 - 15	7	0,7 - 0,2
750	75 - 23	10	1,0 - 0,3
1000	100 - 30	15	1,5 - 0,5
1250	125 - 38	20	2,0 - 0,6
1500	150 - 45	25	2,5 - 0,8

tableau 1, table 1; Tab. 1, tabella 1, tabla 1

Mounting the unit

Please take off the two clips and fix them at a wall (about 18 to 20 cm distance between the two clips). The reverse osmosis unit should be installed in the near of a tap water connection. After fixing the clips, please hang the unit into the clips.

Install the water tap connector at the water tap (don't forget the ring seal). The black tube has to be pushed into the tap water fitting. Cut the tube - it must reach to the unit inlet at the right filter (blue signs). Push the tube into the filter fitting (plate 2).

The rest of the tube has to be fixed in the pure water outlet (the left upper fitting at the module). The pure water should be collect in a storage tank (glass or plastic). **The pure water never be stored in a metal tank!**

The rest of the tube must be connected at the flushing valve. Disconnect the screw cap (nut) and push the tube into the fitting. Now screw the nut onto the fitting. The tube must be very tight (see table 3)

Putting into operation

If all tubes are fixed, open the water tap. Close the flushing valve tenderly. **the flushing valve do not shut totally! Do not close it tightly! Otherwise the correct function of the reverse osmosis unit is not guaranteed.**

The air rushes out of the unit. Please search for leakage. After that open the flushing valve for about 15 minutes. After the flushing time closed the flushing valve tenderly. Now the unit produces pure water. The first 2 litres has to be drained, because there is a disinfection substances in it.

Maintenance

Flush the reverse osmosis unit before and after every use for about 2 minutes (5 minutes if you have very hard tap water). For flushing open the flushing valve totally. After the flushing time close the valve gently. In operation the waste water (brine) never should be less than 3 to 6 parts of the pure water (permeate). **A good maintenance extends the life of the reverse osmosis membrane.**

Every three month the filters has to be proved. Therefor you disconnect the tube from the sediment filter (left filter with red signs) and unscrew the black fitting. Now you can see into the filter. New sediment filters are white. If it looks brown, red-brown or black or is it smelling, you must change the sediment and the activated carbon filter. **Old filters lowers the pure water quality and the life span of the membrane.**

Every half year the quality of the pure water should be checked. You must measure the electrical conductivity (electronic devices) or the water hardness (quick tests) of the tap water and

the pure water. Before the reverse osmosis unit must be in operation for about 30 minutes! In table 1 please search for the value of your tap water. In the left row you see the right value of the pure water. Is the pure water of your unit has more hardness or electrical conductivity you can do following:

1. Flush the unit for about 30 minutes; measure the quality of the pure water again. If the water is bad:
2. check the prefilters. If they are dirty, change them. If the pure water is bad:
3. exchange the membrane: therefor you must unscrew the module housing. Take off the membrane with a nippers. Put in the new membrane and screw the cap onto the module housing. Flush the unit for about 30 minutes and drain the first two litres pure water.

Warranty

You have 12 months warranty on all AquaCare units excepts spare parts like one-way filters and

seals. You have no warranty if parts are broken by violent (for example totally shut flushing valve). The feed water must have a quality better than: TDS < 2000 ppm, iron < 0,1 mg/l; manganese < 0,1 mg/l; strontium and barium not detectable; oxidation substances (if no activated carbon is used) < 0,1 mg/l.

Technical data

Dimensions (L x W x H):..... 20 × 42 × 9 cm
Mass (dry):..... 1.7 kg
Connection inlet (feed water):.....³/₄ inch
Connection permeate / brine: 6 mm
water pressure: 3-10 bar
operation temperature: 1 - 35 °C
membrane:..... spiral wound membrane
with polyamide polysulfone (TFC)
pure water flow at 4 bar, 15°C, brine:permeate-
ratio 3:1, 500 ppm TDS (±15%):. 30, 90 litres/day
ratio brine : permeate:.....3 to 4 : 1
rejection at 500 ppm TDS, 4 bar and 15°C: ...95 - 97 %
pore size sediment filter: 5 µm
life time prefilter: c. 6-12 months

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