

Systeme für Aquakultur,  
 Aquaristik, Labore und  
 zur Wasseraufbereitung

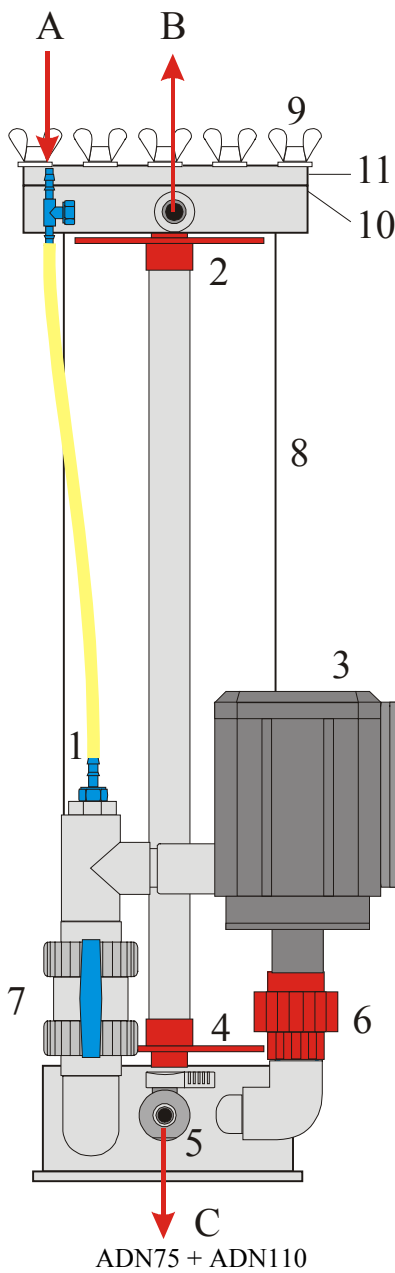
Systems for aqua culture,  
 sea water aquaria, labs and  
 water desalination and purification

Systèmes pour aquaculture,  
 aquariums eau de mer,  
 laboratoires et traitements d'eau

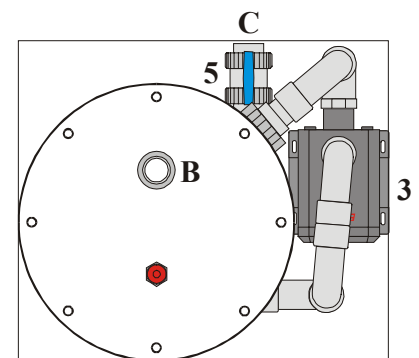
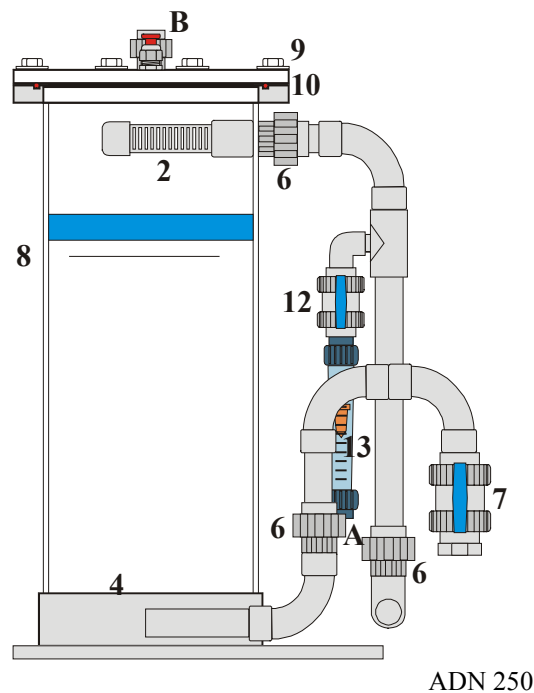


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# ADN Filter



A	Water Inlet	6	Union
B	Water Outlet	7	Ball valve
C	Drain (not ADN75)	8	Main tube
1	De-aerating bypass	9	Plastic Screws
2	Upper sieve	10	Sealing Ring
3	Circulation Pump	11	Cap
4	Lower sieve	12	Inlet ball valve (ADN250)
5	Drain Valve	13	Inlet pass meter (ADN250)



# Instruction manual of AquaCare Nitrate Filter ADN – US version

## Principle

The AquaCare Nitrate Filter ADN eliminates Nitrate with a biochemical process called autotrophic de-nitrification (ADN). Specialized bacteria are living from sulphur and re-spire under anoxic conditions nitrate to nitrogen. For this process any additional substance is used. So the reaction is very safe and only low numbers of bacteria will reach the aquarium water. The oxygen sink is very low.

## Mounting the unit

**Important!** Please flush the filter before using the filter. The sulphur dust should never flow into the aquarium. – Some models are delivered with a disassembled pump. For mounting it screw the screw connections (6) and ball valve (7) together and push the silicone tube into the de-aeration bypass (1).

**The pH of the outlet water is lower than the inlet water. Therefore the carbonate hardness in the aquarium should never be below 3°kKH (fresh water) and 7°dKH (sea water). Control the pH value regularly. If you have connected a column with chalk material please change this granules regularly.**

The ADN filter may be installed near the aquarium or filter tank or directly in the filter sump. The water inlet (A) should be made with a 6/4 mm tube. You can use a bypass from a strong pump or an extra pump (e.g. AquaCare dosing pump) for the water input. Valves or ball valves should be mounted in the inlet hose. The water outlet (B) of the ADN filter should be made with a 16/12 mm tube. The out coming water may flow into the filter tank or the aquarium. The best way is, if the water flows directly into the skimmer. So the oxygen free water will be enriched again with oxygen in the skimmer.

## Putting into operation

It takes a long time to establish the population of specialized bacteria. So you have to start the ADN filter very slowly. The starting time of the ADN filter can reach several weeks.

Please open the inlet water supply (A) totally to fill the ADN filter completely. After this reduce the water inlet to one drop per second. Now you can start the ADN circulation pump (3). If the pump will not run very quietly please shake the filter a little bit. The ball valve (7) must be throttled to prevent swimming up of the sulphur granules.

After one week you can measure nitrate and nitrite concentration. Both substances should be at zero. **Never increase the incoming water if nitrate or nitrite are in the outlet water.** If both values are at zero you can increase the water inlet flow – e.g. two drops per second. If nitrate or nitrite are more than zero please wait another week (the total time may reach 6-10 weeks).

If nitrate and nitrite are at zero, you can increase the water flow through the ADN filter. The forming of gas bubbles in the upper part of the substrate will show biological activity.

The optimum water flow should adapt to the nitrate concentration in the aquarium. If too much nitrate is in the aquarium you can increase the water flow. If too less nitrate is in the aquarium you should decrease the water flow. If you cannot decrease the water inlet, you can take half of the sulphur substrate off the filter. You can dry and store the surplus material.

The best concentration of nitrate is 10 to 20 mg/l (ppm). Never let more water through the ADN filter as noted in “maximum water flow” in the technical data. If the nitrite concentration will not reach zero after two weeks please reduce the water inlet. The possible maximum water flow depends on many factors like pH, temperature, etc.. The outlet water sometime smells. Then increase the water inlet or reduce the filter material.

## Maintenance of the ADN filter

The AquaCare ADN filter works a long time without maintenance. The bacteria growth causes with the time a blocking of the filter granules and the pump. If the efficiency of the ADN filter decreases (you can measure nitrite after a long time; the circulation pump runs not correctly; the material swims up) you should clean the filter system.

Please turn the pump (3) and the water inflow (A) off. Drain the water off the filter. Therefore you can open the drain valve (5) at the bottom of the ADN filter (not ADN75). **You should never flow the filter water (C) into the aquarium.** Disassemble the pump at the screw connections (6) and ball valve (7). Clean the pump as told in the instruction manual of the pump. To open the filter unscrew the plastic screws (9) and open the cap (11). Take out the silicone tube and the upper sieve. The filter substrate should be cleaned with a sieve and aquarium water. You can use the biggest granules again – do not use the small particles. Take out the lower sieve by pulling the centre tube and clean it, too. Push the sieve into the housing. Please fill the ADN filter again and use fresh sulphur granules to fill up the filter completely – just up to the centre tube – do not fill granules into the centre tube (close it with a finger or a PVC cap). Clean the upper sieve, too, put into the housing again. Push the silicone tube into the centre tube and close the filter. Start the system carefully again. The filter needs some time to get the maximum efficiency again. It is possible to flush the ADN250 automatically. Therefore you must connect an auxiliary pump to the “auxiliary water IN” connector and open the “auxiliary water OUT” ball valve. If you start the auxiliary pump the filter bed will be flushed.

If the rotor of the pump has to be changed (loud noises) disassemble the filter in the same way.

## Warranty

You have 24 months warranty on all AquaCare units excepts spare parts like pump bearings and rotors. You have no warranty if parts are broken by violent (for example totally closed water inlet).

Technical data see last page

## Technical data

<b>model</b>	<b>ADN 75</b>	<b>ADN 110</b>	<b>ADN 160</b>	<b>ADN 250</b>
Order number	300-008	300-011	300-016	300-025
Maximum aquarium volume	1.000 litres / 250 US gal	4.000 litres / 1000 US gal	10.000 litres / 2500 US gal	25.000 litres / 6600 US gal
Diameter	75 mm	110 mm	160 mm	250 mm
Filter volume	1.3 kg	3.8 kg	10 kg	26 kg
Height of filter	45 cm	55 cm	70 cm	77 cm
Minimum space for filter	47 cm	57 cm	73 cm	80 cm
Foot print size	190 × 140 mm	210 × 190 mm	300 × 370 mm	400 × 420 mm
materials	PVC, PVC transparent, ABS, NBR rubber seals, PA+PVC Fittings			
Water inlet	6/4 mm		20 mm	
Water outlet	16/12 mm		20 mm	
Optimum water flow	3 l/h	10 l/h	25 l/h	60 l/h
Maximum water flow	15 l/h	50 l/h	125 l/h	300 l/h
Weight without water	3 kg	8 kg		45 kg
Built in pump:				
Type	EHEIM 1048	EHEIM 1048	EHEIM 1250	EHEIM 1260
Electrical connection	10 W	10 W	28 W	50 W

Technical filters starting with 400 mm diameter on request.

# www.aquacare.de