CO2 reactor >>reactor 1000<<

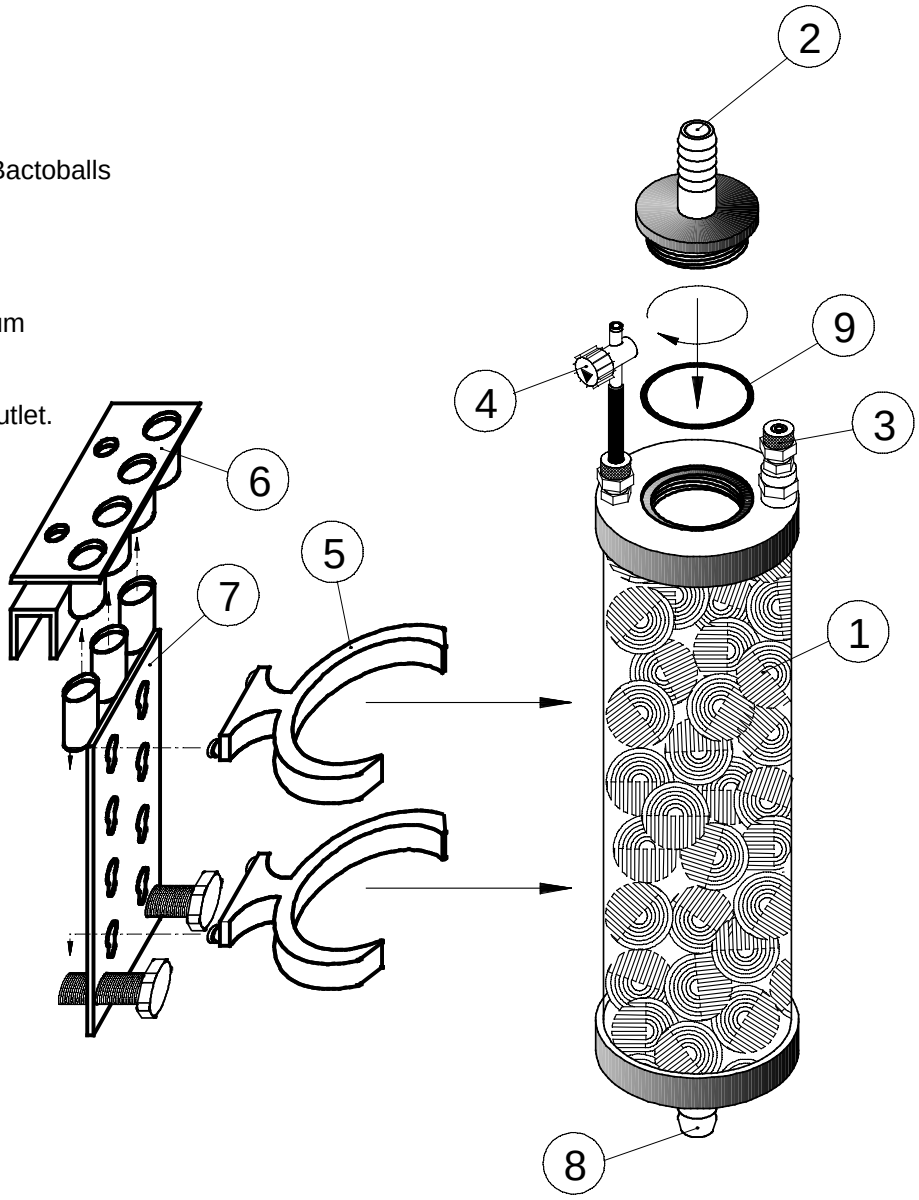
The CO2-reactor 1000 has been developed for the fertilisation of freshwater and marine aquaria Carbondioxide.

The unit has been especially designed for external use, outside of the aquarium.
Read and follow asll instructions in this leaflet carefully . The CO2-reactor will thank this with a safe function and a trouble-free long life.

1. parts of the reactor

fig1: reactor 1000

1. reactor – housing, filled with Bactoballs
2. water inlet
3. CO2 – inlet
4. false gas outlet
5. holding clamps (2 pcs)
6. holder for fixing at the aquarium
7. holding plate
8. Water outlet
9. 0-ring at the water inlet and outlet.



2.Set Up/ Installlation

The reactor 1000 has two hose connections for 16/18 mm hose and may be used externally or internally.

- Mounting inside of the aquarium
The included holding system allows the easy fixing of the reactors at or inside of the aquarium. The holder is mounted on a vertical or horizontal glass stripe and secured with the 2 screws.

- Mounting outside of the aquarium
The reactor 1000 may be mounted at a wall or inside the aquarium cabinet. For this, the holder (6) is removed and the holding plate (7) is directly screwed to the wall or the cabinet. If the reactor 1000 is used externally, make sure, that both water connections are tightened and the O-rings (9) are correctly mounted.

Now both holding clamps (7) are mounted and the reactor 1000 is pressed into the clamps.

Water inlet. The water inlet is connected to the upper hose connection of the reactor 1000 (2). For the water supply, a separate pump (min 1.000 l/hr , 250 gph) or the water outlet of a canister filter may be used. A stronger circulation improves the solution of the carbon dioxide. If the circulation pump is too strong, the reactor can be mounted in a bypass.

Water outlet. The water outlet is connected to the lower hose connection of the reactor 1000 and with a hose 12/16 mm, ½" back to the aquarium.

The CO2 is connected to the pressure fitting (3). Make sure, that a non return valve is mounted between the reactor and the bubble counter of the CO2-unit. The CO2 is directed downwards inside of the reactor with a hose. By this counter current flow, the dissolving of the gas is optimised. The Bactoballs give an extra turbulence.

False gas removal. The air in the reactor reactor can be removed with the valve (4) during starting. Also the false gas which can accumulate in the reactor during operation can be absorbed by opening the tap for a short time.

Please do always care that the hoses do not bend.

technical data

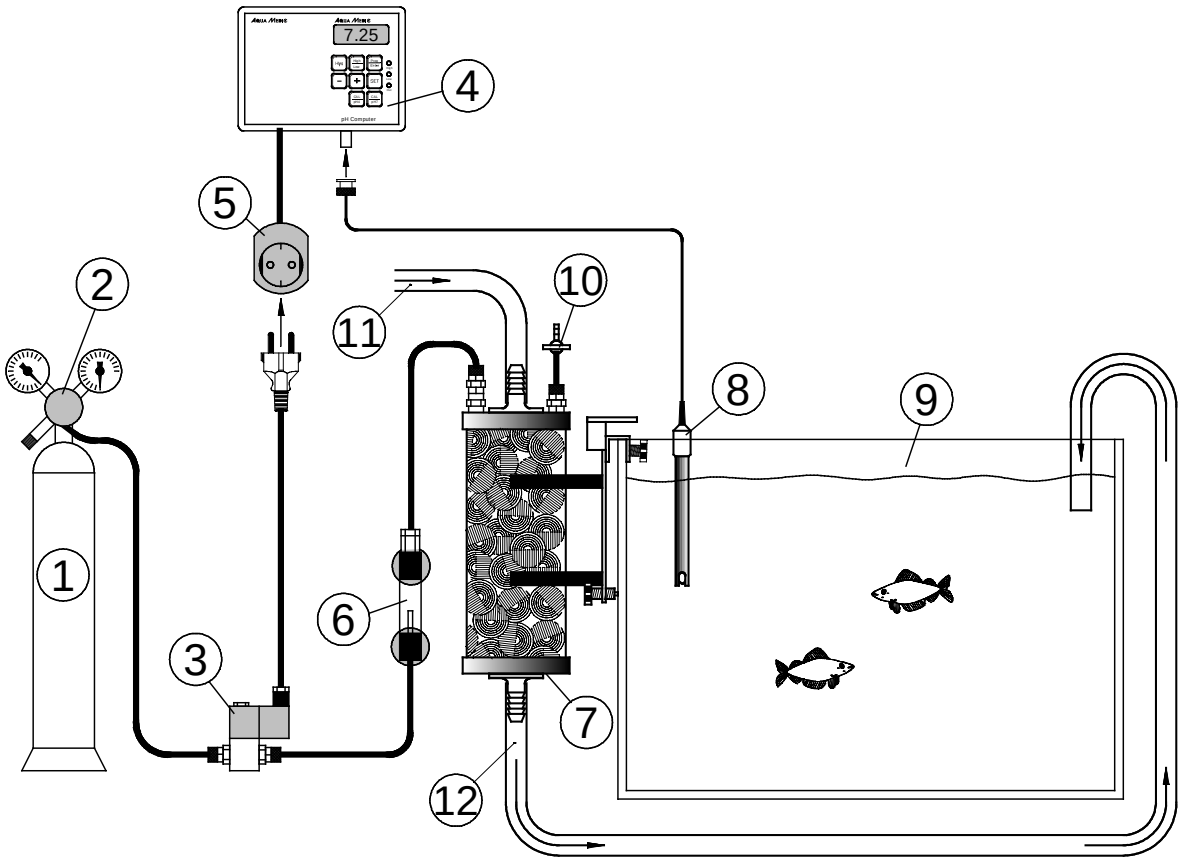
unit	reactor	1000	Art. No:	71113
water connection port:			12/16 mm	
CO2-connection:			6/4 mm	
water flow:			min 1..000 l/std	
set up:			internally or externally	

3. Appliance/ setting

A pressure regulator has to be installed onto the Co2 store bottle before the Co2 reactor can be set up.
Please read the operation manual relating to these device carefully. We recommend the pressure regulator >>regular No. 71011<< of our CO2 programme.
After having installed the pressure regulator and the CO2 reactor as stipulated, the setting up of the CO2 reactor can be started.

1. Switch on the circulation pump for the waterflow.
2. Open the main valve of the CO2 bottle.
3. Fix the working pressure on the pressure regulator to 1 – 2 bar. The working pressure of the regular is fixed to 1,5 bar.
4. Open the fine tuning valve of the pressure regulator slowly. When doing so control the outgoing CO2 bubbles of the bubble counter.
5. At first fix 15 bubbles per minute.
6. The CO2 gas flows into the reactor and is absorbed by the running water.

Please always observe the pH-value and amend the quantity of the bubbles according to demand. Advice: we recommend the bubble counter >>counter No. 71211<< with integrated non return valve of our CO2 programme.



figu. 2: reactor 1000 on aquarium with automatic CO2 control

1. CO2 pressure gas bottle station.
2. pressure regulator regular
3. solenoid valve
4. pH Computer
5. adaptor
6. bubble counter with non return valve counter
7. reactor 1000
8. pH electrode
9. aquarium
10. ventilation
11. running in of water to the reactor 1000
12. outlet of water to the aquarium

Figure 2 shows the reactor 1000 in exterior fixing together with a complete CO2 supply and steering by Aqua Medic. The water is leaded into the reactor coming from the exterior filter (not shown). The pH-Computer measures the pH-value in the aquarium and switches on the CO2 supply via the solenoid valve according to demand.

This way one can keep a constant pH-value in the aquarium (e.g.pH 6,5-6,8) in plant aquariums. Nevertheless the number of bubbles on the fine needle valve of the pressure regulator is not to be fixed on too high values. The risk is given that the pH-value in the aquarium decreases too much when the solenoid valve fails (e.g. blocked by dirt).

Increasing the hardness of carbonate

The carbonate hardness in aquarium water, both fresh- and marine water, is to be at 4 – 6 minimum. It is difficult to stabilize the pH-value when it is under the limit. Acids which reduce the carbonate hardness are permanently produced by biological procedures (e.g. germ reaction).Another carbonate hardness consumer is the filtering over peat, or the setting in of other hard acids. A weekly control of the carbonate hardness is to be executed in case of peat filtering. If the value is under 4 KH in freshwater and under 6 KH in marine water, the carbonate hardness is to be increased. Therefore we recommend the KH tablets by

AQUA MEDIC aqua + KH.

Maintenance and care

The right quantity of CO2

The quantity of CO2 dissolved in the water depends on the carbonate hardness. The higher it is , the more CO2 gas is dissolved – at the same pH-value. The harmfullness limit of the CO2 concentration also depends on the carbonate hardness.

A so-called free carbonic acid (dissolved CO2 gas) belonging to it is necessary in order that the calcium and magnesium inos (those which build carbonate hardness in connection with CO2 gas) keep being dissolved. The free carbonic acid belonging to it (also called eqivalent carbonic acid) is important carbonic acid for the plants. The equivalence between carbonate hardness builder and CO2 is stipulated from pH 7,1 – 7,4 for freshwater (8,1 – 8,4 for marine water). This quantity of CO2 is not dangerous for fish, it does not depind on the carbonate hardness. The plants consume the equivalent carbonc acid at the assimilation (photosynthesis). If it is not permanently supplemented,

the carbonate hardness builder can break down (so-called biogenetic decalcification). This should be absolutely avoided.

The CO2 system compensates for this loss.

It is very important only to replace the CO2 and not to supply the aquarium with more CO2 because one thinks that „very much helps very much“. For a balanced milieu it is important to get the calcium carbonic acid eqivalence. The plants only receive enough CO2 (carbonic acid) when this equivalence is meintained.

Guarantee

AQUA MEDIC GmbH grants a 24 months guarantee from the purchase date on all material- and processing faults of the device. The original receipt applies to guarantee proof. During this time we will get the product into good condition by setting in new parts or by renewing it free of charge (except for freight cost). Should you have problems with this product after the guarantee period please apply to your specialist supplier. This guarantee only applies to the first buyer. It only covers material- and processing faults, occuring at use as agreed. It does not apply to damage by water, transport or inadequately treatment, negligence, wrong setting in as well as interventions and amendments, which were not carried out by an authorized person.

AQUA MEDIC is not liable for damages arising by using this product.

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