D&D aquarium solutions ltd.

Operating Instructions for Deltec PF509 Fluidised Calcium Reactor.

Congratulations on your decision to purchase a **Deltec PF509 Fluidised Calcium Reactor.**

This reactor is suitable for marine systems from 40 to 140 UK gallons, (180 to 630 litres).

If you have bought this calcium reactor in conjunction with a D&D Complete CO2 Set then you will only require a plug timer to operate the unit successfully. Should you have an alternative CO2 set then refer to the manufacturers instructions for installation and ensure that you have the following items; bubble counter, non return valve, solenoid and two stage regulator with gauges. **Ensure that all connections are completely leak free. Test by brushing joints with soapy water and check for bubbles.**

Installation

Step 1: Open the bag of Rowalith C+ and wash the media thoroughly with fresh water to remove any fine dust. The water will then run clear when placed in the reactor.

Note: As this calcium reactor operates on a fluidising principle it is important that only the recommended media, **Rowalith C+**, is used. This media is phosphate free.

Step 2: Turn the lid of the calcium reactor anticlockwise, remove and fill the vessel up to the fill line. Ensure that the central fluid tube is in place with the fluidisation plate and that the single lower sponge is also present.
Place the second sponge on the connector pipe that is attached to the top diffuser plate then place this item on the end of the fluid tube. Re-attach the bayonet top, rotating clockwise, having first checked that the rubber O-ring is in position on the end of the reactor vessel.

Step 3: Connect the additional CO2 equipment as shown on the diagram overleaf and position calcium reactor.
The calcium reactor must be supplied with water from the system, which can be set up in one of 2 ways:

Pressure feed: Take water directly from the aquarium or sump via a suitable powerhead and return water directly back to the aquarium / sump. This allows remote positioning of the unit at any height. Ensure that connections and hoses from the powerhead to the unit are suitable for the pressure developed.

Gravity feed: The unit can be operated on a siphon from the tank and into a sump thus negating the requirement for a separate powerhead or pump.

Important Note: If the unit is operated on a siphon (gravity feed) it is **imperative** that allowances are made in the positioning of the water inlet pipe from the tank, (i.e. only ¼ " below the water surface), so that in the case of a power or pump failure the volume of water that will continue to siphon will not overflow the free space in the sump before the siphon is broken.

Step 4: Having successfully positioned, added media and supplied water to the calcium reactor we can now open the inlet tap fully to begin with and wait for the reactor to fill. Check again for leaks to ensure that the lid had been fully tightened.

Step 5: Switch on the recirculation pump to start fluidising the media. The fluid inlet valve should now be closed down until a flow of 1 drop per second is achieved into the tank/sump.

Step 6: The CO2 can now be switched on. Refer to the instructions supplied with the D&D complete CO2 Set or to the manufacturers instructions from any alternative set used for directions on operation.
Set the CO2 rate to one bubble per second as observed in the bubble tube and leave the system to run for 6 to 7 hours.
After this period the dKH of the water coming out of the calcium reactor should be measured with a suitable test kit. A reading of 35 to 40 dKH should be measured which will equate to a calcium level of approximately 600 mg/lt.
If the reading is lower, then the CO2 flow rate should be increased or the water flow rate through the reactor decreased until the desired measurement is achieved. Conversely if the reading is too high then the volume of CO2 should be reduced and the water flow rate increased. **Important note: Do not restrict or block the outlet from the reactor to the sump / tank.**

General Operation

A. The reactor unit should **not** be run 24-7 on small tanks. To obtain the best results run the unit for 8 -10 hours per day.

B. The reactor should start to run 4 hours after the lights have come on. This will enable the highest pH to be maintained within the aquarium.

C. If the reactor is running at maximum capacity then to reduce the likelihood of carry over of excess CO2 into the tank run the outlet through a further cup of reactor media to degas the water before it returns to the tank.

D. The natural dKH of seawater is 7-8. A dKH of higher than 11 is not recommended in the tank and indicates that the running period for the calcium reactor is too long.
Note: At higher levels of dKH in the aquarium calcium can become chemically locked in the system and therefore unavailable for coral growth.

E. The correct level of calcium in a reef aquarium should be between 420 and 440 mg/lt. To achieve this reading then the running time, the drip rate and the CO2 bubble count should be adjusted accordingly as described above.

Note: It is very important that phosphates are minimised when using a calcium reactor as CO2 can encourage the growth of nuisance algae. We would recommend the use of Rowaphos for the removal of phosphates used in a Deltec fluidised reactor.

Maintenance

A. The reactor should be cleaned out every 3-4 months.

B. The inlet water control valve is best fitted with a micro-filter, (part number 64056) to prevent dirt from the aquarium from causing blockages. Alternatively please flush the tap through with fresh water every 2 weeks.

C. Due to the aggressive environment of and fine abrasive media particles in which the recirculation pump operates, it is possible that wear may occur on the impellor bearing which should be considered a low cost consumable item.

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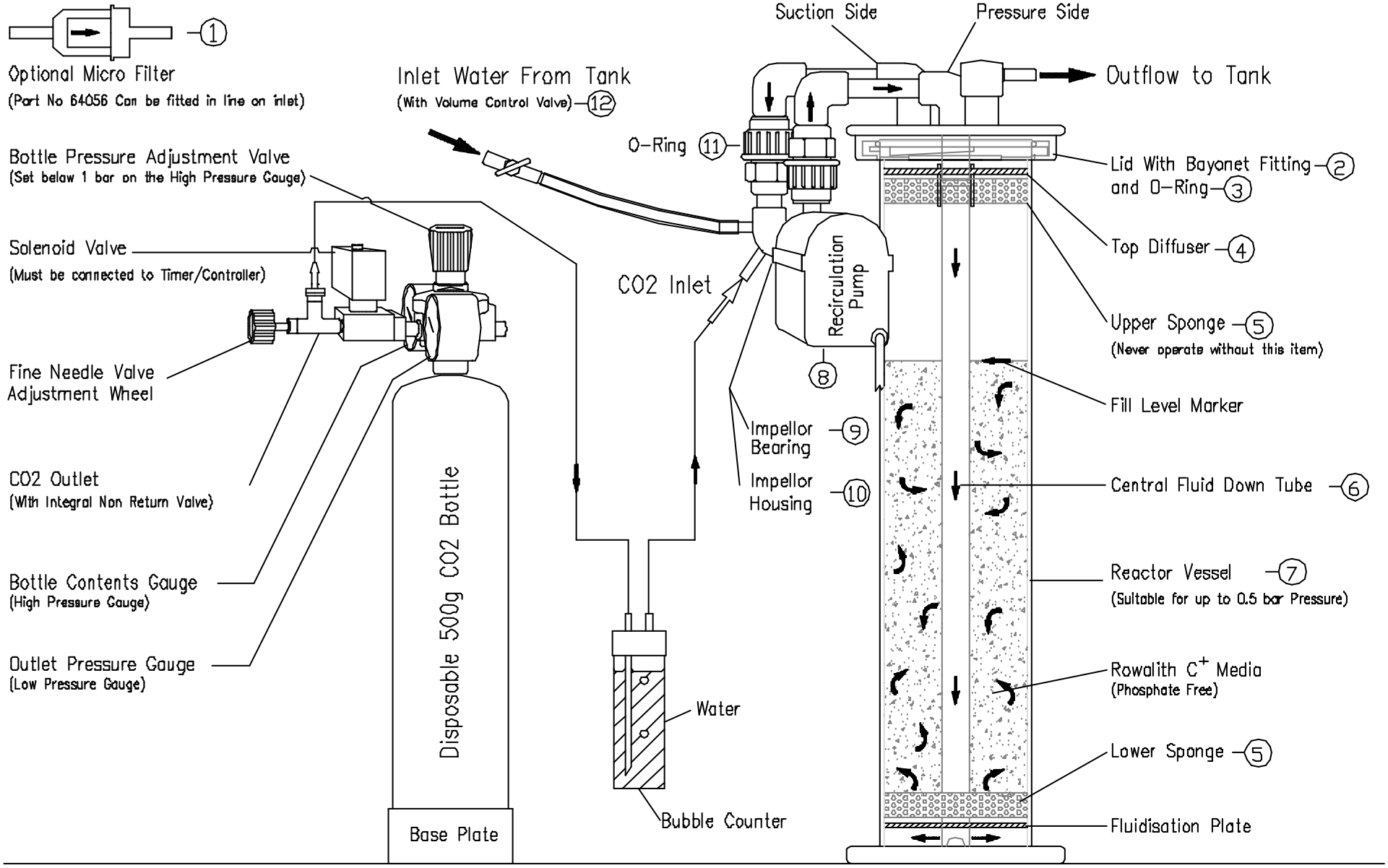
Deltec PF509 Fluidised Calcium Reactor With D&D CO2 Set



This Reactor, at maximum output, is capable of up to 70/80dKH at the outlet if set correctly according to instructions overleaf.