

# D&D aquarium solutions Ltd.

## Deltec Fluidised Media Reactors

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

These reactors are suitable for fluidising Rowaphos, reactive carbon or sand for biological filtration.

The following instructions describe how to set up the fluidised reactor for use with Rowaphos however with other media types it is still possible to follow the same instructions. Clean the media before use as described for Rowaphos.

### Operating Instructions for Deltec Fluidised Media Reactors with Rowaphos.

The **FR 509** is suitable for marine systems up to 200 UK gallons, (900 litres) and will fluidise up to 1 lt of *Rowaphos*.

The **FR 616** is suitable for marine systems up to 600 UK gallons, (2,700 litres) and will fluidise up to 3 lts of *Rowaphos*.

The **FR1016** is suitable for marine systems up to 1200 UK gallons, (5,400 litres) and will fluidise up to 5 kg of *Rowaphos*.

The **FR1020** is suitable for marine systems over 2500 UK gallons, (10,900 litres) and will fluidise up to 10 kg of *Rowaphos*.

For tanks of less than 50 gallons, (225 litres) we would recommend that you half fill the small reactor with 500 ml of *Rowaphos*.

**Note:** The above recommendations on tank size assume reasonable change periods however smaller units can be used on larger tanks with a corresponding increase in change rate.

**Rowaphos:** To obtain the greatest phosphate absorption efficiency from *Rowaphos* it is possible to fluidise the media, however great care must be taken initially to ensure that the media is not over fluidised and forced from the reactor by the water flow and into the tank.

**Fluidisation will greatly increase the life and effectiveness of *Rowaphos* as it allows a larger surface area for reaction with the water and prevents channels forming through the media.**

### Installation

**Step 1:** Turn the lid of the *Rowaphos* reactor anticlockwise to remove. Wash the two sponges and place one sponge above the lower fluidisation plate ensuring first that the central fluid tube is in position.

**Note:** The fluid tube and lower diffusion plate on the **FR509** is removable however on the larger units these are fixed.

Temporarily block the top of the central tube to stop media going down, (PF509 only), then fill with the required volume of media. 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 2:** Take the unit to a sink and with a pump or tap pressure and a hose connect the reactor to a fresh water supply and gently flush through the unit to remove the fine particles of *Rowaphos* which will turn the water inside the reactor brown.

Let the water run until it runs clear inside the vessel. Do not allow too much pressure / flow to drive media from the reactor and note that the brown scummy water is safe to dispose of down the sink, as it is generally inert.

**If this step is not carried out then the water in the tank will turn brown for a short period of time. This brown material is harmless but will look unsightly until it clears.**

**Note:** When used in a bag, *Rowaphos* do not recommend washing the media, however flushing the media must be carried out when fluidising to remove all of the fine particles.

**Step 3:** Position the reactor ideally inside the sump or outside remotely in a vertical orientation. Connect and prime the pump ensuring first that the tap on the supply pipe is closed and ensure that the return from the unit is in the tank or sump.

**Step 4:** Switch on the pump and open the supply valve slowly until the *Rowaphos* starts to Fluidise. Do not over fluidise the media. Your reactor should now be commissioned. Check for any leaks and leave to run.

### General Operation

**A.** The reactor unit should be run continuously and be **achieving phosphate levels below 0.015 mg/lt PO4**.

**B.** For tanks with an initial high phosphate level *Rowaphos* will become exhausted relatively quickly and will therefore require replacement, see note C. Subsequent additions will be dealing with a maintenance level of phosphate only due to release from some tank media, death and general feeding / waste. For more information see *Rowaphos* data sheet.

**C.** The *Rowaphos* within the reactor will continue to remove phosphate until it is exhausted. To determine this point, the water in the tank and from the reactor outlet should be monitored with a suitable test kit, (capable of measuring levels below 0.015 mg/lt). When the level in the tank is above zero and you find that the level in the exit from the fluidised reactor measures the same then it is time to replace the media.

**D.** If Kalkwasser / Calcium Hydroxide is used within the tank then ensure that the drips do not feed into the inlet of the pump feeding the fluidised reactor. It is possible that calcite formed by excessive dosing of this additive could cause aggregation of the *Rowaphos* as would be encountered with the media within a plenum.

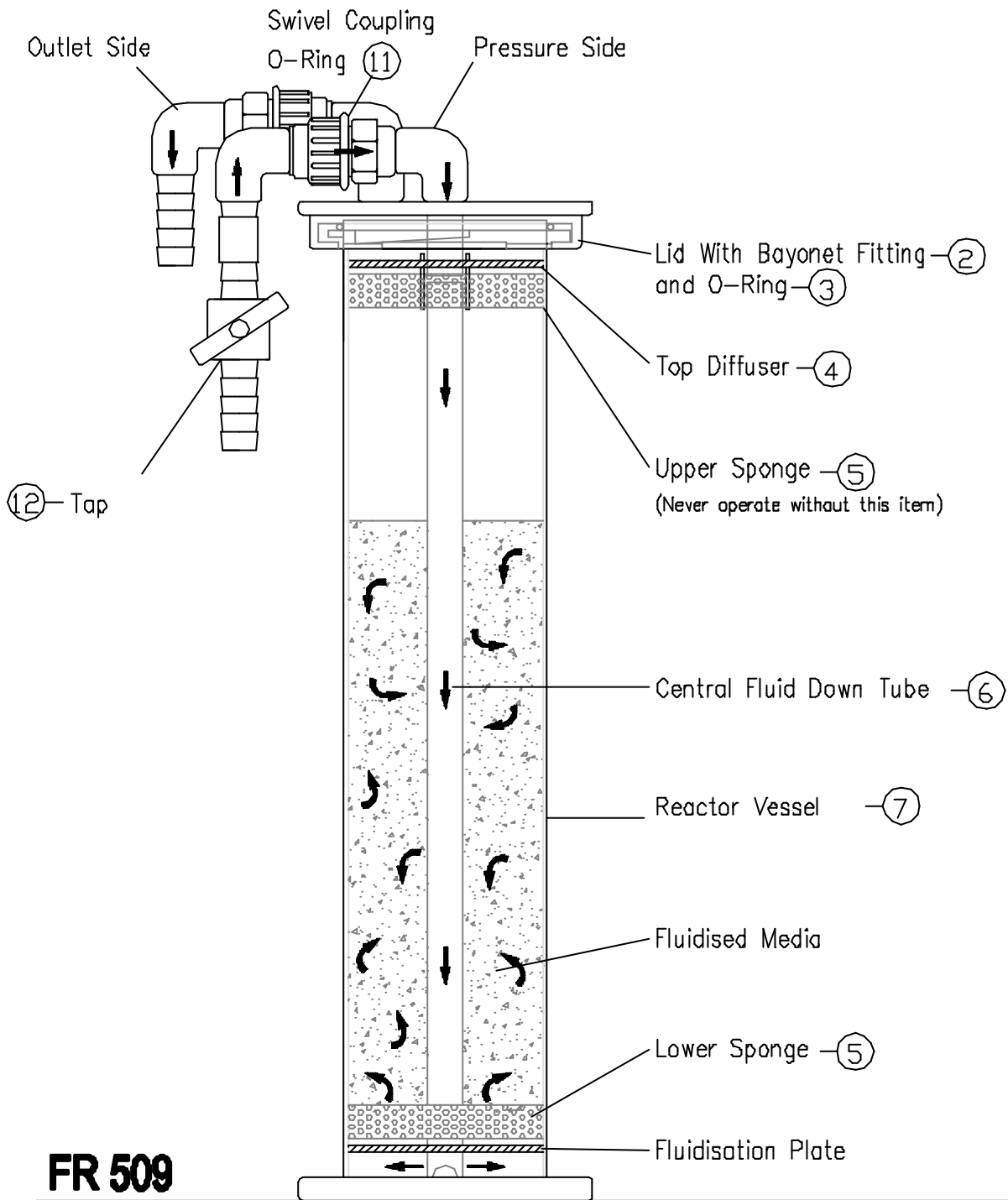
### Maintenance

**A.** The reactor should be cleaned out every time that the media is replaced ensuring that there is no media below the bottom fluidisation plate.

**B.** The inlet water control valve should be cleaned to ensure that it does not become gradually blocked with debris from the tank or calcium deposits.

# Deltac FR Series Fluidised Media Reactors

Suitable for 'In Sump' or Remote Mounting



## FR 509

Model	Approx. Dimensions (Footprint) (Height)	Approx. Media Capacity (Varies Depending on Media)	Required Water Flow (Up to)
FR 509	180 x 140 x 500 mm	1.2 Litres	500 Ltr./hour
FR 616	300 x 250 x 600 mm	4.6 Litres	2500 Ltr./hour
FR 1016	300 x 250 x 1000 mm	9.0 Litres	2500 Ltr./hour
FR 1020	350 x 300 x 1000 mm	14.0 Litres	4000 Ltr./hour