

D-D aquarium solutions ltd.

Deltec AP Series Skimmer Instructions.

Congratulations on your decision to purchase a **Deltec AP Series Skimmer**.

Deltec skimmers with their Patented Pin Wheel Impellor are renowned throughout the world for their ability to mix air and water to produce the fine-bubbled foam that is required for efficient foam fractionation.

The AP Series skimmer is the ultimate piece of equipment for protein waste removal from aquariums. The automatic cleaning head available for larger models can clean both inside and outside of the cup and will increase the efficiency by a further minimum 20%.

Choice of Skimmer: The initial choice of skimmer should be determined by the size of the aquarium system and the stocking level.

Model	High Stocking Capacity	Normal Stocking Capacity	Required Water Throughput	Cleaning Head
AP 525	450 lts (100 gals)	700 lts (155 gals)	600lts/hr (133 gals/hr)	Not Available
AP 600	500 lts (111 gals)	750 lts (167 gals)	600lts/hr (133 gals/hr)	Not Available
APF600	750 lts (167 gals)	1000 lts (222 gals)	800lts/hr (178 gals/hr)	Not Available
AP 851	1000 lts (222 gals)	1500 lts (333 gals)	1000lts/hr (222 gals/hr)	Not Available
AP701	1000 lts (222 gals)	1500 lts (333 gals)	1000lts/hr (222 gals/hr)	Not Available
AP 702	1500 lts (333 gals)	2000 lts (444 gals)	2300lts/hr (511 gals/hr)	Available
AP 703	2000 lts (444 gals)	3000 lts (667 gals)	2800lts/hr (622 gals/hr)	Available
AP 902	1800 lts (400 gals)	3600 lts (800 gals)	3000lts/hr (667 gals/hr)	Available
AP 1003	3500 lts (778 gals)	5000 lts (1111 gals)	3000lts/hr (667 gals/hr)	Available
AP 1004	4500 lts (1000 gals)	6000 lts (1333 gals)	3000lts/hr (667 gals/hr)	Available
AP 1006	8000 lts (1778 gals)	12000 lts (2667 gals)	3500lts/hr (778 gals/hr)	Available

Assembly: When the skimmer arrives it is likely that it has been packed in a disassembled state to prevent damage in transit. Study the diagrams attached to reassemble. Always check when screwing the pumps and couplings together that you have fitted the O-rings that are supplied with the unit, as without these items a watertight joint cannot be achieved.

Take the opportunity to remove the inlet pipework from the pump and have a look at the Patented Pinwheel Impellor with its ceramic shaft. Note the venturi pipe where the air passes into the pump. These are all parts that will require regular cleaning and inspection. Do not switch on the recirculation pumps unless the pumps are immersed or flooded with water.

NEVER REMOVE THE SEALED PLUG FROM THE SKIMMER PUMP AS THIS WILL INVALIDATE THE WARRANTY ON THE MOTOR AND MAY MAKE USE OF THE SKIMMER DANGEROUS IN ITS NORMAL WET ENVIRONMENT.

Positioning: The Deltec AP range of skimmers is designed for the unit to stand beside the aquarium, inside or beside a sump or even positioned remotely with a return drain back to the system. In all types of installation the water should be able to drain freely under gravity from the outlet pipe into a section of the aquarium system which is lower than the underside of the return pipe.

Suitable installations are: Pumping from the aquarium and returning water back into the aquarium. Pumping from the sump and returning water back into the sump. Gravity feed from an overflow to the sump. Pumping from the sump and returning water back into the aquarium. Ensure for this option that the over flow system in the tank is large enough to cope with the increased flow.

Note Never install a system that pumps water from the aquarium through the skimmer and then returns it to a low level sump below. If the pump returning water from the sump to the tank should lose duty or fail then the sump will become flooded and the tank will empty down to feed pump level. In the case of a power cut the system will also siphon to the same level.

Feed Supply and Return Pipework: The skimmer should be provided with water from the aquarium system either under pressure from a separate feed pump or by gravity supply.

For a pumped system use our installation kits or choose a suitable pump and pipe diameter using the table above and connect it to the inlet of the unit. Rigid or flexible pipework can be used for this task. Connect up the outlet pipe to allow water to return to the system.

It is recommended on smaller skimmers that a ball valve is fitted on the outlet pipe to achieve better adjustment of the water level. Larger models may come supplied with a coupling at one side of the ball valve to allow the riser tube to rotate for easier installation.

If gravity feeding the skimmer it is necessary to fit a tee piece to the existing overflow drain to the sump and use the branch to supply the skimmer. In order to regulate the supply, a valve should be fitted below the tee. Ensure that the pipe feeding the skimmer is of large enough diameter and that there is enough head to provide the proper flow rate.

Operation and Setting: Open the valve on the outlet pipe and allow the skimmer to fill with water then outflow naturally back into the system. Check for leaks on the fittings. Close the tap(s) on the air intake pipe(s) plug the pump(s) into a suitable supply and switch on.

Check that all of the pumps are operating by opening and closing the tap on each air intake in turn. This should produce a stream of bubbles into the skimmer body if operating correctly. **Note:** Do not run for prolonged periods of time with the air taps closed.

As with all water pumps it is possible to trap air within the body, which will affect the operation and noise produced by the unit. To remove this air, switch the pump off and on at the mains a few times until no further air is released.

Often the pump will be found to run hot at one end. This is often due to trapped air affecting the water-cooling of the ceramic bearing and can be reduced by following the above procedures.

Observe the water level within the skimmer with the air intake valves closed. For all Deltec skimmers the ideal operating level for the water is just above the bottom of the black bayonet fitting for the removable cup (A). Adjust the level by opening or closing the valve the outlet pipe or by altering the flow through the inlet. If it is not possible to reduce the level below the bayonet then the supply volume is too great and should be regulated accordingly.

Open the air intake tap(s) and set to the 2 o'clock position. The body of the skimmer should now be white with fine dense foam. Leave the skimmer to settle down for a day or so before further adjustment to allow the surface of the plastic to wet out fully as until this happens the true capacity of the unit will not be achieved. With fresh salt solutions or large water changes it is often common to remove significant quantities of clear or pale liquid. This is a conditioning compound found in some salts and will not last for long.

The level of the initial foam in the skimmer should rise to half way up the skimmer tube. Adjust the taps to achieve fine bubbles within the neck of the skimmer. Opening the air intake taps will result in an increased quantity of wetter foam and visa versa.

During normal operation it is recommended that the skimmer cup is emptied every 2-4 days and that during this operation the riser tube into the cup is wiped clean of any fatty deposits as build up of this waste product will greatly reduce the ability for the foam to climb the neck. Ensure before removing the cup that the pumps are switched off and that the water level is below the bayonet fitting. Whilst cleaning leave the pump switched off, with the taps open, for 10 minutes to allow any salt deposits in the venturi tube to dissolve.

Use with Ozone: Deltec skimmers are suitable for use with ozone and will automatically suck the gas through the venturi hose. A maximum volume of 50 mg/h per pump should be used with special manifolds available for multi pump units. Do not use excessive ozone, as it is dangerous and can cause severe headaches. Should the skimmer performance deteriorate check the ozoniser for blockage. Ensure that it is not possible for water to siphon through the ozoniser by installing the unit above the skimmer water level.

Maintenance: The Deltec skimmer range should need very little adjustment and maintenance once set correctly, however due to the high levels of calcium in marine aquariums and large volumes of air drawn in, it is common for deposits to accumulate requiring periodical cleaning. Regular introduction of a small amount of RO water into the inlet tap may help to prevent any build up.

The AP Series Skimmers are fitted with two different types of pump depending on the model.

1. - Smaller skimmers are fitted with **Aquabee pumps**, which have permanent magnet motors where the impellor, on start up, can randomly rotate in either a clockwise or anti clockwise direction. In one direction the full pumping capacity is achieved and in the other a reduced flow is observed. In order to counteract this effect the Aquabee pumps are fitted with a little flap inside the outlet of the pump, which flips from one side to the other depending on the direction of rotation thus ensuring that the pump always operates at full duty.

2. - Larger skimmers are fitted with **Eheim Pumps**, which are also have permanent magnet motors but have no such flap device, relying on a symmetrical outlet port design and accepting a lower working efficiency.

Due to the high levels of air drawn into the Deltec skimmers it is normal to find dust, and salt collecting in the inlet tap and venturi pipe. This build up will restrict or block the air supply and will reduce the skimming efficiency and should be checked and carefully cleaned.

Carefully remove the silicone hose where it slides over the venturi pipe by working it off and not pulling it off then with a toothpick or fine drill rotated between the fingertips scrape the hard deposit from the inside of the pipe until it feels clean and smooth. The tap can simply be blown clear to remove the dust ball that always builds up.

It is recommended every 3 months with either type of pump that they are removed from the skimmer having first drained the body of water. Strip down the pump to check and clean the impellor of debris. On Aquabee pumps ensure that the direction flap moves easily and if necessary soak the neck of the pump housing in white vinegar or D-D EzyClean scale remover to dissolve any calcium carbonate deposits.

On older skimmers check for wear on the impeller by holding the two ends of the ceramic shaft between the thumb and first finger and look for excessive movement (slop). If this is found it should be replaced, as the loss of balance will cause unnecessary noise. It should be noted that this is very rare as the wearing surfaces are both ceramic.

Check for damage or wear of the sealing ring on the base of the cup and if necessary replace it.

Important Note: Ensure that the air intake pipes are always positioned well above the water level in the skimmer to prevent back siphoning of water when the pumps are switched off.

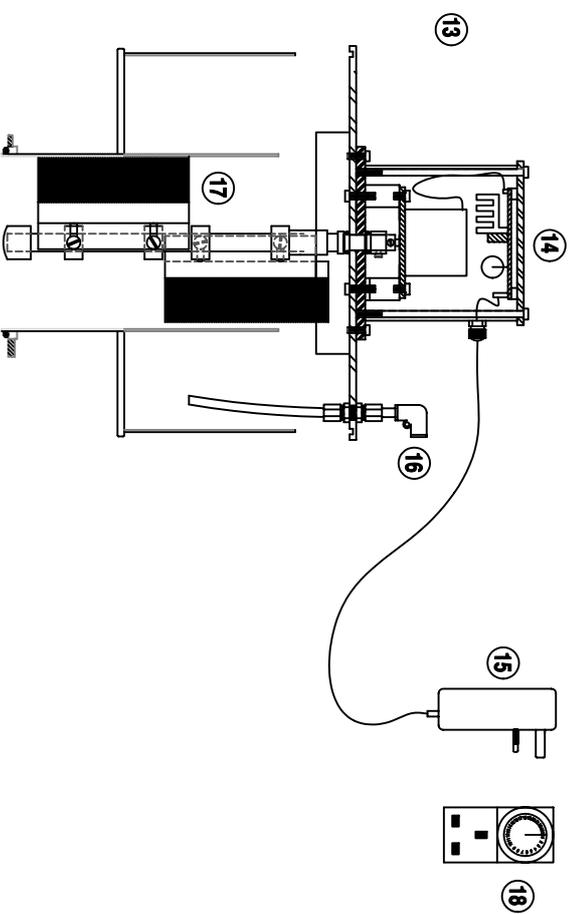
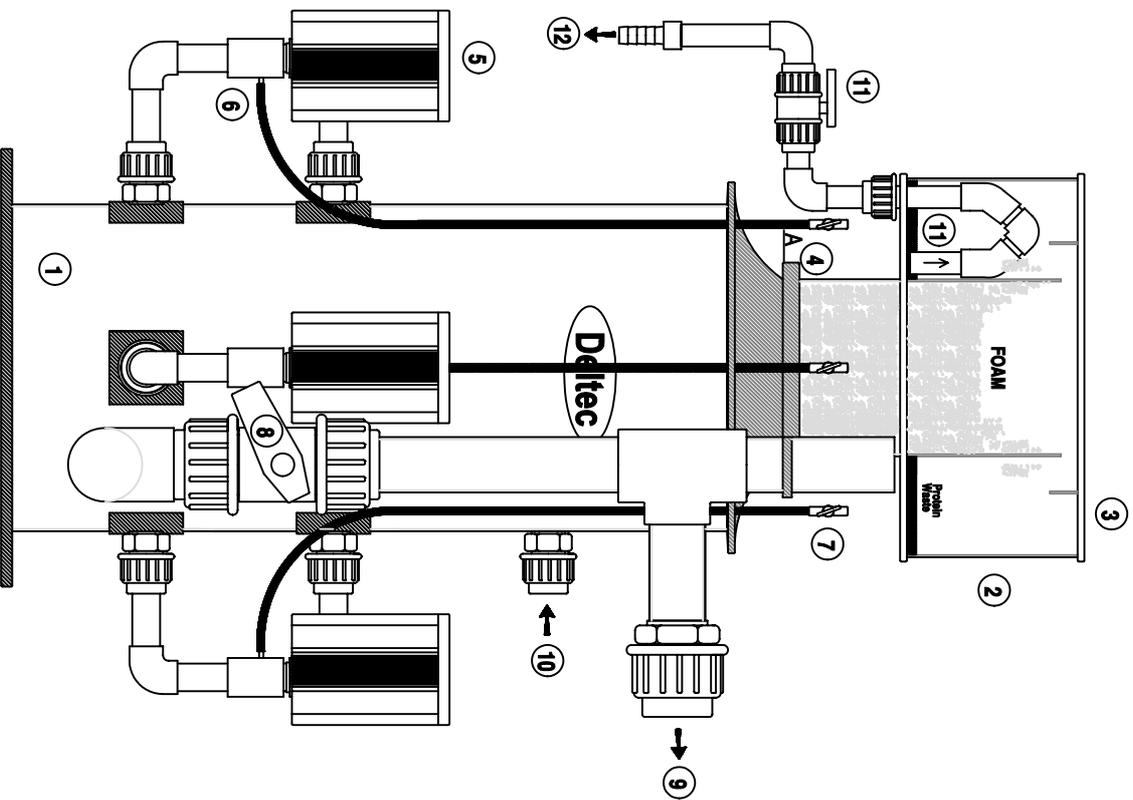
Deltec Self Cleaning Head and Auto Flush Systems

It is possible to fit a Self Cleaning Head to many of the larger Deltec Skimmers to clean the inside and the outside of the collection cup. This can be ordered with the skimmer or simply retrofitted at a later stage.

Fitting of such a system can increase the efficiency of the skimmer by at least 20% due to the constant removal of fatty deposits on the riser tube that will otherwise reduce foam production.

For further information on this or any other D-D product please contact us or visit our website on:

Delttec AP Series Larger Skimmer Range With Self Cleaning Head



KEY.

- 1. - MAIN SKIMMER BODY
- 2. - COLLECTION CUP
- 3. - STANDARD LID FOR COLLECTION CUP
- 4. - BAYONET FITTING FOR CUP
- 5. - EHEIM RECIRCULATION PIN WHEEL PUMPS
- 6. - VENTURI PIPE
- 7. - AIR INTAKE TAP
- 8. - WATER LEVEL CONTROL VALVE ON EXIT PIPE
- 9. - WATER RETURN TO SYSTEM
- 10. - WATER INTAKE TO SKIMMER
- 11. - AUTOMATIC SYPHON AND DRAIN SYSTEM FOR PROTEIN WASTE
- 12. - WASTE TO DRAIN
- 13. - SELF CLEANING HEAD AND LID
- 14. - LOW VOLTAGE MOTOR
- 15. - TRANSFORMER SUPPLY TO DRIVE LOW VOLTAGE MOTOR
- 16. - TIMED WATER SUPPLY FOR CUP FLUSH FROM MAINS OR PUMP
- 17. - BRUSHES TO CLEAN INSIDE OF CUP
- 18. - TIMER TO CONTROL SELF CLEANING HEAD