



TC 2060 - TC 3070



Operating instruction

IMPORTANT SAFETY INSTRUCTIONS

To guard against injury, basic safety precautions should be observed, including the following.

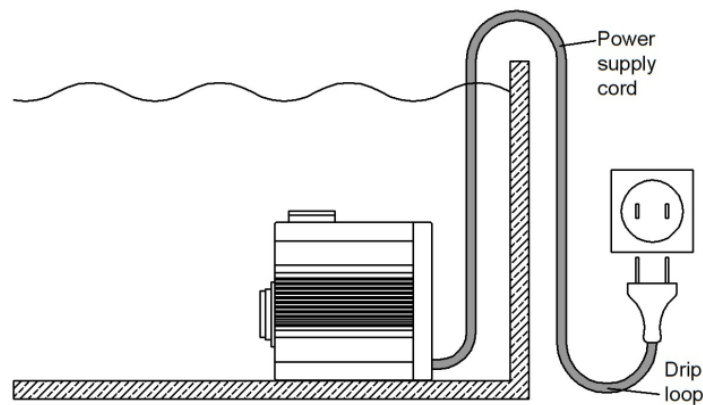
- 1) READ AND FOLLOW ALL SAFETY INSTRUCTIONS.
- 2) DANGER – To avoid possible electric shock, special care should be taken since water is employed in the use of aquarium equipment. For each of the following situations, do not attempt repairs by yourself; return the appliance to an authorized service facility for service or discard the appliance.

a) Do not operate any appliance if it has a damaged cord or plug, or if it is malfunctioning or has been dropped or damaged in any manner.

b) To avoid the possibility of the appliance plug or socket getting wet, position aquarium stand and tank to one side of a wall-mounted socket to prevent water from dripping onto the socket or plug.

A “drip-loop”, shown in the figure below, should be arranged by the user for each lead connecting an aquarium appliance to a socket. The “drip-loop” is that part of the cord below the level of the socket, or the connector if an extension lead is used, to prevent water travelling along the lead and coming in contact with the socket.

If the plug or socket does get wet, **DO NOT** unplug the lead. Disconnect the fuse or circuit breaker that supplies power to the appliance. Then unplug and examine for presence of water in the socket.



- 3) Close supervision is necessary when any appliance is used by or near children.
- 4) Do not use an appliance for other than intended use. The use of attachments not recommended or sold by the appliance manufacturer may cause an unsafe condition.
- 5) Make sure an appliance mounted on a tank is securely installed before operating it.
- 6) Read and observe all the important notices on the appliance.
- 7) If an extension lead is necessary, a lead with a proper rating should be used. A lead rated for lower amperes or watts than the appliance rating may overheat. Care should be taken to arrange the lead so that it will not be tripped over or pulled.
- 8) This appliance has a polarized plug (one blade is wider than the other). As safety feature, this plug will fit in a polarized outlet only one way. If the plug does not fit, contact a qualified electrician. Never use with an extension lead unless plug can be fully inserted. Do not attempt to defeat this safety feature.

Exception: This instruction may be omitted for an appliance that is not provided with a polarized attachment plug.

Removing of the plug invalidates the warranty!

SAVE THESE INSTRUCTIONS

Deltec Protein Skimmer TC 2060 – TC 3070

Deltec "TC" series protein skimmers are very compact, highly efficient and are fitted with a special low energy skimmer pump.

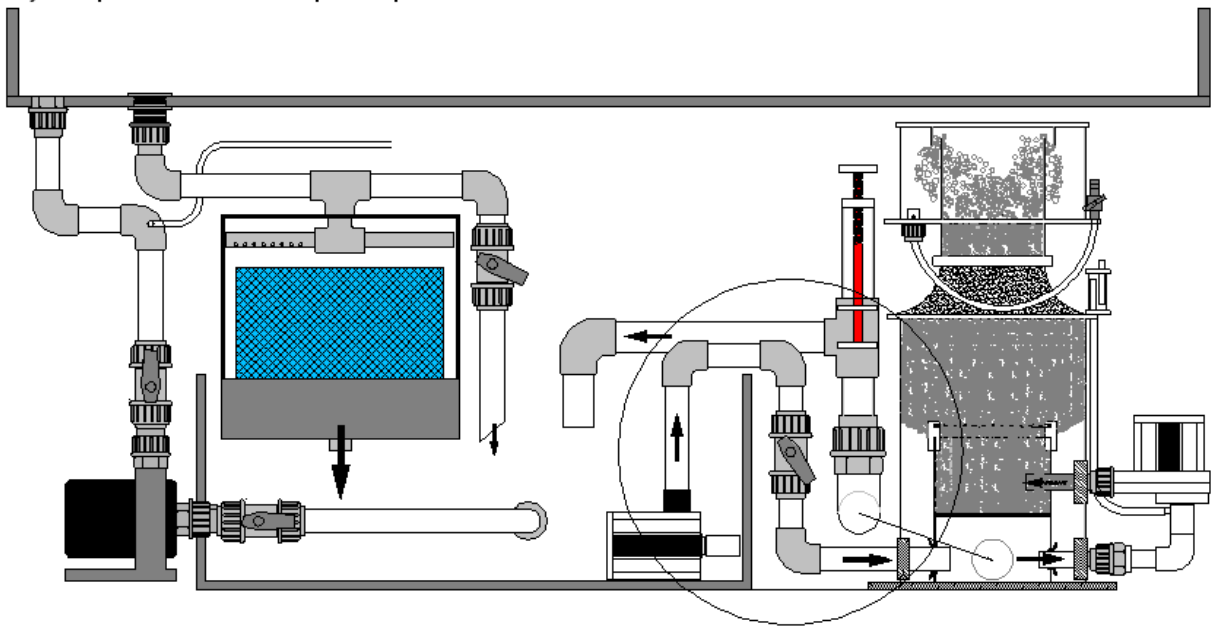
The "TC" skimmers features

- precision water level adjuster
- remote skimmer cup drain
- silencer (the silencer can be opened for cleaning)

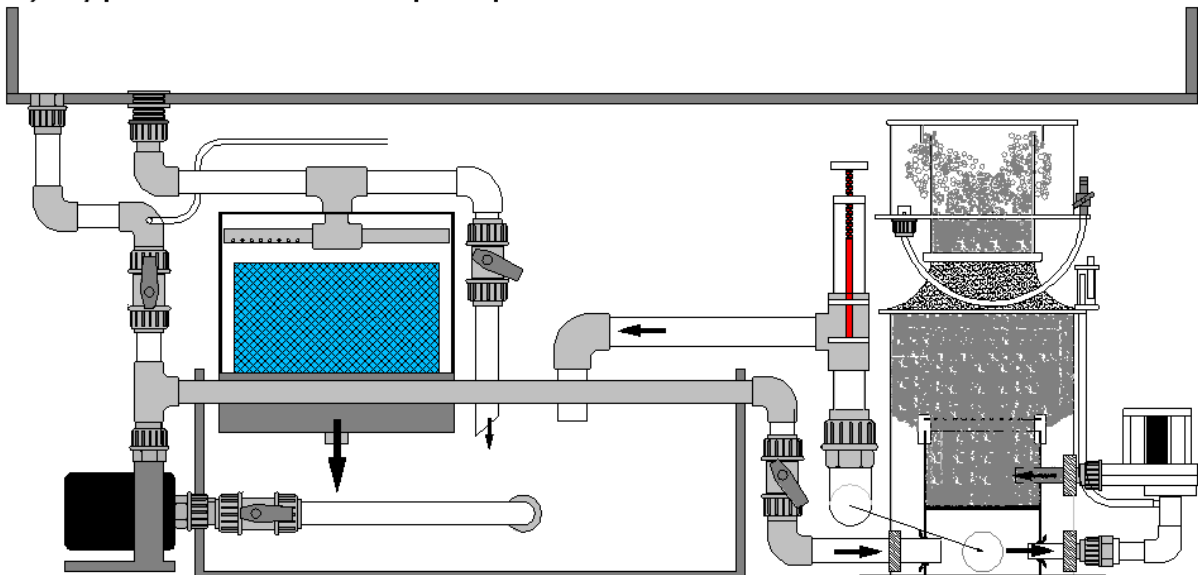
Installation

Protein skimmers of the "TC" series are mainly used in combination with an external filter. They are normally fitted outside the filter sump; if space permits they can be fitted also inside the sump. Please remember that the sump's capacity to accept water when the main aquarium pump is stopped, will be reduced

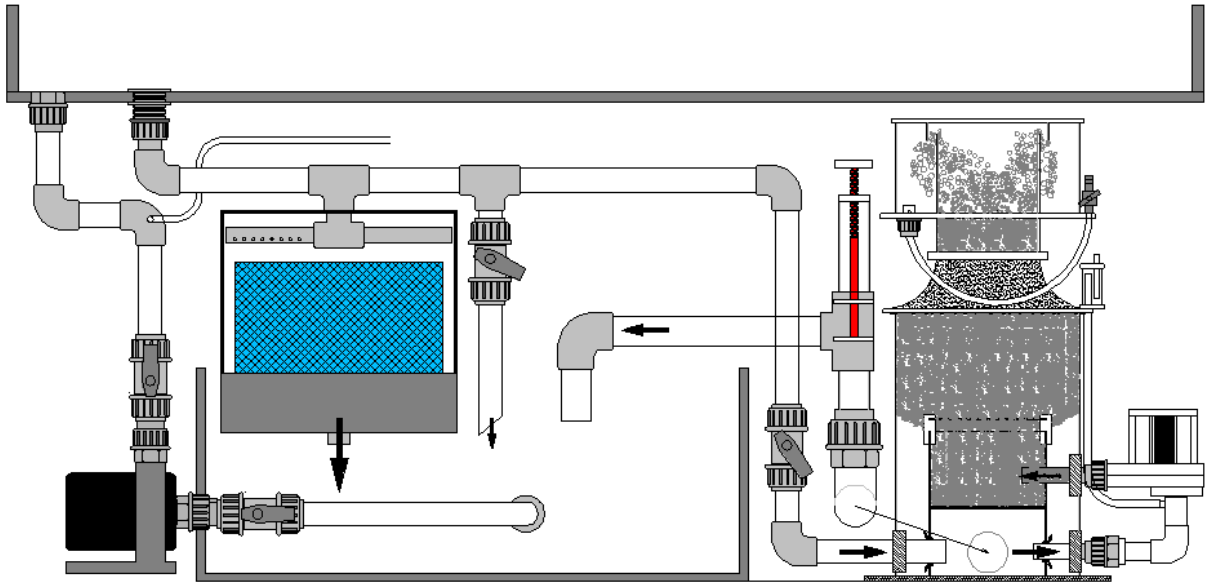
a) separate feed pump



b) Bypass from return pump



c) Bypass from overflow

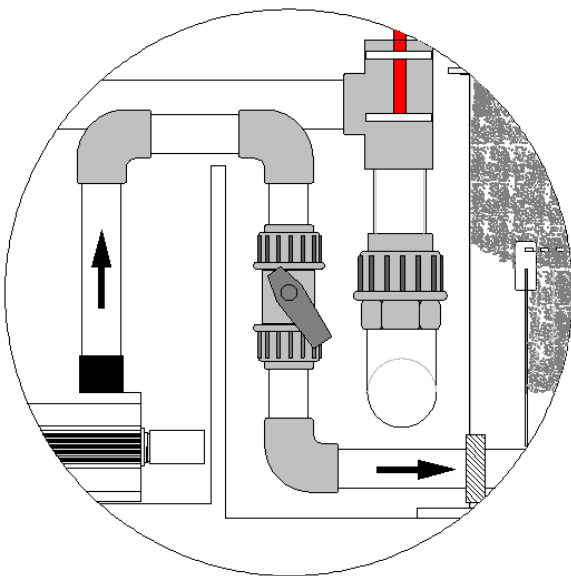


Feed line

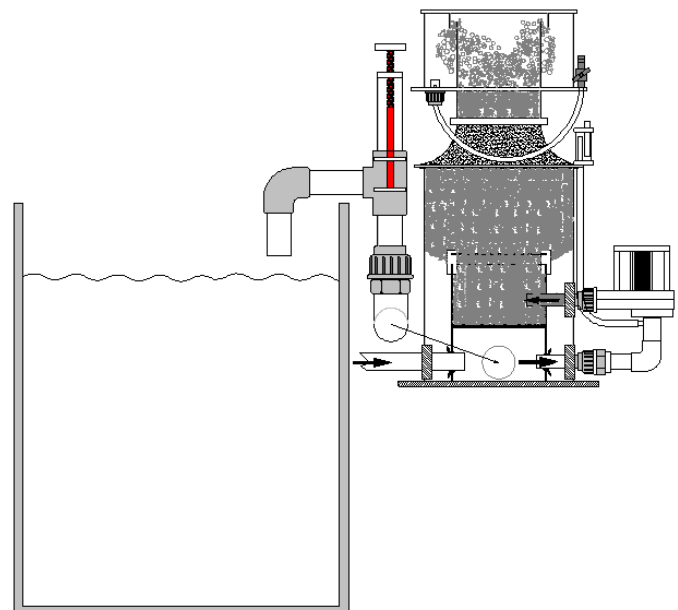
In order to achieve best results it is important to fit a shut off cock into the water feed line. This allows exact regulation of the water flow to compensate variations of existing salinity and water pollution. The diameter of the feed line should not be smaller than the skimmer inlet. When choosing a pump to supply the skimmer, the capacity should be somewhat higher than the recommended maximum flow through the skimmer (see technical data). The optimum flow through the skimmer can then be adjusted with the shut-off valve in the feed line (Diagram d).

Outlet

The skimmer must be installed in such a way, that the cleaned water can flow unrestricted back into the sump (or aquarium). Never fit an outlet pipe higher or smaller in diameter than existing on the skimmer. When installing the skimmer directly to the aquarium, the skimmer outlet must be positioned higher than the top rim of the aquarium (Diagram e). A degassing set can be supplied to reduce air bubbles entering the aquarium from the outlet pipe.



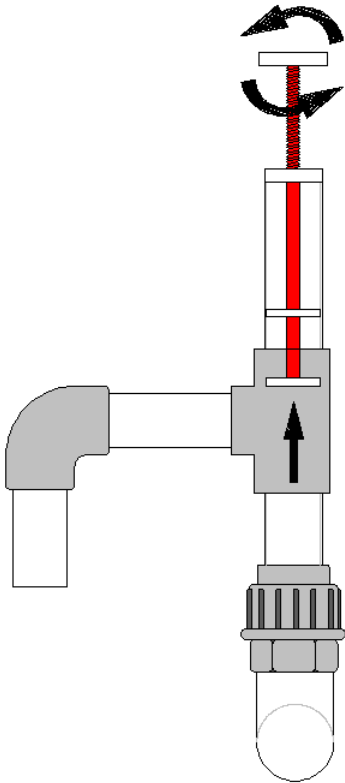
d) Shut off valve inlet



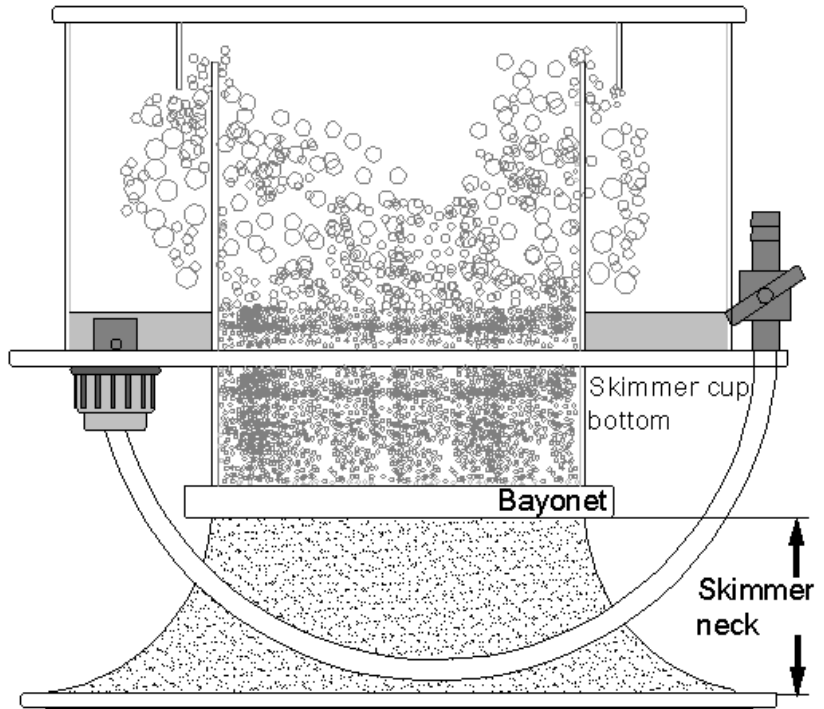
e) Skimmer directly to the aquarium

Starting the skimmer

- open the water level adjuster (WAL) fully by turning it anti-clockwise (Diagram f)
- switch on water supply through skimmer
- adjust the water level inside the skimmer with the feed line shut-off cock and the WAL to somewhere between the top and bottom of the skimmer neck, see (Diagram g)
- check the skimmer for possible damage and check the whole skimmer installation for leaks.
- switch on the skimmer pump
- to prevent initial over foaming and flooding of the skimmer cup, adjust the fine foam level in the cup's riser tube to the bottom plate of the skimmer cup. This is achieved by turning the WAL
- wait a minimum of 24 hours for the final adjustment.
- Turn the WAL so that the fine bubbles start bursting app. half way up the cup's riser tube.
- for dry foam turn the (WLA) anti clockwise, for wet foam clockwise
- **Important:** Never allow the pump to run dry.



f) water level adjuster (WAL)



g) Skimmer cup

Operation with Ozone

The Skimmer can be operated with ozone up to max. 50 mg/h per pump. One air connection of the ozoniser should be connected via a suitable silicon hose to the protein skimmer pump. The air is automatically sucked in the ozoniser by the skimmer pump. Should the skimmer performance deteriorate please check the ozoniser for blockage.

Fresh salt water

If the skimmer is used with new water on an aquarium it is common for you to find an excessive quantity of small bubbles produced and often the skimmer cup fills with a clear liquid. This is due to the high surface tension of the new water which prevents the bubbles from bursting. Once the water matures this effect will do away but can take up to 2-3 weeks. The effect is different on different salt brands and is often dependant on levels of conditioning agents added to the salt. Once these are skimmed out then the skimmer will act normally.

Heavier feeding in the initial stages will give the chemically pure water something to react with and allow it to mature into proper aquarium salt water rather than the initial chemical soup which is new salt water.

Technical data

technical data TC Serie	Dimensions mm			Aquarium size litre		Water flow rate litre/h		Power consumption Watt		Air litre/h		Connections Ø mm	
	Footprint	height	Height under outlet pipe	normal stocking	light stocking	min.	max.	min.	max.	min.	max.	Feedline	Outlet
TC 2060	280x400	600	281	1400	1700	1400	2500	19	22	1100	1300	32	50
TC 2560		600		2000	2400	2000	3600	29	34	1500	1800	32	50
TC 3070		700		4000	4800	2200	3600	2x29	2x34	2x1500	2x1700	32	50

Fault finding

Fault	Cause	Solution
Pump produces insufficient air	silencer, airline or venturi blocked	clean
	airline kinked	remove kink
	ozonizer blocked	clean
	pump flap blocked	clean
excessive air bubbles in aquarium water	caused by additives in certain sea salts and water conditions	Use different salt or feed heavily for a period, empty skimmer cup frequently. This condition may last for several weeks.
Pump does not start	Front bearing of the impeller stuck. When the pump (after having been used) has been stored dry for a period of time, the front bearing can "dry out".	Remove impeller with the extractor tool as illustrated and loosen the bearing by moving the bearing plate around and along the ceramic shaft in tap water.

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 it is common for deposits to build up on moving parts requiring periodical cleaning. Deltec pumps are fitted with little flaps inside the outlet of the pump and inside the housing, which flip from one side to the other depending on the direction of rotation thus ensuring that the pump always operates at full duty. It is recommended every 6 months, or when required, that the pumps are removed from the skimmer having first drained the body of Water.

Check and clean the impellor of debris. Ensure that the direction flaps move easily and if necessary soak the neck of the pump housing in white vinegar or lime scale remover to dissolve any calcium carbonate deposits. A build up of calcium, dust and salt can restrict or block the venturi inlet on the connecting pipe work and reduce the skimming efficiency. This should be checked and carefully cleaned with a toothpick or fine drill rotated between the fingertips.

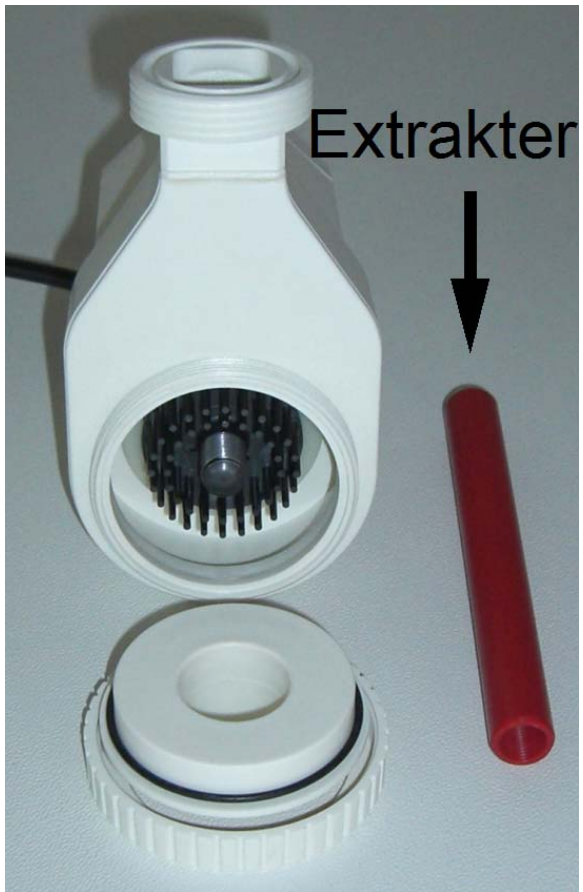
It is advisable to stop the pump for approximately 15 minutes once every week in order to dissolve any dust or salt crystals that may have collected in the venture tube.

Service hints

The skimmer pump is fitted with a very powerful rotor magnet. To remove the rotor from the pump use only the special extractor tool (picture 1). Screw the extractor onto the rotor's centre piece (picture 2) and pull the rotor out of the pumps housing slowly and deliberately in a straight line (picture 3). Be careful not to put any side forces onto the ceramic rotor shaft as this might break the hard and brittle material.

Use the same tool when inserting the rotor into the pump housing.

Make sure that the guide fitted to the bearing plate is located in the slot of the stator (picture 4). The Impeller is fixed inside the stator by an o-ring. It requires a certain pressure to push the impeller the last 2-3mm into its correct position.



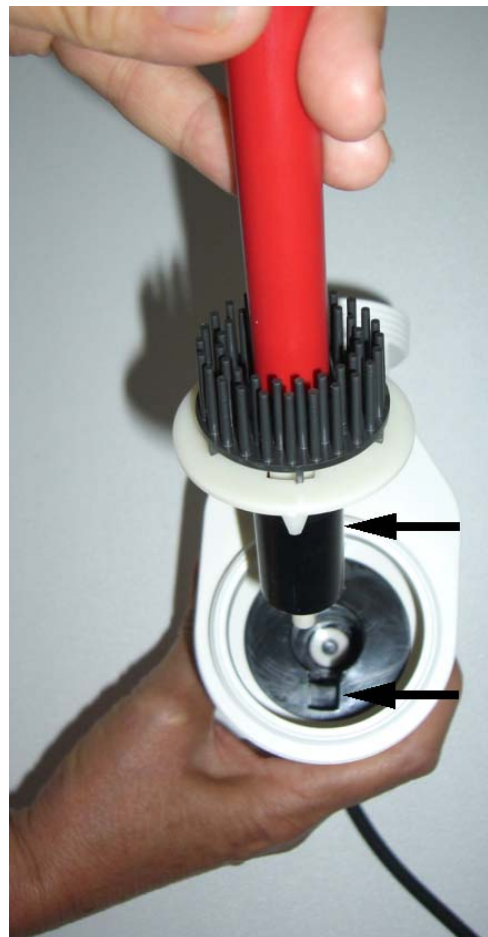
Picture 1



Picture 2



Picture 3



Picture 4

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