Pumps

for aquaristic purpose

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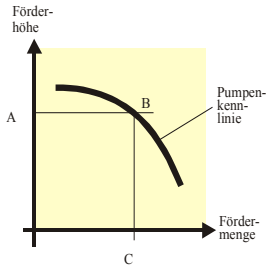
Pumps are used for very different purposes in aquaristic: whether for pumping air into simple air-lifts or high-end high-power industrial pumps. The quality differs extremely and you must decide what item is the best for your application.



For **lifting water** from the filter tank to the aquarium (overflow system) you must take care that the pump has enough water flow at the required water column.

How much water a pump is able to lift is seen in the pump diagram (see picture). First measure the height between the water level of the filter tank and the level inside of the aquarium. In the diagram read the height at point (A) at the Y-axis. Draw a horizontal line (A-B) until it will cut the diagram. At this point draw a vertical line (B-C). The point (C)at the X-axis is the maximum water flow of the pump. It is important that the real water flow will be lower because of the resistance of the tubing.

Basically a pump should never be throttled at the incoming side (suction side).

For **currents** inside the aquarium the pumps should have a high water flow and a low pressure. Pumps with its motor outside of the water are very favourable because the consumed energy that is converted into heat energy will be blown out into the air and not into the water. Especially in summer this advantage is very important.

As a general rule the water flow between filter tank and aquarium should be about 5 times the aquarium volume. The current inside the aquarium should be about 10 times of the volume.

Overview of aquaristic pumps:

picture	type	cost price	energy costs	purpose	advantage	disadvantage
	circulation pump with synchronous motor*	⊕	⊕	water flow current	submersible	all the heat is given to the water; not controllable*
	magnetic coupled pump with asynchronous motor	⊖	⊕/⊖		rigid; less heat is given to the water; controllable	high price; not submersible
	Energy-saving, controlled pump Blue Eco	⊖	⊕⊕		Less heat is given into the water; incl. controller; high flows	high price
	tube dosing pump	⊕/⊖	⊕	dosing of additives	lower cost price	low accuracy
	membrane dosing pump	⊖	⊖		very good accuracy	high cost price
	diaphragma pump	⊕	⊕	reverse osmosis units	low cost price; very silent	not suitable for continuous operation; low performance
	roto-vane pump	⊖	⊖		high performance; suitable for continuous operation	high cost price; not silent
	membrane pump with small capacity	⊕	⊕	air supply	silent; very low cost price	low power;
	piston pump with small capacity	⊕/⊖	⊕/⊖		extremely silent; good performance	high cost price
	blower pump with small capacity	⊕	⊕/⊖		very high performance	very loud; low air pressure

* only with very costly technique possible