Aquarium Water Pumps Selection Guide

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Whether you're a novice aquarist or an experienced hobbyist, your primary objective is to maintain a healthy thriving aquatic environment for your underwater plants and animals. To achieve this goal, one of the most critical decisions you'll make is choosing the right pump.

When choosing a water pump type and size, there are several factors to include in your decision:

- **Filtration type** -- What type of filter system is best for the type of aquarium you are planning? The type of filter you choose dictates the type of water pump you need.
- **Desired flow rate** -- Do the inhabitants of your aquarium require a greater flow rate (saltwater fish), or a lesser one (planted aquarium). Research the flow rate needs of the type of aquarium you are planning.
- **Plumbing and head height** -- What type of plumbing will be installed? Are you using a lot of elbows, and sharp turns, etc. Where will the filtration system be located? Directly underneath the aquarium? In the basement or another room? Be sure to consider the total distance the pump will be required to move your aquarium water.
- **Additional devices** -- Will your new aquarium require additional filtration or temperature control devices, such as UV sterilizers, protein skimmers, and chillers, etc.?

Besides simply powering your filtration system and providing water movement in your aquarium, water pumps can also be used to power other devices such as protein skimmers, to drain or fill your tank, or even to mix up saltwater in holding tanks for water changes.

If you are looking for a pump to power your filtration system, there are two different types of pumps to consider: submersible and in-line. Some of the more versatile pumps, such as the Mag Drive pumps and the Eheim hobby pumps, can be used either submerged or in-line.

Submersible Water Pumps

Submersible water pumps are run completely underwater, usually in the sump of a wet/dry filtration system. They draw water from the filter, and push it back into the aquarium, or through other devices, such as chillers or UV sterilization units. There are several advantages to a submersible pump: they are easy to install because they don't require you to drill and install a bulkhead in your filter system; and they tend to be a little quieter because they run underwater.

The main disadvantage with submersible pumps, especially the more powerful ones, is that they are water cooled, so that means unwanted heat may be added to your aquarium water. Additionally, your filter's sump may have limited space for a pump, so the dimension of the submerged pump is an important consideration.

In-line Water Pumps

In-line water pumps are used out of the water, and are connected to an inlet hose and outlet hose used to filter your aquarium water. The major advantage of in-line pumps is that they are air-cooled, which means they may add less heat to the water. They are often more powerful pumps, able to move more gallons per hour. In-line water pumps can be installed in one of two configurations: pressure setups or free-flow setups. The Lifegard Quiet One pump may be successfully used in either configuration. Other in-line pumps are optimized for one specific configuration.

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NOTE: Very high head heights (6 or more feet) can create high levels of back pressure. Remember to consider head height when choosing your water pump.

- ### In-line Pressure Setups

  This type of configuration normally places the pump before a canister filtration system. The pump forces water under pressure into the canister system. Pumps configured in this type of setup receive a substantial amount of back pressure from the filtration device. Some in-line pumps, such as the Little Giant MDQ series pumps are specially built to handle back pressure with ease.

- ### In-line Free-flow Setups

  This type of configuration often places the pump after the filtration has already occurred, such as a wet/dry filter. The pump takes the filtered water from the sump, and sends it back up into the aquarium, or possibly through additional devices, such as UV sterilizers or protein skimmers. Pumps configured in this type of setup receive very little back pressure. Therefore, they are often able to move more water with less effort. Some in-line pumps, such as the Little Giant MDQX series is specially built for maximum efficiency in these low-pressure situations.

To help you decide which water pump is right for you and your aquarium,

- Review the frequently asked questions (FAQs) for a list of questions that can help you decide which features are important to you.
- Refer to the selection guide to view the features of each pump and identify which pump contains the features you need.

For more information:
Choosing the Proper Flow Rate for your Aquarium
Choosing the Correct Filtration

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