



# Pump Care

## The Heart of the Pond

The pump is one of the most important pieces of equipment in your pond and is the heart of your pond's circulation. A circulation system is really just a fancy way of saying "pumps and plumbing." The proper size pump is extremely important for the aesthetics of a water feature. More importantly, an efficient circulation system keeps the water moving and provides the necessary oxygen levels for healthy fish and plants.

In order to have an efficient circulatory system, you need to make sure the heart, or pump in this case, can handle the job. For a pond, the pump should be the proper size to push water up and over the waterfall at an appealing rate. For a smaller feature such as a container water garden with a fountain or spitter, the pump shouldn't be so strong that it spews water all over the ground outside the container. You'd be filling up the container with water on a daily basis if this occurred.

Choosing the right size pump for your project is an all-important step and should be considered carefully. With a little knowledge, you can rest assured that you chose the proper pump for your water feature. Once your pump is installed, simple maintenance and troubleshooting should keep a pump's life going to its full potential.



## Pumps are Available in Many Different Types and Sizes

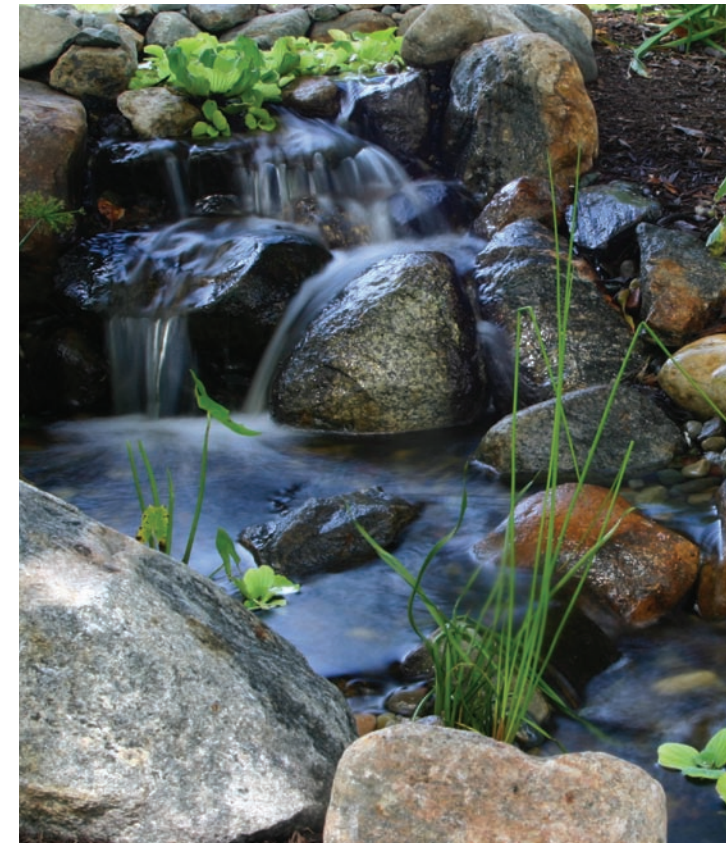
- AquaJet™ (600 to 1500 gph)
- AquaSurge™ (2000 to 7000 gph)
- AquaForce™ (1000 to 2000 gph)
- Ultra™ Pump (350 to 2000 gph)
- Statuary Pump (75 to 210 gph)

## A Variety of Pump Accessories are Available

- Filter screen and replacement filters
- Replacement impellers

## Additional Resources:

- The EcoSystem Pond book
- [www.aquascapeinc.com](http://www.aquascapeinc.com)







## Selecting a Pump

Before selecting a pump for your pond or water feature, ask yourself the following questions:

- **How many gallons are in my pond?** Gallons are calculated by multiplying the average length x average width x average depth x 7.5 x .75. This will give you the approximate volume of your pond. Once you arrive at that number, you can now begin the process of selecting a pump. It is recommended that you circulate the ponds entire volume a minimum of once per hour. For instance, if you have a 1000 gallon pond, the pump should move at least 1000 gallons per hour.
- **How high is your water feature (referred to as rise), measuring from the water surface to the top of the falls?** Remember to add 1' of rise for every 10' length of hose from your pump to the falls. Every pump is rated in gallons per hour at a certain threshold of rise, usually 0 - 5'. Once you calculate your total rise, refer to the pump specifications, located on the side of the box, to determine what pump will work best for you. Using the example above, if you need 1000 gph based on pond size, you will need a pump that provides at least 1000 gph at the maximum rise.
- **How wide is my waterfall?** We have found that most pond owners are happy with a minimum of 100 gallons per hour for every inch of width of the waterfall. If your waterfall and stream contain larger rocks and boulders, though, we suggest you increase your flow to a minimum of 150 gallons per hour for every inch of width of the stream and waterfall.

Remember, if you're upsizing an existing pond pump, you need to make sure your plumbing, or tubing, is adequately sized to handle the increased flow of water. Refer to the following chart to see maximum flow rates for different sized tubing

Pipe Size	GPH	GPM
½"	480	8
¾"	900	15
1"	1,500	25
1¼"	2,700	45
1½"	3,600	60
2"	5,400	90
3"	13,500	225
4"	21,000	350
6"	42,000	700

## Aquascape Pumps

There are several Aquascape pumps to choose from. The following will help you decide which one is right for you.

- **Aquascape Statuary Pumps** – Mag Drive pump with 3 sizes ranging from 75 gph to 210 gph. Generally used for small spitters and fountains in small ponds and container gardens. Not intended for waterfalls. 2-Year Warranty
- **Aquascape Ultra™ Pumps** – Mag Drive pump with sizes ranging from 350 gph to 2000 gph. Generally used for medium sized spitters and fountains in medium sized ponds. These pumps can also be used for small water falls, with the largest handling a water fall that doesn't exceed 10" in width. These pumps are very energy efficient, costing pennies a day to operate. 3-Year Warranty
- **Aquascape AquaJet™ Pumps** – Mag Drive pumps with sizes ranging from 600 gph to 1500 gph. These pumps come with fountain head attachments and divert valve, and are designed to require less maintenance due to its pre-filter protective case. Very energy efficient. 3-Year Warranty
- **AquaForce™ Pumps** – Mag Drive pump features 3 sizes ranging from 1000 gph to 2000 gph. This pump is unique in the fact that it can handle solids such as organic debris and push it to the filter. Designed to be used in the pond, and requires less maintenance than most other mag drive pumps. Generally used for small to medium sized water falls, as well as a de-icer by keeping a hole open in the ice in the winter months.

Extremely energy efficient considering the relatively high flow rates. 3-Year Warranty.

- **AquaSurge™ Pumps** – 5 sizes ranging from 2000 gph to 7000 gph. Generally used for medium to large water falls, it is still up to 70% more energy efficient than other direct drive waterfall pumps. 3-Year Warranty.

## Terms You Should Know

- **Gallons Per Hour (GPH)** – Represents how many gallons the pump is circulating every hour, and can also be referred to as "rated flow."
- **Gallons Per Minute (GPM)** – Represents how many gallon the pump is circulating every minute.
- **Flow Rate** – The amount of water moving in a given time period.
- **Watts** – Electrical power consumption of a motor. Watts = volts x amps.
- **Rise** – The height from the surface of the pond to the start of the waterfall.
- **Mag Drive** – Type of pump that relies on magnetic forces to drive the impeller. Pumps a smaller amount of water than direct drive pumps, but is more efficient.
- **Direct Drive** – Type of pump in which a motor drives a shaft that spins the impeller. More durable but less efficient than a mag drive.

## Ground Fault Circuit Interrupter (GFCI)

The National Electrical Code requires GFCI protection of receptacles located outdoors and in bathrooms, garages, and spa areas. A GFCI provides protection against overloads, short circuits, and ground faults (electrical current leaks). It detects very low levels of ground faults, and acts quickly to shut off the power, preventing serious shock.