



# PUMP SELECTION GUIDE

Selecting the appropriate pump for a water feature will provide ideal water flow and maximize pump life.

Use this guide to make it quick and easy to select the right pump for your Aquascape ecosystem pond or Pondless® Waterfall.



*EcoWave  
Pond Pumps*



*AquaSurge®  
Pond Pumps*



*AquaForce®  
Pond Pumps*



*AquascapePRO  
Pond Pumps*



*PL and PN  
Pond Pumps*

[aquascapeinc.com/pond-pumps](http://aquascapeinc.com/pond-pumps)

## Recommended Flow Rate

### Ecosystem Ponds

- 1. Pond Volume Calculation:** To maintain proper filtration and support pond fish, we recommend selecting a pump that turns over/filters the total gallons in the pond at least once every hour. Use the following formula to calculate the total volume of water contained in your pond. Note: this calculation factors in rocks and curved edges to provide a more accurate calculation for most ecosystem ponds.

Length (ft.) x Width (ft.) x Average Depth (ft.) x 7.48 x 0.8 = Total Gallons

**Example:**

8 ft. x 11 ft. x 1.5 ft. Avg. Depth x 7.48 x 0.8 = 790 Total Gallons

- 2. Waterfall Width:** We recommend 125 gallons per hour (GPH) for every inch of waterfall width. Higher flow rates can be used to provide more dramatic water flows. Use this simple formula to calculate the minimum flow rate for the width of your waterfall.

Waterfall Width (in.) x 125 (GPH) = Minimum Waterfall Flow Rate

**Example:**

24 in. wide waterfall x 125 (GPH) = 3,000 (GPH) Minimum Waterfall Flow Rate

- 3.** Choose the higher of the two numbers (Total Gallons and Minimum Waterfall Flow Rate) to determine your **recommended flow rate**.

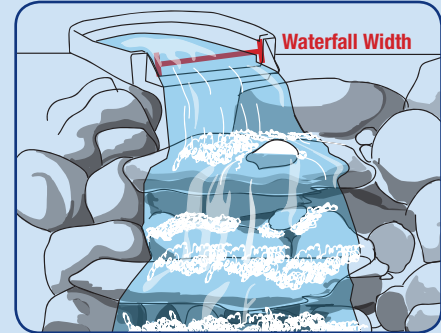
### Pondless® Waterfall

- 1. Waterfall Width:** We recommend 125 gallons per hour (GPH) for every inch of waterfall width. Higher flow rates can be used to provide more dramatic water flows. Use this simple formula to calculate the minimum flow rate for the width of your waterfall.

Waterfall Width (in.) x 125 (GPH) = **Recommended Flow Rate**

**Example:**

24 in. wide waterfall x 125 (GPH) = 3,000 (GPH) Recommended Flow Rate



After finding your recommended flow rate, it's time to calculate head height.

## Head Height

The calculation below is a simple way to estimate approximate head height and allow you to use pump performance specifications below to select the correct pump for your application.

$$(\text{Elevation in feet}) + (\text{Pipe Length in feet} \div 10) = \text{Approximate Head Height}$$

**Elevation:** Height difference from water level in the feature to the top of the waterfall

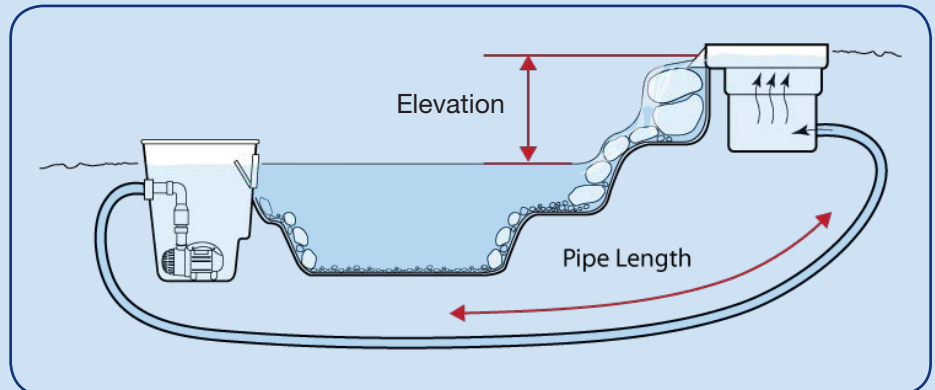
**Pipe Length:** Total length of pipe

**Example:**

Elevation: 3 feet

Pipe length: 20 feet

$(3 \text{ ft.}) + (20 \text{ ft.} \div 10) = 5 \text{ ft. of head height}$



## Pump Flow (GPH)

Refer to the following pump flow chart to select a pump that is compatible with your calculated head height.

**Example:**

Recommended Flow Rate: 3,000 gallons per hour (GPH)

Head Height: 5' head height

Follow the 5' marker and identify pumps producing approximately 3,000 GPH. If several options are identified, please see back page.



Model	Max Head Height	Application Head Height												
		0'	5'	10'	15'	20'	25'	30'	35'	40'	45'	50'	55'	
EcoWave 2000	14.4'	2020	1350	860	650	400	150	0	GPH					
EcoWave 3000	17.5'	2960	2150	1470	1100	850	550	300	0	GPH				
EcoWave 4000	20'	4000	2950	2210	1650	1250	1000	750	400	0	GPH			
EcoWave 5000	21'	5000	4050	3205	2450	1850	1450	1100	750	300	0	GPH		
AquaSurge® 2000	12.5'	2193	1850	1465	0	GPH								
AquaSurge® 3000	15'	3196	2700	2350	0	GPH								
AquaSurge® 4000	18.5'	3947	3750	3350	2250	0	GPH							
AquaSurge® 5000	24'	5284	5000	4750	3250	1750	0	GPH						
AquaSurge® 2000-4000	18.5'	3947	3750	3350	2250	0	GPH							
AquaSurge® 4000-8000	28'	7793	7350	7000	5850	4300	2000	0	GPH					
AquaForce® 1000	10'	1070	850	0	GPH									
AquaForce® 1800	16.5'	2149	1806	1320	260	0	GPH							
AquaForce® 2700	14'	2695	2425	1840	0	GPH								
AquaForce® 3600	18'	3868	3613	3254	2100	0	GPH							
AquaForce® 5200	24'	5284	5116	4250	3186	1500	0	GPH						
AquaForce® 4000-8000	28'	7794	7150	6440	5320	3950	1800	0	GPH					
AquascapEPRO 3000	20'	2900	2900	2000	1200	0	GPH							
AquascapEPRO 4500	33'	4500	4500	4000	3300	2700	2000	1000	0	GPH				
AquascapEPRO 7500	42'	6700	6700	6100	5300	4900	4000	3200	2200	1100	0	GPH		
AquascapEPRO 10000	28'	10600	10600	8100	6900	4900	2300	0	GPH					
3-PL	14'		3000	1700	0	GPH								
5-PL	23'		5300	4500	3500	1800	0	GPH						
9-PL	35'		7300	6400	5600	4900	4100	3000	0	GPH				
8-PN	56'			5500	5200	4800	4300	3600	2800	2000	1200	600	0	
12-PN	23'		10000	7600	4600	1500	0	GPH						

## Determining the Best Pump



### EcoWave Pond Pumps

**Benefit:** Maximum Electrical Efficiency

**Location:** Skimmer Filters and Pondless® Waterfall Applications

These magnetically-driven pumps provide incredible electrical efficiency and high flow rates at very low head height applications.



### AquaSurge Pond Pumps

**Benefit:** Electrical Efficiency

**Location:** Skimmer Filters and Pondless® Waterfall Applications

These asynchronous pumps provide powerful flow with extreme energy-efficiency, providing significant savings throughout the year.



### AquaForce Solids-Handling Pond Pumps

**Benefit:** Electrical Efficiency

**Location:** Directly in the pond

An asynchronous motor and protective pump cage makes these pumps energy-efficient and ideal for setting directly into the pond.



### AquascapePRO Pond Pumps

**Benefit:** Solids Handling

**Location:** Skimmer Filters and Pondless® Waterfall Applications

These direct-drive pumps provide high flow-rates and work efficiently in higher head height applications.



### PL and PN Pond Pumps

**Benefit:** Maximum Solids Handling

**Location:** Skimmer Filters and Pondless® Waterfall Applications

These direct-drive pumps provide high flow rates and handle large solids effectively, reducing clogging and maintenance.

## Pipe Diameter

Pipe diameter limits the amount of flow that can travel through the piping in a water feature. Select a pump that is compatible with the pipe diameter of the project. We recommend using flexible PVC or kink-free pipe.



Model	1/2"	3/4"	1"	1.25"	1.5"	2"	3"
EcoWave Pond Pumps 2000, 3000, 4000, 5000				Acceptable	Optimum	Optimum	
AquaSurge® Pond Pumps 2000, 3000, 4000, 5000				Acceptable	Optimum	Optimum	Acceptable
AquaSurge® 2000-4000 Adjustable Flow Pond Pump				Acceptable	Optimum	Optimum	Acceptable
AquaSurge® 4000-8000 Adjustable Flow Pond Pump					Acceptable	Optimum	Optimum
AquaForce Pond Pumps 1000, 1800, 2700, 3600, 5200			Acceptable	Optimum	Optimum	Optimum	Acceptable
AquaForce 4000-8000 Adjustable Flow Pond Pumps					Acceptable	Optimum	Optimum
AquascapePRO Pumps 3000, 4500					Optimum	Optimum	Acceptable
AquascapePRO Pumps 7500					Acceptable	Optimum	Optimum
AquascapePRO Pumps 10000						Acceptable	Optimum
PL Pond Pumps 3-PL 3000, 5-PL 5000					Optimum	Optimum	Acceptable
PL & PN Pond Pumps 8-PN 5500, 9-PL 7000					Acceptable	Optimum	Optimum
PN Pond Pump 12-PN 10000						Acceptable	Optimum

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