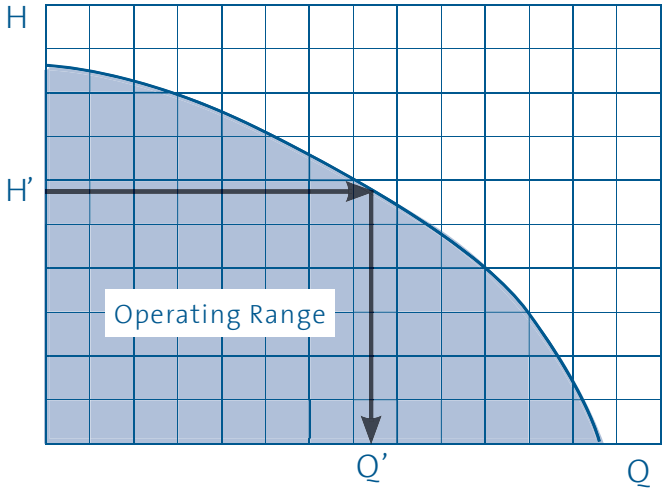
Choosing the right pump

OASE designs its pumps for specific application and operating environments. Fountain or nozzles displays, for instance, require pressure rather than a high flow, while a filtration system that runs constantly may need a higher flow rate but should not require a lot of energy to operate.

Therefore, when choosing a pump the first decision criterion should always be whether the pump is suited for the application.

Reading a pump curve



The above pump curve illustrates the relationship between flow (Q) and head (H) for a particular pump. Any point on the curve allows determination of how much water (*Q'*) is pumped to a particular height (*H'*) above the water surface by the pump in question. Any point to the left of the curve is within the operating range of the pump – although it may have to be throttled back, any point to the right of the curve is outside the pump's operating range. Once head and flow requirements for a specific application are known the pump curve provides a simple way to check whether a particular pump has the right performance.

Flow rate for a waterfall or water course

Three things need to be known for building a great looking water course or waterfall:

1) The height above the water surface of the topmost spill (H in picture above)

2) The width of the spill (W in picture above)

3) Intensity of the effect (trickle - 1/2" deep, creek - 1" deep, stream - 1 1/2" deep)

A generic formula for determining flow rate is: every sq. in. of cross section (width x depth) requires 200 gph.

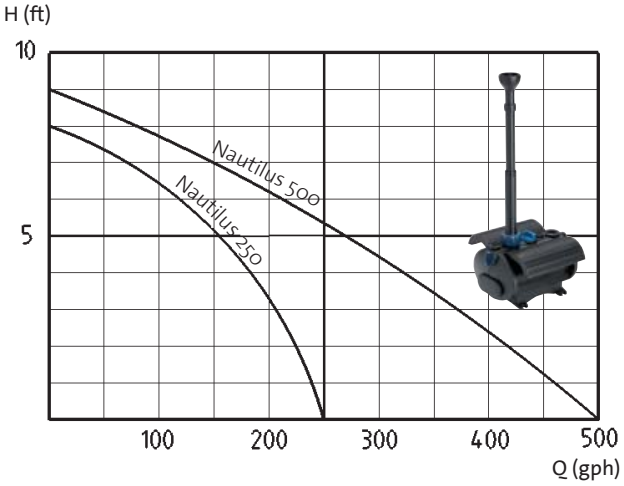
So, for each inch of width a trickle will require a flow rate of up to 100 gph, a creek will require 100 to 150 gph and a waterfall will require up to 200 gph. The pump has to be capable of delivering these flow rates at the height H above the water surface. So, for instance, a 1-foot wide trickling waterfall that begins 4 ft. above the water surface will require a flow rate of 1200 gph (100 gph x 12 in.) at 4 ft.

The correct pump can then be selected by utilizing a pump curve (as shown to the left) and checking whether the combination of required head and flow rate fall within the operating range of the pump.

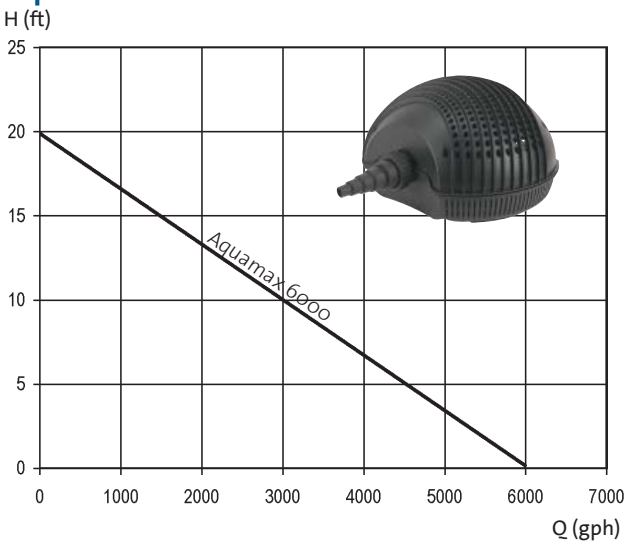
Flow rate for a filtration system

Some believe that a pond should be "turned" every two hours but this does not take into consideration the presence of a capable filtration system. In fact, lower flow rates will almost always improve the efficiency of a filter. In addition, a lower flow rate results in a lower energy requirement. OASE's BIOsys Filtration Systems are designed specifically around these points.

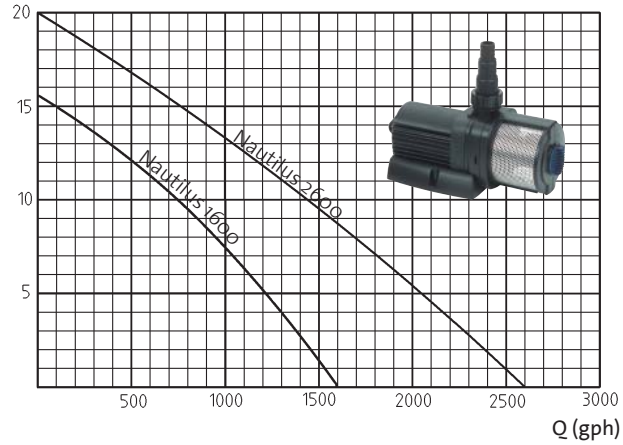
Nautilus 250-500



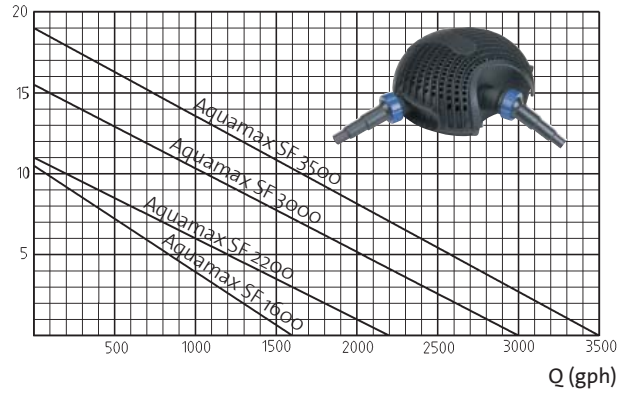
Aquamax 6000



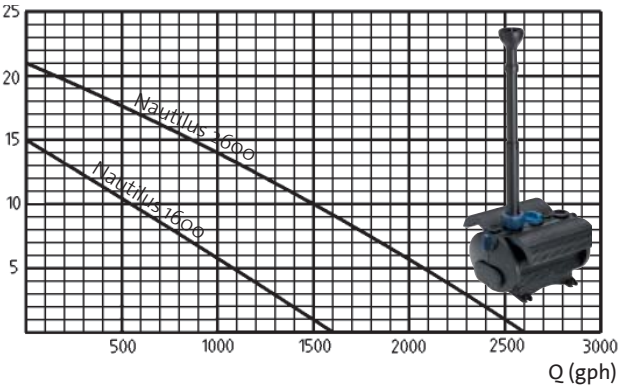
Neptun 1600-2600



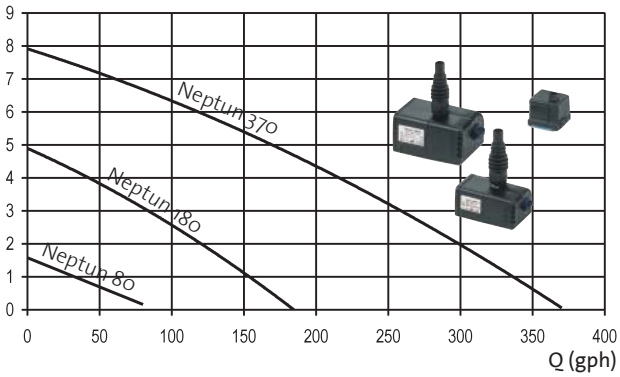
Aquamax SF



Nautilus 1600-2600



Neptun 80-370



Profinaut 6000