

A system curve is a graphical representation of the head and flow characteristics of a hydraulic system. Pumps move water through hydraulic systems that include:

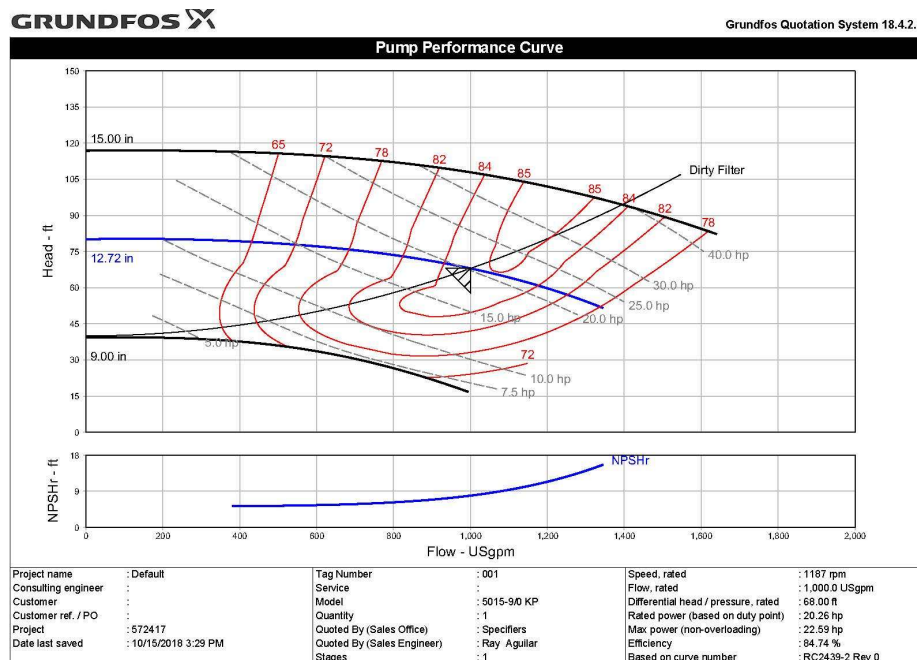
- A source of liquid
- Suction piping or an intake structure leading to the pump
- Discharge piping leading away from the pump to the discharge point
- A discharge point

A certain amount head is necessary to push a flow of 1 GPM through the hydraulic system. As flow increases, the amount of head required to move the liquid through the hydraulic system also increases due to friction within the hydraulic system. As a result, if flow increased to 1000 GPM the amount of head necessary to push the flow through the hydraulic system would be more than what was required to push a flow of 1 GPM.

The difference between the head required to push 1 and 1000 GPM through a hydraulic system will depend on the design on the system. In a simple system designed for capacities of 1000 GPM and much larger, the difference might be negligible. However, in a complex system, or one designed for capacities less than 1000 GPM, the difference might be very large.

System curves are created by Engineers and used to model the performance of a hydraulic system and as a basis for determining if a selected pump is a good match for system characteristics.

[review the video: Understanding a System Head Curve]



[Typical manufacturer's performance curve with a System Head Curve overlaid]