

Parallel installation of water system energy storage pipes

How much flow does a parallel pump provide?

The single pump in a two equally sized parallel pump application will always provide more than half of the design flow. How much more than one-half is determined by the pump and system curve analysis. The size of the piping in the pump branch is also determined by the system curve analysis.

What is flow in series and parallel pipes?

Flow in series and parallel pipes is presented first and is followed by the analysis of pipe networks containing multiple loops. Water-quality modeling is also presented. Because solving the flow equations by hand for systems beyond a simple network is not practical, computer models are used. Application of these models is also discussed.

How does parallel pumping work?

In order to illustrate the concept of parallel pumping, we'll use two pumps, each sized for one-half of full system flow. Note that for two identical pumps in parallel, the total system flow divides at Point "A" in the suction manifold into two parallel paths through the pumps and check valves. At Point "B", the flows rejoin and go to the system.

What is a parallel condenser pump?

They reject heat from the chiller condenser to the atmosphere. Parallel condenser pumps are used in large chilled water systems for the same reasons already discussed; redundancy, operating cost savings, and so on. Parallel pump curve construction for an open system is similar to the procedure used for closed systems.

Do two pump parallel systems produce the same pressure head?

Figure 1 shows that each pump in a two pump parallel system with identical pumps is pumping one-half of the total design flow rate. If the pumps are identical, and are pumping the same flow rate, it follows that each pump will produce the same pressure head.

What are the components of a water distribution system?

Application of these models is also discussed. A water distribution system consists of three major components: pumps, distribution storage, and distribution piping network. Most systems require pumps to supply lift to overcome elevation differences and energy losses due to friction. Pump selection and analysis is presented in Chap. 10.

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