Sizing a Pump

Mechanical Engineering

Matching a pump curve to a system curve, and keeping the inlet safe.

The duty point is where the two curves cross, not where you wanted it.

1. **Fix the duty flow**
   The flow the process needs, with a stated margin, not a guess.

2. **Build the system curve**
   Static lift plus friction and fitting losses, plotted against flow.

3. **Overlay the pump curve**
   The crossing point is the flow and head you will actually get.

4. **Check the efficiency island**
   Run near best efficiency point, not at either end of the curve.

5. **Check the inlet**
   Available suction head must exceed what the pump requires, with margin.

Cavitation is an inlet problem, not a pump fault. Educational reference; follow the maker's own curves.