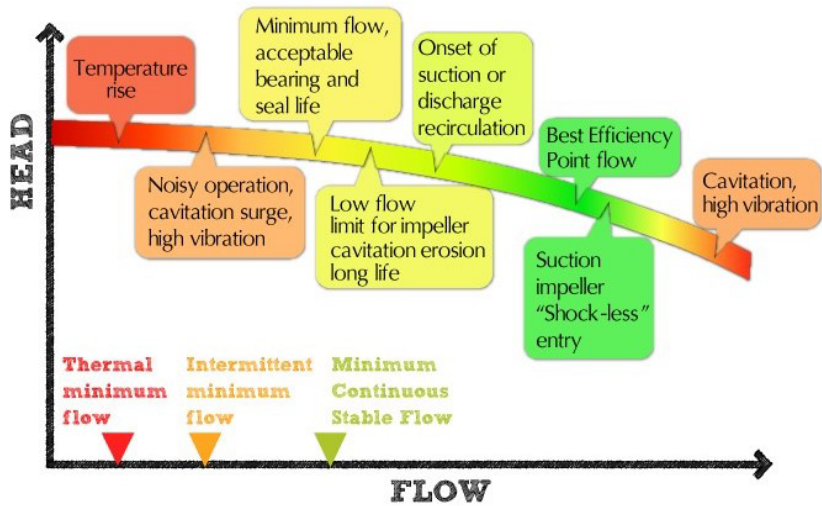


# MINIMUM PUMP FLOW

## APPLICATION SHEET

### APPLICATION OVERVIEW

The pumps in these applications are high flow pumps that require a minimum constant flow to properly operate (also known as minimum continuous stable flow, or MCSF). This minimum flow is calculated based on pump characteristics such as cavitation erosion intensity, temperature rise, suction recirculation, and more. If the downstream process has the potential to not consume this minimum flow, and a recirculation line must be designed to maintain the pump's minimum flow. Accurate flow control of this line will ensure the minimum flow is met, without wasting process fluid.



### KATES SOLUTION

The Kates Flow Controller will maintain an accuracy of 1.5% of its flow set point, regardless of pressure fluctuations. By actuating the Kates Valve, the minimum flow can be set in the recirculation or dump line to ensure the pump's needs are met. As the pump ramps up, the Kates can be tied into the VFD to lower its setpoint to ensure that [process line flow + recirculation line flow = minimum flow]. The linearity of the Kates makes actuation extremely simple. There is no flow curve, only a straight flow line. Every degree of rotation is an equivalent flow change as the next degree of rotation.

