

Surge Anticipating Valve



Description

The valve protects the pumping system from water hammer, caused by sudden pump shut-off (case of power failure, for example). The valve is assembled on a T-junction of the main pipeline, instantly opens when the pump stops, relieving the returning high pressure wave. The valve slowly closes once the pressure returns to the static level. The valve also functions as a pressure relief valve.

Features

- No slam operation
- Simple and reliable design
- Easy installation and maintenance
- Low Resistance and high flow capacity
- Protection for sewage as well as clean water pumping systems

Purchase Specifications

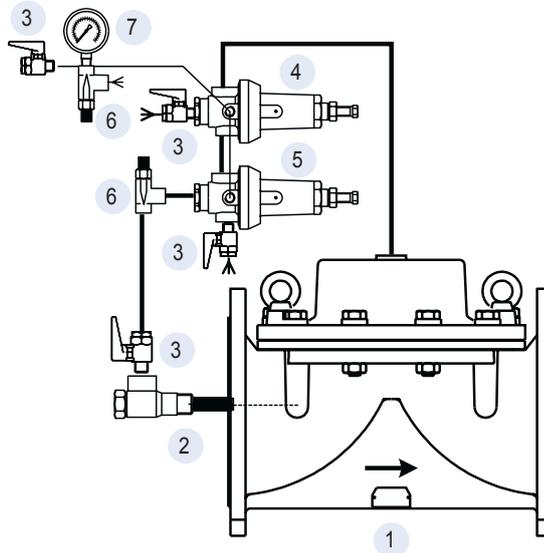
The valve will be hydraulic, direct sealing diaphragm type, which allows inline maintenance. No stem, shaft or guide bearing will be located within the water passage. The valve will be activated by the line pressure or by an external hydraulic or pneumatic pressure. The valve will be operated by pressure relief pilot valve for opening at a low pressure set point and another pilot for pressure relief at a high pressure set-point. The valve and the controls will be a Dorot Series 100 valve or similar in all aspects.

Quick Sizing

- The valve should be sized to match the 80% of the normal flow at static head in the valve site:
 $D[\text{mm}] \leq \sqrt{(250 \times \text{Flow}[\text{m}^3/\text{hr}] / \sqrt{\text{Pressure}[\text{mwc}]})}$
 $D[\text{inch}] \leq \sqrt{(0.109 \times \text{Flow}[\text{gpm}] / \sqrt{\text{Pressure}[\text{psi}]})}$

Design Considerations

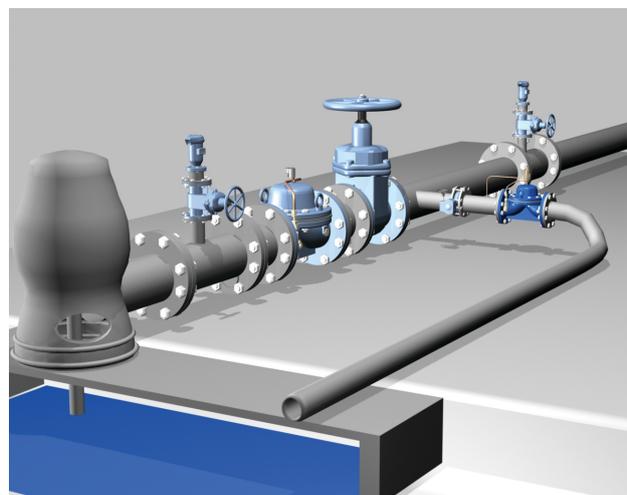
- Install a manual separation/throttling valve, upstream of the valve position
- Closure time is related to the pipe length and should be extended for longer pipe
- The valve sensor tube must be connected to the main line



Optional Control System Components:

- 1 Main Valve
- 2 Self-flushing filter
- 3 Cock valve*
- 4 Low-pressure relief pilot valve
- 5 High-pressure relief pilot valve
- 6 Needle valve
- 7 Pressure gauge

* Optional component



Typical Application

Dorot Surge Anticipating Valve prevents water-hammer surges caused by an un-expected pump shut-off.