30-RE Surge Anticipating Valve

Principal of operation

The Dorot Series 300 Surge Anticipating Valve ('30-RE') is an automatic controlled valve, activated by the pressure of the pipeline. 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.

S300 Features

- Superb performance:
  - Regulates at a stable mode, regardless of valve-size, down to near-zero flow. Thus, eliminating the need for a special low flow plug-design (such as 'V-port') or a bypass valve.
  - 'Floating', low-friction internal-trim design, guided by unique LPT® device.
- High reliability:
  - All control ports are fitted with SST sleeves for preventing corrosion-blockage.
  - Pre-shaped reinforced diaphragm – for easier assembly and improved longevity.
- Reduced periodic inspection/maintenance labor:
  - The control-trim is fitted with a self-flushing, inline control-filter.
  - Easy in-situ adjustment and maintenance.
- Versatility:
  - A standard and simple single-chamber valve design, provides smooth operation. Conversion to a double chamber is a patented option.

Standard Materials

- Body & Cover – Ductile Iron
  Optional – Cast Steel, SST, N.A.B, S.Duplex
- Main Internal – SST (1.5"-6), Coated steel (8"-32")
  Optional – Cast Steel, SST, N.A.B, S.Duplex
- Elastomers – EPDM
  Optional – NBR, Neoprene, Viton or others
- Coating – Polyester, Epoxy / Optional – Halar and others
- Control trim – Brass, PA / Optional – SST316, Duplex

Purchase Specifications

- The valve will be hydraulic, pilot-operated globe type.
- Face-to-face length dimension meets ISO 5752 Standard.
- The stem will be guided at the top by a replaceable guide bearing and at the bottom by a stainless steel unique LPT® device.
- The valve will regulate any flow within the specified range without the need for a smaller bypass valve or throttling plug.
- All control ports will be corrosion free protected by stainless steel 316 inserts.

Design Considerations

- The valve should be suited for the maximal flow.
- Install a manual separation/throttling valve, upstream of the valve position.
- The valve sensor tube must be connected to the main line.

Quick Sizing

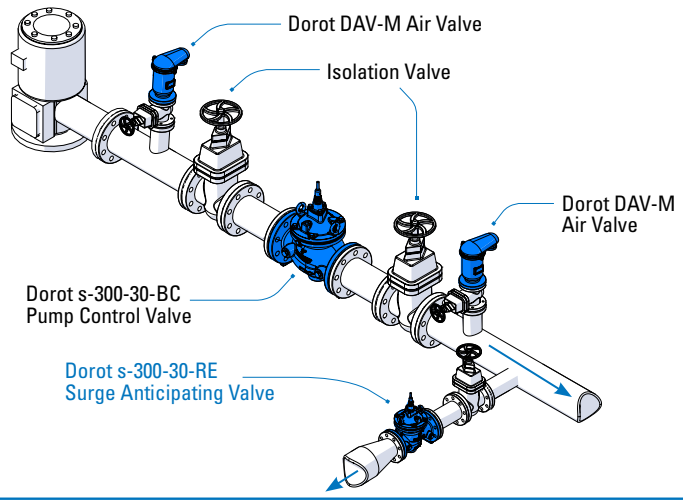
- The valve should be sized to match the 80% of the normal flow at static head in the valve site:
  $D[mm] \le \sqrt{(250 \times Flow[m^3/hr] / \sqrt{Pressure[mwc]})}$
  $D[inch] \le \sqrt{(0.109 \times Flow[gpm] / \sqrt{Pressure[psi]})}$

Pressure rating

- Model 30, 30A for medium pressure (PN16 bar / 250 psi)
- Model 31, 31A for high pressure (PN25 bar / 360 psi)

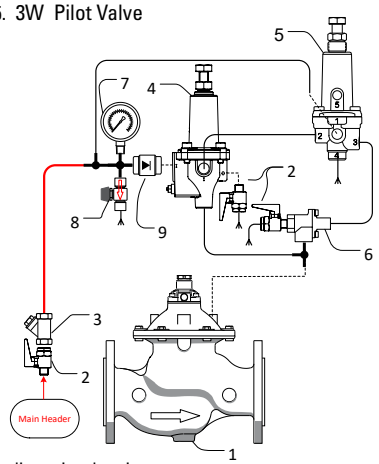
Typical Installation

Typical applications include Pressure Sustaining Valve Model 30-RE.
The Dorot Surge Anticipating Valve prevents water-hammer surges caused by an un-expected pump shut-off.



Main Control System Components*

1. Main Valve
2. Ball valve
3. Filter
4. 2W Pilot Valve
5. 3W Pilot Valve
6. Fast Acting Relay
7. Pressure Gauge
8. Needle Valve
9. Check Valve



* Indicatative drawing