

GK
Bladder Type Pulsation Dampener
Data Sheet



Overview

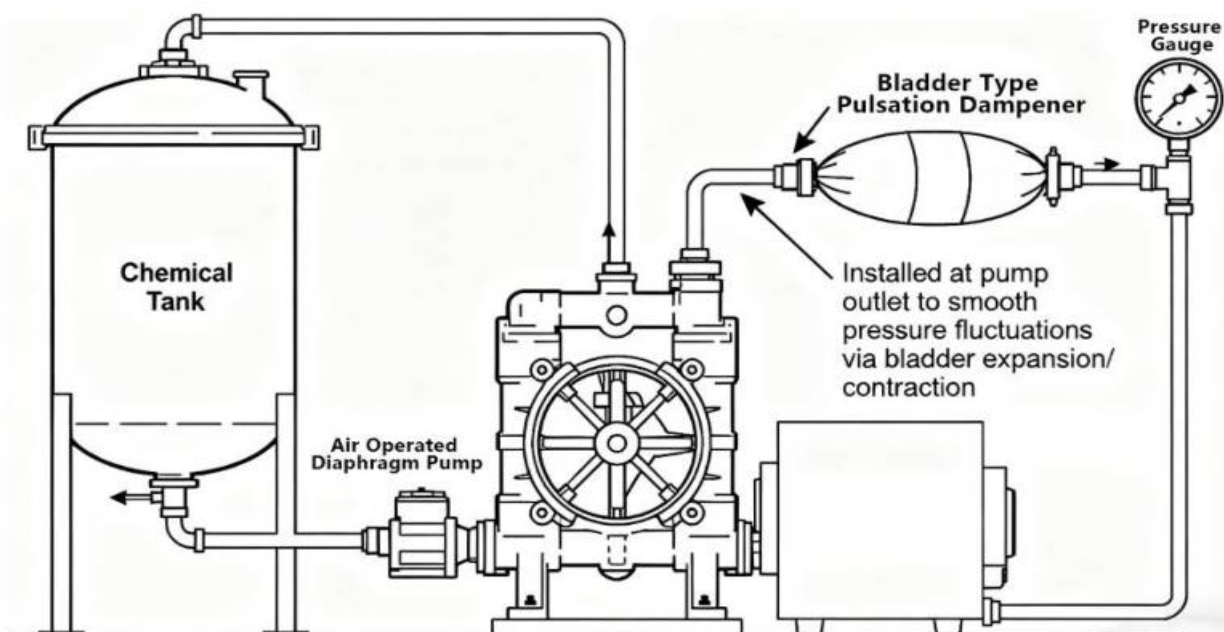
A pulsation dampener, also known as a pulse dampener, is a common component used to eliminate pipeline pulsations. It is designed to smooth out pulsations in pipelines and system water hammer caused by positive displacement pumps such as metering pumps and pneumatic diaphragm pumps.

It utilizes a corrosion-resistant diaphragm to separate the gas from the liquid in the pipeline. By utilizing the change in the gas chamber's volume, it smoothens pipeline pulsations, thereby reducing the harm of water hammer to the system, decreasing the peak value of flow rate fluctuations, protecting pipelines, valves, and fittings from the impact of pressure fluctuations, and lowering system energy consumption.

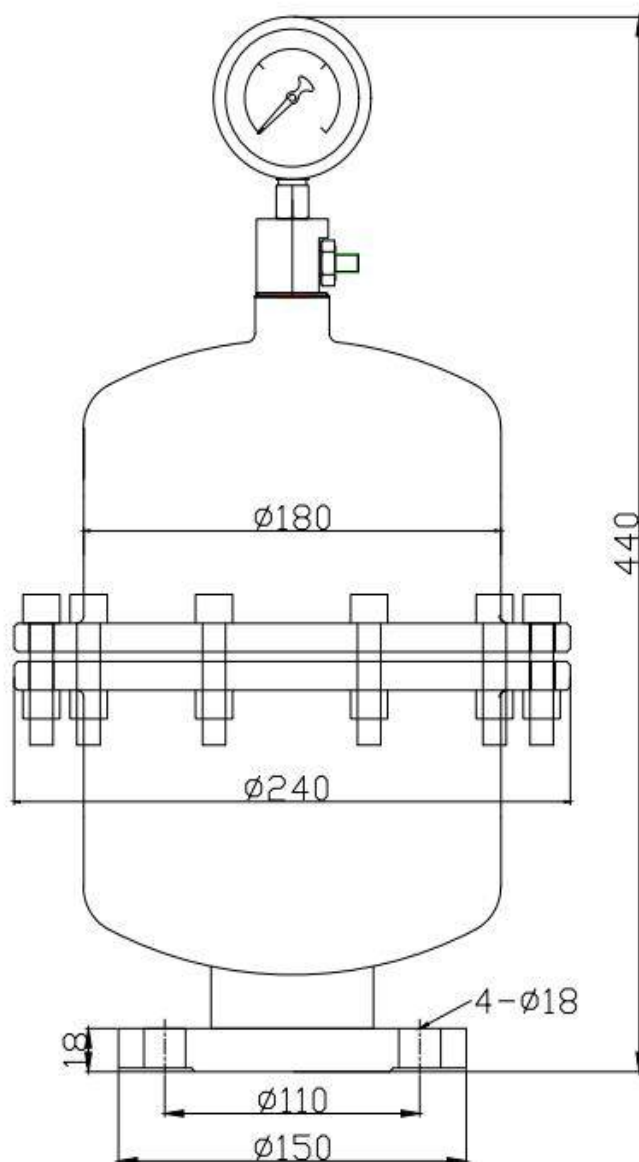
Existing diaphragm-type pulsation dampeners operate based on Boyle's Law, where the volume of a gas is inversely proportional to its pressure. They smooth pipeline pulses by altering the gas volume, making them effective for systems with sinusoidal flow rate curves:

- At the peak of the wave: The gas chamber volume decreases, and the dampener absorbs the excess fluid flow.
- At the trough of the wave: The gas chamber volume increases, and the dampener releases the stored fluid, thus achieving the effect of smoothing pulsations.

However, because the diaphragm presses tightly against the inner wall of the dampener's chamber during operation, when pulsations are received, the tight contact between the diaphragm and the chamber wall can prevent fluid from rapidly filling in or discharging. This causes a 'vapor lock' or 'gas trapping' effect, which impacts its response speed.



Dimension Drawing



Features & Benefits:

- *Robust Construction : Housing options include UPVC, PP, PVDF, SS304, and SS316L to handle a wide range of chemicals.
- *Superior Bladder Materials : Choose between FPM (Viton®) and EPDM bladders for optimal media compatibility and longevity.
- *Precision Sizing : 8 volumetric sizes from 0.35L to 12L, designed for pumps with port sizes from DN15 to DN80.
- *Proven Reliability : Ensures stable system operation by effectively smoothing pulsations and eliminating water hammer.
- *Custom Solutions : Higher pressures and special configurations available upon request.

Sizing Rule of Thumb for 90% Pulsation Reduction:

- Calculate: Per-Stroke Metering Capacity (ml) $\times$ 12
- Result: Minimum Required Dampener Volume (ml)

Ability To Innovate And Develop New Product

GK expert for fluid
transfer.



Due to the continuous improvement of the product, GK will reserves the right to
modify the operation manual without notice.

GIN KAI TECHNOLOGY (SHANGHAI) CO ., LTD

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