



NOMAD™

OPERATION MANUAL

SURGE DAMPENER

NSD 25



1"

NSD 40



1.5"

NSD 50



2"



A JDA Global Company

Shell material: 304 SS

Diaphragm material: PTFE, EPDM

Features:

- Reduce the harm of water hammer to the system.
- Reduce the peak value of flow rate fluctuations.
- Protect pipelines, valves and joints from the impact of pressure fluctuations.
- Create a good working environment for metering pumps and improve pump performance.
- Allow the system to use a smaller pipe diameter and reduce costs.
- Used in conjunction with a back pressure valve, etc., the pressure fluctuation of the pipeline can be close to zero.
- Reduce the energy consumption of the system.

The use of pulsation dampeners offers several notable benefits:

Pulsation Dampeners' can reduce pulsation of Fluid within the Pipe (hose) system.

Thus, reducing water hammer while creating a more Laminar flow.

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- **Improved Efficiency:** By reducing pressure fluctuations, dampeners promote a more stable flow.
- **Extended Equipment Lifespan:** Dampeners protect equipment from excessive wear and tear caused by rapid pressure changes.
- **Enhanced Product Quality:** Pulsation dampeners contribute to consistent product quality and reliable processes.

- Working Principle

The functionality of the Active Pulsation Dampener involves providing equilibrating pressure to counteract the pulsations generated by the pump. This equilibrating pressure is delivered precisely during the pump's low-pressure phases, aligning with the pressure decrease that occurs between pump strokes, resulting in a pulsatile flow. Consequently, the dampener's supplied pressure diminishes pressure fluctuations, leading to a consistent flow from your Diaphragm Pump.

- Product Function

Use of a pulsation dampener forces liquid from piping system to the in-line pulsation dampener bottom liquid chamber, which has a membrane between the top air chamber, the top air chamber is charged with air that is calibrated for best flow to allow liquid to be forced between diaphragm strokes filling the gap of fluid being pumped through the air operated diaphragm pumps.



Figure 1



Install the dampener in-line as close to the pump discharge as possible to absorb the pulse at its source and before any downstream equipment such as elbows, valves, or filters. Install dampener at the pump discharge side of the pump between the pump and the system piping. (see Figure 1).

Figure 2



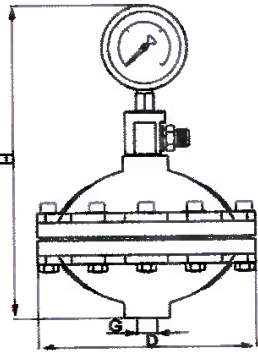
Pre-charge the Dampener to desired psi to create optimal Laminar flow.

(Max psi 125 psi/8 Bar) Air connection included with Dampener. Air should be placed on the dampener gauge (pressurized) at a level which creates the desired proximity to laminar flow. Adjust air pressure to the dampener until liquid flow is most continuous, normally with a ratio of 1/10 PSI air supply to the dampener as compared to the PSI placed on the pump. Results will vary with pressure, volume of air and viscosity of liquid.

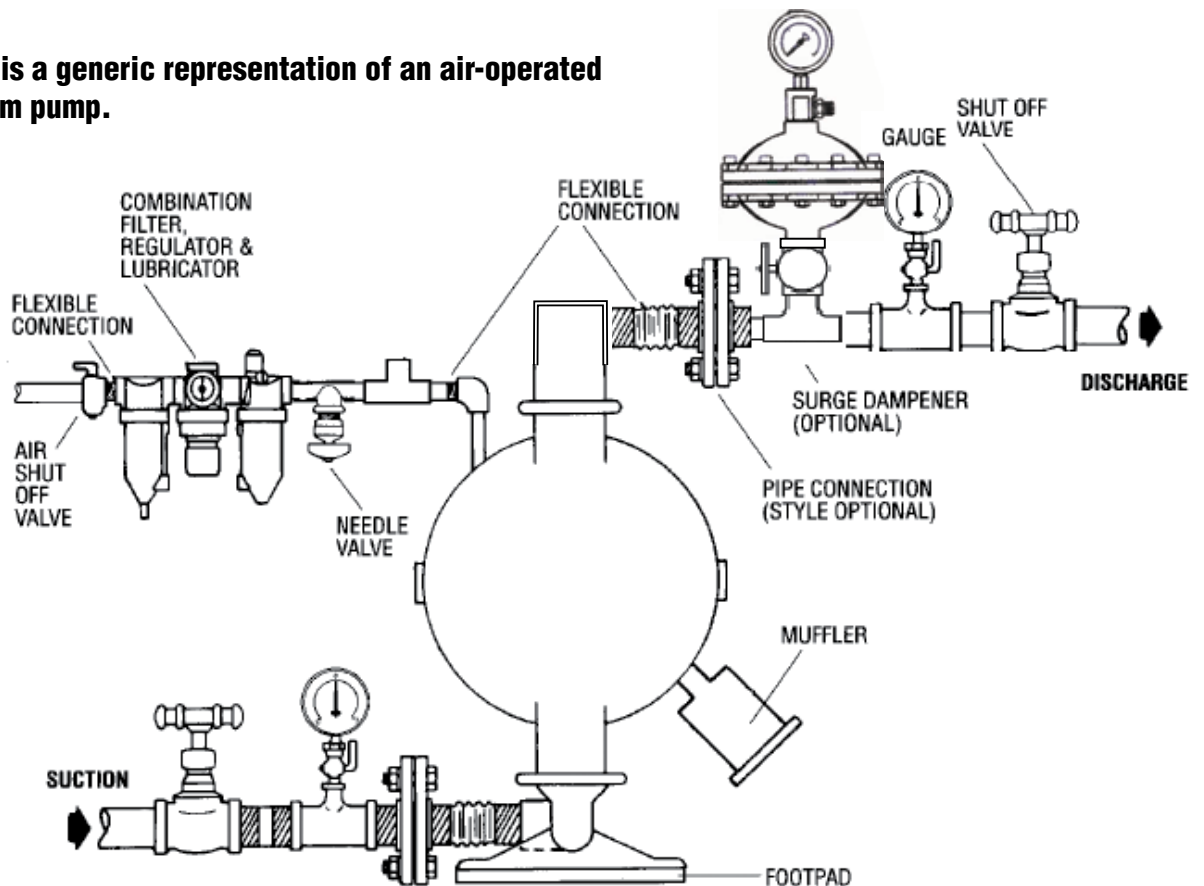
In some cases, user may realize maximum non-pulsating flow by up-sizing the dampener. Thus, using a 1.5" dampener on a 1' pump and so on.

Size	Liters/Gallons	Thread Size	D	G	H	Pressure MPa
1" (25mm)	1L / .264 gal	1" (25mm)	1" (25mm)	8.5" (21.59 cm)	10.75" (27.30 cm)	1.6
1.5" (40 mm)	1.5L / .396 gal	1.5" (40 mm)	1.5" (40 mm)	10.75" (27.30 cm)	11.25" (28.57 cm)	1.6
2" (50 mm)	2L / .528 gal	2" (50 mm)	2" (50 mm)	12" (30.48 cm)	12" (30.48 cm)	1.6

Dimensions



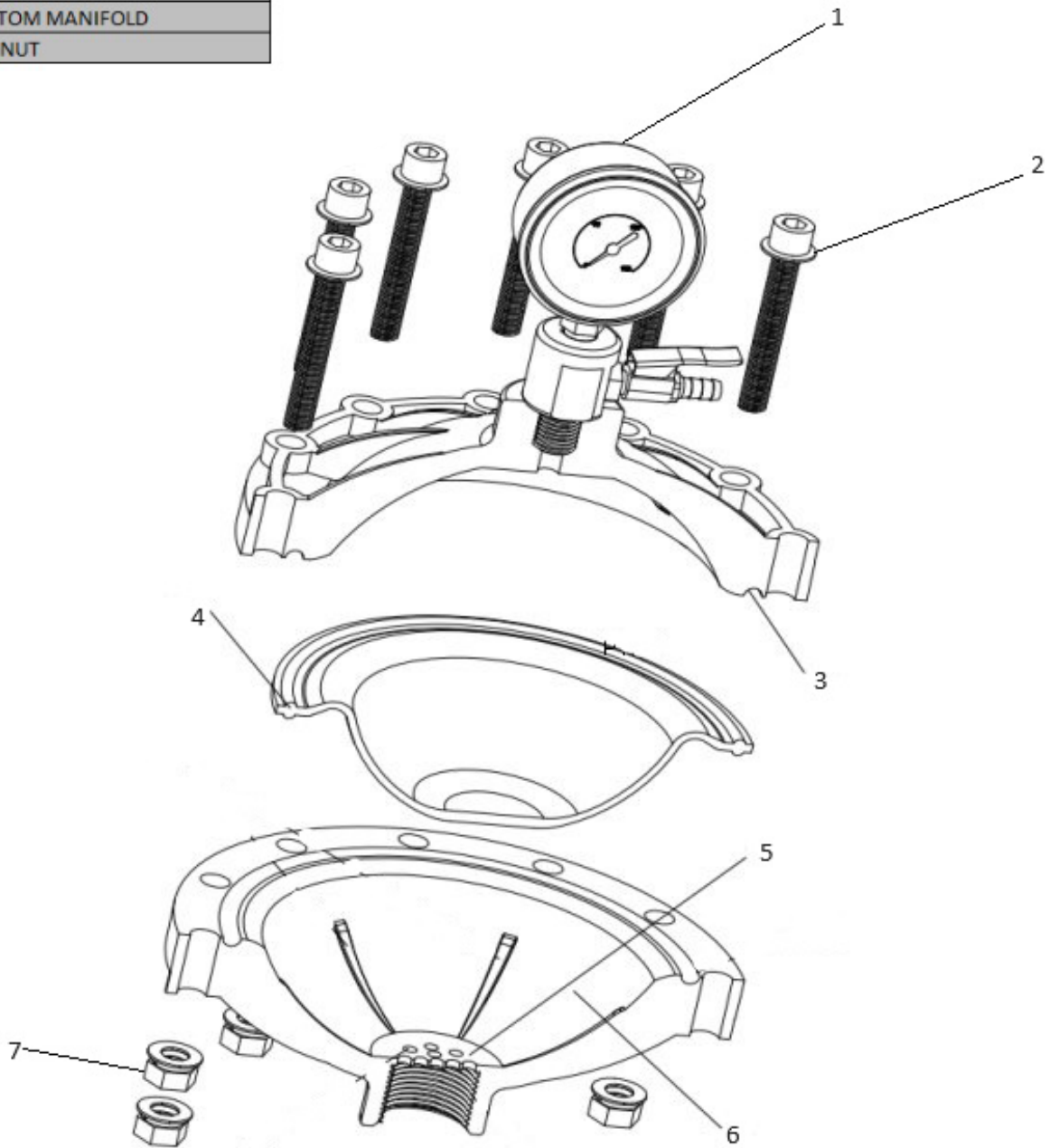
This illustration is a generic representation of an air-operated double-diaphragm pump.



Exploded View

Diaphragm Dampener

#	Description
1	AIR GAGE
2	SOCKET HEAD CAP SCREW
3	TOP MANIFOLD
4	DIAPHRAGM
5	SCREEN
6	BOTTOM MANIFOLD
7	HEX NUT





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