

Pulsation Dampeners

Purpose

Neptune dampeners are installed on the discharge side of positive displacement pumps to remove the pulsating flow caused by the start and stop action of the pump. Dampeners ensure a smooth and continuous flow, eliminate pipe vibration and protect in-line instrumentation.

Dampeners may also be installed at the pump inlet as an inlet stabilizer to improve the NPSH condition of the pump by reducing the acceleration pressure losses due to the opening and closing of the inlet ball valve.

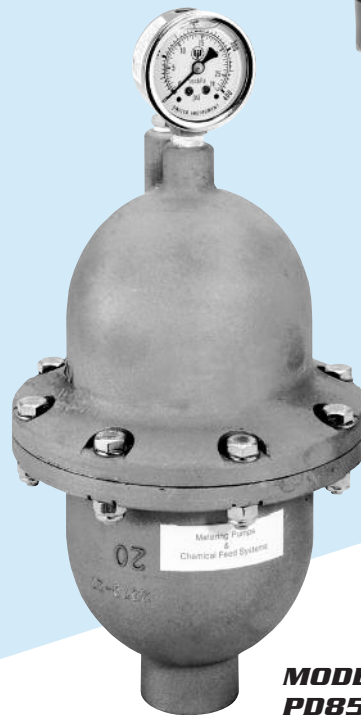
Features

- Lightweight, compact design
- Equipped with pressure gauge and charging valve
- Easy in-line maintenance
- Pressure ratings to 1000 psi with 4:1 safety margin
- Extensive range of plastics, metals and elastomers

Neptune
A DOVER COMPANY



**MODEL
PD36PV**



**MODEL
PD855S**



**MODEL
PD365S**

How They Work

A pressure chamber is divided by an elastomeric bladder. The lower portion of the chamber is filled with the pumped liquid, the upper portion of the chamber contains an air cushion. The air cushion is pre-charged to a pressure appropriate for the operating condition. The energy from each pump discharge stroke displaces the bladder into the air cushion allowing the dampener to absorb the energy. The air cushion and bladder force liquid out of the bladder during the pump suction stroke.

Pulsation Dampener Selection

CHART #1 ▼

| NEPTUNE PUMP MODEL | DEGREE OF DAMPENING | |
|-------------------------------------|---------------------|-------------|
| | 95% | 90% |
| 481 / 500 / 501 / 510 / 515 / 517 | 4 cu. inch | 4 cu. inch |
| 520 / 522 / 525 / 527 / 7000 / 7001 | 10 cu. inch | 4 cu. inch |
| 530 / 532 / 535 / 537 / 547 / 7020 | 36 cu. inch | 36 cu. inch |
| 562 / 565 / 567 / 7050 / 7070 | 85 cu. inch | 36 cu. inch |
| 6100 / 6150 | 36 cu. inch | 10 cu. inch |
| 6250 / 7101 / 7100 / 7120 / 7150 | 85 cu. inch | 36 cu. inch |
| 635 / 637 | 175 cu. inch | 85 cu. inch |
| 647 | 175 cu. inch | 85 cu. inch |
| 7200 / 7220 / 7250 | 370 cu. inch | 85 cu. inch |

DAMPENER SELECTION

Use chart #1 to determine required dampener size in cubic inches to obtain desired degree of dampening.

Use chart #2 to select the Model Number based on the dampener size, material and pressure.

All units are equipped with pressure gauge and charging valve.

Charging Kit Accessory – Part No. CK701

Charging kit comprised of 8 foot of 5000 psi hose with 1/4" NPTM fitting at one end for connection to nitrogen bottle regulator and charging adaptor with purge valve and gauge at other end.

CHART #2 ▼

| GAS VOLUME | MODEL NUMBER | MATERIAL | PRESSURE RATING (VITON & EPDM BLADDERS) | PRESSURE RATING (TEFLON® BLADDER) | CONNECTION SIZE/TYPE | OVERALL HEIGHT | DIAMETER |
|--------------|--------------|----------|---|-----------------------------------|----------------------|----------------|----------|
| 4 cu. inch | PD4SS-* | 316SS | 300 psi | 300 psi | 3/8" FNPT | 5 1/2" | 3 1/2" |
| | PD4PV-* | PVC | 150 psi | N/A | 3/8" FNPT | 5" | 3" |
| | PD4SSH-* | 316SS | 1000 psi | 600 psi | 3/8" FNPT | 5 1/2" | 3 1/2" |
| | PD4AL-* | Alloy 20 | 300 psi | 300 psi | 3/8" FNPT | 5 1/2" | 3 1/2" |
| 10 cu. inch | PD10SS-* | 316SS | 300 psi | 150 psi | 3/8" FNPT | 7" | 3 1/2" |
| | PD10PVP** | PVC | PVC BLADDER ONLY: 150 psi | | 1/2" FNPT | 6 1/2" | 3 1/2" |
| | PD10PV-* | PVC | 150 psi | N/A | 1/2" FNPT | 6" | 3" |
| | PD10SSH-* | 316SS | 1000 psi | N/A | 3/8" FNPT | 7" | 3 1/2" |
| | PD10AL-* | Alloy 20 | 300 psi | 150 psi | 3/8" FNPT | 7" | 3 1/2" |
| 12 cu. inch | PD12SSH-* | 316SS | 4000 psi | 2000 psi | 1/2" FNPT | 7" | 3 3/4" |
| 24 cu. inch | PD24SSH-* | 316SS | 4000 psi | N/A | 1/2" FNPT | 9 1/2" | 3 3/4" |
| 36 cu. inch | PD36SS-* | 316SS | 300 psi | 300 psi | 3/4" FNPT | 8 1/2" | 6 1/4" |
| | PD36PV-* | PVC | 150 psi | N/A | 3/4" FNPT | 9" | 7" |
| | PD36AL-* | Alloy 20 | 300 psi | 300 psi | 3/4" FNPT | 8 1/2" | 6 1/4" |
| | PD36SSH-* | 316SS | 1000 psi | N/A | 3/4" FNPT | 8 1/2" | 6 1/4" |
| 85 cu. inch | PD85SS-* | 316SS | 300 psi | 150 psi | 3/4" FNPT | 12" | 6 1/4" |
| | PD85PV-* | PVC | 150 psi | N/A | 3/4" FNPT | 12" | 7" |
| | PD85AL-* | Alloy 20 | 300 psi | 150 psi | 3/4" FNPT | 12" | 6 1/4" |
| | PD85SSH-* | 316SS | 1000 psi | N/A | 3/4" FNPT | 12" | 6 1/4" |
| 175 cu. inch | PD175SS-* | 316SS | 300 psi | 300 psi | 2" FNPT | 15 1/2" | 8" |
| | PD175PV-* | PVC | 150 psi | N/A | 2" FNPT | 14 1/2" | 9" |
| | PD175AL-* | Alloy 20 | 300 psi | 300 psi | 2" FNPT | 15 1/2" | 8" |
| | PD175SSH-* | 316SS | 1000 psi | 600 psi | 2" FNPT | 15 1/2" | 8" |
| 370 cu. inch | PD370SS-* | 316SS | 300 psi | 150 psi | 2" FNPT | 23 1/2" | 8" |
| | PD370PV-* | PVC | 150 psi | N/A | 2" FNPT | 23" | 9" |
| | PD370AL-* | Alloy 20 | 300 psi | 150 psi | 2" FNPT | 23 1/2" | 8" |
| | PD370SSH-* | 316SS | 1000 psi | N/A | 2" FNPT | 23 1/2" | 8" |

* Add "V" to Model # for Viton Bladder; Add "E" to Model # for EPDM Bladder; Add "T" to Model # for Teflon® Bladder.

** This model available with PVC Bladder only.



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