



1 Dampers listed below are from 1000s of "off the shelf" inventory dampers, for preventing pipe systems from converting lobe flow "rumble" into pressure pulsation. Prices are tabulated for you at www.pulseguard.com. Call toll free 1-888-DAMPERS(326-7377) for discounts etc. Choose a damper matching your pump connection size, for standard damping. Or allow us to calculate for you, from your smoothness required and your system data.



2 As many foods are highly viscous, you may care to first view dampers for that industry; Please GOTO http://www.pulseguard.com/pulsation_dampening/catalog_index.htm, Then, go to the foot of that page, to DAMPERS BY INDUSTRY, on the right "Food & Drug"; click on the PDF files



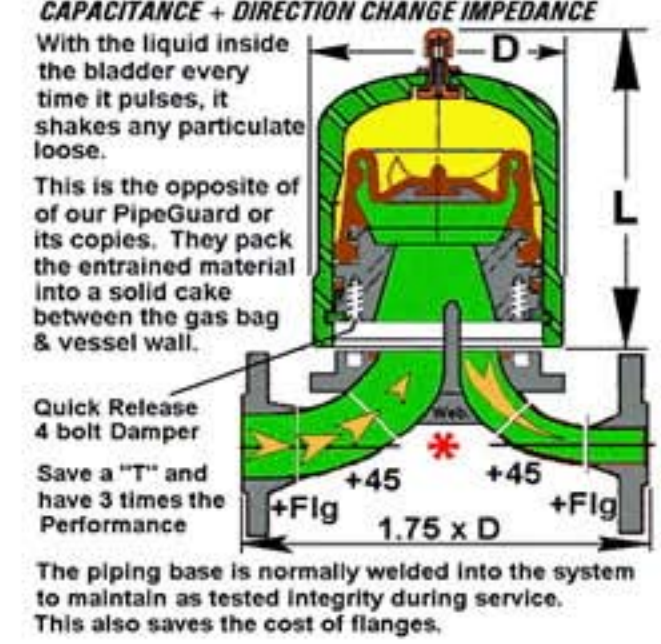
3 Before selection consider: Pipe design can stop any damper from performing. A small damper piped well, is far better than a huge damper piped incorrectly.

A. Dampers must be not more than 12 pipe diameters from the pump. **B.** Direction changes in the pipe system not tighter than bends with a radius of 5 pipe diameters. **C.** Keep pipes small enough for them to be dissipative - so they do not become an amplifier. **D.** Direct all wave action into the damper.

PipeHugger LP Economical - Liquid in elastomer bag, Air in shell. Shorter In to Out dimension than PumpGuard. Higher performance.

| Please State Material preferences and model Number below when ORDERING: | Connections | | Connct. Type | Length L Inch | Diam D Inch | Weight Lbs. | Vol. in 316ss | Pres. @ 93 C | Wetted your choice | Spares Kit |
|---|-------------|---------------|--------------|---------------|-------------|-------------|---------------|--------------|--------------------|------------|
| | To Pump | To Sys. | | | | | | | | |
| Lobe-PhrLP"0"20 | +PB2.5 | 0.5" x 0.375" | F npt | 5.4 | 3.0 | 10 | 20i/800p | 316L | D85L | ? |
| Lobe-PhrLP"0"40 | +PB4.0 | 0.75" x 0.5" | F npt | 6.3 | 4.0 | 12 | 40i/700p | 316L | D115L | ? |
| Lobe-PhrLP"0"60 | +PB5.0 | 1.0" x 0.75" | F npt | 6.9 | 6.0 | 18 | 60i/600p | 316L | D125L | ? |
| Lobe-PhrLP"0"90 | +PB6.0 | 1.5" x 1.0" | M npt | 6.9 | 6.5 | 21 | 90i/500p | 316L | D145L | ? |
| Lobe-PhrLP"0"180 | +PB8.0 | 2.0" x 1.5" | M npt | 8.5 | 8.5 | 38 | 180i/400p | 316L | D191L | ? |
| Lobe-PhrLP"0"360 | +PB9.0 | 3.0" x 2.0" | 37° BW | 9.4 | 10.4 | 55 | 360i/400p | 316L | D244L | ? |
| Lobe-PhrLP"0"720 | +PB12 | 4.0" x 3.0" | 37° BW | 10.1 | 12.7 | 80 | 720i/250p | 316L | D285L | ? |
| Lobe-PhrLP"0"999 | +PB14 | 5.0" x 4.0" | 37° BW | 14.0 | 14 | 130 | 999i/200p | 316L | D328L | ? |
| LobePhrLP"0"1500/ | +PB16 | 6.0" x 6.0" | 37° BW | 16.0 | 16 | 210 | 1500/200p | 316L | D368L | ? |
| LobePhrLP"0"3000/ | +PB20 | 8.0" x 8.0" | 37° BW | 20.0 | 20 | 315 | 3000/200p | 316L | D450L | ? |

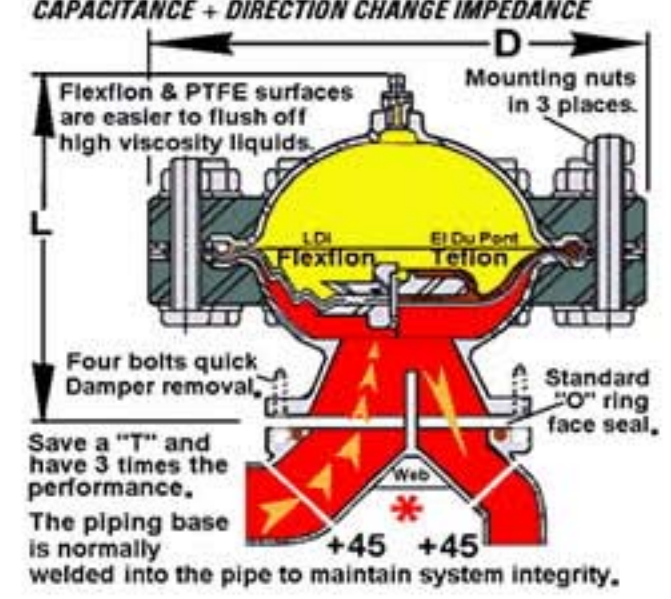
The PipeHugger LP



Flexorber LP with Flexflon, & PTFE for those aggressive liquids. Do not lose two thirds of the smoothness performance by being off line on a "T".

| Please State Material preferences and model Number below when ORDERING: | Connections | | Connct. Type | Length L Inch | Diam D Inch | Weight Lbs. | Vol. in 316ss | Pres. @ 93 C | Wetted your choice | Spares Kit |
|---|-------------|---------------|--------------|---------------|-------------|-------------|---------------|--------------|--------------------|-------------|
| | To Pump | To Sys. | | | | | | | | |
| Lobe-Sog-Lp 15 | +PB2.5 | 0.5" x 0.375" | F npt | 7.5 | 6.5 | 18 | 15 | 425p | 316L | DW123BF |
| Lobe-Sog-Lp 30 | +PB4 | 0.75" x 0.5" | F npt | 8.5 | 7.8 | 24 | 30 | 750p | 316L | DW143BF |
| Lobe-Sog-Lp 60 | +PB5 | 1.0" x 0.75" | F npt | 9.2 | 10 | 30 | 60 | 500p | 316L | DW175BF |
| Lobe-Sog-Lp 75 | +PB6 | 1.5" x 1.5" | 37° BW | 10.0 | 11 | 38 | 75i | 500p | 316L | DW187BF |
| Lobe-Sog-Lp 150 | +PB7 | 2.0" x 2.0" | 37° BW | 10.5 | 11.4 | 60 | 150i | 400p | 316L | DW223BF |
| Lobe-Sog-Lp 230 | +PB8 | 2.5" x 2.5" | 37° BW | 12.3 | 13.8 | 95 | 230 | 500p | 316L | DW268BF |
| Lobe-Sog-Lp 330 | +PB10 | 3.0" x 3.0" | 37° BW | 13.5 | 16 | 130 | 330 | 350p | 316L | DW305BF |
| Lobe-Sog-Lp 450 | +PB12 | 4.0" x 4.0" | 37° BW | 14.2 | 18 | 160 | 450i | 300p | 316L | DF345Teflon |
| Lobe-Sog-Lp 900 | +PB16 | 6.0" x 6.0" | 37° BW | 18 | 24 | 290 | 900i | 250p | 316L | DF450Teflon |

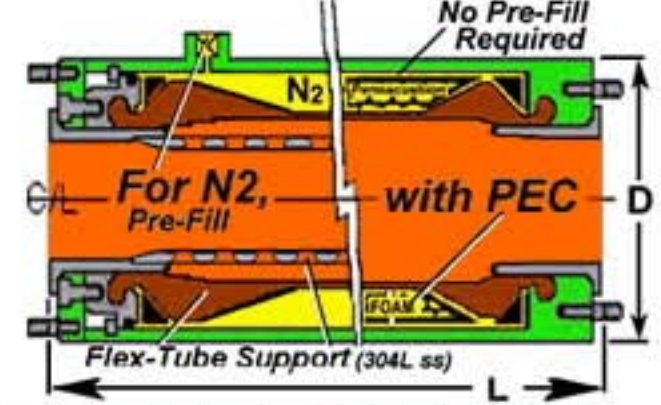
The Flexorber LP



PumpGuard Where you have 4 to 6 feet available directly on to the pump: An elastomeric "hose" damper for "ram thru." cleaning.

| Please State Material preferences and model Number below when ORDERING: | Connections | | Connct. Type | Length L Inch | Diam D Inch | Weight Lbs. | Vol. in 316 Gls. | Pres. @ 93 C | Wetted your choice | Spares Kit |
|---|-------------|---------|--------------|---------------|-------------|-------------|------------------|--------------|--------------------|------------|
| | To Pump | To Sys. | | | | | | | | |
| Lobe-Pug 690 | 2 x 2 | Mnpt | 64 | 6.6 | 100 | 3g | 500p | 316L | T74x58x1562x122 | ? |
| Lobe-Pug 1155 | 3 x 3 | 300 # | 55 | 8.6 | 200 | 5g | 500p | 316L | T120x100x1210x190 | ? |
| Lobe-Pug 2310 | 4 x 4 | 300 # | 45 | 10.7 | 350 | 10g | 500p | 316L | T120x100x1040x252 | ? |
| Lobe-Pug 3465 | 6 x 6 | 300 # | 45 | 12.7 | 450 | 15g | 500p | 316L | T185x165x1040x242 | ? |
| Lobe-Pug 4620 | 8 x 8 | 300 # | 65 | 14 | 950 | 20g | 500p | 316L | T239x219x1550x260 | ? |

The PumpGuard



* The question mark "?" = Letters, showing your choice of compatible elastomer, add the letter to ordering Pt. Nbr. - N=Buna N, E=EP, H=Hypalon, x V=Fluoro-Carbon, x x= addition to cost A20 = Alloy 20, H22 = Hasteloy 22, Ti2 = Titanium 2, Tan = Tantalum, Zir Zirconium, DSS = Duplex Stainless, SDSS = Super Duplex.

When you see a damper or a pump of particular interest, please request literature dedicated to that subject.

4. Where no OSHA requirement for in place flush before service, nor process need for 1st in 1st out, constant temp., change of liquid pumped, interception of pressure pulsation, or preventing sedimentation; use second connection to save a "T" for RV, PI, or System Drain. 2 connection dampers are standard lowest cost.

PUMPS make FLOW, SYSTEMS cause PRESSURE, pressure pulsation is a system response, AND a system responsibility NOT a pump manufacturers liability.

* For piping bases GOTO http://www.pulseguard.com/pulsation_dampening/select_smooth_percentagel/flow_or_pressure/ind_pump_f/alc_damper_volume/select/pipe_method/pipe_method.htm