



**1** Dampers listed below are from 1000s of "off the shelf" inventory dampers, for preventing pipe systems from converting gear tooth flow ripple into pressure pulsation. Prices are tabulated for you at [www.pulseguard.com](http://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.

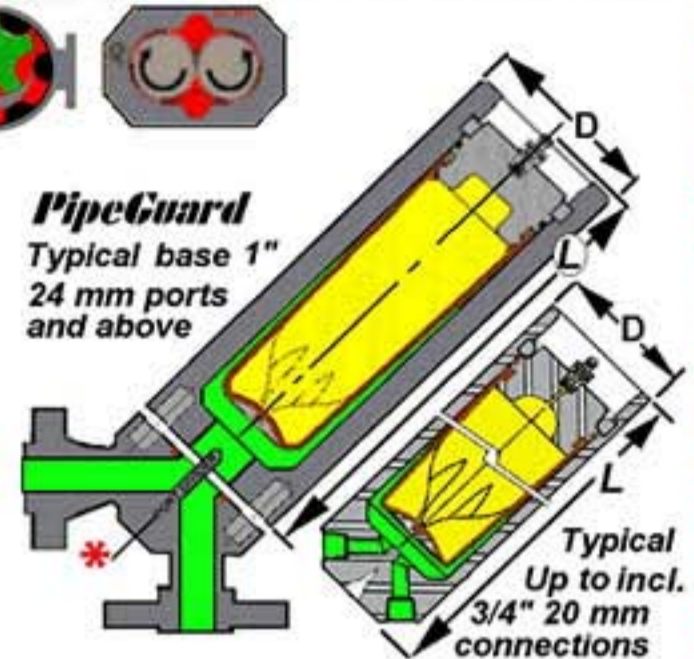


When you see a damper or a pump of particular interest, please request literature dedicated to that subject.

**2.** 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; use second connection to save a "T" for RV, PI, or System Drain. 2 connection dampers are standard lowest cost. Waveguard and Dampers for 10Hz & above, IE systems 300 meters (1000 ft.) or less, must use FLOW-THROUGH

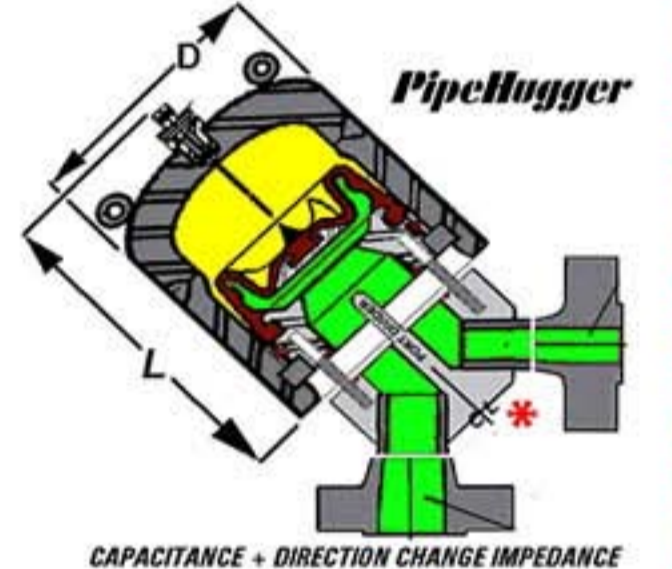
**PipeGuard** For use in externally corrosive environments.  
Small diam. gas bag response characteristics are less suitable to low amplitude fluctuations

Model Number For Ordering	Connections To Pump to Sys.	Connct. Type	Length L Inch.	Diam D Inch.	Weight Lbs.	Vol. In3	Pres. @ 93 C Lbs/In <sup>2</sup>	Wetted your choice Dims. For	Spares Kit	*
<b>DIRECT THREADED</b>										
Gear-Pig-MP-6	3/8" x 1/4"	F NPT	7.2	2.5	6	6	3,000	316L	B44x75	?
Gear-Pig-MP-15	1/2" x 3/8"	F NPT	8.6	2.75	10	15	3,000	316L	B57x98	?
Gear-Pig-MP-40	3/4" x 1/2"	F NPT	11.1	3.5	15	40	2,500	316L	B63x190	?
Gear-Pig-MP-75	1.0" M x 3/4"	F NPT	11.1	3.5	15	75	2,500	316L	B63x190	?
<b>MeterGuard Piping block</b>										
Gear-Pig-MP-120	1" x 1"	Sch 80	11.8	6.7	65	120	2,000	316 L	B139x105	?
Gear-Pig-MP-240	1.5" x 1.5"	Sch 80	15.7	6.7	81	240	2,000	316 L	B139x205	?
Gear-Pig-MP-460	2" x 2"	Sch 80	24	6.7	101	460	1,500	316 L	B139x420	?
Gear-Pig-MP-693	2.5" x 2.5"	Sch 80	24	8.62	212	693	1,500	316 L	B195x 360	?



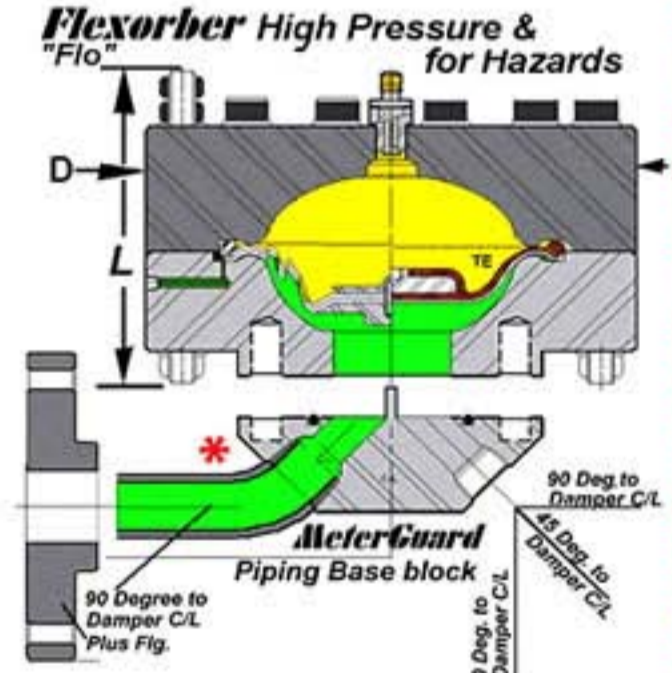
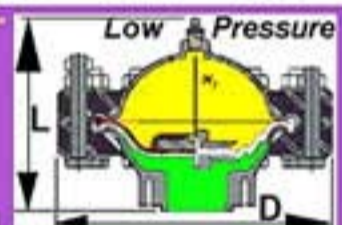
**PipeHugger** For externally NON-corrosive environments, with elastomer bladder.  
Large diam. liquid bladder response characteristics suit low amplitude fluctuations removal

Model Number For Ordering	Connections To Pump to Sys.	Connct. Type	Length L Inch.	Diam D Inch.	Weight Lbs.	Pres. @ 93 C Lbs/In <sup>2</sup>	Wetted your choice Dims. For	Spares Kit	*	
<b>For pressure pulsation damping PIPEHUGGER with METERGUARD PIPING BASE with SO pipe ends.</b>										
Gear-Phr-40	1/2" x 3/8"	F NPT L	8.9	5.0	26	1,700	316 L	D100L	?	
Gear-Phr-61	3/4" x 1/2"	F NPT L	9.8	6.6	48	1,500	316 L	D125L	?	
Gear-Phr-122	1.0" M x 3/4"	F NPT L	9.4	6.6	33	1,050	316 L	D145L	?	
Gear-PhrO-200	1.5" x 1.25"	Sch 80 L	9.6	8.5	56	1,200	316 L	D191M	?	
Gear-PhrO-475	2.0" x 1.5"	Sch 80 L	14.6	11	155	1,850	316 L	D230L	?	
Gear-PhrO-733	2.0" x 2.0"	Sch 80 L	15.3	13.8	315	2,000	316 L	D285L	?	



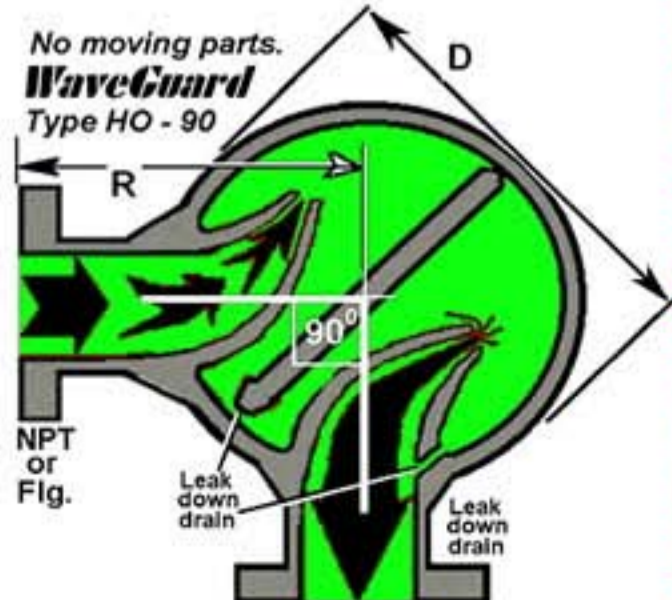
**Flexorber** For use with liquids that require PTFE "Sog" / Flexflon. The Teflon diaphragm stiff response characteristics will leave at least 0.1 Bar / 1.5-psi fluctuations in the system.

Model Number For Ordering	Connections To Pump to Sys.	Connct. Type	Length L Inch.	Diam D Inch.	Weight Lbs.	Pres. @ 93 C Lbs/In <sup>2</sup>	Wetted your choice Dims. For	Spares Kit	*	
<b>"Sog" part Numbers denote lower pressure items from hydro-forged shells</b>										
<b>"Flo" part Numbers denote Medium to High pressure items from solid billet</b>										
<b>Above 1" Pipe thread, and all Flexorbers above 40 In3 MeterGuard Piping block Connections male &amp; FROM A "METERGUARD"</b>										
Gear-Sog 30	1.5" x 1.25"	Sch 80	5.5	7.8	20	30	750	316L	DW 143tfe	
Gear-Sog 60	2.0" x 1.5"	Sch 80	6.0	10.2	50	60	1,450	316L	DW 175tfe	
Gear-Flo 122	2.0" x 2.0"	Sch80	11.5	14	300	122	2,000	316 L	DW 223tfe	
Gear-Flo 180	2.5" x 2.0"	Sch 80	12.5	16	500	180	2,500	316 L	DW 268tfe	
Gear-Flo 240	3" x 2.5"	Sch 80	13	17	700	240	1,250	316 L	DW 280tfe	
Gear-Sog 350	3.0" x 3.0"	Sch 80	9.1	17	475	350	700	316L	DW 305tfe	
Gear-Sog 450	4.0" x 3.0"	Sch 80	17	20	600	450	600	316 L	* DF 345vtf	
Gear-Flo 610	4.0" x 4.0"	Sch 80	18	26	2100	610	2,750	316 L	* DF 400vtf	
Gear-Sog 1000	6.0" x 4.0"	Sch 80	20	30	1250	1000	350	316 L	* DF 450vtf	



**WaveGuard** For high RPM, large number of gear teeth. No moving parts. Flow fluctuation ripple is removed only by the compressibility of the liquid volume. Pressure pulsation response from the pipe system is removed by orifice ratio to vessel diameter.

Model Number For Ordering	Connections To Pump to Sys.	Connct. Type	Radius C/L to connection end R Inch.	Diam D Inch.	Weight Lbs.	"e" Nbr. Equivalent to N <sub>2</sub> volume	Pres. @ 93 C Lbs/In <sup>2</sup>	Wetted your choice Dims. For	*
Gear-Wag/HO/90/ 0.3e	1/4" - 1/8"	F NPT	3.25	4.6		0.3	3000		
Gear-Wag/HO/90/ 0.6e	3/8" - 1/4"	F NPT	3.75	5.6		0.6	3000		
Gear-Wag/HO/90/ 1.0e	1/2" - 3/8"	F NPT	4.5	6.6		1.0	3000		
Gear-Wag/HO/90/ 2.5e	3/4" - 1/2"	F NPT	5.5	8.5		2.5	3000		
Gear-Wag/HO/90/ 5.0e	1.0" - 0.75"	F NPT	7	10.5		5.0	3000		
Gear-Wag/HO/90/ 8.5e	1.25" - 1.0"	F NPT	8	12.5		8.5	3000		
Gear-Wag/HO/90/ 14e	1.5" - 1.25"	M NPT	9	14.0		14	3000		
Gear-Wag/HO/90/ 21e	2.0" - 1.5"	1500#	10	16.0		21	3000		
Gear-Wag/HO/90/ 30e	3.0" - 2.5"	1500#	12	18.0		30	2500		
Gear-Wag/HO/90/ 40e	4.0" - 3"	1500#	14	20		40	2500		



**3.** \* 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 = addition to cost  
A20 =Alloy 20, H22 =Hasteloy 22, Ti2 =Titanium 2, Tan =Tantalum, Zir Zirconium, DSS = Duplex Stainless, SDSS = Super Duplex.