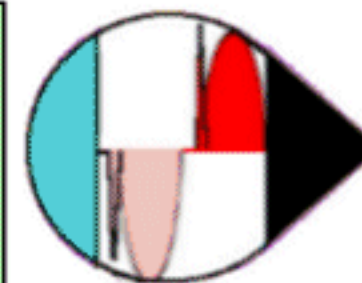


Pulsation Damper Size Selection Tables for double layer PTFE diaphragm head Metering Pumps. P22



The dampeners in these tables are a small selection from 1000 off the shelf inventory item PRICE LISTS at www.pulseguard.com When using those prices, be sure to ring Free-phone / call Toll-free for the current escalation and discount %ages. Select by connection size to suit your pump for "moderate" dampening. A smaller connection damper will give "course" dampening and a larger damper, with larger connection sizes, will give "smooth" dampening.



For **Flexorber / LP** please see P3 tabulation of LP Dosing pump brochure

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

2. Where there is no occupational health and safety need for in place flush through before servicing, nor any process requirement for constant temperature, or first in first out need to control residence time, not even clean before changing liquids it is still least expensive to use a standard twin connection damper, & save a "T". Use the other connection for the system drain, relief valve, or branch line. Waveguard and DAMPERS for frequencies above 10 Hz., systems shorter than 300 meters or 1000 ft, must use the FLOW-THRU. feature.



Off the shelf inventory - **Flexorber** - with **LDI FlexFlow** modified PTFE with secondary containment sealing, double layer diaphragms, & permeation alert port. Discharge system Shock Interception where EPDM, BunaN, Hypalon, Fluoroc etc are NOT compatible

Please State Material preferences and model Number below when ORDERING :	Connections To Pump to Sys.	Connct. Type	Length without Flange L Inch.	Diam D Inch	Weight Lbs.	Vol. In3	Pres. @ 93 C Lbs/In ² (For LP See Flexorber LP)	Wetted your choice Dims. For	Spares Kit	Flexflon
Mtrg-Flo 0.5	1/8" x 1/8"	F NPT	3.5	5.3	12	0.5	3,000	316 L	DW 65 tfe	
Mtrg-Flo 1.5	1/8" x 1/8"	F NPT	5.3	6.0	25	1.5	6,000	316 L	DW 85 tfe	
Mtrg-Flo 3.0	1/4" x 1/4"	F NPT	5.3	6.3	30	3.0	6,000	316 L	DW 93 tfe	
Mtrg-Flo 7.0	3/8" x 3/8"	F NPT	5.3	7.0	35	7.0	2,000	316 L	DW 113 tfe	
Mtrg-Flo 10.0	1/2" x 1/2"	F NPT	6.75	8.0	80	10	7,000	D-SS	DW 127 tfe	
Mtrg-Flo 15.0	1/2" x 1/2"	F NPT	7.5	10.0	130	15	6,000	D-SS	DW 145 tfe	
Mtrg-Flo 25.0	3/4" x 3/4"	F NPT	8.25	10.5	190	25	5,850	D-SS	DW 160 tfe	
Mtrg-Flo 40.0	1.0" x 1.0"	F NPT	9.5	12.0	240	40	5,750	316 L	DW 175 tfe	

Not on the shelf inventory - **Flexorber** + MeterGuard pipe base

Above 1" Pipe thread, and all Flexorbers above 40 In3		MeterGuard Piping block		Connections male & FROM A "METERGUARD"					
Mtrg-Flo 61	1.0" x 1.0"	Sch XX	10.0	12.5	300	61	5,500	316 L	DW 187 tfe
Mtrg-Flo 80	1.25" x 1.0"	Sch XX	11.0	13.5	350	80	5,250	316 L	DW 200 tfe
Mtrg-Flo 122	1.5" x 1.25"	Sch XX	11.5	14	400	122	5,000	316 L	DW 223 tfe
Mtrg-Flo 180	2.0" x 1.5"	Sch XX	12.5	16	550	180	4,500	316 L	DW 268 tfe
Mtrg-Flo 240	2.0" x 2.0"	Sch XX	13	17	675	240	4,000	316 L	DW 280 tfe
Mtrg-Flo 300	2.5" x 2.0"	Sch XX	15.2	18	800	300	3,500	316 L	DW 305 tfe
Mtrg-Flo 400	3" x 2.5"	Sch 160	17	20	1200	400	3,000	316 L	DF 345 tfe
Mtrg-Flo 610	3.5" x 3.0"	Sch 160	18	26	2100	610	2,750	316 L	DF 400 tfe
Mtrg-Flo 860	4.0" x 3.5"	Sch 160	20	30	3000	860	2,500	316 L	DF 450 tfe

Liquid in elastomer bladder - **PipeHugger** - N2 in the drive bonnet For high pressure metering & injection systems compatible with EP, EPDM, Nitrile/Buna, Fluoro etc. The large diameter relative to connection sizes ensures efficient pressure pulsation attenuation.

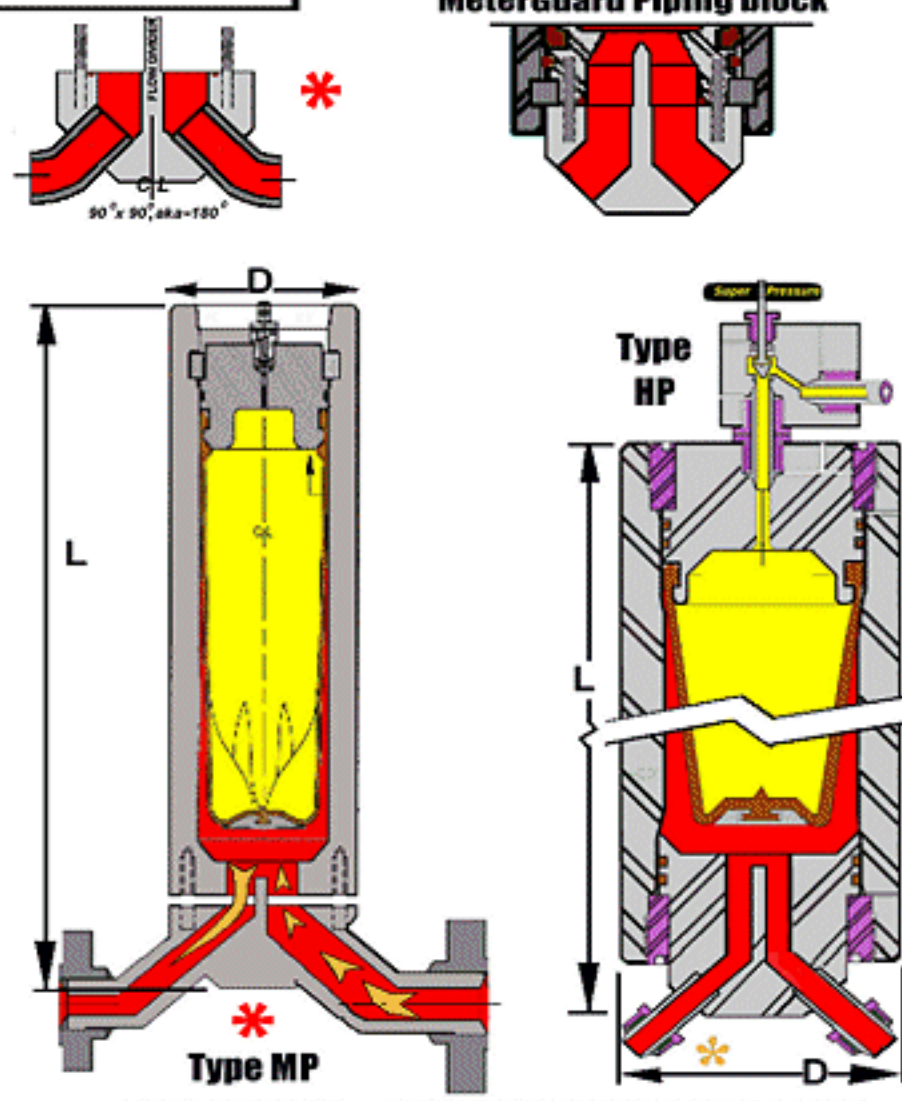
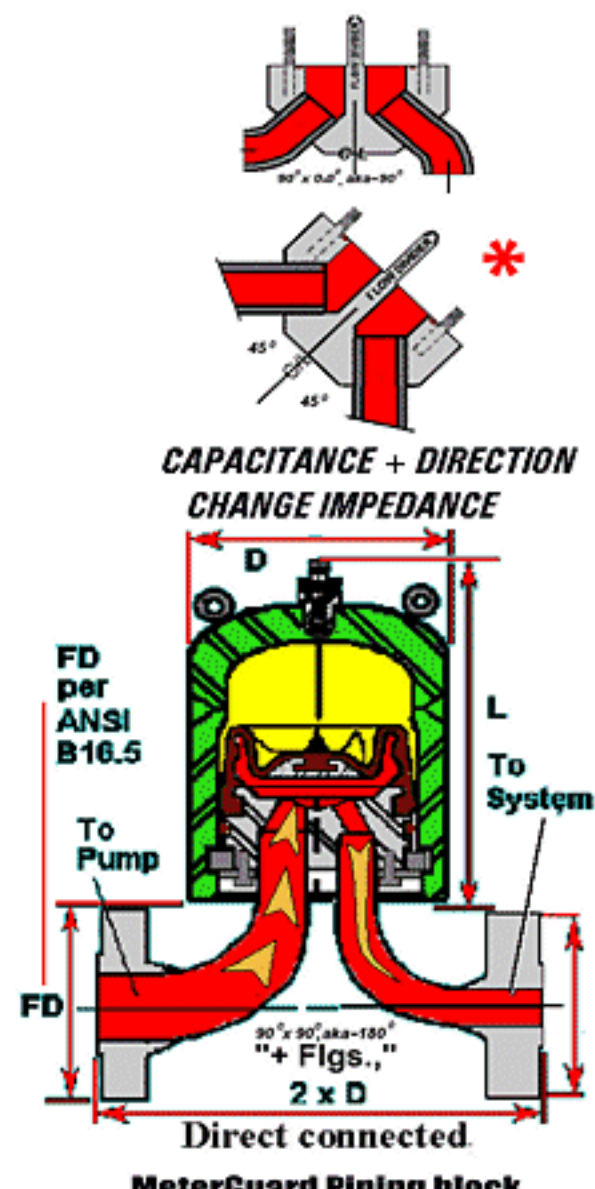
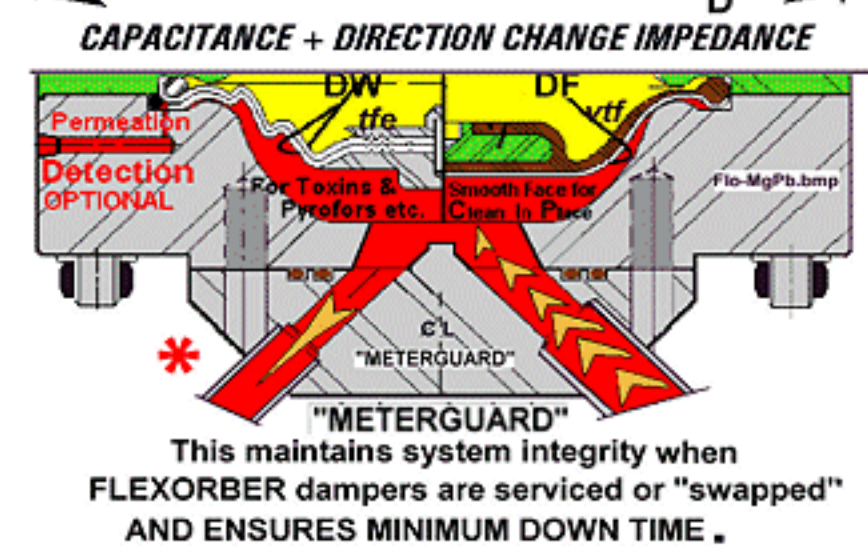
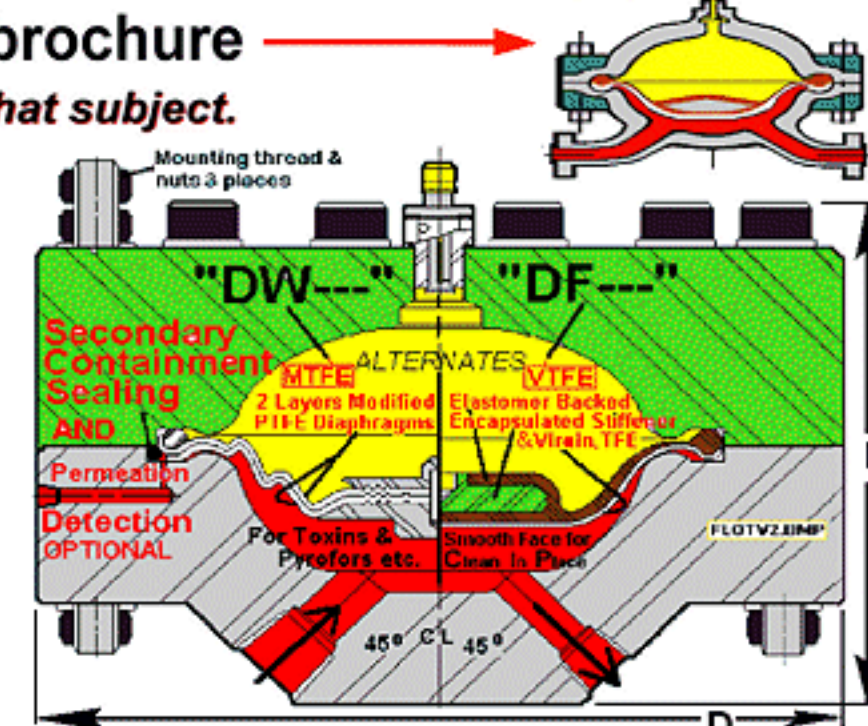
Please State Material preferences and model Number below when ORDERING :	Connections To Pump to Sys.	Connct. Type	Length without Flange L Inch.	Diam D Inch	Weight Lbs.	Vol. In3	Pres. @ 93 C Lbs/In ² (for Low Pres. see PipeHugger LP)	Wetted your choice Dims. For	Spares Kit	*
For pressure pulsation damping PIPEHUGGER with female connections										
Mtrg-Phr-8	1/8" x 1/8"	F NPT	6.7	3.9	13	8	4,200	316 L	D64L	?
Mtrg-Phr-18	1/4" x 1/8"	F NPT	8.1	4.2	20	18	2,000	316 L	D75L	?
Mtrg-Phr-18	3/8" x 1/4"	F NPT	8.5	4.5	25	18	5,500	316 L	D75L	?
Mtrg-Phr-40	1/2" x 3/8"	F NPT	8.9	5.0	26	40	1,700	316 L	D100L	?
Mtrg-Phr-40	1/2" x 3/8"	F NPT	11	5.9	52	40	5,250	316 L	D100L	?
Mtrg-Phr-61	3/4" x 1/2"	F NPT	9.8	6.6	48	61	1,500	316 L	D125L	?
Mtrg-Phr-61	3/4" x 1/2"	F NPT	11.2	7.0	75	61	4,300	316 L	D125L	?
Mtrg-Phr-122	1.0" x 3/4"	F NPT	9.4	6.6	33	122	1,050	316 L	D145L	?
For pressure pulsation damping PIPEHUGGER with METERGUARD PIPING BASE with SO pipe ends.										
Mtrg-PhrO-122	1.25" x 1.0"	Sch 160	13	7.9	112	122	3,950	316 L	D145L	?
Mtrg-PhrO-200	1.5" x 1.25"	Sch 80	9.6	8.5	56	200	1,200	316 L	D191M	?
Mtrg-PhrO-475	2.0" x 1.5"	Sch 80	14.6	11	155	475	1,850	316 L	D230L	?
Mtrg-PhrO-733	2.0" x 2.0"	Sch 80	15.3	13.8	315	733	2,000	316 L	D285L	?

Gas in elastomer bag - **PipeGuard/HP** Liquid in 316ss Shell The Original 1965, no poppet to jam, one piece molded - no glue or bond gas bag, flow smoother Tall & slim - low cost construction, but small diameter sacrifices efficient pressure pulse attenuation.

Please State Material preferences and model Number below when ORDERING :	Connections To Pump to Sys.	Connct. Type	Length without Flange L Inch.	Diam D Inch	Weight Lbs.	Vol. In3	Pres. @ 93 C Lbs/In ² (for Low Pres. see PipeGuard LP)	Wetted your choice Dims. For	Spares Kit	*
For externally corrosive environments										
PIPEGUARD HP Direct connected, for flow fluctuation smoothing and injection shock interception										
Mtrg-Pig-HP-1	AutoClave / PPI	SF375	4.6	1.77	3	1	6,000	316L	B24x50	?
Mtrg-Pig-HP-6	AutoClave / PPI	SF562	7.5	3.5	17	6	15,000	DSS	B44x75	?
Mtrg-Pig-HP-15	AutoClave / PPI	SF750	10	4.0	26	15	11,250	DSS	B57x98	?
Mtrg-Pig-HP-60	GrayTec/LokHub	IGR5 IGR4	16	5.1	70	60	11,000	SDSS	B72x255	?
For flow fluctuation smoothing PIPEGUARD MP with METERGUARD PIPING BASE with SO pipe ends.										
Mtrg-Pig-MP-120	1" x 1"	Sch 160	11.8	6.7	65	120	3,500	316 L	B139x105	?
Mtrg-Pig-MP-240	1.5" x 1.5"	Sch 160	15.7	6.7	81	240	3,500	316 L	B139x205	?
Mtrg-Pig-MP-460	2" x 2"	Sch 160	24	6.7	101	460	3,500	316 L	B139x420	?
Mtrg-Pig-MP-693	2.5" x 2.5"	Sch 160	24	8.62	212	693	3,100	316 L	B195x360	?

3. The ratio of cross sectional areas inside the pipes for best pressure stability is 2:6:3:1 Where 2 is a suitable area for constant velocity suction supply, an area of 6 accommodates the peak velocity of the suction stroke. 3 will takes the peak velocity of the discharge stroke, 1 will be ideal for the discharge constant velocity produced by the discharge damper. We have labelled the connections with their correct relative area numbers for your convenience

4. * 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.



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_percentage/flow_or_pressure/find_pump_ficalc_damper_volume/select_pipe_method/pipe_method.html