ACCU-PULSE
Pulsation Dampeners

APX Series
High Pressure Dampeners

withstand shock loads four times the maximum working pressure.
Designed for high pressure applications up to 2900 PSI (200 BAR)

ACCU-PULSE pulsation dampeners remove pulsating flows from positive displacement pumps and:

- reduce pump pulsation, pipe vibration and shaking up to 99%
- protect expensive high pressure tube and pipe
- extend pump life & improve performance
- minimize pump cavitation
- eliminate water hammer and pressure spikes caused by quick closing valves
- limit damaging pressure surges from pump start up and shut down
- eradicate splashing, foaming and product degradation

Standard Features Include:

- rugged 316L shell casing
- standard elastomers are nitrile (Buna-N), EPDM & FPM (Viton); other elastomers available
- available in 4 to 1098 cubic inches (.075 L to 18 L)
- larger capacities and higher pressures available on request

ACCU-PULSE APX Pulsation Dampener

Why use an ACCU-PULSE pulsation dampener?

Positive displacement pumps creat pulsation through the reciprocating action of their design. These pulsations can result in system inefficiency, damage to the system components and product inconsistency and/or degradation.

ACCU-PULSE pulsation dampeners absorb and minimize the pulsations in the system providing:

- protection of pipes, fittings, valves, meters and in-line instrumentation from pulsation ,vibration, hydraulic shock and surges
- meter accuracy, longevity and repeatability
- increased system efficiency with a steady and continuous flow for dosing, blending or proportioning process additives
- uniform discharge of materials in spraying and coating applications
- steady pressure flows to filters and elimination of surge holes in filter bags
- complete suction stroke filling of pump cylinders and diaphragm chambers
- minimal splashing, foaming or degradation of product
- prevention of cavitation and premature pump failure

ACCU-PULSE Product Features:

- body available in chemical resistant 316L Stainless Steel, Hastelloy C and Alloy 20; other alloys available on request
- variety of bladder materials available, see options and details below
- standard sizes from 4 cu in (0.075 L) to 1098 cu in (18 L)
- pressure range up to a maximum of 2900 psi (200 BAR); dependant on model
- temperature range from -60 °F to 350 °F (-51 °C to 176 °C); dependant on model
- connection sizes from 3/8" to 2" (10 mm to 51 mm); dependant on model
- units available with a standard threaded connection; flanged or socket connections are optional
- simple design allows for easy in-line maintenance
- APXL and APXH models are complete with a pressure gauge

Bladder Elastomer Options:

Note: Please reference the Primary Fluid Systems Chemical Resistance Guide (available on our website) or contact us for assistance in selecting the appropriate bladder for your application.

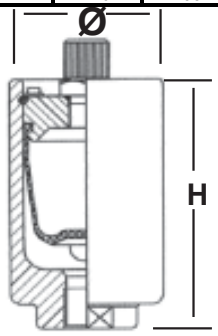
Bladder Material	Temperature Limits	Applications
Nitrile (BUNA-N)	(-)12 °C to 82 °C 10 °F to 180 °F	Good flex life; use with petroleum, solvents and oil based fluids
EPDM	(-)51 °C to 137 °C (-)60 °F to 260 °F	Use in extreme cold; good chemical resistance with caustics and ketones.
FPM (Viton)	(-)23 °C to 176 °C (-)10 °F to 350 °F	Use in high temperatures and with aggressive fluids, aromatics, solvents, acids and oils

Note:
Hypalon, Teflon and Butyl bladders are available on request. Contact factory for details.

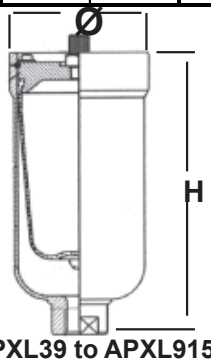
Dimensional Information

Capacity	cu in. 4	Litre (L) 0.075	cu in. 9	Litre (L) 0.15	cu in. 21	Litre (L) 0.35	cu in. 39	Litre (L) 0.65	cu in. 58	Litre (L) 0.95	cu in. 85	Litre (L) 1.40
Bladder, Shell ex. BUNA, S/S	Model APXL4-S/S-B-0 APXH4-S/S-B-0 APX4-S/S-B-0		Model APXL9-S/S-B-1 APXH9-S/S-B-1 APX9-S/S-B-1		Model APXL21-S/S-B-1 APXH21-S/S-B-1 APX21-S/S-B-1		Model APXL39-S/S-B-2 APXH39-S/S-B-2 APX39-S/S-B-2		Model APXL58-S/S-B-2 APXH58-S/S-B-2 APX58-S/S-B-2		Model APXL85-S/S-B-2 APXH85-S/S-B-2 APX85-S/S-B-2	
Fitting Size	3/8"		1/2"		1/2"		3/4"		3/4"		3/4"	
Dimensions	inches	(mm)	inches	(mm)	inches	(mm)	inches	(mm)	inches	(mm)	inches	(mm)
Diameter (Ø)	2.17	55	2.76	70	3.15	80	3.54	90	4.33 or 4.41	110 or 112	4.33 or 4.41	110 or 112
Height (H)	3.66	93	4.65	118	6.38	162	8.07	205	7.87	200	9.65	245

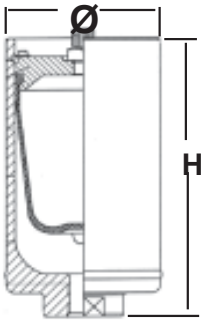
Capacity	cu in. 158	Litre (L) 2.60	cu in. 225	Litre (L) 3.70	cu in. 341	Litre (L) 5.60	cu in. 579	Litre (L) 9.50	cu in. 915	Litre (L) 15.0	cu in. 1098	Litre (L) 18.0
Bladder, Shell ex. BUNA, S/S	Model APXL158-S/S-B-3 APXH158-S/S-B-3 APX158-S/S-B-3		Model APXL225-S/S-B-3 APXH225-S/S-B-3 APX225-S/S-B-3		Model APXL341-S/S-B-35 APXH341-S/S-B-35 APX341-S/S-B-35		Model APXL579-S/S-B-4 APXH579-S/S-B-4 APX579-S/S-B-4		Model APXL915-S/S-B-4 APXH915-S/S-B-4 APX915-S/S-B-4		Model APXL1098-S/S-B-4 APXH1098-S/S-B-4 APX1098-S/S-B-4	
Fitting Size	1"		1"		1-1/2"		2"		2"		2"	
Dimensions	inches	(mm)	inches	(mm)	inches	(mm)	inches	(mm)	inches	(mm)	inches	(mm)
Diameter (Ø)	5.51	140	5.51	140	6.69	170	8.66 or 8.82	220 or 224	8.66 or 8.82	220 or 224	8.82	224
Height (H)	11.42 or 11.61	290 or 295	15.20 or 15.35	386 or 390	16.30	414	17.40	442	24.61	625	29.92	760



APXL4 to APXL21
APXH4 to APXH21
APX4 to APX21

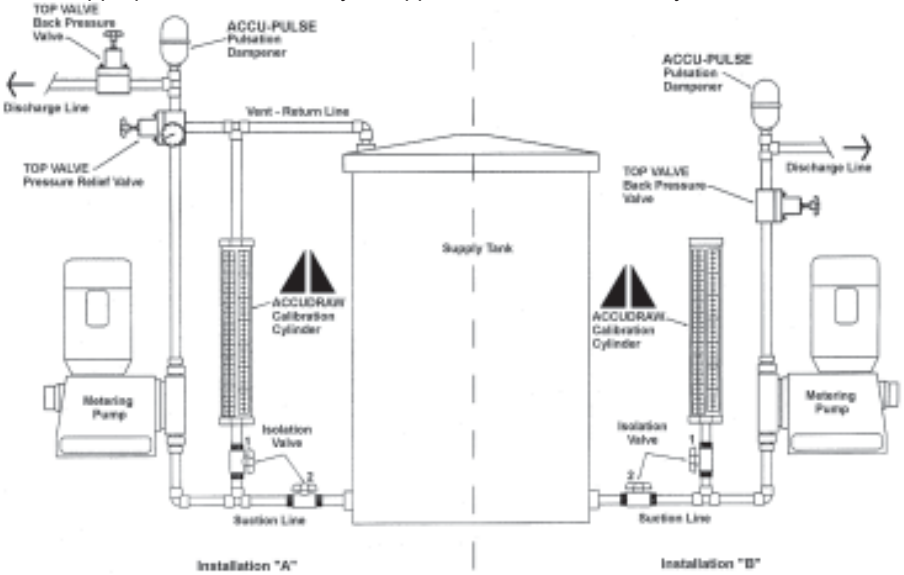


APXL39 to APXL915
APXH39 to APXH915
APX39 to APX 915



APXL1098
APXH1098
APX1098

Typical Installations: The installations below are typical installation examples only. Consult your engineering department for the appropriate installation of your application or call the factory for advice.



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ACCU-PULSE APX Series Pulsation Dampeners

Dampener Sizing Guide for Standard Simplex Metering Pumps

Note: Separate sizing guide available for air operated double diaphragm pumps.
The following are general ranges for sizing ACCI-PULSE dampeners for metering pump applications.

Models stated are based on 5% pressure fluctuations and a Simplex single acting metering pump. For a 10% pressure fluctuation, multiply the Capacity per Stroke range number in the chart below by 2.

To calculate cubic inches per stroke: gallons per minute = gallons per stroke
strokes per minute
Gallons per stroke X 231 cu inches per gallon = cubin inch per stroke

Example: .15 = .0015 GPS Therefore: .0015 X 231 = 0.3465 Cubic inches per stroke
100 = APX(Series) 9 Dampener

Capacity per Stroke Range (cu in.)	ACCU-PULSE Dampener	Capacity per Stroke Range (cu in.)	ACCU-PULSE Dampener
0 - 0.17	APX(Series)4	3.40 - 6.29	APX(Series)158
0.18 - 0.36	APX(Series)9	6.30 - 5.95	APX(Series)225
0.37 - 0.85	APX(Series)21	8.96 - 13.54	APX(Series)341
0.86 - 1.57	APX(Series)39	13.55 - 22.98	APX(Series)579
1.58 - 2.30	APX(Series)58	22.99 - 36.28	APX(Series)915
2.31 - 3.39	APX(Series)85	36.29 - 43.54	APX(Series)1098

Note: For other pump factors or residual pulsation, contact factory for assistance.

Ordering Information

Body Material
S/S = Stainless Steel
ALL20 = Alloy 20
HAST = Hastelloy

Bladder Material
B = Nitrile (BUNA-N)
E = EPDM
V = FPM (Viton)
Additional materials available:
H = Hypalon BU = Butyl
T = Teflon

Threaded Connection Size
0 = 3/8" NPT(F) for Series 4
1 = 1/2" NPT(F) for Series 9 to 21
2 = 3/4" NPT(F) for Series 39 to 85
3 = 1" NPT(F) for Series 158 to 225
35 = 1 1/2" NPT(F) for Series 341
4 = 2" NPT(F) for Series 579 to 1098

Example: Part # APX_ - 9 - S/S - E - 1 - F

Model
APXL = Low Pressure
APXH = High Pressure
APX = Maximum Pressure

Optional Flanges
Add suffix -AT for ATEX certification
Add suffix -B for BSP threads
Add suffix -F for flanges
Add suffix -FD for "DIN" metric flanges

Series	Capacity	APXL Model	APXH Model	APX Model
4	4 cu in (0.075 L)	400 psi (27.5 BAR)	1000 psi (69 BAR)	2900 psi (200 BAR)
9	9 cu in (0.15 L)	400 psi (27.5 BAR)	1000 psi (69 BAR)	2610 psi (180 BAR)
21	21 cu in (0.35 L)	400 psi (27.5 BAR)	1000 psi (69 BAR)	1885 psi (130 BAR)
39	39 cu in (0.65 L)	400 psi (27.5 BAR)	1000 psi (69 BAR)	1740 psi (120 Bar)
58	58 cu in (0.95 L)	400 psi (27.5 BAR)	1000 psi (69 BAR)	1595 psi (110 BAR)
85	85 cu in (1.40 L)	400 psi (27.5 BAR)	1000 psi (69 BAR)	1595 psi (110 BAR)
158	158 cu in (2.60 L)	400 psi (27.5 BAR)	1000 psi (69 BAR)	1595 psi (110 BAR)
225	225 cu in (3.70 L)	400 psi (27.5 BAR)	1000 psi (69 BAR)	1595 psi (110 BAR)
341	341 cu in (5.60 L)	400 psi (27.5 BAR)	1000 psi (69 BAR)	1885 psi (130 BAR)
579	579 cu in (9.50 L)	400 psi (27.5 BAR)	1000 psi (69 BAR)	1885 psi (130 BAR)
915	915 cu in (15.0 L)	400 psi (27.5 BAR)	1000 psi (69 BAR)	1885 psi (130 BAR)
1098	1098 cu in (18.0 L)	400 psi (27.5 BAR)	1000 psi (69 BAR)	1885 psi (130 BAR)

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