

ARO®

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call 877-742-2878 or visit
www.burtprocess.com

SHOCK BLOCKER™

FLUID PULSATION DAMPENERS



The Automatic Shock Blockers

For over 85 years, the ARO® Fluid Products business of Ingersoll Rand® has developed partnerships with more than 200 original equipment manufacturers and distributors, enabling us to better focus on the unique pumping needs of many industries. It's a strategic merger of our partners' application expertise, along with our decades-long legacy of designing and building outstanding piston and diaphragm pumps.



Foaming



Material Pulsation



Hydraulic Shock



Splashing

Diaphragm and piston pumps of any type have at least two points in their cycle where they provide no pressure or flow to a process. The unwanted result of this pressure fluctuation can often be material foaming, material pulsation, hydraulic shock or material splashing. While traditional pulsation dampeners can help reduce unwanted pulsation and other problems, they also require operator intervention and adjustments.

Applications where Shock Blockers provide advantages:

- Fluid Dispensing Control
- Inline Flow Meter Protection
- Long Pipe Runs
- Equipment Protection (Pumps, Meters, Piping)
- High Back Pressure Application

Design Features

1", 2" AND 3" SHOCK BLOCKERS

- Automatic Air Adjustment - compensates for fluctuations in fluid pressure without operator intervention.
- Significant Pulsation Reduction - the new Shock Blockers deliver an average 60% - 80% pulsation reduction in high back pressure applications.
- Perfect for Process Applications - pulsation reduction in long piping runs help prevent costly fluid pipe and downstream valve damage.
- Built for High-Flow/Aggressive Fluid Applications - the 2" models can handle up to 159 in.³ maximum fluid volume, and 3" models up to 509 in.² maximum fluid volume.
- Broad Material Range for Compatibility - choose from Kynar®, polypropylene, groundable acetal (1" models) or aluminum, cast iron or stainless steel (2" & 3" models) body materials for optimum pump-to-pulsation dampener compatibility.
- Broad Diaphragm/Bladder Fluid Compatibility - choose from Santoprene®, Nitrile, PTFE, Viton or Urethane for optimum fluid-to-diaphragm compatibility.
- Bolted Construction - for leak-free vessel integrity and a safer work-site.
- Ultra-Rugged Construction for Long service Life - both inside and out, the new Shock Blockers re built tough to deliver worry free, near pulse-free fluid handling.

Performance Charts

Fluid Pressure PSI Back Pressure	1/2" Pump w/1" Shock Blocker					% Reduction In Pulsation	
	20	40	60	1	2	3	4
20	94	81	70	65			
40	92	83	70				
60	91	85					
				1	2	3	4
						5	10
							12

Fluid Pressure PSI Back Pressure	1" Pump w/1" Shock Blocker					% Reduction In Pulsation	
	20	40	60	80	1	5	10
20	90	80	70	60			
40	99	75	70				
60	85	80	75				
80	85	80					
					1	5	10
						15	20
							25
							30

Fluid Pressure PSI Back Pressure	1-1/2" Pump w/2" Shock Blocker					% Reduction In Pulsation	
	40	60	80	100	1	20	40
40	80	70					
60	89	70					
80	80	65					
100	80	70					
					1	20	40
							60
							80

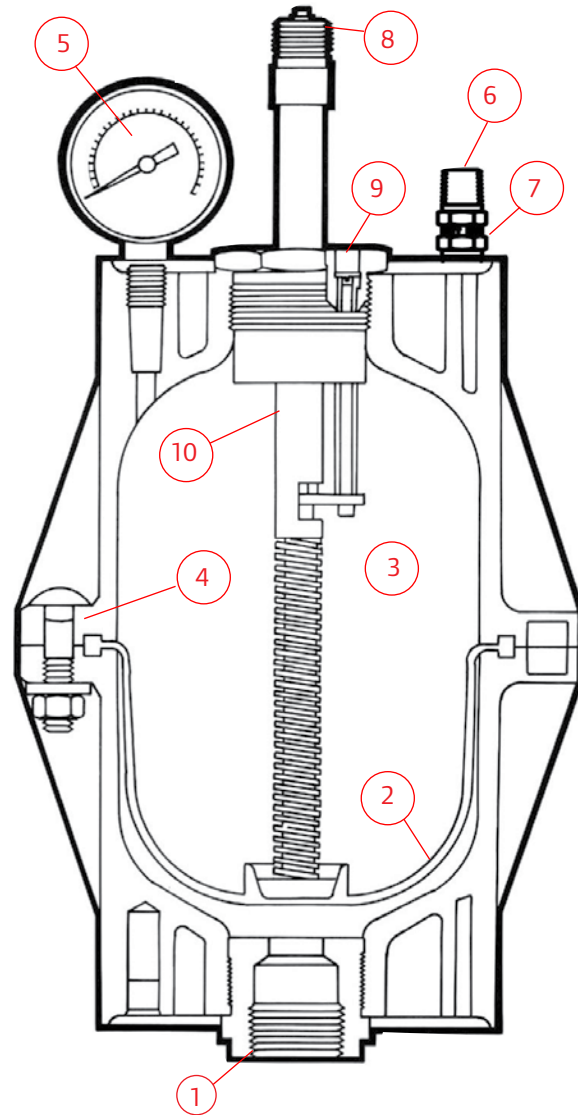
Fluid Pressure PSI Back Pressure	2" Pump w/2" Shock Blocker					% Reduction In Pulsation	
	40	60	80	100	3	30	70
40	65	55					
60	70	60					
80	70	55					
100	60	55					
					3	30	70
							100
							130

Fluid Pressure PSI Back Pressure	3" Pump w/3" Shock Blocker					% Reduction In Pulsation	
	40	60	80	100	5	75	125
40	60	50					
60	65	55					
80	60	50					
100	60	50					
					5	75	125
							150
							200

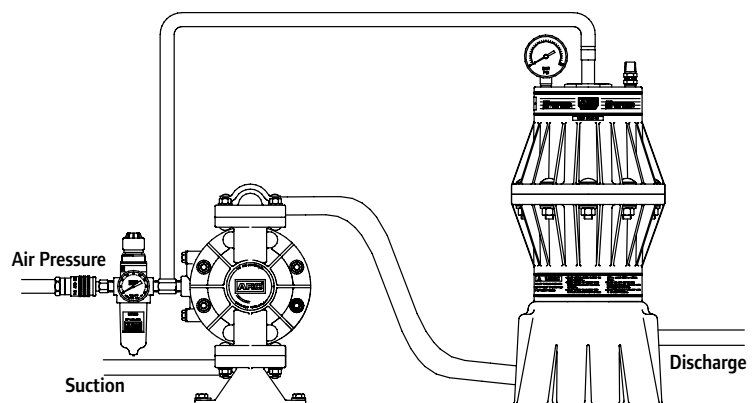
Design Features

1" SHOCK BLOCKER

- 1 **Fracture-Resistant Fluid Inlet** minimizes the chance of cracking the main vessel's housing while threading.
- 2 **Bladder** flexes as fluid pulses from the pump.
- 3 **Enlarged Air Chamber** provides superior smoothing of fluid pressure.
- 4 **Flange Bolt Fasteners** make assembly faster and easier and insures a leak-free seal.
- 5 **Pressure Gauge** (included) provides easy visibility for convenient process monitoring.
- 6 **Pressure Relief Valve** minimizes the possibility of vessel over-pressurization (above 125 PSI).
- 7 **Grounding Lug** provides convenient ground connection.
- 8 **Air-Tamer Auto-Adjust Assembly**
Unlike other air adjusters, Air-Tamer has no lip seals along its piston to wear out, and all moving parts are encased inside the dampener housing.
- 9 **Bleed Port** can be plumbed to drain off material in the event of bladder failure.
- 10 **Bladder Guard** prevents damage or rupture of the bladder.



Typical Installation Used with 1/2" & 1" Ported Diaphragm Pumps



Shock Blocker 1" Port

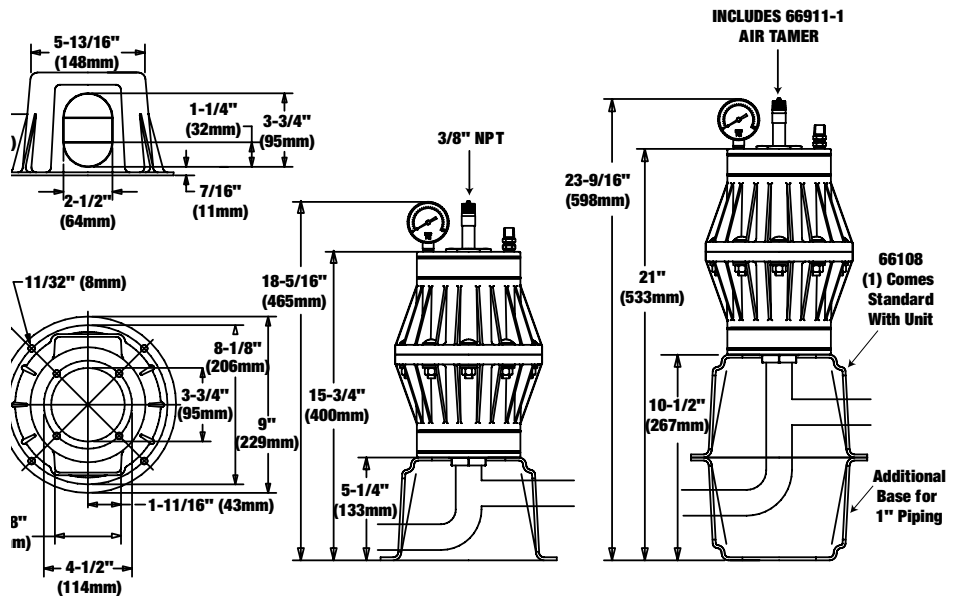


1" Shock Blocker

Specifications

Pulsation Dampener Type	Non-Metallic / Automatic
Material	See model description chart
Weight	Polypropylene 8.4 lbs (3.8 kgs) Conductive Acetal 8.6 lbs (3.9 kgs) Pure Kynar (PVDF) 9.0 lbs (4.1 kgs)
Material Inlet/Outlets	SB10X-AXX 1" - NPTF (Female) (Both are available) SB10X-BXX - 1" BSP (Female)
Air Inlet	Air Tamer is 3/8" NPTF (Male) (Standard)
Maximum Air Inlet Pressure	100 PSIG (6.9 bar)
Maximum Material Inlet Pressure	100 PSIG (6.9 bar)
Maximum Temperature Limits	Polypropylene 35° F - 100° F (+1.6° C - 37.7° C) Conductive Acetal 10° F - 180° F (-12° C - 82° C) Pure Kynar 10° F - 200° F (-12° C - 93° C)
Maximum Fluid Volume	57 In. ³ (931)

Dimensions



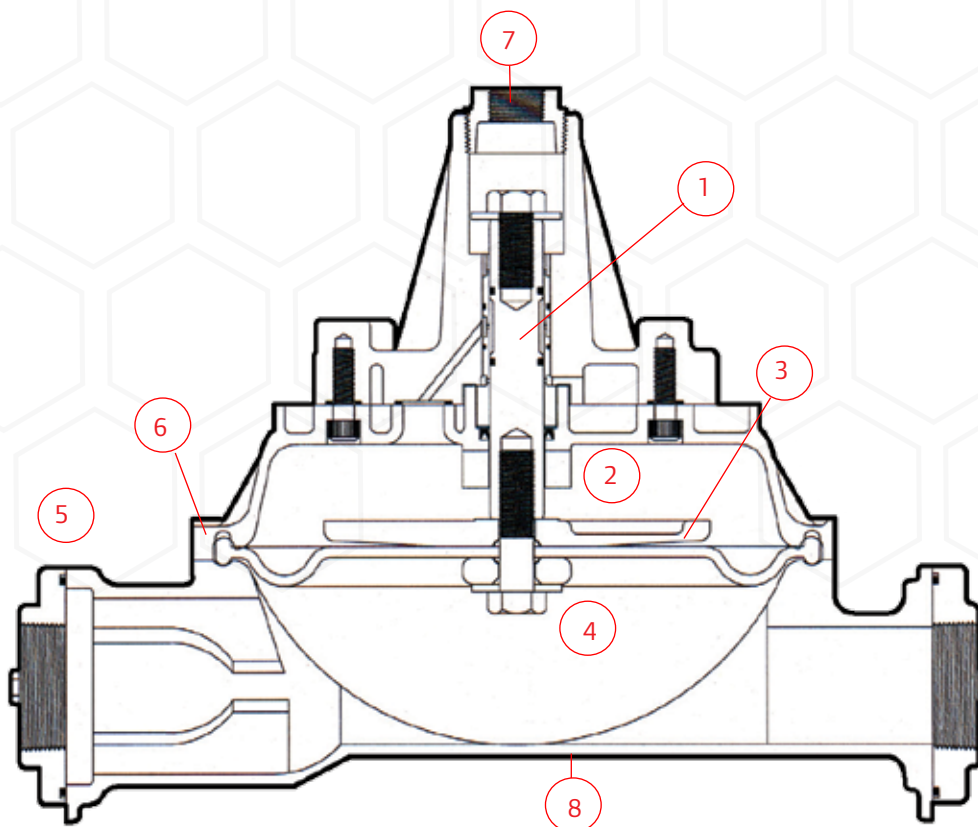
Ordering

Position	1	2	3		4	5	6		7
Example:	SB	10	X	-	X	X	X	-	X

Position 1 Model Series	Position 2 Size	Position 3 Air Body	Position 4 Thread	Position 5 Fluid Construction	Position 6 Hardware	Position 7 Diaphragm
SB- Shock Blocker	10 - 1"	P - Polypropylene K - Pure Kynar (PVDF) D - Conductive Acetal	A - NPT B - BSP	P - Polypropylene K - Pure Kynar (PVDF) D - Conductive Acetal	S - Stainless (304)	A - Santoprene C - Hytrel T - PTFE U - Urethane

Design Features

2" AND 3" SHOCK BLOCKER



① **Auto-Adjust Valve** Similar to ARO's patented Air Tamer design; automatically adjusts to fluid pressure to reduce pulsation

② **Air Chamber** Large air chamber offers air support to the diaphragm during the pulsation process and smoothing of fluid pressure

③ **Diaphragm** flexes as fluid pulses from the pump

④ **Large Fluid Section** offers sensitivity for 2" and 3" diaphragm pump fluid volumes

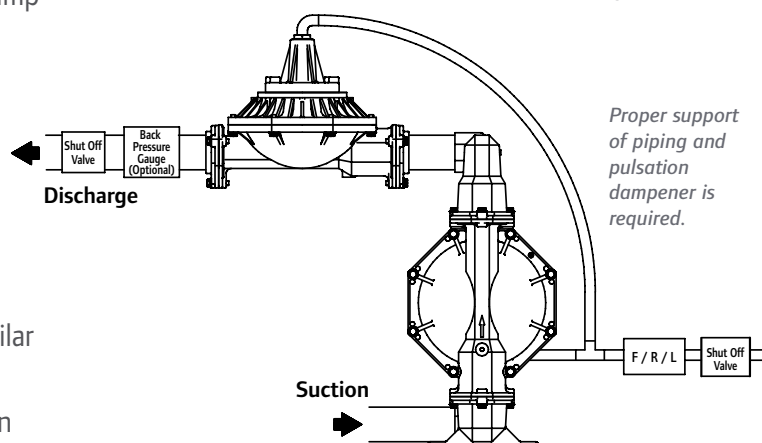
⑤ **Fluid Inlet/Outlet Ports** NPT/BSP internal pipe threads

⑥ **Bolted Fasteners** For leak-free integrity, similar design and characteristics which set ARO Diaphragm Pumps apart from the competition

⑦ **Air Inlet** Will accept same air line pressure as diaphragm pump

⑧ **Part Interchangeability** Utilize parts from the 2" & 3" diaphragm pump

▼ **Typical Installation** SB20X use with 1-1/2" and 2" Metal Diaphragm Pumps, SB30X use with 3" Metal Diaphragm Pumps



Shock Blocker 2" and 3" Ports



Specifications

Pulsation Dampener Type

Metallic / Automatic

Material

See model description chart

Weight

SB20X Aluminum (fluid cap) 29 lbs (13.2 kgs)
 SB20X Cast Iron (fluid cap) 70 lbs (31.8 kgs)
 SB20X Stainless St. (fluid cap) 71 lbs (32.2 kgs)
 SB30X Aluminum (fluid cap) 41 lbs (18.6 kgs)
 SB30X Cast Iron (fluid cap) 94 lbs (42.6 kgs)
 SB30X Stainless St. (fluid cap) 96 lbs (43.5 kgs)

Material Inlet/Outlets

SB20X-AXX-X 2" -11-1/2 NPTF -1
 SB20X-BXX-X 2" -11 BS Rp
 SB30X-AXX-X 3" -8 NPTF -1
 SB30X-BXX-X 3" -11 BS Rp

Air Inlet

3/4" - 14 NPT (female)

Maximum Air Inlet Pressure

120 PSIG (8.3 bar)

Maximum Material Inlet Pressure

120 PSIG (8.3 bar)

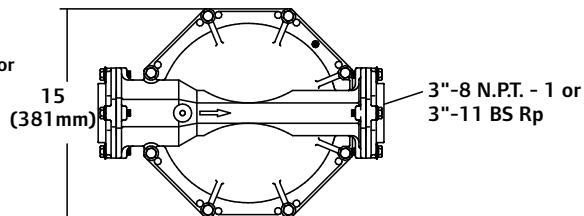
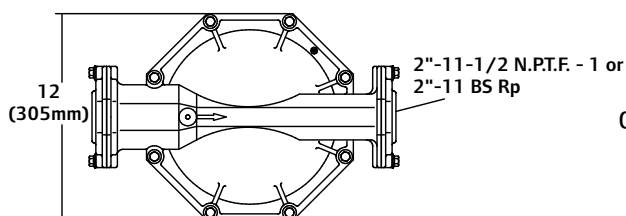
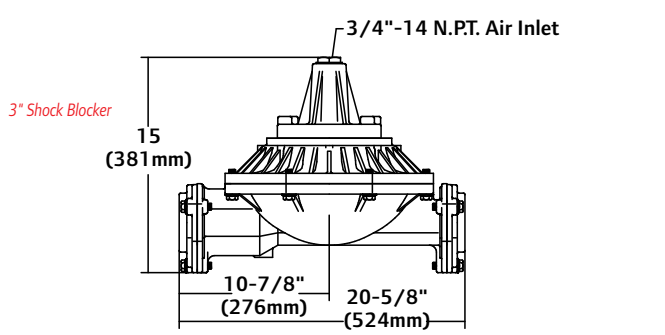
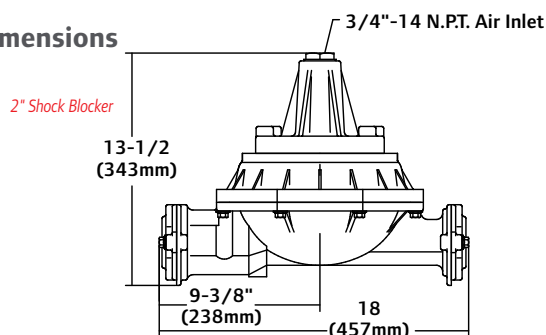
Maximum Temperature Limits

200° F (93° C)

Maximum Fluid Volume

SB20X 159 in.³ (2.61 lit.)
 SB30X 509 in.³ (3.84 lit.)

Dimensions



Ordering

Position	1	2	3		4	5	6		7
Example:	SB	XX	X	-	X	X	X	-	X

Position 1 Model Series	Position 2 Size	Position 3 Air Body	Position 4 Thread	Position 5 Fluid Construction	Position 6 Hardware	Position 7 Diaphragm
SB- Shock Blocker	20 - 2" 30 - 3"	A - Aluminum C - Cast Iron* S - Stainless Steel	A - NPT B - BSP	A - Aluminum C - Cast Iron S - Stainless Steel	S - Stainless (304) P - Plated Steel	A - Santoprene G - Nitrile T - PTFE V - Viton

* Available with 2" model only

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