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COM LEM<u>i 3</u> **BLACOH PRODUCTS ARE DESIGNED TO HELP** PREVENT, ENSURE, PROTECT YOUR PUMPING **SYSTEM FROM HARMFUL AND DAMAGING**

HYDRAULIC SHOCK & VIBRATION. OUR UNITS CAN ELIMINATE UP TO 99% OF THE PULSATION.







COMPREHENSIVE SOLUTIONS

There is no substitute for experience. Understanding your requirements and specific needs at a technical level and proof of design ensure you are getting the expertise you need and deserve.



TECHNICAL SALES SUPPORT

Our sales team and global footprint make it easy for you to get the answers you need and personalized solutions for your pumping system.



ENGINEERING ASSISTANCE

The engineering team is here to problem solve and provide you with the necessary drawings, technical documentation, calculations, and customized solutions.



QUICK TURNAROUND

Some of our units are ready to ship same day. Our customer service team is proud of our exceptional on-time delivery rate.

FULL SYSTEM SOLUTIONS

As the industry's leader and foremost expert in the design and manufacture of fluid control products, Blacoh has the most expansive offering in the marketplace, all proudly made in the USA and backed by our team of engineering and application experts.

SINCE 1976

From common pumping system problems to complex issues involving fluid dynamics, Blacoh has been improving the performance, reliability, safety, and productivity of pumping systems for nearly 50 years.

SURGE SOLUTIONS

Blacoh designs and develops customized solutions and transient pressure monitoring in large scale applications where more in-depth analysis and support are required to solve critical issues with water hammer and hydraulic surge.



WHAT MAKES THE BLACOH EXPERIENCE DIFFERENT

PROVIDING YOU WITH THE NECESSARY RESOURCES:





eConfigurator allows you to build your product online and get a dimensional drawing to your specifications.

ONLINE



IMMEDIATE QUOTES

Our website's

eQuote is a quick
and easy way to
request quotes online.
Available 24/7.



ENGINEERING DRAWINGS

Engineering assistance and 3D drawings are available for easy implementation into your system model.



WEB & MARKETING ASSISTANCE

The Blacoh website
has literature
and videos for
download. Create an
account for access
to additional media
assets!



Enhance your knowledge and grow professionally with convenient online learning. Blacoh University is an e-learning resource dedicated to the discovery, development, and application of knowledge relating to fluid control processes across a variety of industries. Take advantage of white papers, articles, videos, and many other resources relevant to fluid control professionals.

INDUSTRY RESOURCES

It is not just about the products; we are dedicated to providing white papers, case studies, articles, and videos of a wide range of topics across various fluid related industries to grow professionally.

DISTRIBUTOR TRAINING



We provide in-person Distributor Training Sessions or you can view the virtual series online to enhance your industry knowledge and ability to confidently deliver fluid control solutions to end users.

ENGINEER PDH CREDIT



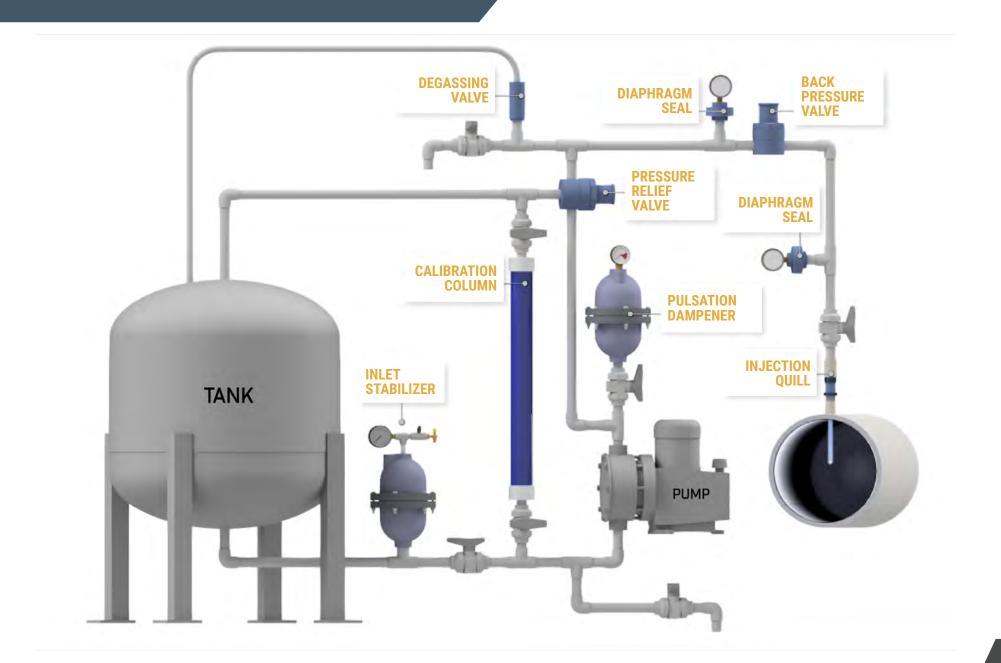
Engineering professionals can watch our courses, complete quizzes, and earn free Professional Development Hours (PDH) Lecture video topics include acceleration head, surge analysis, and water hammer.

MAINTENANCE VIDEOS

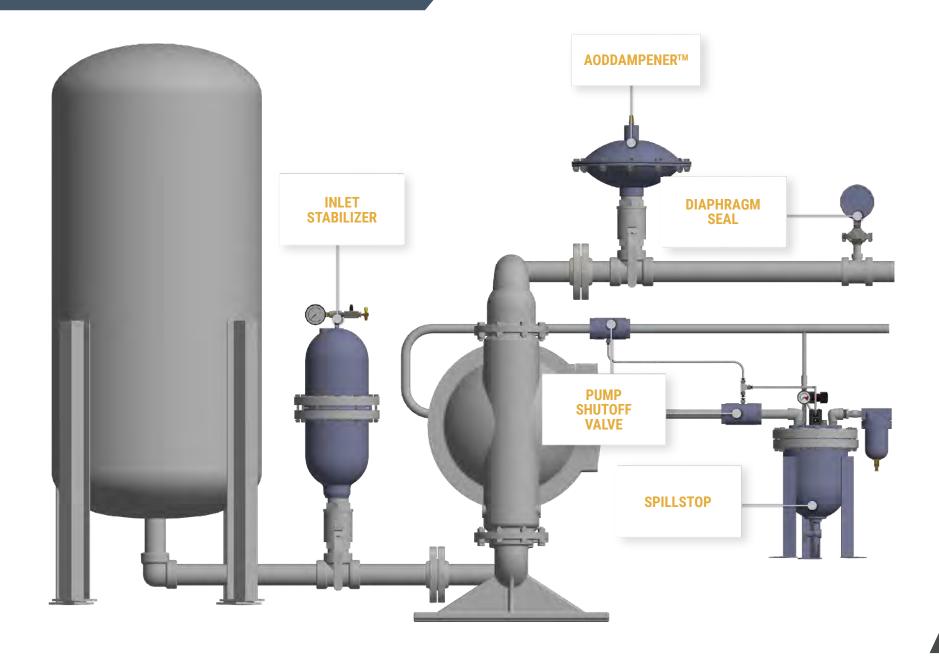


Quick and easy to view video tutorials describe the how-to's of installation, maintenance, and repair of our Blacoh product lines. Watch assembly videos for each model and get quick links to installation manuals.

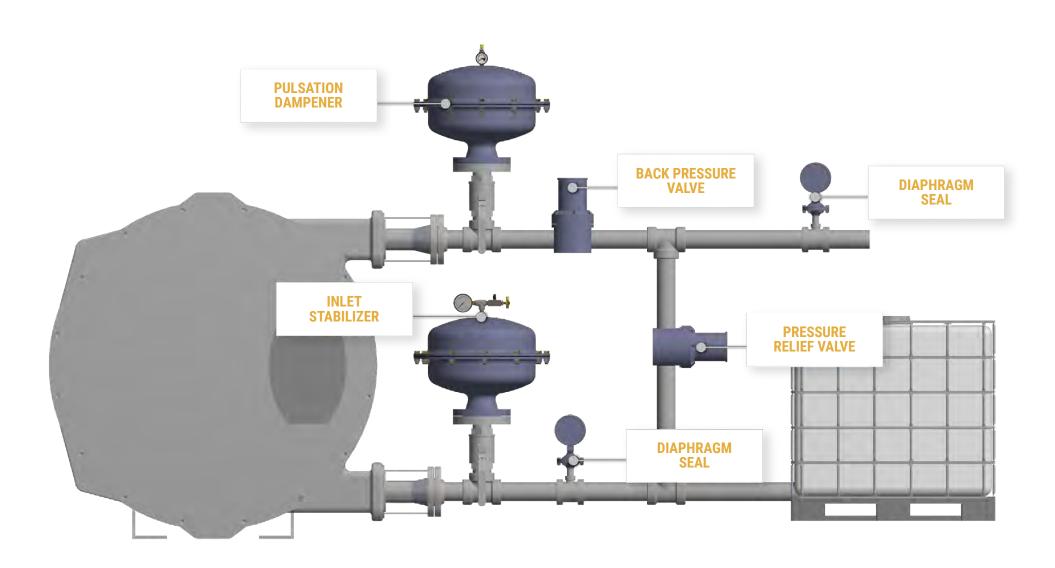
FULL SYSTEM SOLUTIONS



FULL SYSTEM SOLUTIONS



FULL SYSTEM SOLUTIONS



16 IN³ (0.26 L)

SENTRYTough PULSATION DAMPENERS/INLET STABILIZERS

Series	Housing	Diaphragm	Inlet	Inlet	Max	Air Control	Estimated	Certifications
	Material	Material	Size	Type	Pressure	Type	Shipping Weight	& Testing
(C1631 shown)	CPVC PVC PVDF	PTFE	0.5" (15mm) 0.75" (20mm) 1" (25mm)	FNPT BSP ANSI Flange DN Flange Socket Weld	225 psi (15.5 bar)	Adjustable Chargeable Inlet Stabilizer	4 to 6 lbs (1.8 to 2.7 kg)	Hydrostatic PMI Bolt Tensile Customer Specified

Series	Wetted/Non-Wetted		Accessories					
1631 1633 1640 1642	PVC CPVC PVDF/PVC PVDF	_	Charging Kits Spare Bladder Kits Hardware Kits Diaphragm Seals Custom Gauges Pressure Relief Valves	Back Pressure Valves Spill Containment for AODD Calibration Columns Injection Quills Degassing Valves				



28 IN3 (0.46 L)

SENTRYTough PULSATION DAMPENERS/INLET STABILIZERS

Series	Housing	Bladder	Inlet	Inlet	Max	Air Control	Estimated	Certifications
	Material	Material	Size	Type	Pressure	Type	Shipping Weight	& Testing
(C2831 shown)	CPVC PVC PVDF	Buna EPDM Hypalon PTFE Viton	0.5" (15mm) 0.75" (20mm) 1" (25mm)	FNPT BSP ANSI Flange DN Flange Socket Weld	225 psi (15.5 bar)	Adjustable Chargeable Inlet Stabilizer	4 to 6 lbs (1.8 to 2.7 kg)	Hydrostatic PMI Bolt Tensile Customer Specified

Series	Wetted/Non-Wetted
2831	PVC
2833	CPVC
2840	PVDF/PVC
2842	PVDF

Accessories **Charging Kits** Back Pressure Valves Spare Bladder Kits Spill Containment for AODD **Calibration Columns** Hardware Kits Diaphragm Seals Injection Quills Degassing Valves **Custom Gauges** Pressure Relief Valves



42 IN³ (0.69 L)

SENTRYTough PULSATION DAMPENERS/INLET STABILIZERS

Series	Housing	Bladder	Inlet	Inlet	Max	Air Control	Estimated	Certifications
	Material	Material	Size	Type	Pressure	Type	Shipping Weight	& Testing
(C4231 shown)	CPVC PVC PVDF	Buna EPDM Hypalon PTFE Viton	0.5" (15mm) 0.75" (20mm) 1" (25mm)	FNPT BSP ANSI Flange DN Flange Socket Weld	225 psi (15.5 bar)	Adjustable Chargeable Inlet Stabilizer	4 to 6 lbs (1.8 to 2.7 kg)	Hydrostatic PMI Bolt Tensile Customer Specified

Series	Wetted/Non-Wetted
4231	PVC
4233	CPVC
4240	PVDF/PVC
4242	PVDF

Accessories Charging Kits Back Pressure Valves Spare Bladder Kits Spill Containment for AODD **Calibration Columns** Hardware Kits Diaphragm Seals Injection Quills Degassing Valves **Custom Gauges** Pressure Relief Valves



(J4240 shown)

52 IN³ (0.85 L)

SENTRYTough PULSATION DAMPENERS/INLET STABILIZERS

Series	Housing	Bladder	Inlet	Inlet	Max	Air Control	Estimated	Certifications
	Material	Material	Size	Type	Pressure	Type	Shipping Weight	& Testing
(C5231 shown)	CPVC PVC PVDF	Buna EPDM Hypalon PTFE Viton	0.5" (15mm) 0.75" (20mm) 1" (25mm)	FNPT BSP ANSI Flange DN Flange Socket Weld	225 psi (15.5 bar)	Adjustable Chargeable Inlet Stabilizer	5 to 7 lbs (2.3 to 3.2 kg)	Hydrostatic PMI Bolt Tensile Customer Specified

Series	Wetted/Non-Wetted	
5231 5233 5240 5242	PVC CPVC PVDF/PVC PVDF	

Accessories					
Charging Kits Spare Bladder Kits Hardware Kits Diaphragm Seals	Back Pressure Valves Spill Containment for AODD Calibration Columns Injection Quills				
Custom Gauges Pressure Relief Valves	Degassing Valves				



66 IN³ (1.08 L)

SENTRYTough PULSATION DAMPENERS/INLET STABILIZERS

Series	Housing	Bladder	Inlet	Inlet	Max	Air Control	Estimated	Certifications
	Material	Material	Size	Type	Pressure	Type	Shipping Weight	& Testing
(C6631 shown)	CPVC PVC PVDF	Buna EPDM Hypalon PTFE Viton	0.5" (15mm) 0.75" (20mm) 1" (25mm)	FNPT BSP ANSI Flange DN Flange Socket Weld	225 psi (15.5 bar)	Adjustable Chargeable Inlet Stabilizer	5 to 7 lbs (2.3 to 3.2 kg)	Hydrostatic PMI Bolt Tensile Customer Specified

Series	Wetted/Non-Wetted
6631	PVC
6633	CPVC
6640	PVDF/PVC
6642	PVDF

Accessories Charging Kits Back Pressure Valves Spare Bladder Kits Spill Containment for AODD **Calibration Columns** Hardware Kits Diaphragm Seals Injection Quills Degassing Valves **Custom Gauges** Pressure Relief Valves



(J6640 shown)

90 IN³ (1.47 L)

SENTRYTough PULSATION DAMPENERS/INLET STABILIZERS

Series	Housing	Bladder	Inlet	Inlet	Max	Air Control	Estimated	Certifications
	Material	Material	Size	Type	Pressure	Type	Shipping Weight	& Testing
(C9031 shown)	CPVC PVC PVDF	Buna EPDM Hypalon PTFE Viton	0.5" (15mm) 0.75" (20mm) 1" (25mm)	FNPT BSP ANSI Flange DN Flange Socket Weld	225 psi (15.5 bar)	Adjustable Chargeable Inlet Stabilizer	5 to 7 lbs (2.3 to 3.2 kg)	Hydrostatic PMI Bolt Tensile Customer Specified

9031 PVC 9033 CPVC 9040 PVDF/PVC 9042 PVDF	Series	Wetted/Non-Wetted
9033 CPVC 9040 PVDF/PVC		
9040 PVDF/PVC	9031	PVC
	9033	CPVC
9042 PVDF	9040	PVDF/PVC
	9042	PVDF

Accessories Charging Kits Back Pressure Valves Spare Bladder Kits Spill Containment for AODD Calibration Columns Hardware Kits Diaphragm Seals Injection Quills Degassing Valves **Custom Gauges** Pressure Relief Valves



(M9033 shown)

(J9040 shown)

4 IN³ (0.06 L)

SENTRYTM III

Series Material	Housing Material	Bladder Material	Inlet Size	Inlet Type	Max Pressure	Air Control Type	Estimated Shipping Weight	Certifications & Testing
PLASTIC	CPVC Polypropylene PVC PVDF	Buna-N EPDM Hypalon	0.375" (10mm) 0.5" (15mm)	FNPT BSP ANSI Flange	150 psi (10.3 bar) PVDF 200 psi (13.7 bar)	Adjustable Chargeable	1 to 4 lbs (0.4 to 1.8 kg)	ATEX NSF CRN PED ARRA 3.1 Cert
METAL	Alloy 20 Hastelloy C Stainless Steel Stainless Steel 30 RA Polished	Hypalon PTFE Santoprene Silicone - Food Grade Viton	0.375" (10mm) 0.5" (15mm) 0.75" (20mm) Tri-clamp	DN Flange Socket Weld Tri-clamp Union	1000 psi (68.9 bar)	SS Chargeable (V Model)	4 to 7 lbs (1.8 to 3.1 kg)	Material Cert Cert of Origin Hydrostatic Dye Penetrant Radiography (X-Ray) PMI Bolt Tensile Customer Specified

Plastic Series	Wetted/Non-Wetted	Metal Series	Wetted/Non-Wetted	Acces	ssories
04PP 04PVC 04X 04K	Polypropylene PVC CPVC PVDF	1120 1170 1175 1185 7325 8325	Stainless Steel Alloy 20 Alloy 20 / Stainless Steel Hastelloy C / Stainless Steel Stainless Steel (Tri-clamp) Stainless Steel 30RA Polish (Tri-clamp)	Charging Kits Spare Bladder Kits Hardware Kits Diaphragm Seals Custom Gauges Pressure Relief Valves	Back Pressure Valves Spill Containment for AODD Calibration Columns Injection Quills Degassing Valves

10 IN³ (0.16 L)

SENTRYTM III

Series Material	Housing Material	Bladder Material	Inlet Size	Inlet Type	Max Pressure	Air Control Type	Estimated Shipping Weight	Certifications & Testing
PLASTIC	Acetal CPVC Polypropylene PVC PVDF	Buna-N EPDM Hypalon PTFE Santoprene Silicone Food Grade Viton	0.375" (10mm) 0.5" (15mm)	(10mm) 0.5"	150 psi (10.3 bar) PVDF 200 psi (13.7 bar)	Adjustable Chargeable	1 to 5 lbs (0.4 to 2.2 kg)	ATEX NSF CRN PED ARRA 3.1 Cert
METAL	Alloy 20 Hastelloy C Stainless Steel Stainless Steel 30RA Polish		(10mm) 0.5" (15mm) 0.75" (20mm)		1000 psi (68.9 bar)	SS Chargeable (V Model) Inlet Stabilizer (J Model)	4 to 8 lbs (1.8 to 3.6 kg)	3.1 Cert Material Cert Cert of Origin Hydrostatic Dye Penetrant Radiography (X-Ray) PMI Bolt Tensile Customer Specified

Plastic Series	Wetted/Non-Wetted	Metal Series	Wetted/Non-Wetted	Acce	ssories
10D 10PP 10PVC 10X 10K	Acetal Polypropylene PVC CPVC PVDF	1020 1070 1075 1085 7320 8320	Stainless Steel Alloy 20 Alloy 20 / Stainless Steel Hastelloy C / Stainless Steel Stainless Steel (Tri-clamp) Stainless Steel 30RA Polish (Tri-clamp)	Charging Kits Spare Bladder Kits Hardware Kits Diaphragm Seals Custom Gauges Pressure Relief Valves	Back Pressure Valves Spill Containment for AODD Calibration Columns Injection Quills Degassing Valves

SENTRY™ TEF-GUARD

Housing Material	Bladder Material	Inlet Size	Inlet Type	Max Pressure	Air Control Type	Estimated Shipping Weight	Certifications & Testing
Stainless Steel Hastelloy C / SS	PTFE	0.5" (15 mm)	FNPT BSP ANSI Flange	2000 psi (137.8 bar)	Chargeable	12 to 15 lbs (5.4 kg to 6.8 kg)	ATEX PED ARRA 3.1 Cert Material Cert Cert of Origin Hydrostatic Dye Penetrant Radiography (X-Ray) PMI Bolt Tensile



Series	Wetted/Non-Wetted	Acce	ssories
TG12SS TG12HS	Stainless Steel Hastelloy C / Stainless Steel	Charging Kits Spare Bladder Kits Hardware Kits Diaphragm Seals Custom Gauges Pressure Relief Valves	Back Pressure Valves Spill Containment for AODD Calibration Columns Injection Quills Degassing Valves

Customer Specified

36 IN³ (0.59 L)

SENTRYTM II

Series Material	Housing Material	Bladder Material	Inlet Size	Inlet Type	Max Pressure	Air Control Type	Estimated Shipping Weight	Certifications & Testing
PLASTIC	Acetal CPVC Polypropylene PTFE PVC PVDF	Aflas Buna-N Buna-N Food Grade EPDM	0.5" (15mm) 0.75" (20mm) 1" (25mm)	FNPT BSP ANSI Flange	150 psi (10.3 bar)	Adjustable Automatic	7 to 15 lbs (3.1 to 6.8 kg)	ATEX NSF CRN PED ARRA 3.1 Cert
METAL	Alloy 20 Carbon Steel Hastelloy C Stainless Steel Stainless Steel 30RA Polish	Hypalon Neoprene PTFE Santoprene Silicone Food Grade Viton	0.75" (20mm) 1" (25mm) 1.5" (40mm) Tri-clamp	DN Flange Socket Weld Tri-clamp Union	1000 psi (68.9 bar)	Chargeable SS Chargeable (V Model)	13 to 19 lbs (5.8 to 8.6 kg)	Material Cert Cert of Origin Hydrostatic Dye Penetrant Radiography (X-Ray) PMI Bolt Tensile Customer Specified

Plastic Series	Wetted/Non-Wetted
601	PTFE
1301	Polypropylene
1305	Polypropylene (0.5")
1311	PVC
1315	PVC (0.5")
1341	CPVC / PVC
1345	CPVC / PVC (0.5")
1401	PVDF / Polypropylene
1801	Acetal / Polypropylene

Metal Series	Wetted/Non-Wetted
3120 3140 3175 3185 7225 8225	Stainless Steel Carbon Steel Alloy 20 / Stainless Steel Hastelloy C / Stainless Steel Stainless Steel (Tri-clamp) Stainless Steel 30RA Polish (Tri-clamp)

Accessories							
Charging Kits	Back Pressure Valves						
Spare Bladder Kits	Spill Containment for AODD						
Hardware Kits	Calibration Columns						
Diaphragm Seals	Injection Quills						
Custom Gauges	Degassing Valves						
Pressure Relief Valves							

85 IN³ (1.4 L)

SENTRY™ II

Series Material	Housing Material	Bladder Material	Inlet Size	Inlet Type	Max Pressure	Air Control Type	Estimated Shipping Weight	Certifications & Testing
PLASTIC	Acetal Conductive Polypropylene CPVC Polypropylene PTFE PVC PVDF	Aflas Buna-N Buna-N Food Grade EPDM Hypalon	0.5" (15mm) 0.75" (20mm) 1" (25mm)	FNPT BSP ANSI Flange DN Flange	150 psi (10.3 bar) PVDF 250 psi (17.2 bar)	Adjustable Automatic Chargeable SS Chargeable	7 to 15 lbs (3.1 to 6.8 kg)	ATEX NSF CRN PED ARRA 3.1 Cert Material Cert
METAL	Alloy 20 Carbon Steel Hastelloy C Stainless Steel Stainless Steel 30RA Polish	Neoprene PTFE Santoprene Silicone Food Grade Viton	0.75" (20mm) 1" (25mm) 1.5" (40mm) Tri-clamp	Socket Weld Tri-clamp Union	1000 psi (68.9 bar)	(V Model) Inlet Stabilizer (J Model)	13 to 19 lbs (5.8 to 8.6 kg)	Cert of Origin Hydrostatic Dye Penetrant Radiography (X-Ray) PMI Bolt Tensile Customer Specified

Plastic Series	Wetted/Non-Wetted
301	Polypropylene
305	Polypropylene (0.5")
311	PVC
315	PVC (0.5")
321	Conductive Polypropylene
331	CPVC
335	CPVC (0.5")
401	PVDF / Polypropylene
421	PVDF
651	PTFE
801	Acetal / Polypropylene

Metal Series	Wetted/Non-Wetted
3020 3040 3075 3085 7220 8220	Stainless Steel Carbon Steel Alloy 20 / Stainless Steel Hastelloy C / Stainless Steel Stainless Steel (Tri-clamp) Stainless Steel 30RA Polish (Tri-clamp)

Accessories								
Charging Kits Spare Bladder Kits Hardware Kits	Back Pressure Valves Spill Containment for AODD Calibration Columns							
Diaphragm Seals	Injection Quills							
Custom Gauges	Degassing Valves							
Pressure Relief Valves								

175 IN³ (2.87 L)

SENTRYTM I

Series Material	Housing Material	Bladder Material	Inlet Size	Inlet Type	Max Pressure	Air Control Type	Estimated Shipping Weight	Certifications & Testing
PLASTIC	Polypropylene PVC PVDF	Aflas Buna-N EPDM Hypalon	1.5" (40mm) 2" (50mm)	FNPT BSP ANSI Flange	150 psi (10.3 bar)	Adjustable Automatic	15 to 26 lbs (6.8 to 11.7 kg)	ATEX NSF CRN PED ARRA 3.1 Cert
METAL	Alloy 20 Hastelloy C Stainless Steel Stainless Steel 30RA Polish	Neoprene PTFE Santoprene Silicone Food Grade Viton	2" (50mm) 2.5" (65mm) Tri-clamp	DN Flange Socket Weld Tri-clamp Union	1000 psi (68.9 bar)	Chargeable SS Chargeable (V Model)	30 to 45 lbs (13.6 to 20.4 kg)	Material Cert Cert of Origin Hydrostatic Dye Penetrant Radiography (X-Ray) PMI Bolt Tensile Customer Specified

Plastic Series	Wetted/Non-Wetted	Metal Series	Wetted/Non-Wetted	Acce	ssories
901 905 911 915 1201	Polypropylene / Noryl Polypropylene / Noryl (1.5") PVC / Noryl PVC / Noryl (1.5") PVDF / Noryl	2175 2185 2500 2520 7125 8125	Alloy 20 / Stainless Steel Hastelloy C / Stainless Steel Stainless Steel / Noryl Stainless Steel Stainless Steel (Tri-clamp) Stainless Steel 30RA Polish (Tri-clamp)	Charging Kits Spare Bladder Kits Hardware Kits Diaphragm Seals Custom Gauges Pressure Relief Valves	Back Pressure Valves Spill Containment for AODD Calibration Columns Injection Quills Degassing Valves

370 IN³ (6.06 L)

SENTRYTM I

Series Materia	Housing I Material	Bladder Material	Inlet Size	Inlet Type	Max Pressure	Air Control Type	Estimated Shipping Weight	Certifications & Testing
PLASTIC	Polypropylene PVC PVDF	Aflas Buna-N EPDM Hypalon Neoprene	1.5" (40mm) 2" (50mm)	FNPT BSP ANSI Flange	150 psi (10.3 bar) PVDF 200 psi (13.7 bar)	Adjustable Automatic Chargeable	18 to 27 lbs (8.1 to 12.2 kg)	ATEX NSF CRN PED ARRA 3.1 Cert
METAL	Alloy 20 Hastelloy C Stainless Steel Stainless Steel 30RA Polish	Neoprene PTFE Santoprene Silicone Food Grade Viton SS Metal Belows (Series 2420)	2" (50mm) 2.5" (65mm) Tri-clamp	DN Flange Socket Weld Tri-clamp Union	1000 psi (68.9 bar) 16 Bolt SS 1250 psi (86.1 bar)	SS Chargeable (V Model) Inlet Stabilizer (J Model)	32 to 52 lbs (14.5 to 23.5 kg)	Material Cert Cert of Origin Hydrostatic Dye Penetrant Radiography (X-Ray) PMI Bolt Tensile Customer Specified

Plastic Series	Wetted/Non-Wetted	Metal Series	Wetted/Non-Wetted	Accessories
101 105 111 115 201 221	Polypropylene Polypropylene (1.5") PVC PVC (1.5") PVDF / Polypropylene PVDF	2075 2085 2400 2420 7120 8121	Alloy 20 / Stainless Steel Hastelloy C / Stainless Steel Stainless Steel / Polypropylene Stainless Steel Stainless Steel (Tri-clamp) Stainless Steel 30RA Polish (Tri-clamp)	Charging Kits Spare Bladder Kits Hardware Kits Diaphragm Seals Custom Gauges Pressure Relief Valves Back Pressure Valves Spill Containment for AODD Calibration Columns Injection Quills Degassing Valves

1155 IN³ (18.93 L)

SENTRYTM IV

	Series Naterial	Housing Material	Bladder Material	Inlet Size	Inlet Type	Max Pressure	Air Control Type	Estimated Shipping Weight	Certifications & Testing
200	ASTIC	Polypropylene	Buna-N EPDM	3" (80mm) FNPT	100 psi (6.8 bar)	Adjustable Automatic Chargeable	35 lbs (15.8 kg)	ATEX PED ARRA 3.1 Cert Material Cert	
M	METAL	Aluminum Epoxy Coated Aluminum Alloy 20 Carbon Steel Epoxy Coated Carbon Steel Hastelloy C Stainless Steel Stainless Steel	Hypalon Neoprene PTFE Viton	3" (80mm) 4" (100mm) 6" (150mm)	ANSI Flange DN Flange Tri-clamp	275 psi (18.9 bar)	SS Chargeable (V Model) Inlet Stabilizer (J Model)	32 to 79 lbs (14.5 to 35.8 kg)	Cert of Origin Hydrostatic Dye Penetrant PMI Bolt Tensile Customer Specified

Plastic	astic Wetted/Non-Wetted		Wetted/Non-Wetted Metal		Wetted/Non-Wetted Metal Wetted/Non-Wetted		Acces	ssories
P4000	Polypropylene	4000 4020	Aluminum Stainless Steel	Charging Kits	Back Pressure Valves			
Epoxy Coated	Wetted/Non-Wetted	4030 4040 4050	Carbon Steel / Aluminum Carbon Steel Stainless Steel / Aluminum	Spare Bladder Kits Hardware Kits Diaphragm Seals	Spill Containment for AODD Calibration Columns Injection Quills			
4010 4015 4045 4046 4065	Epoxy Coated Aluminum / Aluminum Epoxy Coated Aluminum Epoxy Coated Carbon Steel Epoxy Coated Carbon Steel / Aluminum Stainless Steel / Epoxy Coated Carbon Steel	4060 4075 4080 4085 7420 8420	Stainless Steel / Carbon Steel Alloy 20 / Stainless Steel Hastelloy C Hastelloy C / Stainless Steel Stainless Steel (Tri-clamp) Stainless Steel 30RA Polish (Tri-clamp)	Custom Gauges Pressure Relief Valves	Degassing Valves			

2310 IN³ (37.85 L)

SENTRYTM V

Series	Housing	Bladder	Inlet	Inlet	Max	Air Control	Estimated	Certifications
Material	Material	Material	Size	Type	Pressure	Type	Shipping Weight	& Testing
METAL	Carbon Steel Epoxy Coated Stainless Steel	Buna-N EPDM Hypalon Neoprene Viton	3" (40mm) 4" (50mm) 6" (150mm)	FNPT ANSI Flange DN Flange	275 psi (18.9 bar)	Adjustable Automatic Chargeable SS Chargeable (V Model) Inlet Stabilizer (J Model)	146 lbs (66.2 kg)	ATEX PED ARRA 3.1 Cert Material Cert Cert of Origin Hydrostatic Dye Penetrant PMI Bolt Tensile Customer Specified

Metal Series	Wetted/Non-Wetted	Acce	ssories
5020 5040 5045	Stainless Steel Carbon Steel Epoxy Coated Carbon Steel	Charging Kits Spare Bladder Kits Hardware Kits Diaphragm Seals Custom Gauges Pressure Relief Valves	Back Pressure Valves Spill Containment for AODD Calibration Columns Injection Quills Degassing Valves

8-122 IN³ (0.13-2 L)

SENTRY™ XP

HIGH PRESSURE DAMPENERS



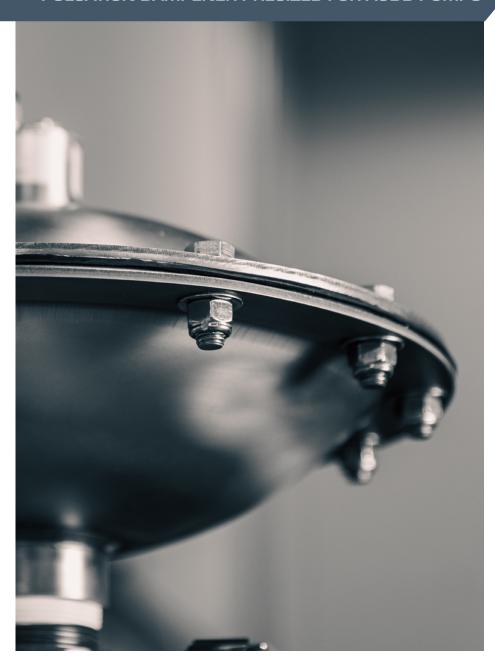
Capacity	Housing Material	Bladder Material	Inlet Size	Inlet Type	Max Pressure	Air Control Type	Certifications & Testing
8 in ³ (0.13 L) 12 in ³ (0.2 L) 24 in ³ (0.39 L)	Stainless Steel	Buna-N	0.5" (15mm)	FNPT BSP ANSI Flange FNPT Flow Through Autoclave	2000 to 15000 psi (137.8 to 1034.2 bar)		ATEX CRN¹ PED ARRA 3.1 Cert
36 in ³ (0.59 L) 60in ³ (0.98 L) 91in ³ (1.5 L) 122in ³ (2 L)	Stainless Steel Hastelloy C / SS ² Alloy 20 / SS ² Duplex Stainless Steel	EPDM PTFE Viton	0.75" (20mm) 1" (25mm) 1.5" (40mm) 2" (50mm)	FNPT BSP ANSI Flange FNPT Flow Through	2600 to 8000 psi (179.2 to 551.5 bar)	Chargeable Optional Gauge Adapter	Material Cert Cert of Origin Hydrostatic Dye Penetrant Radiography (X-Ray) PMI Bolt Tensile Customer Specified
ASME Certified	Units		I				
8 in ³ (0.13 L) 12 in ³ (0.2 L) 24 in ³ (0.39 L)	316L Stainless Steel	PTFE	0.5" (15mm)	FNPT	4000 psi (275.7 bar)	Chargeable Optional Gauge Adapter	ASME U-Stamp Division VIII, Section I

¹ Available on 8in³, 12in³, 24in³ up to 8400 psi only ² PTFE only

THE ORIGINAL

AODDAMPENERTM

PULSATION DAMPENER PRESIZED FOR AODD PUMPS



The AODDampener[™] series is Blacoh's most cost effective dampener model for systems using AODD pumps. Designed exclusively for use with air operated double diaphragm (AODD) pumps, this stainless steel dampener is pre-sized for pumps up to 3" and features a unique fully automatic air control to save on energy costs.

The AODDampener is compatible with most fluids as well as a wide range of both plastic and metal system components. Connected to your plant's air supply line, the fully automatic air control reduces dampener air consumption. It only uses the amount of air required to adjust to changes in pump discharge pressure, ensuring the dampener remains at optimum charge.

SPECIFICATIONS -

CONSTRUCTION: 316 Stainless Steel housing,

PTFE diaphragm

PUMP SIZE: 1", 1.5", 2", 3"

CONNECTIONS: NPT, BSP, ANSI Flange, Tri-Clamp

PRESSURE RATING: up to 150 psi (10.3 bar)

AIR CONTROL: Automatic

CERTIFICATIONS: ATEX available

AODDAMPENERTM

Housing	Bladder	Inlet	Inlet	Max	Air Control	Spare	Certifications
Material	Material	Size	Type	Pressure	Type	Kit	& Testing
316 Stainless Steel Stainless Steel 30RA Polish	PTFE	1" (25mm) 1.5" (40mm) 2" (50mm) 3" (80mm)	NPT BSP ANSI Flange Tri-clamp	150 psi (10.3 bar)	Automatic	AOD-10-100 AOD-15-100 AOD-20-100 AOD-30-100	ATEX Material Cert Cert of Origin Hydrostatic



Pump/Inlet Size Series Inlet Type ATEX Cert. AOD 10 NPT FNPT (NPT) ATEX (AT) 1" (10) 1.5" (15) BSP (BSP) 150# Flange (FLG) 2" (20) 3" (30) Tri-clamp (TC) Tri-clamp Polished (TCP)

CONFIGURATOR

SENTRYTM AIS

AUTOMATIC INLET STABILIZER

Housing	Bladder	Inlet	Inlet	Max	Air Control	Spare	Certifications
Material	Material	Size	Type	Pressure	Type	Kit	& Testing
316 Stainless Steel	PTFE	1.5" (40mm) 2" (50mm)	NPT BSP ANSI Flange Tri-clamp	+50/-30 psi (+3.45/-2.07 bar)	Automatic	AIS-15-100 AIS-20-100	3.1 Cert Material Cert Cert of Origin Hydrostatic Dye Penetrant PMI Bolt Tensile Customer Specified

HOW IT WORKS

Say "goodbye" to manual adjustments and "hello" to streamlined operation! The SENTRY Automatic Inlet Stabilizer sets a new industry standard. Pre-sized for 1.5" and 2" AODD pump inlets, this revolutionary solution will reduce wear and tear on the suction side of your pump.

 The automatic air control valve incorporates a fully integrated, automatic venturi valve designed to accommodate negative pressures within the system.

During vacuum conditions, the valve lifts the bladder to maintain dampening capabilities. While under positive pressure, it forces the bladder down with compressed air. This dual-control mechanism ensures optimal system performance in both suction & positive pressure conditions.

ASME CERTIFIED

SURGESHIELDTM

PULSATION DAMPENER & SURGE VESSEL

Housing	Bladder	Capacities	Inlet	Inlet	Max	Certifications
Material	Material		Size"	Type	Pressure	& Testing
Stainless Steel Carbon Steel	PVC Urethane	15 gallons (57 L) 25 gallons (95 L) 37 gallons (140 L)	4" (102mm) 5" (127mm) 6" (150mm)	ANSI Flange	250 psi (17.2 bar)	ATEX ASME UM-Stamp (Division VIII, Section I) Material Cert Cert of Origin Hydrostatic

Standard 15, 25, 37 gallon dampener series are designed to act as shock absorbers for your peristaltic pumps while also serving as small bladderstyle surge vessels. Prevent pipe and pump damage as well as costly repairs with these durable buffers against the damaging effects of water hammer and pulsation from any positive displacement pump.

DETAILS

- Chargeable air control: no need for constant pressurized air source
- Carbon steel tanks painted blue; stainless steel tanks unpainted
- 1/2" NPT drain connection on inlet flange
- 1/2 NPT PSV/instrumentation connection on inlet flange
- Anti-extrusion button replaces inlet screen to prevent bladder protrusion without clogs or flow restriction



OPTIONS

SENTRY™ DAMPENER AIR CONTROLS

	Туре	Description	Max Pressure	Installation
	ADJUSTABLE	Assembly is mounted on a single port with a self-relieving regulator to set dampener pressure. Includes a gauge and one-way brass check valve. Compressed air line must be permanently attached to the regulator. Regulator allows for an easy, convenient method to adjust dampener pressure during system pressure changes.	150 psi (10.3 bar)	Install dampener within 10 pipe diameters of pump discharge. Connect to a constant source of air. DO NOT USE OXYGEN. Charge dampener to 80% of operating pressure. Adjust dampener psi to minimize pulse level.
	AUTOMATIC	Gauge mounted on a side port, valve assembly on the center port, one-way brass check valve connected to an internal poppet valve assembly. (Poppet valve located in the nonwetted portion of the dampener to accomodate for an increase in system pressure). As system pressure increases, bladder is pushed further up into the dampener until it makes contact with the internal valve which then opens, allowing compressed air to enter the dampener. The dampener automatically adjusts as system pressure fluctuates and resets, ready to restart along with system.	150 psi (10.3 bar)	Install dampener within 10 pipe diameters of pump discharge. Connect to a constant source of air. DO NOT USE OXYGEN. When the pump is started, the dampener gauge will read system pressure. No further adjustments are needed.
	CHARGEABLE	Standard chargeable model has a gauge and Shrader-type charging valve on separate ports to pressurize and hold dampener pressure. The <i>V Model</i> assembly has a machined stainless steel charging valve and seal for rugged leak-proof operation in corrosive environments. No permanent source of compressed gas is required. Gas fill valve allows dampener to be manually bled or charged to the required pressure setting.	15,000 psi (1034.2 bar)	Install dampener within 10 pipe diameters of pump discharge or valve, depending on use. Charge dampener to recommended percentage of system operating pressure with compressed air or clean dry Nitrogen. DO NOT USE OXYGEN.
IN	ILET STABILIZER	The inlet stabilizer air control accomodates pressure or vacuum settings and is adjustable for suction lift or positive inlet conditions. Air control consists of a compound pressure gauge, a pressure/vacuum tight ball valve, and a venturi valve. Compressed air passes through the venturi valve at high speed, creating a low pressure area that evacuates air from the stabilizer (internal vacuum). Conversely, when the air flow through the venturi valve is diverted into the stabilizer, a pressure charge results.	30 inHg 30 psi (2 bar)	Install inlet stabilizer within 10 pipe diameters of pump inlet. Use a compressed air line and air chuck to pressurize or create a vacuum. DO NOT USE OXYGEN. For suction lift, vacuum charge to 5-7 inHg. For flooded suction charge to 50% of static inlet pump pressure.

BLADDERS & BELLOWS

Capacity	Bladders	PTFE Bellows	Capacity	Bladders	PTFE Bellows
4 in ³ - 10 in ³ (0.06 - 0.16 L)			175 in ³ - 370 in ³ (2.87 L - 6.06 L)		
8 in³ (0.13 L)			1155 in³ (18.93 L) (5 gal)		
12 in³ (0.20 L)	9	(TG)	2310 in³ (37.85 L) (10 gal)		
24 in³ (0.39 L)			AODDampener™ 1", 1.5", 2", 3" (25mm, 40mm, 50mm, 76mm) Inlet		PTFE-backed diaphragm
36 in³ - 85 in³ (0.59 L - 1.40 L)					

HYBRID VALVE™

BACK PRESSURE VALVE + PULSATION DAMPENER

Standard back pressure valves were not designed to work with dampeners. As pressure varies in the dampener, the back pressure valve negates the dampening effect by opening and closing before the dampener is able to capture a full pulse. By combining the functionality of a pulsation dampener and back pressure valve into a single piece of equipment the performance of each component is optimized.

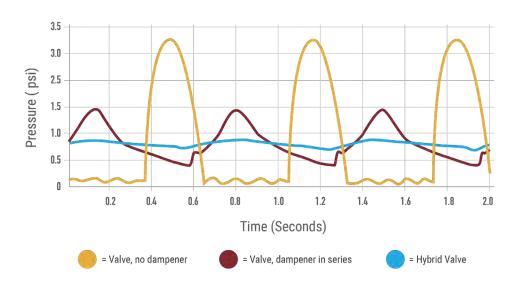
The quick opening and closing of a standard back pressure valves also creates too much flow (gain), resulting in inefficiency and chatter.

Blacoh's Hybrid Valve with patented flow stabilization technology ensures maximum dampening, applies continuous back pressure, and acts as an antisiphon valve to create a smooth laminar flow with no valve chatter.



PERFORMANCE YOU CAN SEE

Tests performed using only a back pressure valve showed no improvement in fluid flow (yellow line in graph below). Fluid flow improves significantly with a pulsation dampener in series (shown in red), but the dampener is not operating at peak efficiency. Nothing matches the outstanding results when the back pressure valve and dampener are replaced with the single construction Hybrid Valve (shown in blue).



US PATENT 10,353,409

HYBRID VALVETM

PULSATION DAMPENER / BACK PRESSURE VALVE

Housing Material	Connection	Dampener Bladder	Valve Diaphragm	Inlet Type	Max Pressure	Air Control Type
CPVC Polypropylene PVC PVDF Stainless Steel (Wetted)	0.25" (8mm) 0.375" (10mm) 0.5" (15mm)	Buna-N EPDM Hypalon PTFE Santoprene Viton	PTFE	FNPT BSP ANSI Flange Union	150 psi (10.3 bar)	Chargeable



Valve Body/ Dampener Bladder/ Inlet Type Series Dampener Housing Valve Diaphragm Valve Spring Connection H10 025 CV SW В 0.25" (025) 5-50 psi (L) FNPT (NPT) PVC/PVC (VV) Buna-N/PTFE (BT) 0.375" (038) CPVC/PVC (CV) EPDM/PTFE (ET) BSP (BSP) 5-150 psi (none) Socket Weld 1/2" (SW) 0.5" (050) CPVC/CPVC (CC) Hypalon/PTFE (HT) PVDF/PVC (KV) Flange 1/2" (F) PTFE/PTFE (TT) Santoprene/PTFE (WT) PVDF/PVDF (KK) Union 1/2" (U) Poly/PVC (PV) Viton/PTFE (VT) SS/PVC (SV)

CONFIGURATOR

SENTINEL™ VALVES

PRESSURE RELIEF VALVES

Pressure Relief Valves—also called safety valves, bypass valves, pump relief valves, or pump safety valves—protect pumps, systems, and tanks from excessive pressure. Prevent damage, reduce the risk of cavitation, and increase personnel wellbeing.

BACK PRESSURE VALVES

Back Pressure Valves—also known as loading valves or antisiphon valves—play a crucial role in pump application by controlling the pressure on the discharge side of a pump. Prevent premature component wear, improve safety, enhance efficiency, and support multi-pump systems.

NO MORE CHATTER

Most back pressure valves are based on a pressure relief design where the valve is normally closed. When a set pressure point is reached, the valve opens quickly with maximum flow to relieve pressure. This action doesn't work well for back pressure valves that need to flow continuously to hold pressure upstream. When the valve opens quickly, pressure upstream drops rapidly and the valve slams closed. The sudden stop in flow causes a pressure spike that forces the valve open again.

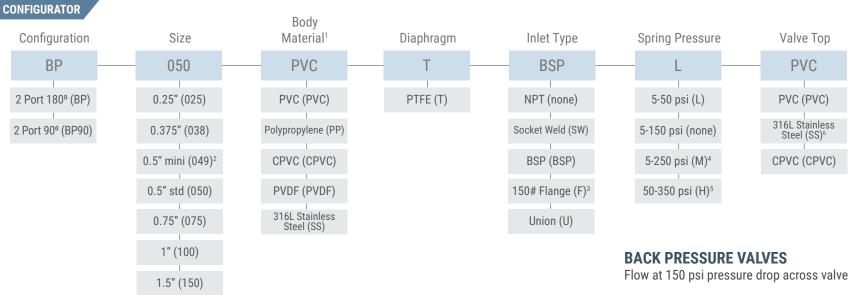
In a back pressure valve application, this cycle occurs many times per second, creating a loud, chattering valve with inferior performance and a shorter service life.

Blacoh's patented valves with flow stabilization technology meter flow when the valve opens to minimize the pressure drop that initiates this cycle. The result is a valve that doesn't chatter, performs better, and lasts longer.



SENTINELTM VALVES

BACK PRESSURE VALVES



2.0" (200)

Size	Pulsating GPH (US)	Continuous GPM (US)
0.25"	240	12
0.375"	260	13
0.5"	288	14
0.5"	600	30
0.75"	640	32
1"	710	36
1.5"	1500	75
2"	2000	100

¹ Additional materials available upon request.

² 0.5", 288 GPH, 14 GPM

³ 300# flange standard on 50-350 psi high pressure valves.

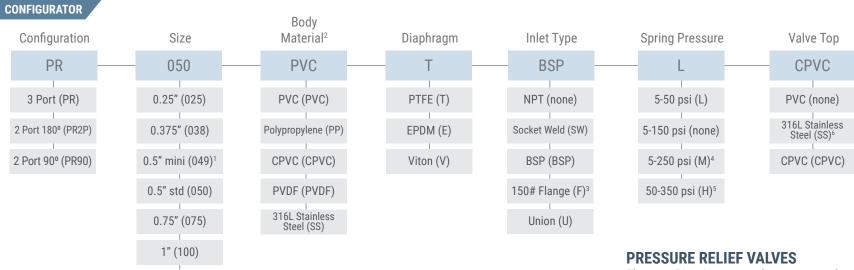
⁴ Valves up to 1" only.

⁵ Metal valves only.

⁶ Standard on 50-350 psi high pressure valves. Available on other valves on request.

SENTINELTM VALVES

PRESSURE RELIEF VALVES



1.5" (150)

2.0" (200)

Flow at 150 psi pressure drop across valve

Size	Pulsating GPH (US)	Continuous GPM (US)
0.25"	560	28
0.375"	620	31
0.5"	660	33
0.5"	1240	62
0.75"	1260	63
1"	1300	65
1.5"	3000	150
2"	4300	215

¹ 0.5", 660 GPH, 33 GPM

² Additional materials available upon request

³ 300# flange standard on 50-350 psi high pressure valves.

⁴ Valves up to 1" only.

⁵ Metal valves only.

⁶ Standard on 50-350 psi high pressure valves. Available on other valves on request.

SENTINEL™ AUTOMATIC DEGASSING VALVES

Material	Connection	Connection Type	Max Pressure
CPVC PVC PVDF	0.5" (15mm)	FNPT BSP Socket Weld Union	150 psi (10.3 bar)

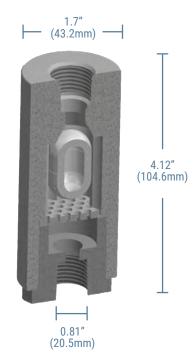
All components are constructed of the same material for maximum chemical and thermal compatibility.



Internal mesh secures float in place and filters out larger particles.







CONFIGURATOR

S	eries	Connection Size	Material	Connection Type
	DG -	050	- PVC -	SW
		0.5" (050)	CPVC (CPVC)	FNPT (NPT)
			PVC (PVC)	BSP (BSP)
			PVDF (PVDF)	Socket Weld (SW)
				Union (U)

SENTINELTM NORMALLY CLOSED SHUTOFF VALVE

Housing Material	Shaft Material	Connections	Connection Type	O-Ring	Control Pressure	Max Pressure	CV Factors
6061-T6 Anodized Aluminum	300 Series Stainless Steel	0.75" Process (20mm) 0.125" Control Port (3mm)	NPT	Buna	> 40 psi up to 100 psi	150 psi (10.3 bar)	Size 3/4" NPT: Coefficient of Flow 14.7



SENTINEL Normally Closed Shutoff Valves offer an excellent high flow coefficient and a low pressure drop that equates to overall faster and smoother fluid flow. Valves are pneumatically controlled and use an internal piston to allow or prevent air or fluid flow. The normally closed valve opens when air pressure is applied to the pneumatic control port.

GAUGE GUARDS

SENTINELTM DIAPHRAGM SEALS

	Series Material	Housing Material	Bladder Material	Inlet Size	Inlet Type	Max Pressure	Estimated Shipping Weight	Certifications & Testing
P	PLASTIC	CPVC Polypropylene PVC PVDF	EPDM PTFE Viton	0.25" (8mm)	FNPT BSP	200 psi (13.7 bar) PVDF 250 psi (17.2 bar)		NSF ARRA
	METAL	Alloy 20 Stainless Steel		0.5" (15mm) 0.75" (20mm)	ANSI Flange Socket Weld Tri-clamp Union	1000 psi (68.9 bar)	1 to 4 lbs (0.4 to 1.8 kg)	3.1 Cert Material Cert Cert of Origin Customer Specified

Wide variety of gauge options with gauge accuracy of +/- 2% or better full deflection.

Models available with no gauge, custom fills, and factory installed instrumentation provided by customer.



Series	Wetted/Non-Wetted
CPVC PP PVC PVDF A20 SS	CPVC Polypropylene PVC PVDF Alloy 20 Stainless Steel

CONFIGURATOR

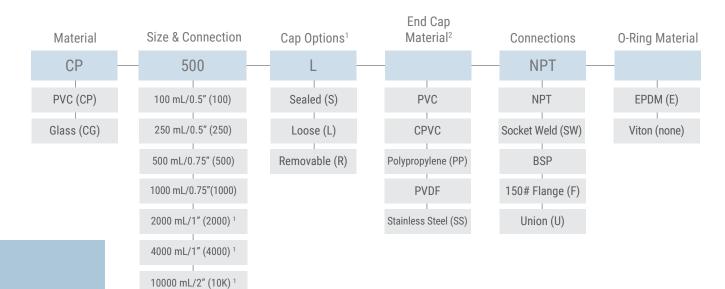
¹ PVC columns only

² Glass columns only

ACCESSORIES

SENTINELTM CALIBRATION COLUMNS

BLACON TOTAL TOTAL



PVC Columns

PVC calibration columns feature three top end cap options:



SEALED

Glued to the cylinder for permanent vent connection. Used in applications with positive suction head.



REMOVABLE

Cap sealed with O-ring for easy removal for cleaning. Used in applications with positive suction head.



LOOSE

Cap acts as dust cover in applications with no positive suction head. Cylinder is filled from the top.

Borosilicate Glass Columns

20000 mL/2" (20K) 1

Glass calibration columns have threaded end caps offered in a variety of materials, two sealing O-rings, and a shield to protect the inner glass tube and calibration scale.

SENTINELTM INJECTION QUILLS

Material	Connection	Connection Type	O-Rings	Quill Length	Max Pressure
Polypropylene PVC PVDF Stainless Steel	0.5" (15mm) 0.75" (20mm) 1" (25mm)	FNPT	EPDM Viton	4" Standard Custom lengths available on request.	150 psi (10.3 bar)





¹ Leave blank unless specifying custom quill length

² Custom length in inches

SAFETY

SPILLSTOPTM

LEAK PREVENTION & SPILL CONTAINMENT

Housing	Lid	Internal	Options	Estimated	Certifications
(Wetted)	(Non-Wetted)	Float		Shipping Weight	& Testing
Polypropylene PVC PVDF Stainless Steel Hastelloy C	Noryl PVDF Stainless Steel TFE Coated SS	Polypropylene Stainless Steel TFE Coated SS	Pnuematic Whistle Pneumatic-to-Electric Switch Additional Shutoff Valves	25 - 55 lbs (11.3 - 25.0 kg)	ATEX ARRA 3.1 Cert Material Cert Cert of Origin



The fully pneumatic SPILLSTOP system attaches directly to the exhaust of an AODD pump. When the pump fails, SPILLSTOP safely captures leaked product and automatically shuts down failed pumps to avoid costly product loss and prevent hazardous spills. Optional warning alarm and backup pump switchover further minimize system downtime for maximum productivity.

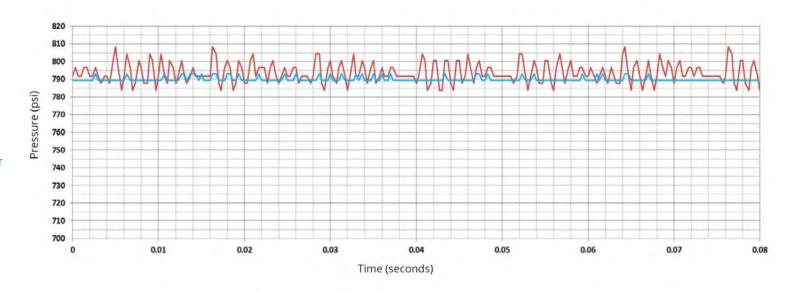
Series	Wetted/Non-Wetted/Float
SPS-10 SPS-11 SPS-20 SPS-21 SPS-30 SPS-31 SPS-33 SPS-81 SPS-82	Polypropylene / Noryl / Polypropylene PVC / Noryl / Polypropylene Stainless Steel / Noryl / Stainless Steel Stainless Steel PVDF / Noryl / Stainless Steel PVDF / PVDF / Stainless Steel PVDF / PVDF / TFE Coated SS Hastelloy C / TFE Coated SS Hastelloy C / Stainless Steel

PERFORMANCE CHARTS

TRIPLEX PUMP with SENTRY XPH Dampener

without Dampener (1715 rpm, 757 pulses/sec)

with XPH Flow-Thru Dampener (± 4 PSI)



TRIPLEX PUMP with SENTRY XPA & XPH Dampener



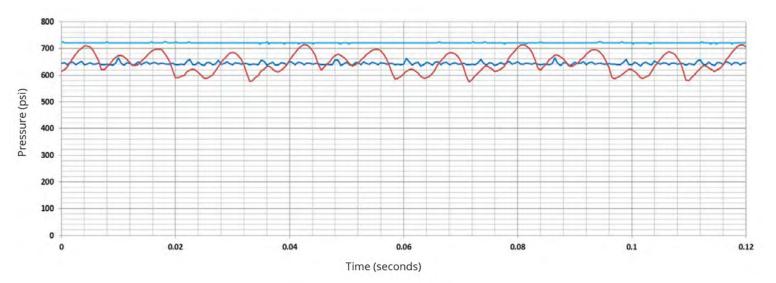
without Dampener



with XPA Dampener



with XPH Flow-Thru Dampener



PERFORMANCE CHARTS

1" METERING PUMP with SENTRY II Dampener

without Dampener



with Dampener

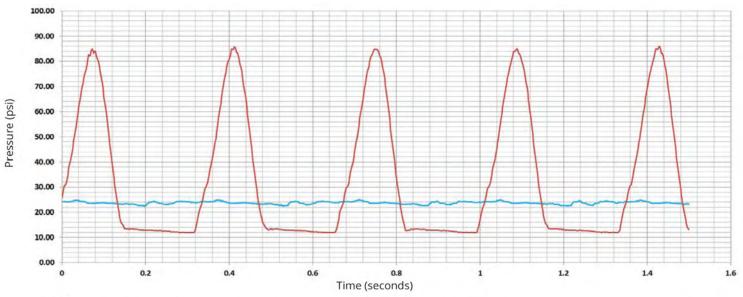
1" AODD PUMP with 1" AODDampener

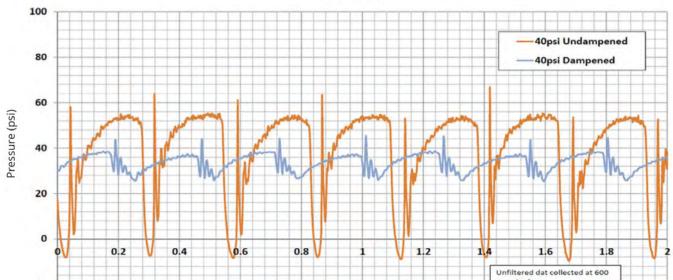


without Dampener



with AODDampener





TESTING & CERTS

Material Certification	Parts	Item Number
2.1 (FN10004) Continue	Wetted Housing (Metal)	DOC-CERT 3.1-W
3.1 (EN10204) Certification	Wetted/Nonwetted Housing (Metal)	DOC-CERT 3.1-WN
3.1 Certification (EN 10204), Wetted/Nonwetted w/Hydrotest	Wetted/Nontwetted/Hydrotest	DOC-CERT 3.1-H
MTR - Chemicals & Heat Number, Wetted Housing	Wetted Housing (Metal)	DOC-MTR-MTL-W
MTR - Chemicals & Heat Number, Wetted/Nonwetted Housing	Wetted/Nonwetted Housing (Metal)	DOC-MTR-MTL-WN
Material ID & Certificate of Conformance (NO MTR)	Sentry Unit	DOC-MC-SENTRY
Material ID & Certificate of Conformance (NO MTR)	SPILLSTOP Unit	DOC-MC-SS
Material ID & Certificate of Conformance (NO MTR)	Diaphragm Seal (Gauge Guard)	DOC-MC-GG
Material ID & Certificate of Conformance (NO MTR)	Bladder	DOC-MCB
Material ID & Certificate of Conformance (NO MTR)	Wetted/Nonwetted Housing	DOC-MCWN
Material ID & Certificate of Conformance (NO MTR)	Wetted Housing, Bladder	DOC-MCWB
Material ID & Certificate of Conformance (NO MTR)	Wetted, Nonwetted Housing, Bladder	DOC-MCWNB
Compliance with PED CAT 1, Group 1	Various	T32E11_030

Testing & Engineering	Parts	Item Number
Standard Unit Test Certification	All Units	DOC-TEST CERT
Hydrostatic Test & Certificate	All Units	DOC-HYDRO
XRay/Radiography & Dye Penetrant Test	Metal Flange Welds	DOC-XRAYDYE
Dye Penetrant Test	Metal Flange Welds	DOC-DYE
XRay/Radiography	Metal Flange Welds	DOC-XRAY
Positive Material Identification (PMI)	Metal Housings	DOC-PMI
Bolt Tensile Test Report	Bolts	DOC-BOLT
Customer or Third-Party Inspection	Consult Factory	
ASME Calculations	Consult Factory	

Order Documentation	Parts	Item Number
Certificate of Origin	All	DOC-COO
Certificate of Conformance to PO	Any Order	DOC-COC
EX ATEX Declaration of Conformity	All ATEX Units	
EC PED Declaration of Conformity	All PED Units	

CONTACT US

P: 951.342.3100

sales@blacoh.com