

ARO[®]

An Ingersoll Rand Business



Take the pulse out Keep the system running

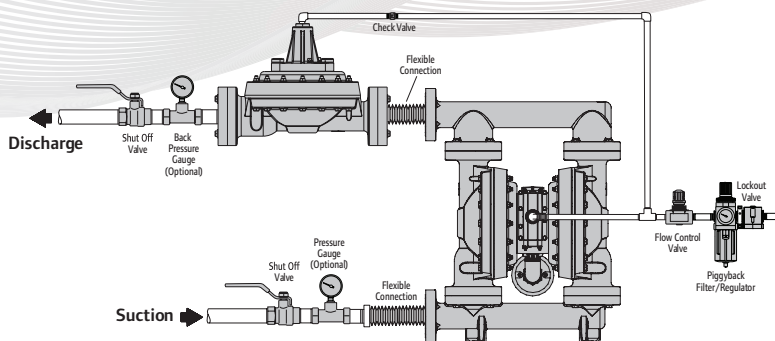
ARO Shock Blocker™ Fluid Pulsation Dampeners

Every diaphragm pump pulses by design. What you do about it changes the system.

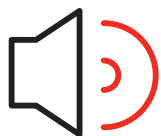
Pulsation is the silent tax on every fluid system. Left unchecked, it damages piping, disrupts instruments, fatigues fittings, and shortens component life.

Maintenance sees it in warranty calls, unplanned shutdowns, and leaks that shouldn't occur. Operators notice noise and vibration.

A properly sized Shock Blocker dampener removes **80–90% of pulsation at the source**—extending equipment life, protecting accuracy, and reducing noise.



Four reasons it pays off



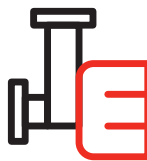
Run Quieter

80–90% pulsation reduction. Pipes stop rattling. Fittings stop loosening. Operators stop complaining.



Run Longer

Less pulse downstream means longer service life on every joint, instrument and component your fluid touches.



Run Smarter

Sized and tested for your pump. The pairing between pump and dampener is engineered, not guessed.



One Brand Whole System

Pump from ARO. Dampener from ARO. FRL from ARO. Service kits from ARO. One warranty conversation.

The Shock Blockers

For over 90 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
- Improved Pump performance
- Diaphragm life improvement

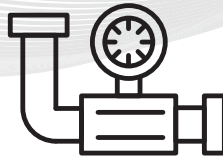
Which Shock Blocker is right for your system?

Three ways to dampen, one decision cue each. Pick by what air you have on-site.



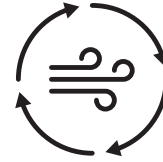
Passive

Pre-charged at install with nitrogen or compressed air. No on-site air required during operation. The default for every electric pump.



Adjustable

Adjustable dampener allows continual adjustment of dampener pressure to changing pump operational loads.



Active

Live pneumatics. Automatic air adjustment matches the pump in real time – the original Shock Blocker. For AODD pumps on continuous air supply.

* Check chemical compatibility before you order.
Optional: ask our expert at AROTechSupport@irco.com



Passive

SBG108-GNP-E

For all general purpose application

GF-Polypropylene · EPDM · 80 in³ · 1" NPTF

For water, lubricants, anti-freeze and light chemistry. The right dampener when you don't yet know your customer's full chemistry picture – and the right answer when you do.



Passive

SBG108-CNP-E

For water-treatment chemistry

PVC · EPDM · 80 in³ · 1" NPTF

Superior acid and chlorinated-water resistance for municipal water, pool chemistry and mild-acid dosing systems.



Passive

SBG108-KNP-T

For aggressive chemistry

PVDF · PTFE · 80 in³ · 1" NPTF

Solvents, strong acids, oxidisers, high-purity media – the chemistry match for your EVO210 Non-Metallic pump.



Passive
Stainless Steel

SBP10S-SNP-T

For corrosive and hygienic application

316L SS · PTFE · 40 in³ · 1" NPTF

Hygienic, high-temperature, food & bev, pharma. Proven in EUA installations; now globally available. BSP option at order.



Adjustable

SBG108-GND-E

When air is on-site

GF-PP · EPDM · 80 in³ · 1" NPTF · adjustable

Same housing as the GF-PP passive variant, with an air valve to dial in pre-charge. Field-retrofittable from passive.

Standard models are listed in Passive and Adjustable designs. In addition, a wide range of customized configurations can be engineered to meet specific process requirements. Refer to the Model Selection Chart to identify the most suitable dampener for your application.

1" Non-Metallic Shock Blocker



Key Specifications

Specification	Value
Dampener Type	Adjustable and Passive
Materials of Construction	C - PVC K - PVDF G - Polypropylene Y - CPVC
Connection Sizes	1"
Connections	NPT, BSPT, Flange
Gauge Port Size	1/4"
Max Temperature — PVC	140°F (60°C)
Max Temperature — PVDF	225°F (107°C)
Max Temperature — GF-Polypropylene	175°F (79°C)
Max Temperature — CPVC	175°F (79°C)
Max Operating Pressure — Plastic @ 70°F	150 psi (10.3 bar)
Max Operating Pressure — Metal @ 70°F	300 psi (21 bar)
Bladder — EPDM	-60°F to +280°F (-51°C to +138°C)
Bladder — Hypalon®	-20°F to +275°F (-29°C to +135°C)
Bladder — PTFE	-20°F to +220°F (-29°C to +104°C)
Gauge & Connector Material	316 SS
Gauge Operating Pressure	0-160 psi (0-11 bar)

Ordering

Position	1	2	3		4	5	6		7
Example:	SBG	?	?	?	?	?	?	?	?

Position 1 Model Series	Position 2 Size	Position 3 Volume	Position 4 Housing Material	Position 5 Connection	Position 6 Control	Position 7 Bladder Material
SBG - Shock Blocker	1 - 1"	08 - 80 in³ 12 - 125 in³	C - PVC K - PVDF G - Polypropylene Y - CPVC	N - NPT B - BSPT F - Flange	D - Adjustable P - Passive	E - EPDM H - Hypalon® T - PTFE

ARO®

Passive
Stainless Steel

Active

1/2" and 1" Metallic Shock Blocker



Key Specifications

Specification	Value
Dampener Type	Active and Passive
Housing Material	Stainless steel (316L)
Weight — 05 series (1/2", threaded)	7.49 lbs (3.4 kg)
Weight — 10 series (1", threaded)	7.71 lbs (3.5 kg)
Weight — 10 series (1", flange)	9.03 lbs (4.1 kg)
Fluid Chamber Volume — 05 series	0.6 L (0.15 gal)
Fluid Chamber Volume — 10 series	0.65 L (0.17 gal)
Fluid Inlet/Outlet — 1/2"	NPT or BSP female (A/B/L/O variants)
Fluid Inlet/Outlet — 1"	NPT, BSP female, or 1" DIN flange (E/F variants)
Air Inlet	1/8" BSP female (Pushlok fitting included)
Pressure Gauge / Air Exhaust	1/8" BSP female (Gauge included)
Max Operating Pressure (air & fluid inlet)	145.03 psig (10 bar)
Max Temperature — PTFE/EPDM diaphragm	-40°F to 225°F (-40°C to 107°C)

Ordering

Position	1	2	3		4	5	6		7
Example:	SB	?	?	?	?	?	?	?	?

Position 1 Model Series	Position 2 Control	Position 3 Size	Position 4 Air Section	Position 5 Thread / Orientation	Position 6 Fluid Section	Position 7 Diaphragm
SB - Pulsation dampener	A - Active P - Passive	05 - 1/2" 10 - 1"	S - Stainless Steel	A - NPT (horiz) B - BSP (horiz) L - BSP (vert) O - NPT (vert) E - Flange 1" (vert) F - Flange 1" (horiz)	S - Stainless Steel	TA - PTFE /EPDM

SHOCK BLOCKER

Technical Reference – Specifications, dimensions, performance & ordering.

Arozone.com

Design Features

1", 2" AND 3" SHOCK BLOCKERS ACTIVE TYPE

- Automatic Air Adjustment - compensates for fluctuations in fluid pressure without operator intervention.
- Significant Pulsation Reduction - the new Shock w 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 PVDF, polypropylene, groundable acetal, aluminum, cast iron or stainless steel 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.

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

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

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

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

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

Design Features

1" NON-METALLIC 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

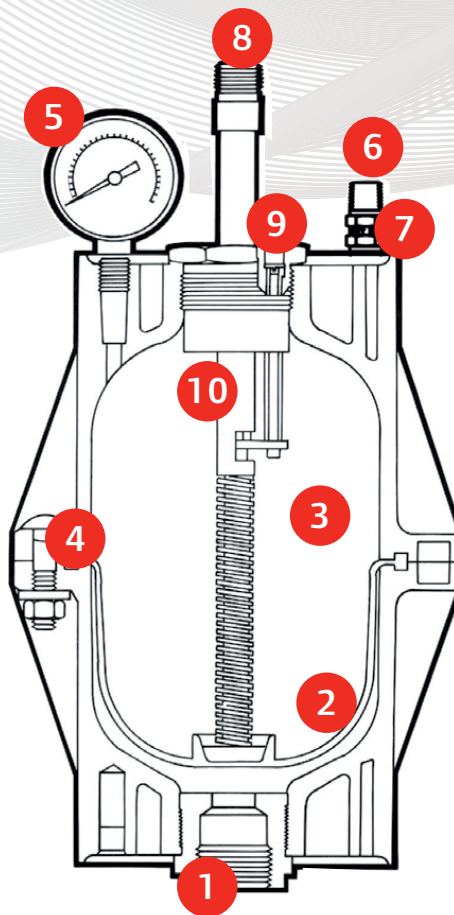
Unlike other air adjusters, Air-Tamer has no lip seals along its piston to wear out, and all moving parts are encased inside the dampener housing.

9. Bleed Port

can be plumbed to drain off material in the event of bladder failure.

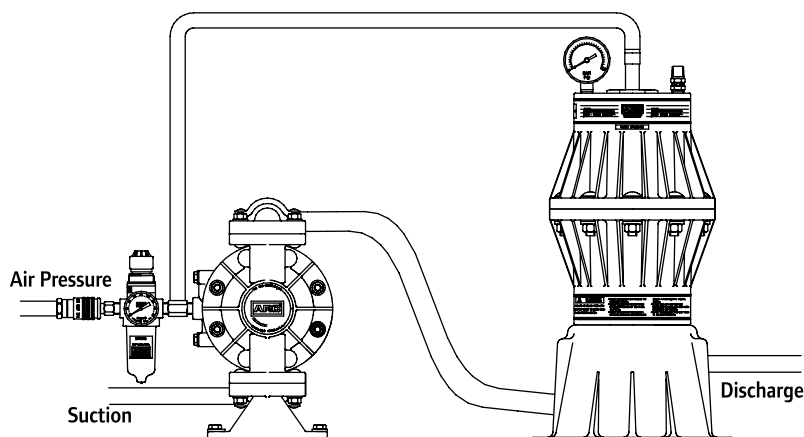
10. Bladder Guard

prevents damage or rupture of the bladder.



Typical Installation

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



ARO®

Active

1" Non-Metallic Shock Blocker



Key Specifications

Specification	Value
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)

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

SHOCK BLOCKER

Technical Reference – Specifications, dimensions, performance & ordering.

Arozone.com

Design Features

2" & 3" METALLIC 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

NPTF & BSPP internal pipe threads for 2" & 3", ANSI/DIN Option for 2"

6. Bolted Fasteners

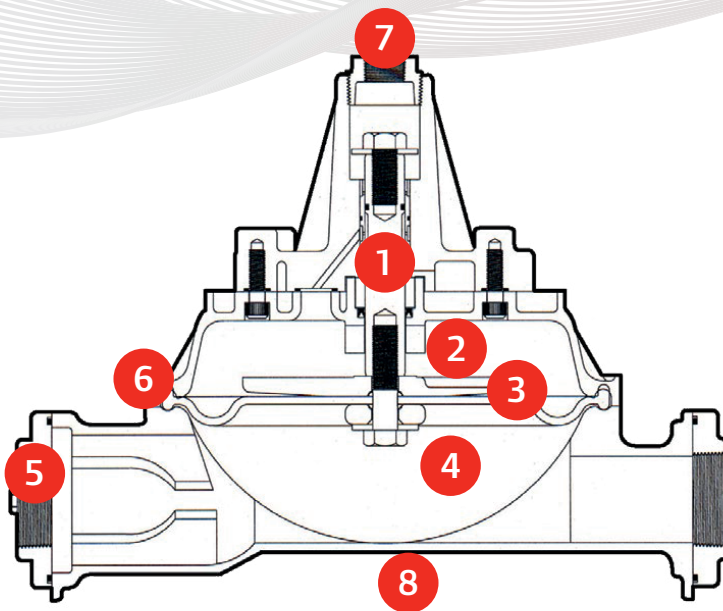
For leak-free integrity, similar design and characteristics which set ARO® Diaphragm Pumps apart from the competition

7. Air Inlet

Will accept same air line pressure as diaphragm pump

8. Part Interchangeability

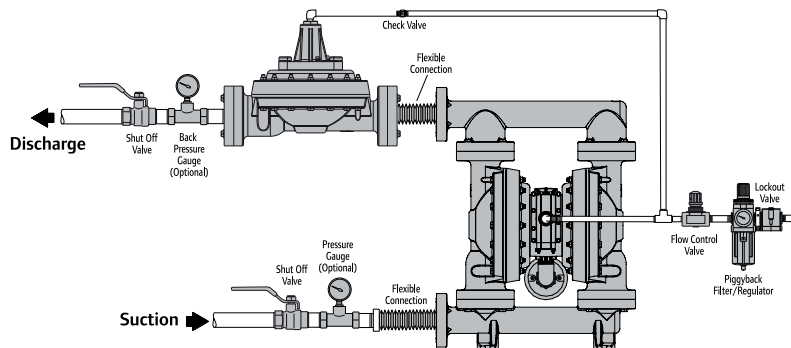
Utilize parts from the 2" & 3" diaphragm pump



Typical Installation

SB20X use with 1-1/2" and 2" Diaphragm Pumps,
SB30X use with 3" Metal Diaphragm Pumps

Proper support of piping and pulsation dampener is required.



2" & 3" Metallic Shock Blocker



2" Shock Blocker



3" Shock Blocker

Key Specifications

Specification	Value
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 194 in.3 (3.18 lit.)
	SB30X 367 in.3 (6.01 lit.)

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

2" Non-Metallic Shock Blocker



Automatically reduces the pressure fluctuation found in normal diaphragm pump operation and can help eliminate material foaming, hydraulic shock or material splashing.

Automatic Shock Blocker®

- **Automatic Air Adjustment**
compensates for fluctuations in fluid pressure without operator intervention.
- **Significant Pulsation Reduction**
Shock Blockers deliver an average 60% - 80% pulsation reduction in high back pressure applications.
- **Built for high-flow/aggressive fluid applications**
contains up to 0.9 Gal (3.38L) of fluid volume.
- **Broad Material Range for Compatibility**
Polypropylene fluid section with a choice of PTFE, Santoprene, Viton or Nitrile diaphragms for optimum fluid compatibility.
- **Perfect for Process Applications**
pulsation reduction in long piping runs help prevent costly fluid pipe and downstream valve damage.
- **Bolted construction**
for leak-free vessel integrity and a safer work-site.
- **Ultra-Rugged Construction for long service life**
both inside and out, the Shock Blockers are built tough to deliver worry-free, near pulse-free fluid handling.

Ordering

Position	1	2		3	4	5		6
Example:	SB20	P	-	X	P	S	-	X

Position 1 Model and Size	Position 2 Air Section	Position 3 Fluid Connection	Position 4 Fluid Section	Position 5 Hardware	Position 6 Diaphragm Material
SB20 - 2"	P - Polypropylene/ Aluminum R - Polypropylene/ Stainless Steel	A - 2-11-1/2 NPTF-1 B - Rp 2 (2-11 BSP, parallel) F - 2" ANSI/DIN Flange Inlet and Outlet K - 2" ANSI/DIN Flange Inlet/ NPTF Outlet L - 2" ANSI/DIN Flange Inlet/ BSPP Outlet	P - Polypropylene	S - Stainless Steel	A - Santoprene® G- Nitrile T - PTFE / Santoprene® V - Viton®

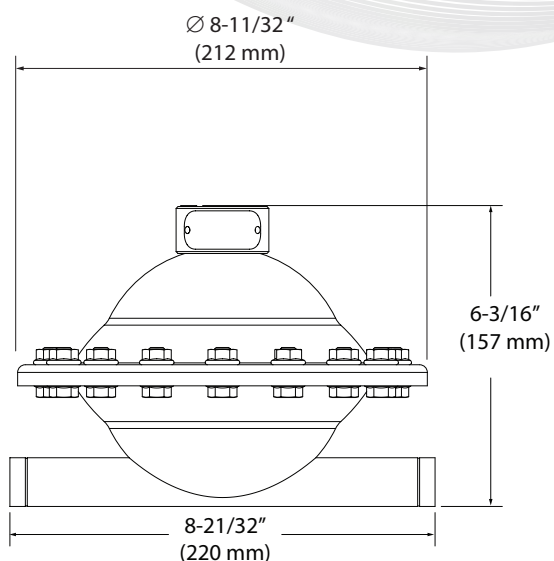
Viton® is a registered trademarks of the DuPont company. Santoprene® is a registered trademark of Monsanto Company, licensed to Advanced Elastomer Systems, L.P.

Dimensions

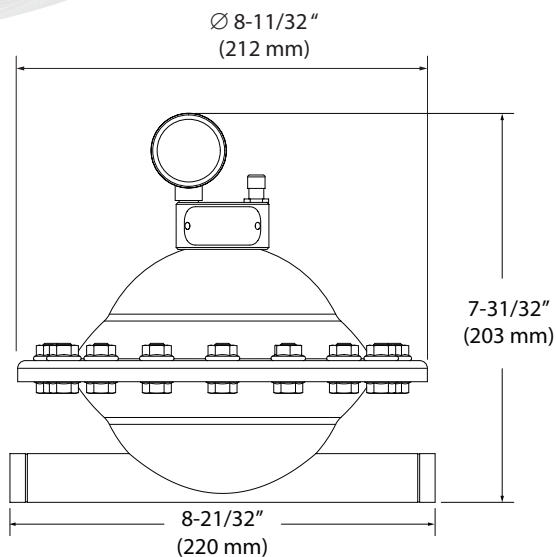
Dimensions shown are for reference only, they are displayed in inches and millimeters (mm).

Active/ Passive (1/2" & 1" Metallic)

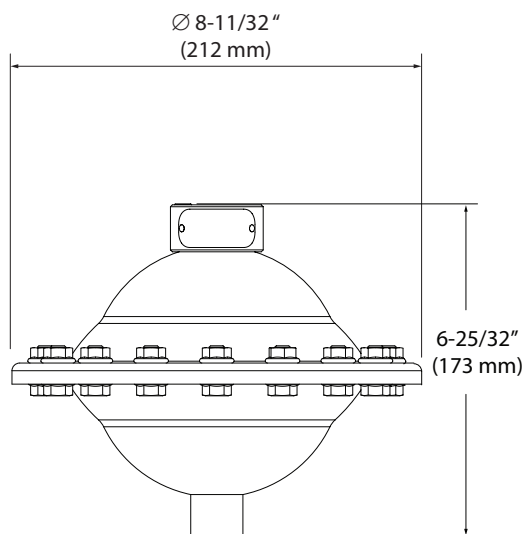
SBAXS-X-TA



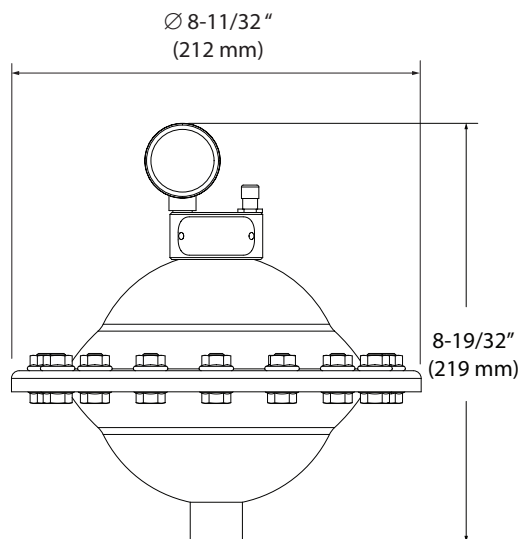
SBPXS-X-TA



SBAXS-X-TA



SBPXS-X-TA

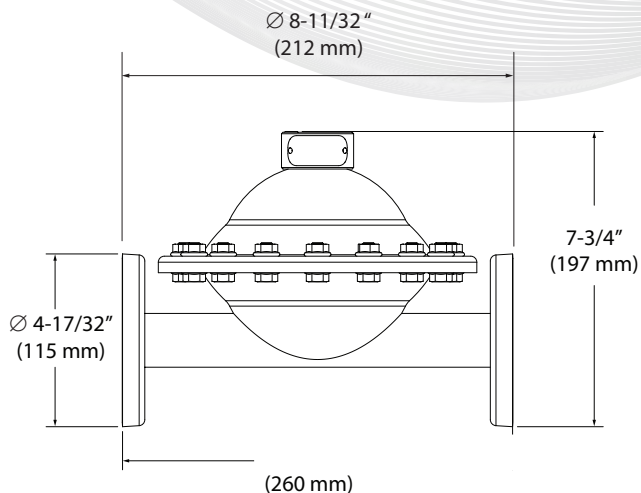


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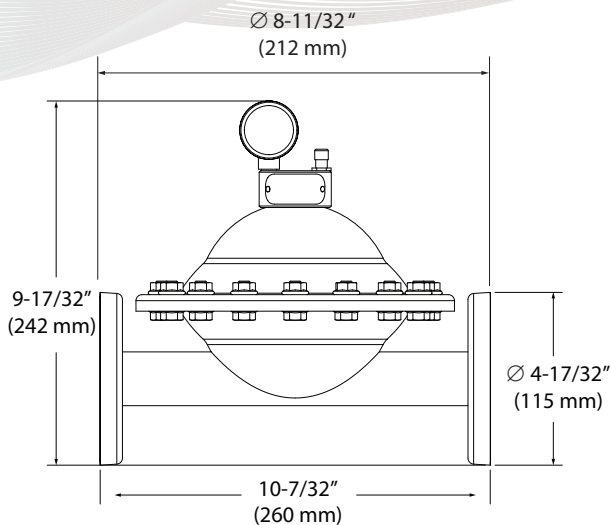
Dimensions shown are for reference only, they are displayed in inches and millimeters (mm).

Active/ Passive (1" Metallic - Flange)

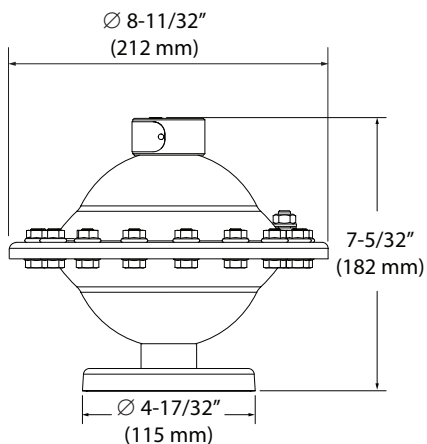
SBA10S-FSS-TA



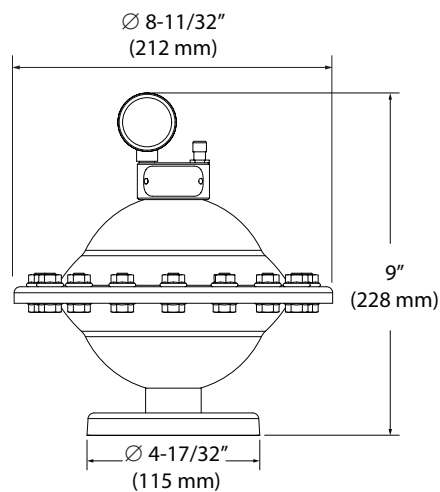
SBP10S-FSS-TA



SBA10S-ESS-TA



SBP10S-ESS-TA

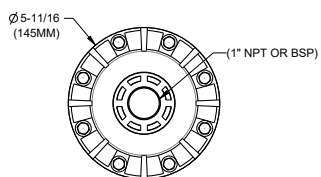
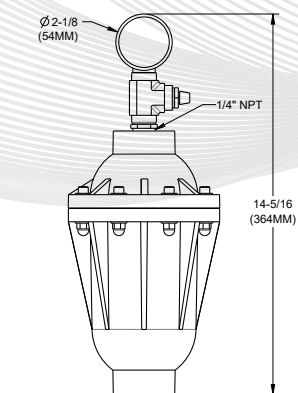


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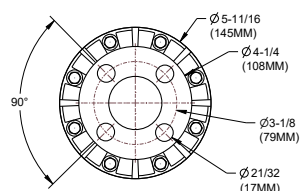
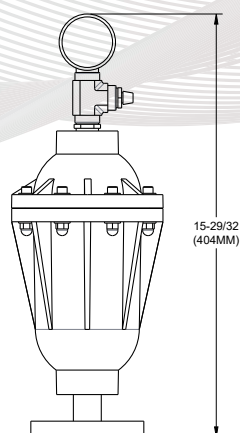
Dimensions shown are for reference only, they are displayed in inches and millimeters (mm).

Passive (1" Non-metallic)

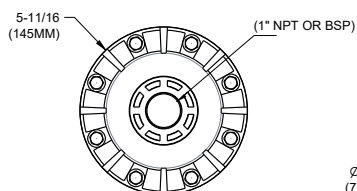
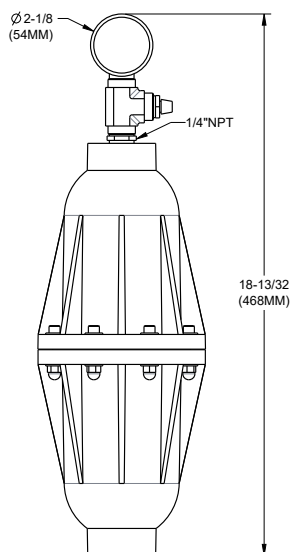
SBG108-CNP-E



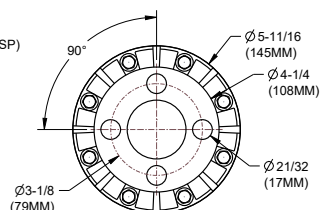
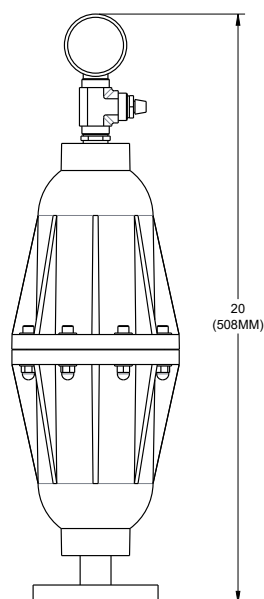
SBG108-CFP-E



SBG112-CNP-E



SBG112-CFP-E

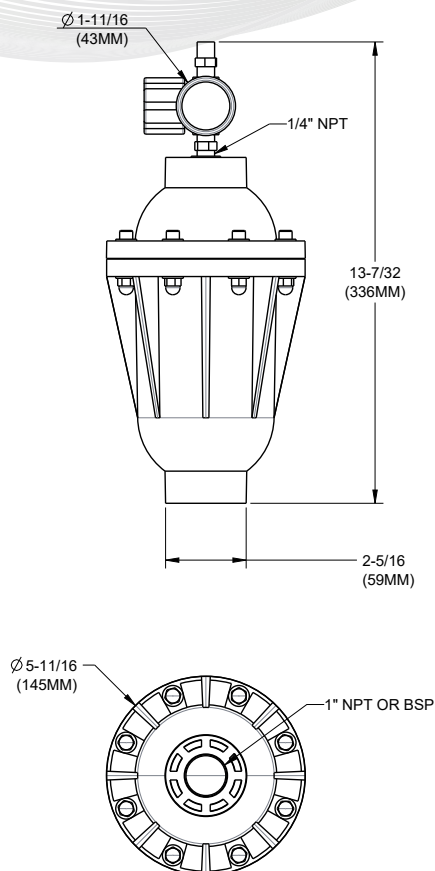


Dimensions

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Adjustable
(1" Non-metallic)

SBG108-CND-E

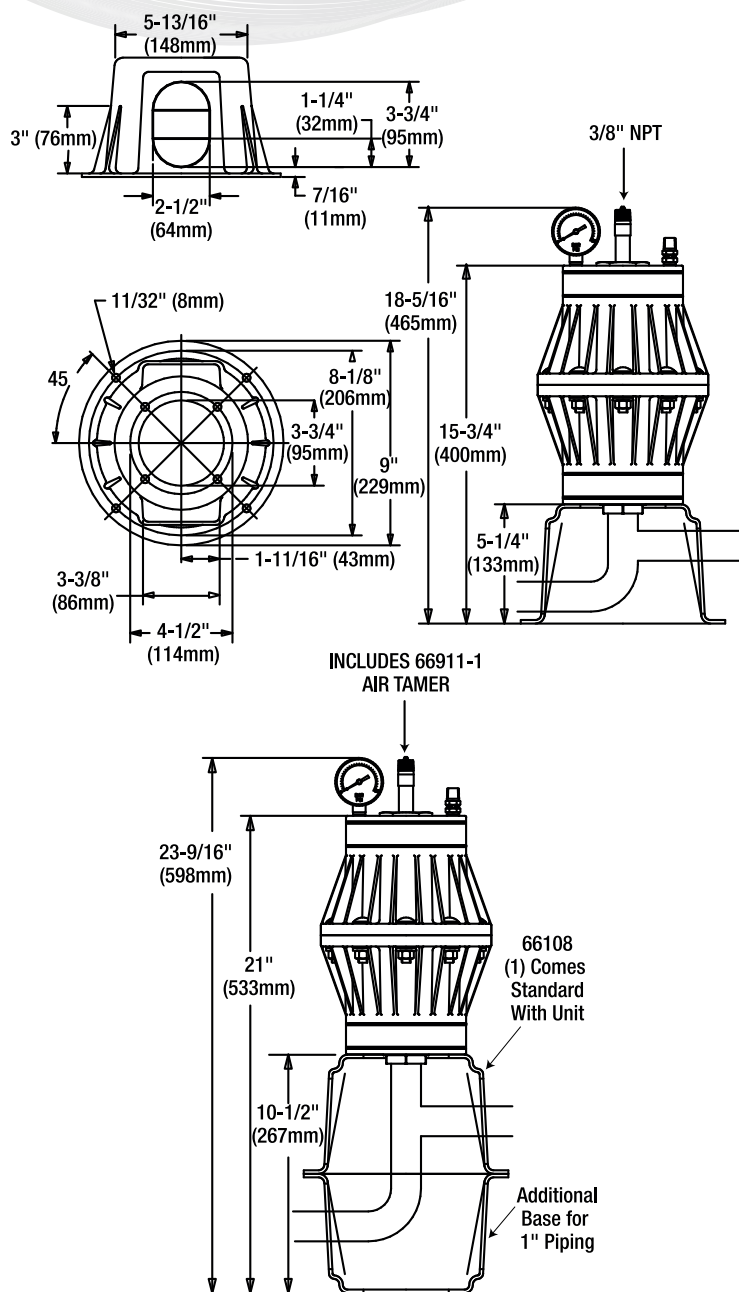


Dimensions

Dimensions shown are for reference only, they are displayed in inches and millimeters (mm).

Active (1" Non-Metallic)

SB10X-XXX-X

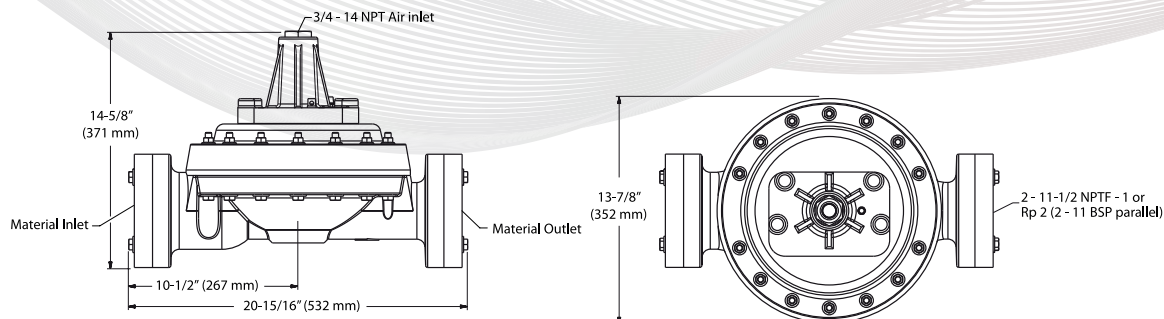


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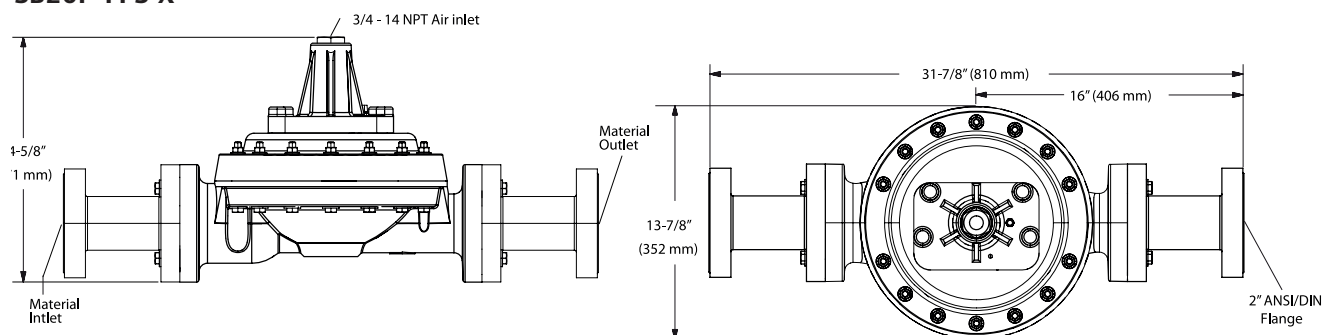
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Active (2" Non-Metallic)

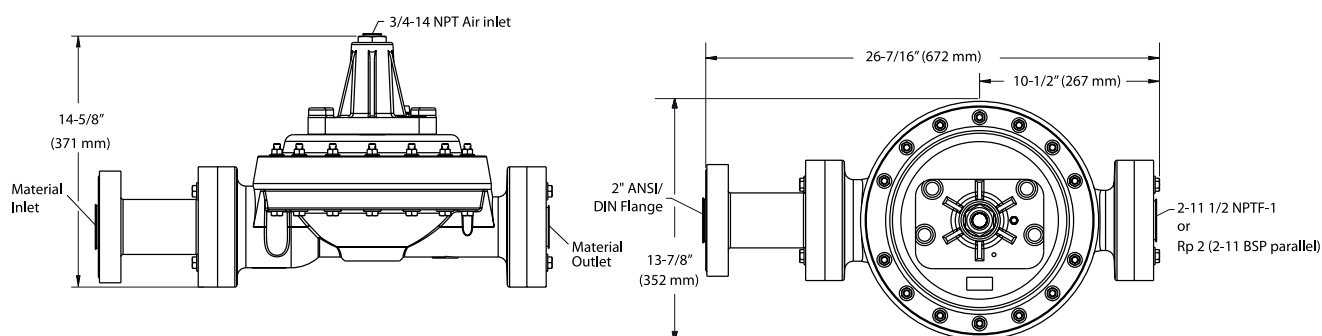
SB20P-APS-X or SB20P-BPS-X



SB20P-FPS-X



SB20P-KPS-X or SB20P-LPS-X

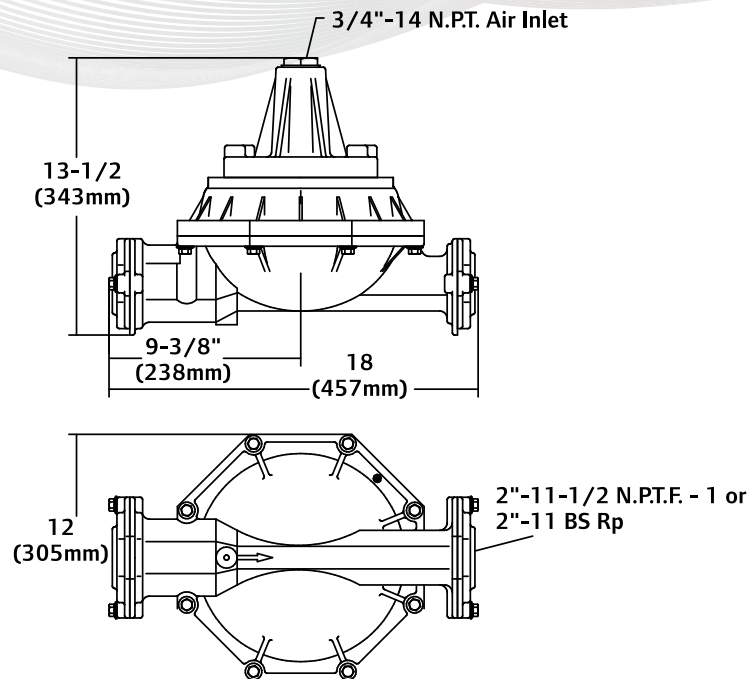


Dimensions

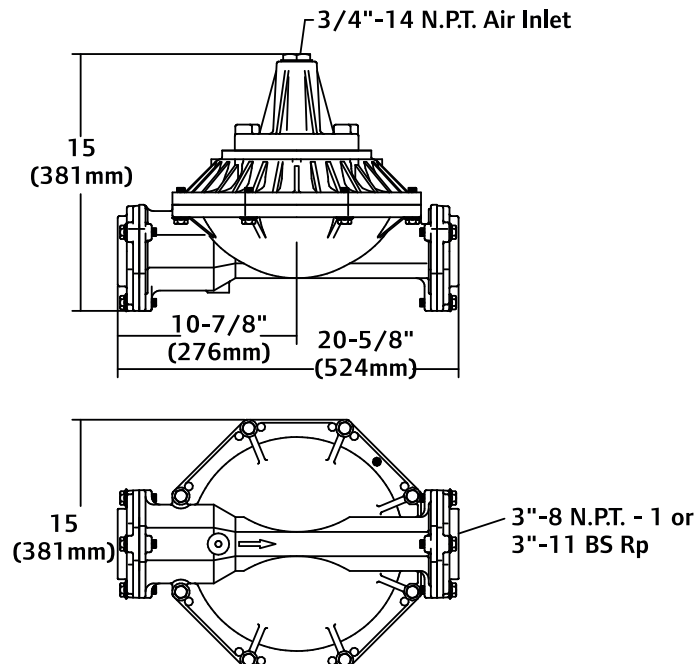
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Active (2" & 3" Metallic)

SB20X-XXX-X



SB30X-XXX-X



Accessories

Air Filter/Regulator

The ARO-FLO Series units extend the life of air operated equipment while reducing operating costs. These units efficiently remove solid particles from compressed air lines - making them the great choice for large flow applications.



Piggyback Filter/Regulator, Metal Bowl w/ Sight Glass, Auto Drain

Pump Size	NPT Model Number	Port Size	Max Inlet Pressure (psi)	Pressure Range (psi)	Max CFM	Micron Element	Size HxWxD (inches)
1/4" to 3/4"	P39124-624	1/4"	250	0-140	47	5	6.9 x 2.9 x 2.9
1"	P39224-614	1/4"	250	0-140	72	5	9.0 x 2.2 x 3.2
1-1/2"	P39344-614	1/2"	250	0-140	172	5	10.9 x 2.8 x 3.2
2"	P39354-614	3/4"	250	0-140	173	5	10.9 x 2.8 x 3.2
3"	P39454-614	3/4"	250	0-140	236	5	14.7 x 3.5 x 4.1

Piggyback Filter/Regulator, Poly Bowl w/Guard, Manual Drain

Pump Size	NPT Model Number	Port Size	Max Inlet Pressure (psi)	Pressure Range (psi)	Max CFM	Micron Element	Size HxWxD (inches)
1/4" to 3/4"	P39124-600	1/4"	150	0-140	47	5	6.2 x 2.9 x 2.9
1"	P39224-600	1/4"	150	0-140	72	5	8.1 x 2.2 x 3.2
1-1/2"	P39344-600	1/2"	150	0-140	172	5	10.0 x 2.8 x 3.2
2"	P39354-600	3/4"	150	0-140	173	5	10.9 x 2.8 x 3.2

Cautions of the Use of Polycarbonate Plastic Bowls - Use Only with Compressed Air. Filters and lubricators with polycarbonate plastic bowls are specifically designed for compressed air service, and their use with any other fluid (liquid or gas) is a misapplication. Avoid Harmful Substances. Some compressor oils, chemical cleaners, solvents, paints, and fumes will attack plastic bowls and can cause bowl failure. Do not use with or near these materials. Consult the factory with any questions.



Ingersoll Rand attests that ARO®-Flo Series of filters, regulators, lubricators (1000, 1500, 2000, 3000 Series) and select accessories are out of scope for ATEX Directive 94/9/EEC or 2014/34/EU. The products listed in IRITS-1215-197 certificate can be used in group II, category 2 environment; Gas and Dust with temperature a T6 (Ex II 2GD T6) if all conditions set up in the Instruction Manual are met. Instruction Manuals and certificate regarding ATEX Declaration can be found at AROZONE.COM

Air Control Actuation Valves

3-way valve controls air supply to pump. Activation starts pump, deactivation cuts off air supply to pump and exhausts air from motor, which prevents stalling.

- MQ3728-120-A for 1/2" and 1" pumps,
- H254SS-120-A for 1-1/2" pumps,
- MQ3729-120-A for 2" and 3" pumps
- 24 VDC MQ3728-024-D for 1/2" and 1" pumps
- H254SS-024-D for 1-1/2" pumps
- MQ3729-024-D for 2" and 3" pumps



MQ3728-120-A used on 1/2" and 1" pumps



Ready to simplify your cooling infrastructure?

From faster deployment to simpler installation and long-term operational reliability — ARO custom skid and cartridge solutions are built to make your cooling infrastructure one less thing to worry about.

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About Ingersoll Rand Inc.

Ingersoll Rand Inc. (NYSE:IR), driven by an entrepreneurial spirit and ownership mindset, is dedicated to helping make life better for our employees, customers and communities. Customers lean on us for our technology-driven excellence in mission-critical flow creation and industrial solutions across 40+ respected brands where our products and services excel in the most complex and harsh conditions. Our employees develop customers for life through their daily commitment to expertise, productivity and efficiency. For more information, visit www.IRCO.com.

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