

SURGE ARRESTORS & VESSELS



Surge Arrestors

When a valve in a high volume fluid handling system opens or closes or a pump starts or stops, there can be vacuum/cavitation pressure spikes generated that are many times greater than the system is designed to handle. This shock can burst pipes, shatter or loosen fittings, disable pumps and knock out instrumentation. OilAir's Surge Arrestors are accumulators designed to protect fluid handling systems from surge cavitation and water hammer damage by absorbing the kinetic energy before it can cause serious damage.

- Controls surges and water hammer
- Helps save lives and property
- Immediate pay-back provided from reduced maintenance and damage
- Pump energy saved by continually holding pressure
- Longer life for equipment
- The entire system performs better overall

Design Features and Benefits

SHELL

Surge Arrestor shells are fabricated from carbon steel or stainless steel with a minimum 3.5 to 1 design safety factor at normal operating pressures. Surge Arrestor shells are designed in accordance to ASME Section VIII, Div. 1 as standard.

BLADDER

Bladders are manufactured in-house to control the material blending, molding, and critical seam assembly and curing processes. It is widely accepted that OilAir bladders are the highest quality bladders in the industry. Bladders are offered in four different standard compounds to suit a variety of fluids and operating temperatures. Special compounds are available for unusual or severe applications.

BLADDER STEMS

All Surge Arrestors are fitted as standard with two-piece bladder stems with replaceable gas valve cartridge for ease of serviceability. This allows for the gas valve to be replaced separate from the bladder.

PORT FLANGES

ANSI RF flanges, 150 and 300 lb., are supplied as standard. Sizes range from 1" thru 10" with special sizes available (consult factory).

SCREENS

Surge Arrestors are equipped with perforated screens to prevent bladder extrusion and improve system dampening.

TOP REPAIRABLE

25 gallon and larger welded and seamless units are supplied as top repairable. The top repairable design permits easy checking and maintenance of the bladder without removing the accumulator from the service line, saving time and money.

GAS VALVE

All accumulators are fitted with a gas valve for ease of gas precharging. 2.5 thru 10 gallon units are equipped with a cored gas valve cartridge (ISO4570-8V1) for ease of maintenance. 25 gallon and larger units are equipped with a poppet-type (m5288890) gas valve cartridge. For safety, all gas valves vent to atmosphere if unscrewed.

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How to Order Surge Arrestors

Surge Arrestors can be specified by using the codes in the chart below to develop a model number. Select only those codes that represent the features desired, and place them in the sequence indicated by the example at the top of the chart.

Example Model Number: S A 0 1 0 C W 1 B 1 1 1 A Y

Indicates Surge Arrestor

Capacity

US Gal	Liters	Code
2.5	9.5	010
5	19	020
10	38	040
15	57	060
25	95	100
40	151	160
60	227	240
80	303	320
100	379	400
120	454	480

Consult factory for other available sizes

Pressures

Pressure	Code
275	1
500	2

Consult factory for other available Pressures

Bladder Materials

Material	Code
Nitrile	B
Butyl	Y
EPR	E
Viton	V

Consult factory for other available materials

Flange Rating

Pounds	Code
150	1
300	2

Consult factory for other available ratings

Flange Size

Size	Code
1"	J
1.5"	L
2"	M
2.5"	N
3"	P
4"	R

Consult factory for other available sizes

Tube Materials

Material	Code
Carbon Steel	C
Stainless Steel	S
Aluminum	A
Monel	M

Consult factory for other available materials

Construction

Description	Code
Welded	W
Seamless	S

Gas Valve

Valve	Code
Schrader	1
MS	2

Consult factory for other available valves

Special

Description	Code
Special requirements should be designated in the tech notes	Y
NO Special Requirements	N

Certification

Certification	Code
ASME*	A
CE	C
ASME*+CE	E
DNV	D
DNV+CE	N
ASME*+CE+DNV	V
ABS-CDS	B
USCG	G
OTHER (specify)	S
Non-Certified	X

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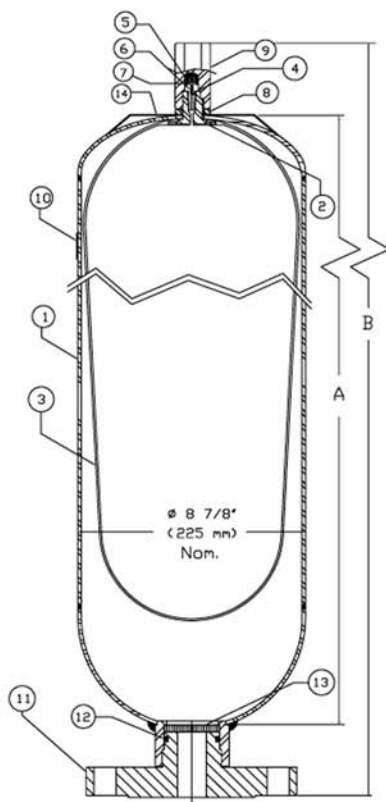


Welded Surge Arrestor (ASME or Non-ASME)

Capacity Gal (liters)	Part Number	A Inch (cm)	B Inch (cm)	Weight Lbs (kg)
2.5 (9.5)	SA-010-C*-W-2	12.5 (31.8)	17 (43.2)	40 (18.14)
5 (18.9)	SA-020-C*-W-2	24.5 (62.2)	29 (73.7)	70 (31.75)
10 (37.8)	SA-040-C*-W-2	46.25 (117.5)	50.75 (128.9)	130 (58.97)
15 (56.78)	SA-060-C*-W-2	70.25 (178.4)	74.75 (189.9)	190 (86.18)

Notes:

- * All of the above Surge Arrestor models are available in Carbon Steel or Stainless Steel
- All of the above Surge Arrestors are available with a pressure rating of 275 PSI or 500 PSI
- Max precharge pressure not to exceed 275 PSI
- Consult factory for available flange connections
- For more detailed specifications for ordering, please see the "How to Order Surge Arrestors" section



Bill of Materials*

Item	Qty	Part Number	Description	Material
1	1	SM-200-S	Shell	Stainless Steel
2	1	11-2-301-SD	Valve Stem	Stainless Steel
3	1	M-2-300-SD	Bladder	Nitrile/CS*
4	1	11-3-313	Valve Adaptor O-Ring	Nitrile*
5	1	11-303	Valve Cap	Carbon Steel
6	1	11-3-309	Valve Adaptor	Stainless Steel
7	1	11-304	Valve Core	Stainless Steel
8	1	11-305-S04	Jam Nut	Stainless Steel
9	1	11-306-S04	Protective Cap	Stainless Steel
10	1	11-413-Caution	Caution Tag	Plastic
11	1	S2.5-417-3/300-S04	3" - 300# Flange*	Stainless Steel
12	1	S2.5-410	Flange O-Ring	Nitrile
13	1	S2.5-517-S03	Screen Plate	Stainless Steel
14	1	11-413	Nameplate	Stainless Steel

Design Specifications

Design Pressure	500 P.S.I.G. @ 200° F
Hydrostatic Test Pressure	750 P.S.I.G.
Maximum Design Temperature	200° F
Minimum Design Temperature	-20° F
Bladder Compound	Nitrile*
Design Code	ASME Section VIII, Div1, "U" Stamp

*Optional materials and/or sizes may vary, consult factory

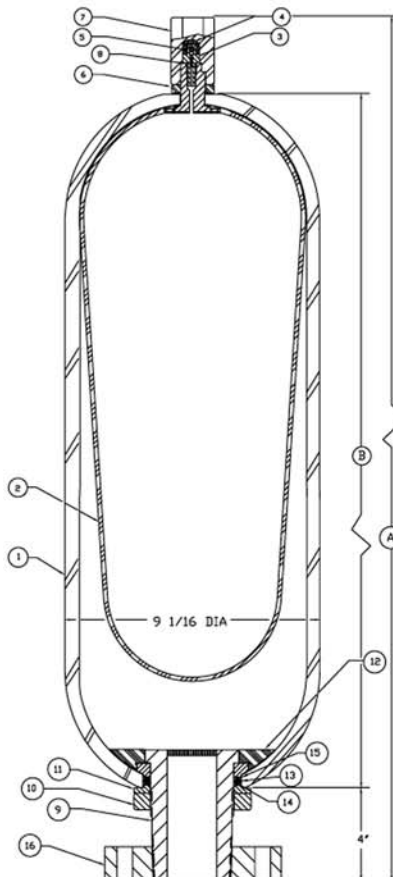
*Bill of Materials representative of 500 PSI Stainless Steel Surge Arrestor,
consult factory for other options

Seamless Surge Arrestor (ASME)

Capacity Gal (liters)	Part Number	A Inch (cm)	B Inch (cm)	Weight Lbs (kg)
2.5 (9.5)	SA-010-C-S-1	22.5 (57.2)	15.5 (39.4)	95 (43.1)
5 (18.9)	SA-020-C-S-1	34.75 (88.3)	27.75 (70.5)	135 (61.24)
10 (37.8)	SA-040-C-S-1	55.5 (141.0)	48.5 (123.2)	235 (106.6)
15 (56.7)	SA-060-C-S-1	79 (200.7)	72 (182.9)	320 (145.15)

Notes:

- All of the above Surge Arrestor models are available with a pressure rating of 275 PSI
- For more detailed specifications for ordering, please see the "How to Order Surge Arrestors" section
- Water service option available
- ANSI RF Flange Connection - Any size and pressure available upon request
- Phenolic or Electroless Nickel internal coatings available



Bill of Materials*

Item	Qty	Part Number	Description	Material
1	1	M-200	Shell	Carbon Steel
2	1	11-2-301	Valve Stem	Carbon Steel
3	1	M-2-300*	Bladder	Nitrile/CS*
4	1	11-3-313	Valve Adaptor O-Ring	Nitrile/CS*
5	1	11-303	Valve Cap	Carbon Steel
6	1	11-3-309	Valve Adaptor	Stainless Steel
7	1	11-304	Valve Core	Stainless Steel
8	1	11-305	Jam Nut	Carbon Steel
9	1	11-306	Protective Cap	Carbon Steel
10	1	11-413-Caution	Caution Tag	Carbon Steel
11	1	S2.5-419	Dustcap (Flange)	Carbon Steel
12	1	S2.5-417-3/150	3" - 150# Flange*	Carbon Steel*
13	1	S2.5-410	Flange O-Ring	Nitrile*
14	1	S2.5-517	Screen Plate	Carbon Steel
15	1	11-413	Nameplate	Carbon Steel

Design Specifications

Design Pressure	275 P.S.I.G
Hydrostatic Test Pressure	413 P.S.I.G.
Maximum Design Temperature	140° F
Minimum Design Temperature	-20° F
Bladder Compound	Nitrile*
Design Code	ASME Sec. VIII Div. 1, "UM" Stamp

*Optional materials and/or sizes may vary, consult factory
 *Bill of Materials representative of 275 PSI Carbon Steel Surge Arrestor,
 consult factory for other options

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High Volume Surge Arrestor (ASME or Non-ASME)

Capacity Gal (liters)	Part Number	(Nominal) A Inch (cm)	B Inch (cm)	Weight Lbs (kg)
25 (94.6)	SA-100-C*-W-2	36 (91.4)	17 (43.2)	325 (147.42)
40 (151.4)	SA-160-C*-W-2	44 (111.8)	21.5 (54.6)	375 (170.1)
60 (226.8)	SA-240-C*-W-2	56 (142.2)	21.5 (54.6)	500 (226.8)
80 (302.8)	SA-320-C*-W-2	66 (167.6)	36.5 (92.7)	700 (317.51)
100 (378.5)	SA-400-C*-W-2	85 (215.9)	36.5 (92.7)	900 (408.23)
120 (454.2)	SA-480-C*-W-2	103 (261.6)	50.0 (127)	1,100 (498.95)

Notes:

- * All of the above Surge Arrestor models are available in Carbon Steel or Stainless Steel
- * Carbon Steel units come with internal phenolic coating (other coatings available, consult factory)
- Consult factory for additional available flange connections
- For more detailed specifications for ordering, please see the "How to Order Surge Arrestors" section
- Maximum pre-charge not to exceed 275 PSI



Bill of Materials*

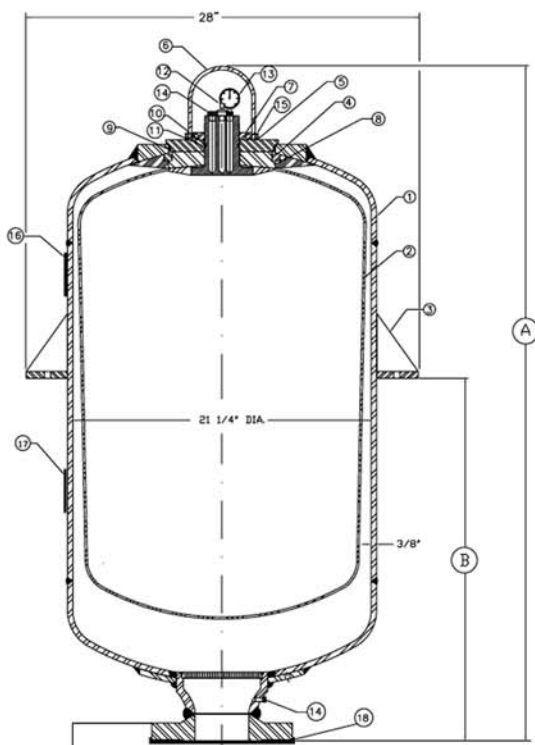
Item	Qty	Part Number	Description	Material
1	1	SM-200-4/300	Shell	Carbon Steel
2	1	SM-5-300	Bladder	Nitrile/SS
3	2	N/A	Brackets	Carbon Steel
4	1	S25-407-A	Anti-Extrusion Ring	CS/Nitrile
5	1	S25-5-406	Spacer Plate	Carbon Steel
6	1	S25-5-550	Gauge Cover	Carbon Steel
7	1	S25-5-305	Jam Nut	Carbon Steel
8	1	S25-5-208	Keeper Plate	Carbon Steel
9	1	S25-410	O-Ring	Nitrile
10	1	S25-310	O-Ring Valve Stem	Nitrile
11	1	S25-311	O-Ring Backup	Nitrile
12	1	11-5-309	Valve Adapter	Stainless Steel
13	1	CG-601-SLF	Pressure Gauge 600 PSI	Stainless Steel
14	2	11-418	Bleeder Plug	Carbon Steel
15	4	S25-318	Socket Head Screw	Carbon Steel
16	1	S25-413	OilAir Nameplate	Stainless Steel
17	1	11-413-CAUT	Caution Tag	Plastic
18	1	S25-419	Dust Cap	Plastic

Design Specifications

Design Pressure	500 P.S.I.G @ 200° F*
Hydrostatic Test Pressure	750 P.S.I.G
Maximum Design Temperature	200° F
Minimum Design Temperature	-20° F
Bladder Compound	Nitrile
Design Code	A.S.M.E. Section VIII, Div 1 "U" Stamp

*Optional materials and/or sizes may vary, consult factory

*Bill of Materials representative of 500 PSI Carbon Steel Surge Arrestor, consult factory for other options



4" - 300# R.F. FLANGE STANDARD
(3" - 300# FLANGE ALSO AVAILABLE)

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OilAIR
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Vessels

NOW AVAILABLE

- Vessels up to 3000 PSI
(Higher pressures available upon request)
- All certified welded (ASME 8/1, API 620 and 650)
- Maximum Size - 12 ft. diameter/50 ft. length
- Maximum Weight - 50,000 pounds



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Options Parts & Accessories

All Surge Arrestors

Charging & Gauging Kit

Part Number	PSI
CG-300	300
CG-600	600

2.5 - 15 Gallon Surge Arrestors

Carbon Steel Bladder Assembly

(Includes Bladder and Valve Adaptor)

Part Number	Gallons
A2.5-2-300	2.5
A5-2-300	5
A10-2-300	10
A15-2-300	15

Stainless Steel Bladder Assembly

(Includes Bladder and Valve Adaptor)

Part Number	Gallons
A2.5-2-300-SD	2.5
A5-2-300-SD	5
A10-2-300-SD	10
A15-2-300-SD	15

Individual Parts

Part Number	Description
S2.5-410	Flange O-Ring
11-305	Carbon Steel Jam Nut
11-305-S	Stainless Steel Jam Nut
11-306	Carbon Steel Protective Cap
11-306-S	Stainless Steel Protective Cap
T-CG-3013-300	Permanent Charging & Gauging Head, 300 PSI Gauge
T-CG-3013-600	Permanent Charging & Gauging Head, 600 PSI Gauge
11-304	Valve Core
11-303	Valve Cap
2.5-530	Mounting Bracket

25 - 120 Gallon Surge Arrestors

Bladder Assembly

(Includes Bladder, O-Ring, O-Ring Valve Stem, O-Ring Backup Valve Stem, Valve Adaptor and Bleeder Plug)

Part Number	Gallons
AS-25-5-300	25
AS40-5-300	40
AS60-5-300	60
AS80-5-300	80
AS100-5-300	100
AS120-5-300	120

Bladder Repair Kit

(Includes Bladder, O-Ring, O-Ring Valve Stem, P-Ring Backup Valve Stem, Valve Adaptor, Bleeder Plug, Anti-Extrusion Ring, and Jam Nut)

Part Number	Gallons
RS25-101	25
RS40-101	40
RS60-101	60
RS80-101	80
RS100-101	100
RS120-101	120

Stainless Steel Bladder Repair Kit

(Includes Bladder, O-Ring, O-Ring Valve Stem, O-Ring Backup Valve Stem, Valve Adaptor, Bleeder Plug, Anti-Extrusion Ring SS, and Jam Nut)

Part Number	Gallons
RS25-101-S	25
RS40-101-S	40
RS60-101-S	60
RS80-101-S	80
RS100-101-S	100
RS120-101-S	120

Gauges

Part Number	PSI
CG-301-SLF	300
CG-601-SLF	600

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