

# SurgeKushons

General Oil Service ■ Water & Chemical Service  
■ Slurry Service



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## Features

- Operating Pressures to 500 PSI
- Eight Different Capacities – from 2-1/2 to 120 gallons
- The Highest Quality In-House Manufactured Bladders
- ASME Certification Standard
- Chemical and Water Service Optional
- Four Bladder Compounds to Suit a Variety of Fluids and Temperatures



SurgeKushons

### Applications

### Hydraulic Accumulators SurgeKushons

In high volume fluid handling systems, shocks are experienced when valves open or close or when pumps are started or shut down. SurgeKushons are essentially low pressure bladder accumulators designed to take these shocks out of high-flow fluid handling systems. Applications for SurgeKushons include water sprinkling systems, water handling systems, refueling systems, and chemical and process plants.



**Fuel loading absorbs shock from pump startup and stopping**

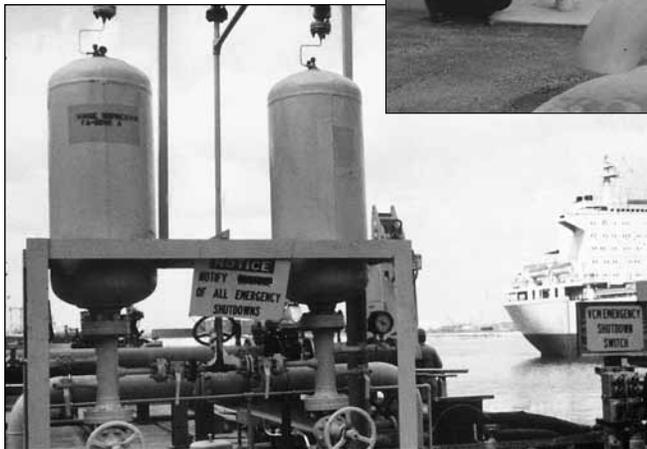


**Protecting sensitive meters and small diameter piping from valve closure on fueling trucks**



**Protection from large valve closure shocks**

**Refineries — Shock from pump starting and stopping**



**Liquid bulk handling absorbs surges and shocks from fluids in motion**



**Aircraft protection from valve closure shocks during refueling.**

**Specifications**

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

Underground or overhead water or fluid systems can be made safer and more trouble-free with the proper SurgeKushon applications. Fire protection systems using sprinklers should be secured with SurgeKushons. Airport refueling facilities, petro-chemical plants, bulk handling systems, and refineries cannot afford surge-ruptured lines and the accompanying spills.

**SurgeKushon Protection Pays...**

- control surges and water hammer
- help save lives and property
- get immediate pay-back from reduced maintenance and damage
- save pump energy by continually holding pressure
- get longer life from equipment
- overall... the whole system works better

**Greer SurgeKushons...  
Your #1 Choice for Surge Protection!**

Greer SurgeKushons are made by the leading manufacturer of bladder accumulators in North America. The broad SurgeKushon offering includes:

- 275 & 500 PSI Rated General Service
- 275 & 500 PSI Rated Slurry Service
- Water & Chemical Service Option
- Stainless Steel Construction Available - Consult Factory

Virtually all of the components used in the construction of the SurgeKushons including the shells and the bladders themselves, the heart of any SurgeKushon, are manufactured inhouse. All processes are internally controlled to the highest standards of quality and consistency.

Also, we offer application assistance and will help to design the proper SurgeKushon arrangement to fit your systems requirements including sizing and placement.

**Specifications**

**Materials**

- Shell – carbon steel to ASME material specifications
- Screens – stainless steel
- Flanges – carbon steel forgings to ANSI material specification
- Gas Valve Protector – steel
- Gas Valve Stem – steel
- Bladders – various polymers, see Standard and Optional Bladders in this section.

**Maximum Flow Rates**

Flange Size	Max. Recommended Flow*	
	GPM	LPM
3"	350	1325
3" Slurry	400	1514
4" & 6"	1000	3785
8" & 10"	1400	5300

\*Note: with fluid viscosity of 60-70 SSU

**Pressure Ratings** – SurgeKushons are available in a variety of maximum operating pressures up to 500 PSI- all at minimum 4 to 1 design factors. See “Models, Capacities and Dimensions” pages for rated pressures.

**Fluids** – SurgeKushons are compatible with a wide variety of fluids. The standard accumulator may be used with petroleum based industrial or water-based flame resistant fluids. Bladders compatible with most industrial fluids can be furnished on special orders with temperature ranges from -40°F to 250°F (-40°C to 121°C).

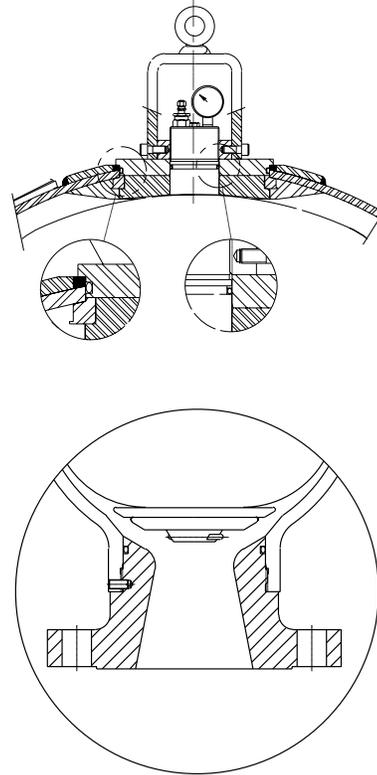
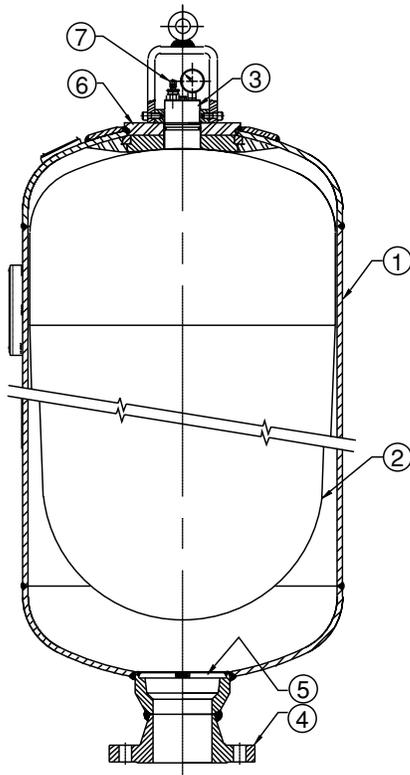
**Precharge** – Units are shipped with a 25 PSI nitrogen precharge as standard. For other precharge pressures, specify at the time of order.

**Available Options** – options available on SurgeKushons include:

- Bladder Compounds (see Standard and Optional Bladders in this section)
- Water & Chemical Service (see Water & Chemical Service Option in this section)

**Certifications** – ASME (Section VIII, Div. 1) is available as standard on SurgeKushons.

SurgeKushons



### 1 Shell

SurgeKushon shells are fabricated from carbon steel with minimum 4 to 1 design factors at normal operating pressures. SurgeKushon shells meet ASME material specifications as standard.

### 2 Bladder

The heart and soul of a SurgeKushon, bladders are manufactured in-house to control the material blending, molding, and critical seam assembly and curing processes. It is widely accepted that Greer 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.

### 3 Bladder Stems

All SurgeKushons are fitted as standard with two-piece bladder stems with replaceable gas valve cartridge for ease of serviceability. Also, the two-piece stem will accept high pressure high-flow gas valves and permanent mount gauge adapters.

### 4 Port Flanges

ANSI RF flanges, 150 and 300 lb., are supplied as standard. Sizes range from 3" thru 10" with special sizes available (consult factory).

### 5 Screens

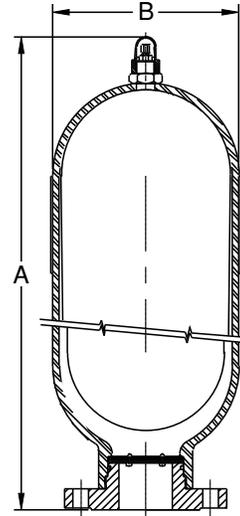
SurgeKushons are equipped as standard with stainless steel screens to prevent bladder extrusion and for corrosion resistance.

### 6 Top Repairable

25 gallon and larger 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.

### 7 Gas Valve

All accumulators are fitted with a gas valve for ease of gas precharging. 2-1/2 thru 10 gallon units are equipped with a cored gas valve cartridge (ISO-4570-8VI) for ease of maintenance. 25 gallon and larger units are equipped with a poppet-type high-flow gas valve. For safety, the gas valve vents if unscrewed.

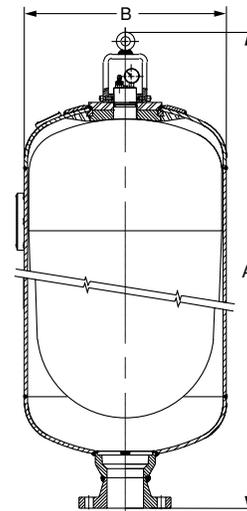


**ASME Certified General Service SurgeKushons**

Nominal Size	Bladder Code	SurgeKushon			A		B		RF Flange	Weight lbs. (Kg)
		Part Number	Repair Kit	Pressure Rating	Inch (mm)					
2-1/2 gallon (9.5 liters)	-01 Slurry	SK02S3FA01A1	703184	275 PSI (19 Bar)	19.25 (489)	8.60 (218)	3", 150#	63 (29)		
	-01	SK02A3FA01A1	702634							
	-04	SK02A3FA04A1	704330							
	-08	SK02A3FA08A1	702636							
	-28	SK02A3FA28A1	702635							
5 gallon (19 liters)	-01 Slurry	SK05S3FA01A1	703191	275 PSI (19 Bar)	29.50 (749)	8.60 (218)	3", 150#	89 (40)		
	-01	SK05A3FA01A1	702637							
	-04	SK05A3FA04A1	704331							
	-08	SK05A3FA08A1	702639							
	-28	SK05A3FA28A1	702638							
10 gallon (38 liters)	-01 Slurry	SK10S3FB01A1	703198	275 PSI (19 Bar)	50.63 (1286)	8.60 (218)	3", 150# (Slurry, 4", 150#)	137 (62)		
	-01	SK10A3FA01A1	702640							
	-04	SK10A3FA04A1	704332							
	-08	SK10A3FA08A1	702642							
	-28	SK10A3FA28A1	702641							
25 gallons (95 liters)	-01	SK25A5PB01A1	702615	500 PSI (34 Bar)	35.69 (907)	22.00 (559)	4", 300#	320 (145)		
	-04	SK25A5PB04A1	704333							
	-08	SK25A5PB08A1	702617							
	-28	SK25A5PB28A1	702616							
	-01	SK40A5PB01A1	702621							
40 gallons (151 liters)	-04	SK40A5PB04A1	704334	500 PSI (34 Bar)	43.44 (1103)	22.00 (559)	4", 300#	368 (167)		
	-08	SK40A5PB08A1	702623							
	-28	SK40A5PB28A1	702622							
	-01	SK80A5PB01A1	702626							
	-04	SK80A5PB04A1	704335							
80 gallons (303 liters)	-08	SK80A5PB08A1	702627	500 PSI (34 Bar)	64.44 (1637)	22.00 (559)	4", 300#	660 (300)		
	-28	SK80A5PB28A1								
	-01	SK100A5PB01A1	702630							
	-04	SK100A5PB04A1	704336							
	-08	SK100A5PB08A1	702631							
100 gallons (379 liters)	-28	SK100A5PB28A1		500 PSI (34 Bar)	84.44 (2145)	22.00 (559)	4", 300#	885 (402)		
	-01	SK120A5PB01A1	702643							
	-04	SK120A5PB04A1	704337							
	-08	SK120A5PB08A1	702644							
	-28	SK120A5PB28A1								

**Note:**  
 Bladder Codes: -01 = Buna-Nitrile, -04 = Hydrin, -08 = EPR, & -28 = Fluorocarbon)

SurgeKushons



**Water/Chemical Service SurgeKushons** (All Bladders are Code -1 Nitrile)

Nominal Size	B Inch (mm)	ANSI RF Flange Size	275 PSI Rated with 150# Flange				400 PSI Rated with 300# Flange						
			Model Number	A		Weight		Model Number	A		Weight		
				Inch	(mm)	lbs.	(Kg.)		Inch	(mm)	lbs.	(Kg.)	
2-1/2 gallon (9.5 liters) RK #702634	8.60 (218)	3"	SK02W3FA01A1	16.94	(430)	63	(29)						
5 Gallon (19 liters) RK #702637	8.60 (218)	3"	SK05W3FA01A1	28.94	(735)	89	(40)						
10 Gallon (38 liters) RK #702640	8.60 (218)	3"	SK10W3FA01A1	50.63	(1286)	137	(62)						
25 gallon (95 liters) RK #702615	22.00 (559)	4"	SK25W3FB01A1	35.69	(907)	310	(141)	SK25W4PB01A1	35.69	(907)	320	(145)	
		6"	SK25W3FC01A1	37.50	(953)	319	(145)	SK25W4PC01A1	38.00	(965)	338	(154)	
		8"	SK25W3FD01A1	37.56	(954)	335	(152)	SK25W4PD01A1	37.94	(964)	362	(165)	
		10"	SK25W3FE01A1	41.56	(1056)	347	(158)						
40 gallons (151 liters) RK #702621	22.00 (559)	4"	SK40W3FB01A1	43.44	(1103)	358	(163)	SK40W4PB01A1	43.44	(1103)	368	(167)	
		6"	SK40W3FC01A1	45.25	(1149)	367	(167)	SK40W4PC01A1	45.75	(1162)	386	(175)	
		8"	SK40W3FD01A1	45.31	(1151)	383	(174)	SK40W4PD01A1	45.69	(1161)	410	(186)	
		10"	SK40W3FE01A1	49.31	(1252)	395	(180)						
80 Gallon (303 liters) RK #702626	22.00 (559)	4"	SK80W3FB01A1	64.44	(1637)	650	(295)	SK80W4PB01A1	64.44	(1637)	660	(300)	
		6"	SK80W3FC01A1	66.25	(1683)	659	(300)	SK80W4PC01A1	66.75	(1695)	678	(308)	
		8"	SK80W3FD01A1	66.31	(1684)	675	(307)	SK80W4PD01A1	66.69	(1694)	702	(319)	
		10"	SK80W3FE01A1	70.31	(1786)	687	(312)						
100 Gallon (379 liters) RK #702630	22.00 (559)	4"	SK100W3FB01A1	84.88	(2156)	875	(398)	SK100W4PB01A1	84.44	(2145)	885	(402)	
		6"	SK100W3FC01A1	86.69	(2202)	884	(402)	SK100W4PC01A1	87.19	(2215)	903	(410)	
		8"	SK100W3FD01A1	86.75	(2203)	900	(409)	SK100W4PD01A1	87.13	(2213)	927	(421)	
		10"	SK100W3FE01A1	90.75	(2305)	912	(415)						
120 Gallons (454 liters) RK #702643	22.00 (559)	4"	SK120W3FB01A1	101.38	(2575)	1000	(455)	SK120W4PB01A1	101.38	(2575)	1010	(459)	
		6"	SK120W3FC01A1	103.19	(2621)	1009	(459)	SK120W4PC01A1	103.69	(2634)	1028	(467)	
		8"	SK120W3FD01A1	103.25	(2623)	1025	(466)	SK120W4PD01A1	103.63	(2632)	1052	(478)	
		10"	SK120W3FE01A1	107.25	(2724)	1037	(471)						

**Note:**

RK = Repair Kit

Options & Ordering Information

A variety of bladders are offered to suit a wide range of fluids temperature ranges, and the types of fluids that are generally and operating temperatures. The following table lists the compatible. optional bladders available, their recommended operating

Code	Polymer	**Recommended Operating Temperature Range	Maximum Temperature with Reduced Life	General Application & Compatibility*
01	Buna-Nitrile	-20°F to 200°F -29°C to 93°C	225°F 107°C	Greer's Standard Compound – Compatible with most mineral oil based fluids.
04	Hydrin (Lo-Temp)	-40°F to 225°F -40°C to 107°C	250°F 120°C	Compatible with most mineral oil based fluids with enhanced low temperature performance.
08	Ethylene Propylene	-40°F to 200°F -40°C to 93°C	300°F 149°C	Compatible with some synthetic fluids and water.
28	Fluorocarbon Elastomer	-10°F to 250°F -23°C to 121°C	400°F 204°C	Compatible with most mineral oil based fluids at higher temperatures and some exotic fluids.

**Note:**

\*Consult your local Greer distributor or the factory for fluid compatibility information. Temperature ranges may vary depending upon the fluid used in the hydraulic system.

\*\* The temperatures listed indicate the operating temperature range of the seals, not the SurgeKushon. For the Minimum Design Metal Temperature (MDMT) of ASME certified SurgeKushons, please consult the factory.

**Bladder Kits**

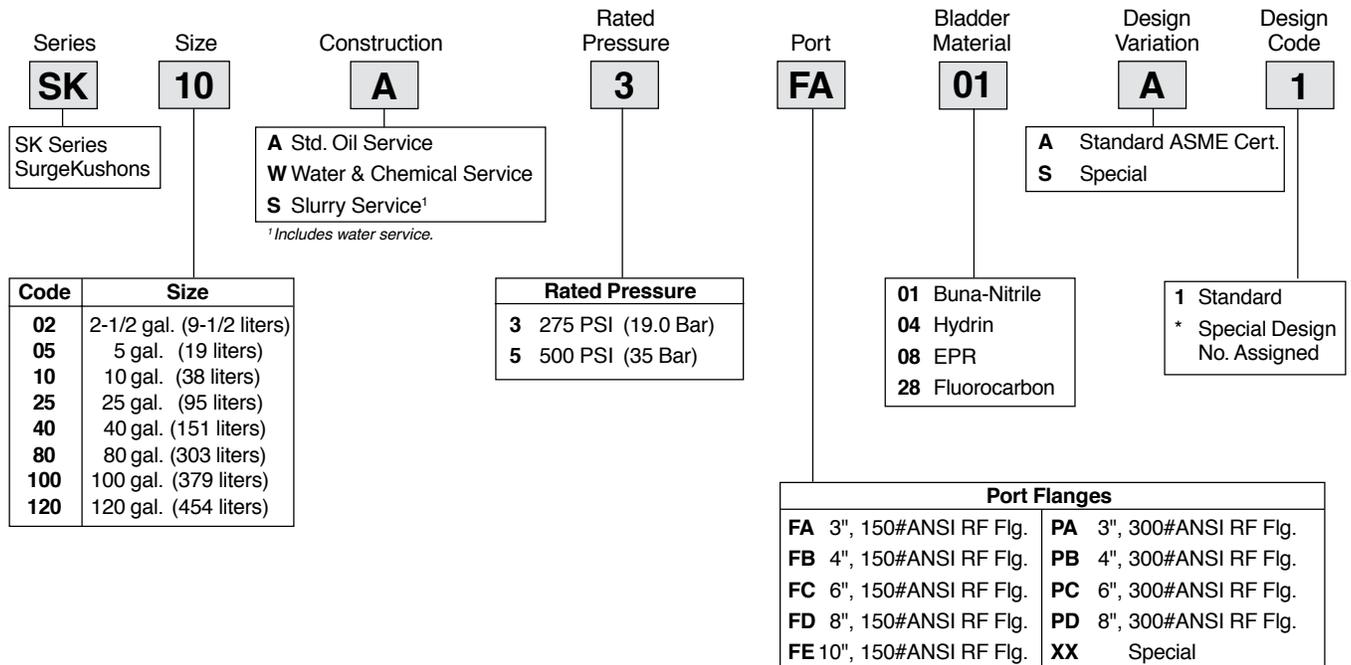
A full range of genuine Greer replacement bladder kits are available to bring your SurgeKushon back to original condition should replacement become necessary. All bladder kits include port o-ring and back-up seals and gas valves with secondary seals. (Consult factory for SurgeKushon repair kit numbers).

**Water & Chemical Service Option**

Standard SurgeKushons are manufactured from carbon steel and are intended for oil or non-corrosive fluid service. For water or corrosive fluid service, the Water & Chemical Service option should be specified. With this corrosive resistant option, all parts that come into contact with the system fluid are made from 300 series stainless steel or have a Skotchkote 134® coating.

**How to Order SurgeKushons**

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



SurgeKushons

**Notes**

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