CATALOG
BLADDER ACCUMULATORS

About
A hydraulic bladder accumulator is the hydraulic equivalent of a spring in that it stores energy and dampens an impulse or force. This energy is stored as an incompressible, high pressure hydraulic fluid using compressible nitrogen gas in an elastomeric bladder enclosed in a high strength steel pressure vessel. The nitrogen gas is precharged to a percentage of the maximum desired hydraulic pressure. As the hydraulic fluid is pumped into the accumulator, the nitrogen gas compresses as pressure is increased. Upon demand from the hydraulic system, the stored hydraulic power in the accumulator is automatically discharged to supplement loss in energy or to absorb dramatic shocks within the circuit.

Applications
Energy & Pump Maintenance Savings:
Reduction of pump capacity requirements which provide long term energy savings and lower pump maintenance costs.

Surge Control & Shock Absorption:
Pulsation dampening and noise reduction caused by pumps and “water hammer”.

Eliminate Sudden Pressure Drops:
Maintain constant pressure on a hydraulic control system (such as a press line) where multiple presses are opened and closed at different times.

Thermal Expansion:
Compensates for pressure variations caused by temperature changes within a hydraulic circuit.

Emergency Back-Up & Safety Failsafe:
Provides stored fluid power for operation of hydraulic equipment power failure.

Features
- Over 60 years of proven reliability.
- Cannot be disassembled under pressure.
- Interchangeable with accumulators from other manufacturers.
- Standard rubber compounds are Nitrile or Cold Weather Nitrile.
- Shells are manufactured from chrome-moly steel, seamless non-welded, pressure tested to 1.5 times working pressure and ASME U-1A certified after third party witness. Offered in bottom load and top repairable configurations.
- Standard fluid ports are available in NPT, SAE, Code 61, and Code 62. All ports are machined from alloy steel and coated for corrosion prevention. Other port types and materials are offered by special order.

Configuration Notes
Coating: STANDARD—Black primer exterior, oiled interior
EPOXY PAINT—Epoxy painted exterior
PHENOLIC—Interior coating, shell only
WATER SERVICE—Phenolic interior, SS fluid port, SS/nitrile anti-extrusion ring
Rated Pressure:
3000 & 5000 psi
per ASME B&PV Code Sect VIII Div1
4000 & 6000 psi
per ASME B&PV Code Sect VIII Div 1 App 22

Service:	**Peak Range °F (°C)**	**Optimal Range °F (°C)**
Standard	-10 to 220 (-23 to 104)	35 to 160 (2 to 71)
Cold Weather	-60 to 200 (-51 to 93)	-25 to 145 (-31 to 62)
Low Temp	-80 to 200 (-62 to 93)	-45 to 145 (-42 to 62)

Sizes Gal	Rated Pressure	Shell	Port Size	Port Type	Service	Coating
1 Pt **1Qt**	**3** 3000 **4** 4000 **5** 5000[1] **6** 6000[1]	**B1** Bottom Load-Non ASME **B2** Bottom Load-ASME	**1** 3/4" **2** #16 **3** 1”	**N** NPT **S** SAE **C** Code 61[1]	**S** Standard **C** Cold Weather	**1** Standard **2** Epoxy Painted **3** Phenolic Interior **4** Water Service
1	**3** 3000 **5** 5000 **6** 6000	**B** Bottom Load **P** Piston	**1** 1-1/4" **2** #20 **3** 1”	**N** NPT **S** SAE **C** Code 61	**S** Standard **C** Cold Weather **L** Low Temp **G** Gas Bottle	**1** Standard **2** Epoxy Painted **3** Phenolic Interior **4** Water Service
2.5	**3** 3000 **5** 5000 **6** 6000 **10** 10000	**B** Bottom Load **T** Top Repairable **P** Piston	**1** 1-1/4" **2** #24 **3** 2" **4** #16	**N** NPT **S** SAE **C** Code 61 **D** Code 62	**S** Standard **C** Cold Weather **H** High Cycle **L** Low Temp **G** Gas Bottle	**1** Standard **2** Epoxy Painted **3** Phenolic Interior **4** Water Service
5 **10** **11** **15**	**3** 3000 **5** 5000 **6** 6000 **10** 10000	**B** Bottom Load **T** Top Repairable **P** Piston	**1** 1-1/4" **2** #24 **3** 2"	**N** NPT **S** SAE **C** Code 61 **D** Code 62	**S** Standard **C** Cold Weather **L** Low Temp **G** Gas Bottle	**1** Standard **2** Epoxy Painted **3** Phenolic Interior **4** Water Service

Notes: *[1]Excludes 1 Pt. option*

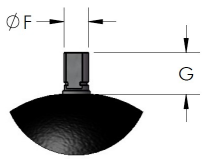
PACSEAL HYDRAULICS, INC.
Tel: 714-529-9495 Fax: 714-529-1366 561 Tamarack Ave, Brea CA USA www.pacsealhydraulics.com

3000 psi Accumulators - Dimensions and Weight

Nominal Size (gal)	Fluid Capacity, Gal. *Liter*	Gas Capacity, cu. in *cc*	A1,in. *cm*	A2, in. *cm*	B, in. *cm*	C, in. *cm*	D, in. *cm*	Bottom Load E1, in. *cm*	Bottom Load Wt., lb. *kg*	Top Repairable E2, in *cm*	Top Repairable Wt., lb. *kg*
0.12 (1 Pt.)	0.12 *0.45*	28 454	9.9 *25.1*	N/A	1.9 *4.8*	3.5 *8.9*	1.4 *3.6*	1.5 *3.8*	6.0 *2.7*	N/A	N/A
0.25 (1 Qt.)	0.25 *0.95*	58 946	12.0 *30.5*	N/A	2.1 *5.3*	4.5 *11.4*	1.4 *3.6*	2.8 *7.1*	10.0 *4.5*	N/A	N/A
1	1 *4*	235 3851	17.0 *43.2*	N/A	3.5 *8.9*	6.7 *17.0*	2.4 *6.1*	2.4 *6.1*	32.0 *14.5*	N/A	N/A
2.5	2.5 *10*	600 9832	21.0 *53.3*	20.0 *50.8*	3.5 *8.9*	9.0 *22.9*	3.0 *7.6*	2.4 *6.1*	76.0 *34.5*	1.4 *3.6*	78.0 *35.4*
5	5 *19*	1,203 19,713	33.0 *83.8*	32.3 *82.0*	3.5 *8.9*	9.0 *22.9*	3.0 *7.6*	2.4 *6.1*	116.0 *52.6*	1.4 *3.6*	118.0 *53.5*
10	10 *38*	2,259 37,018	54.0 *137.2*	53.0 *134.6*	3.5 *8.9*	9.0 *22.9*	3.0 *7.6*	2.4 *6.1*	212.0 *96.2*	1.4 *3.6*	214.0 *97.1*
11	11 *42*	2,535 41,541	60.0 *152.4*	58.5 *148.6*	3.5 *8.9*	9.0 *22.9*	3.0 *7.6*	2.4 *6.1*	230.0 *104.3*	1.4 *3.6*	232.0 *105.2*
15	15 *57*	3,440 56,372	78.0 *198.1*	76.5 *194.3*	3.5 *8.9*	9.0 *22.9*	3.0 *7.6*	2.4 *6.1*	296.0 *134.3*	1.4 *3.6*	298.0 *135.2*

Bladder Stem Dimensions

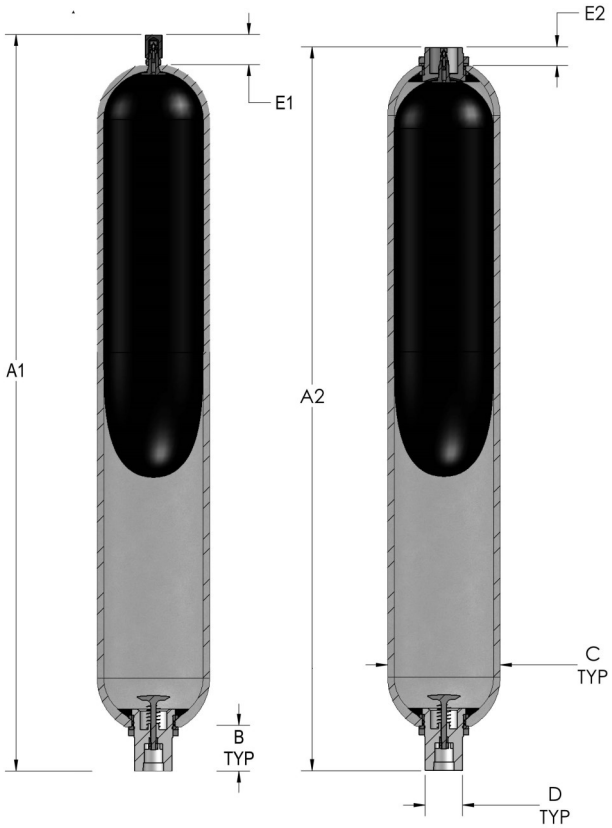
Pressure Rating [psi]	Ø F [in.]	G [in.]
3000	7/8	1.4



Bladder Stem Detail View

Fluid Port Size	1-1/4" NPT	2" NPT	SAE 24	Code 61 Flange
Plug Body	AISI 4130 or 4140		AISI 4130 or 316 SS	
Top Plug Body	AISI 4130 or 4140			
Bladder Material	BUNA-N 35 to 160 °F (2 to 71 °C)	BUNA-N Cold Weather -25 to 145 °F (-31 to 62 °C)	BUNA-N Low Temp -45 to 145 °F (-42 to 62 °C)	
Gas Valve Body	Stainless Steel			
Bladder Stem	Carbon Steel			
Shell Material	Chrome Moly SA372 Grade E Class 70			

Manufactured and tested per ASME Section VIII Div. I Boiler and Pressure Vessel Code, U-1A Certification. Optional certifications include DNV, ABS, CE, or CRN.

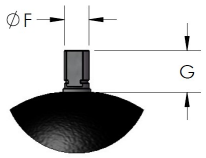


5000 psi Accumulators - Dimensions and Weight

Nominal Size (gal)	Fluid Capacity, Gal. / *Liter*	Gas Capacity, cu. in / *cc*	A1,in. / *cm*	A2, in. / *cm*	B, in. / *cm*	C, in. / *cm*	D, in. / *cm*	Bottom Load E1, in. / *cm*	Bottom Load Wt., lb. / *kg*	Top Repairable E2, in / *cm*	Top Repairable Wt., lb. / *kg*
0.25 (1 Qt.)	0.25 *0.95*	58 946	12.0 *30.5*	N/A	2.1 *5.3*	4.7 *11.9*	1.4 *3.6*	2.3 *5.8*	10.0 *4.5*	N/A	N/A
1	1 *4*	235 3851	18.0 *45.7*	N/A	3.5 *8.9*	7.2 *18.3*	2.4 *6.1*	2.4 *6.1*	36.0 *16.3*	N/A	N/A
2.5	2.5 *10*	600 9832	22.0 *55.9*	21.0 *53.3*	3.9 *9.9*	9.6 *24.4*	3.0 *7.6*	2.4 *6.1*	118.0 *53.5*	1.4 *3.6*	78.0 *35.4*
5	5 *19*	1,203 19,713	34.0 *86.4*	33.0 *83.8*	3.9 *9.9*	9.6 *24.4*	3.0 *7.6*	2.4 *6.1*	198.0 *89.8*	1.4 *3.6*	118.0 *53.5*
10	10 *38*	2,259 37,018	55.0 *139.7*	54.0 *137.2*	3.9 *9.9*	9.6 *24.4*	3.0 *7.6*	2.4 *6.1*	308.0 *139.7*	1.4 *3.6*	214.0 *97.1*
15	15 *57*	3,440 56,372	79.0 *200.7*	78.0 *198.1*	3.9 *9.9*	9.6 *24.4*	3.0 *7.6*	2.4 *6.1*	468.0 *212.3*	1.4 *3.6*	298.0 *135.2*

Bladder Stem Dimensions

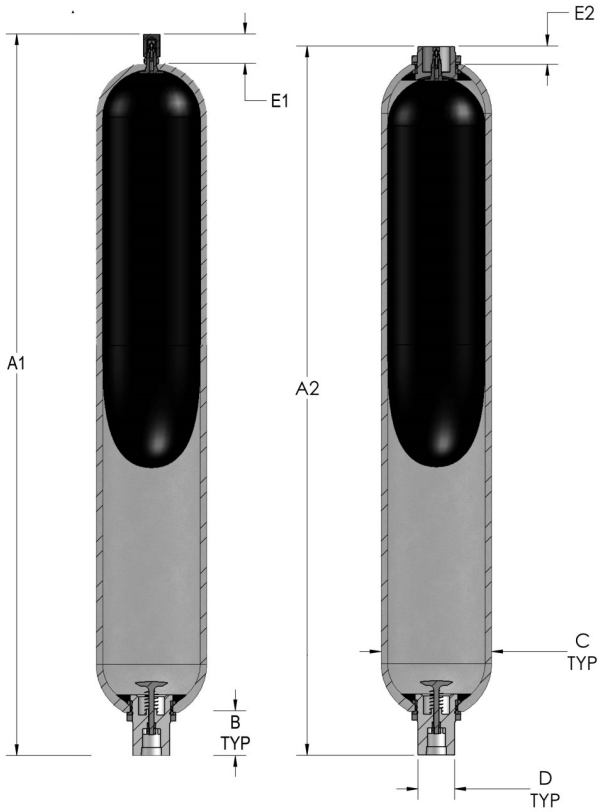
Pressure Rating [psi]	Ø F [in.]	G [in.]
5000/6000	7/8	2
5000/6000	2	2



Bladder Stem Detail View

Fluid Port Size	1-1/4” NPT	2” NPT	SAE 24 Code 62 Flange
Plug Body	AISI 4130 or 4140	AISI 4130 or 316 SS	
Top Plug Body	AISI 4130 or 4140		
Bladder Material	BUNA-N 35 to 160 °F (2 to 71 °C)	BUNA-N Cold Weather -25 to 145 °F (-31 to 62 °C)	BUNA-N Low Temp -45 to 145 °F (-42 to 62 °C)
Gas Valve Body	Stainless Steel		
Bladder Stem	Carbon Steel		
Shell Material	Chrome Moly SA372 Grade E Class 70		

Manufactured and tested per ASME Section VIII Div. I Boiler and Pressure Vessel Code, U-1A Certification. Optional certifications include DNV, ABS, CE, or CRN.



BLADDER ACCUMULATORS

See Model Number Configurator for Accumulator Assemblies

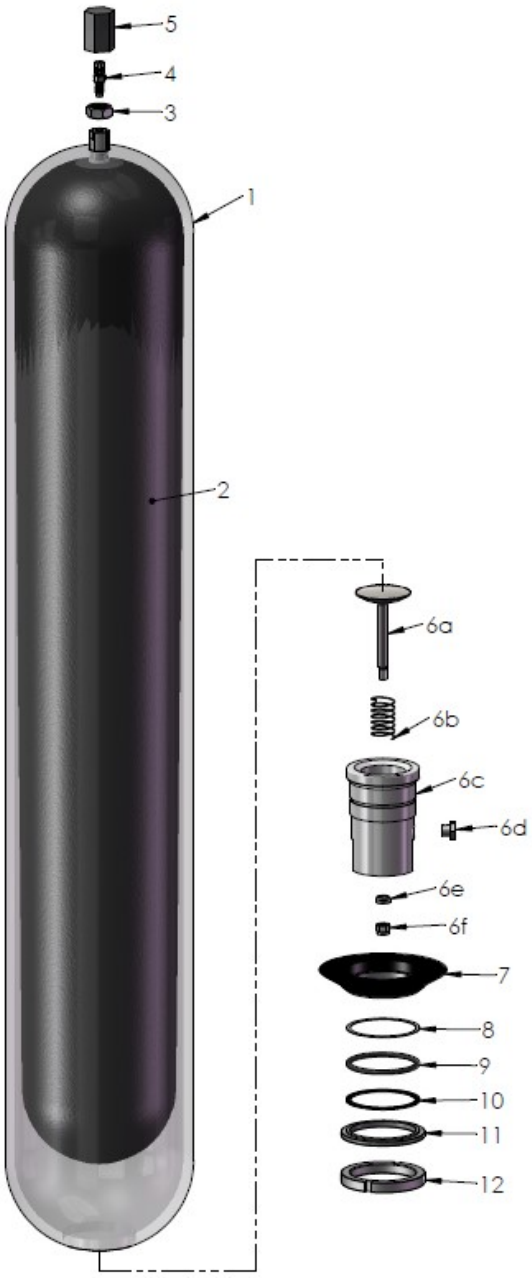
Request a quote through website or contact PacSeal for ordering information.

If you do not see a product for your specific needs, please contact PacSeal and we will do our best to provide a solution.

Bottom Load Accumulators

Item No.	Description	Qty	Kit ID
1	Shell	1	
2	Bladder	1	A
3	Valve Nut	1	
4	Gas Valve Assembly	1	A, B
5	Valve Guard	1	
6	Plug & Poppet Assy	1	C, D
7	Anti-Extrusion Ring	1	D
8	Back-up Washer	1	A, D, E
9	O-Ring	1	A, D, E
10	Backup Ring	1	A, D, E
11	Spacer	1	D
12	Locknut	1	D

Kit Name	Kit ID
Bladder Kit	A
Gas Valve Assembly	B
Plug & Poppet Assembly	C
Port Assembly	D
Port Seal Kit	E



When ordering a Bottom Load Bladder Kit (A), please specify the following:

1. Bladder size: 1 Pt., 1 Qt., 1, 2.5, 5, 10, 11, or 15 Gal.
2. Pressure Rating: 3000, 5000/6000, or 10000 psi
3. Bladder Stem Diameter: 7/8" (3 or 5/6 ksi) or 2" (5/6, or 10 ksi)
4. Bladder Service: Standard, Cold Weather, or Low Temp.
5. Duty Cycle (2.5 Gal. only): Standard or High Cycle

When ordering a Gas Valve Assembly (B), please specify the pressure rating: 3000, 5000/6000, or 10000 psi.

When ordering a Bottom Load Plug & Poppet Assembly (C) or Port Assembly (D), please specify the following:

1. Accumulator size: 1 Pt., 1 Qt., 1, 2.5, 5, 10, 11, or 15 Gal.
2. Port size: 3/4", 1", 1-1/4", 2" NPT, #16, #20, #24 SAE, Code 61, or Code 62
3. Pressure Rating: 3000, 5000/6000, or 10000 psi

When ordering a Port Seal Kit (E), please specify the Accumulator size: 1 Pt., 1 Qt., 1, 2.5, 5, 10, 11, or 15 Gal.

See Model Number Configurator for Accumulator Assemblies

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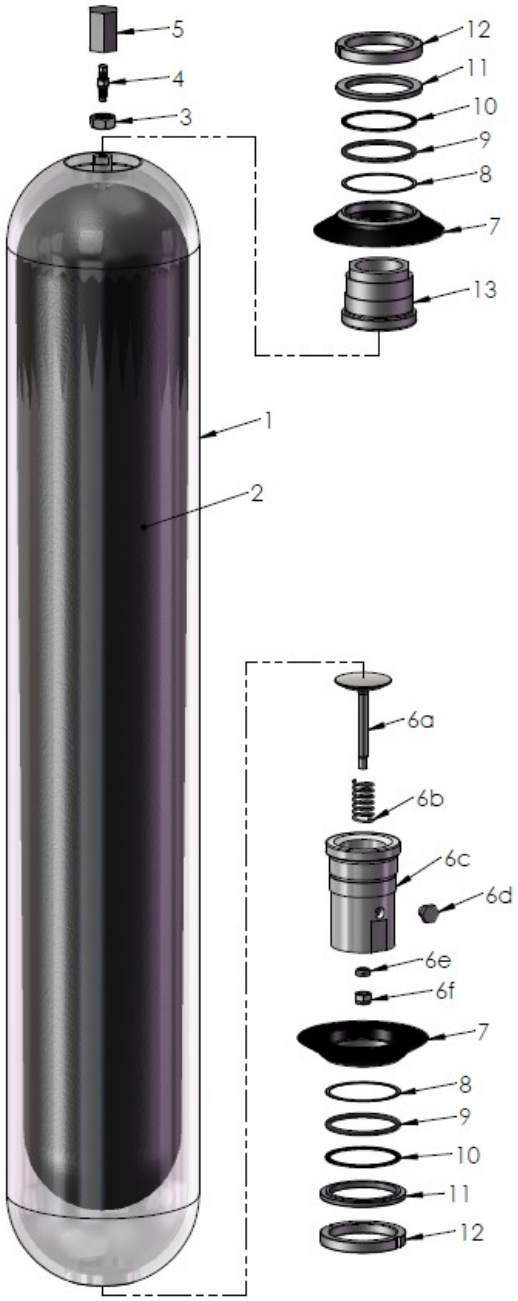
Top Repairable Accumulators

Item No.	Description	Qty	Kit ID
1	Shell	1	
2	Bladder	1	A
3	Valve Nut	1	
4	Gas Valve Assembly	1	A, B
5	Valve Guard	1	
6	Plug & Poppet Assy	1	C, D
7	Anti-Extrusion Ring	2	D
8	Back-up Washer	2	A, D, E
9	O-Ring	2	A, D, E
10	Backup Ring	2	A, D, E
11	Spacer	2	D
12	Locknut	2	D
13	Plug Body	1	D

Kit Name	Kit ID
Bladder Kit	A
Gas Valve Assembly	B
Plug & Poppet Assembly	C
Port Assembly	D
Port Seal Kit	E



When ordering a Top Repairable Bladder Kit (A), please specify the following:

1. Bladder size: 1 Pt., 1 Qt., 1, 2.5, 5, 10, 11, or 15 Gal.
2. Pressure Rating: 3000, 5000/6000, or 10000 psi
3. Bladder Stem Diameter: 7/8" (3 or 5/6 ksi) or 2" (5/6, or 10 ksi)
4. Bladder Service: Standard, Cold Weather, or Low Temp.
5. Duty Cycle (2.5 Gal. only): Standard or High Cycle

When ordering a Gas Valve Assembly (B), please specify the pressure rating: 3000, 5000/6000, or 10000 psi.

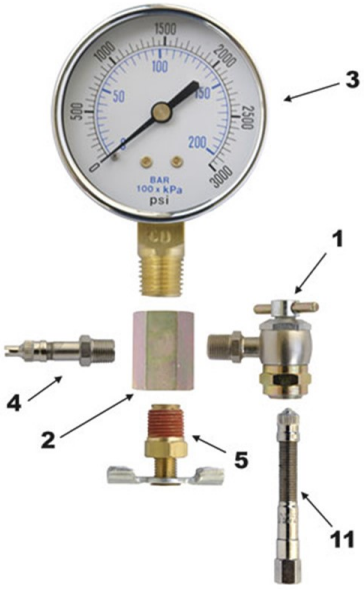
When ordering a Top Repairable Plug & Poppet Assembly (C) or Port Assembly (D), please specify the following:

1. Accumulator size: 1 Pt., 1 Qt., 1, 2.5, 5, 10, 11, or 15 Gal.
2. Port size: 3/4", 1", 1-1/4", 2" NPT, #16, #20, #24 SAE, Code 61, or Code 62
3. Pressure Rating: 3000, 5000/6000, or 10000 psi

When ordering a Port Seal Kit (E), please specify the Accumulator size: 1 Pt., 1 Qt., 1, 2.5, 5, 10, 11, or 15 Gal.

Accessories

ORDER SEPARATELY or by ASSEMBLY			Charging & Gauging Assy	Charging & Gauging Assy Top Repairable	Gauging Head Assy	Gauging Head Assy Top Repairable	Hose Assy
	Part #		**40-1618**	**40-1844**	**40-1828**	**40-1829**	**40-1884**
1	40-0947	Air Chuck	X	X	X	X	
2	40-0654	Adapter	X	X	X	X	
3	40-0985	Gauge, 0-3000 psi	X	X	X	X	
4	50-0292	Tank Valve	X	X	X	X	
5	40-0961	Bleed Valve	X	X	X	X	
6	40-0986	Swivel Connector	X	X			X
7	40-0879	Hose	X	X			X
8	50-0278	Coupler	X	X			X
9	50-0233	Nut	X	X			X
10	50-0234	Gland	X	X			X
11	40-0987	Adapter Top Repairable		X		X	
12	40-2682	Case for Charging Assy	Order separately				



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