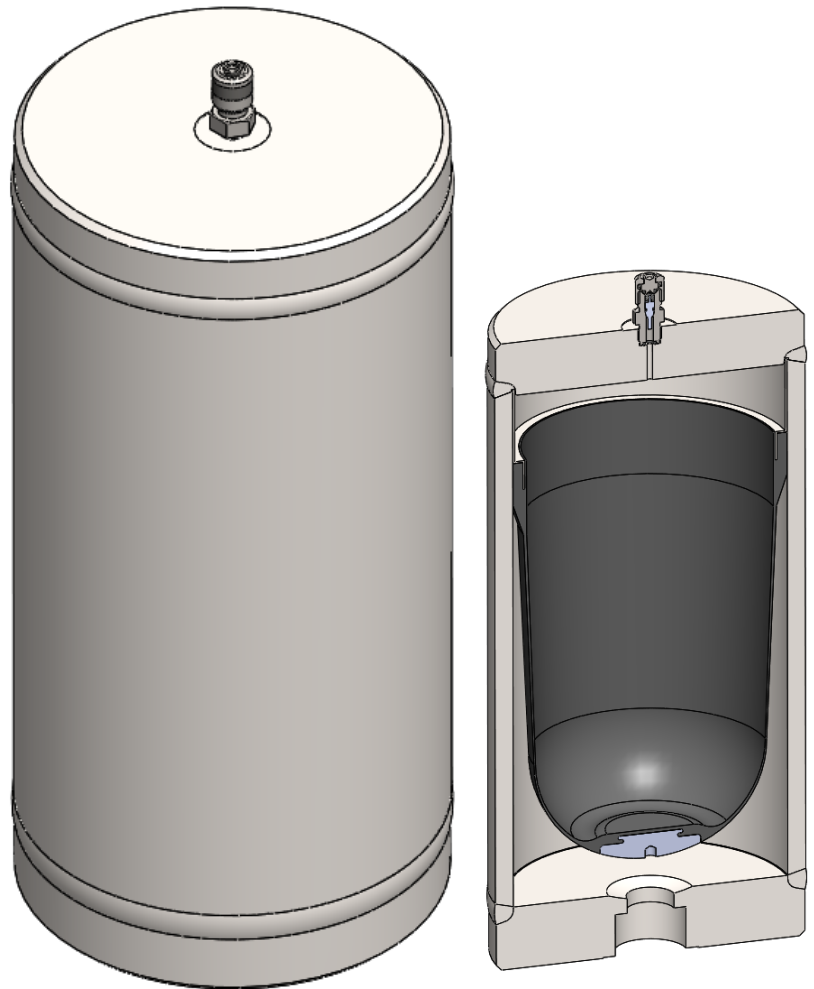




aerospace
climate control
electromechanical
filtration
fluid & gas handling
hydraulics
pneumatics
process control
sealing & shielding



Hydracushion

HCF Series 172 and 210 bar range



ENGINEERING YOUR SUCCESS.

Benefits

Design Features and Benefits

Parker HCF series Hydracushions are non-repairable bladder accumulators that have been specially designed for high volume, low cost applications where it is more economical to replace a unit than to refurbish it after a long service life.

The HCF series incorporates bladder technology within a robust welded shell design. Engineered and manufactured to the highest standards this product offers reliable and optimum performance for your hydraulic system.

1 Shell

1.0 to 4.0 litre capacity - carbon steel tube.
Working Pressure - 172 bar and 210 bar.

2 Label

Self adhesive label to suit model

3 Material Certification

Declaration of Conformity in accordance with the Pressure Equipment Directive.
Design Code: PD5500

4 Finish

One coat primer paint as standard. Special paints available.

5 Bladder

One piece in nitrile rubber, bonded to a steel ring band having a steel button to prevent extrusion through fluid port on nitrogen precharge.

6 Fluid Port Assembly

Integral port, BSPF - see table Capacities and Dimensions Column D.

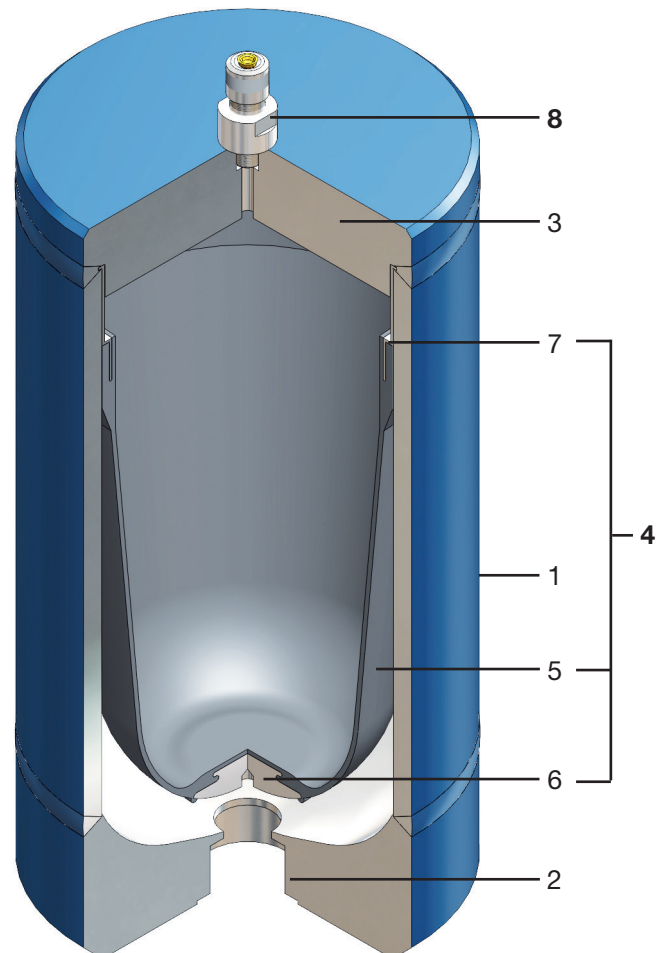
7 Safety

All gas-loaded accumulators are pressurised vessels and it is recommended that safety consideration be given to the application in which they are used. A relief valve should always be fitted to the hydraulic system with the option of a burst disc to protect the accumulator.

8 Pressure Testing

A hydro static pressure test is carried out on all our accumulator shells during the manufacturing process. We can carry out additional pressure testing witnessed by a specified Inspection Authority and/or customer as an optional extra if required.

We can also carry out a hydro-pneumatic pressure test on the complete assembly as an optional extra if required. Again this can be witnessed by a specified inspection authority and/or customer.



1	Shell
2	Fluid Port
3	Head
4	Bladder Assembly
5	Bladder
6	Button
7	Ring Band
8	Gas Valve Assembly includes:- Gas Valve Body Sealing Cap Valve Core 'O' Ring

Markets & Applications

Ideal for mobile

Fork Lift Truck Applications

The table below shows the recommended size of Hydracushions for load shock elimination on fork lift trucks.

Recommended Sizes	
Truck Load (KG)	Hydracushion
up to 1360	0.5 Litre
1360 to 3628	1 Litre
3628 to 5450	2 Litre
5450 upwards	4 Litre



Main Features

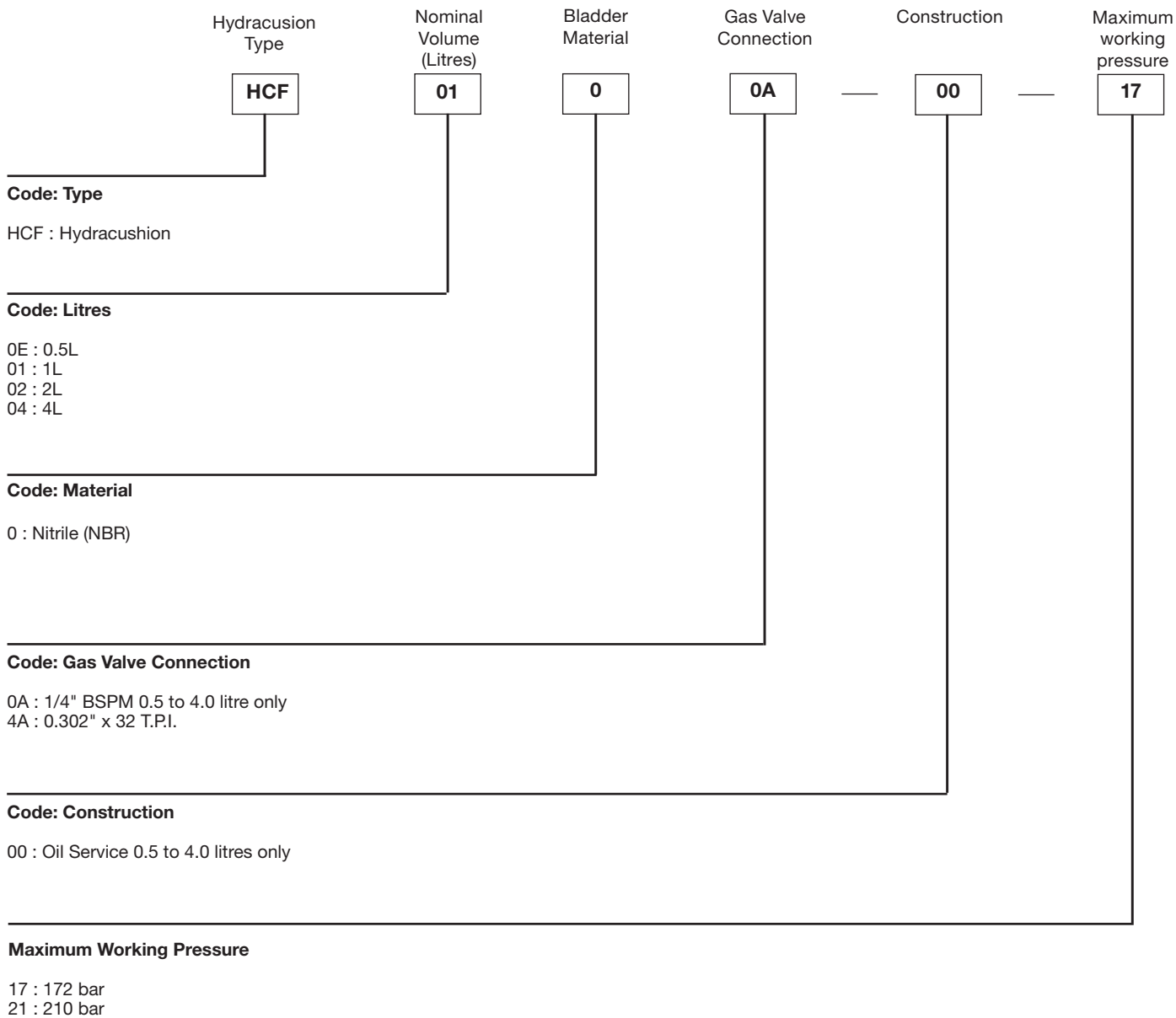
	Hydracushions
Maximum Pressure	172 and 210 bar
Maximum Volume	4 Litres
Maximum Flow Rate	(470 Litres/min)
Maintenance	Non-repairable

Accessories

A complete range of accumulator accessories is available for the HCF Hydracushion series (please see page 6 for more information).



Hydracushions: How to order



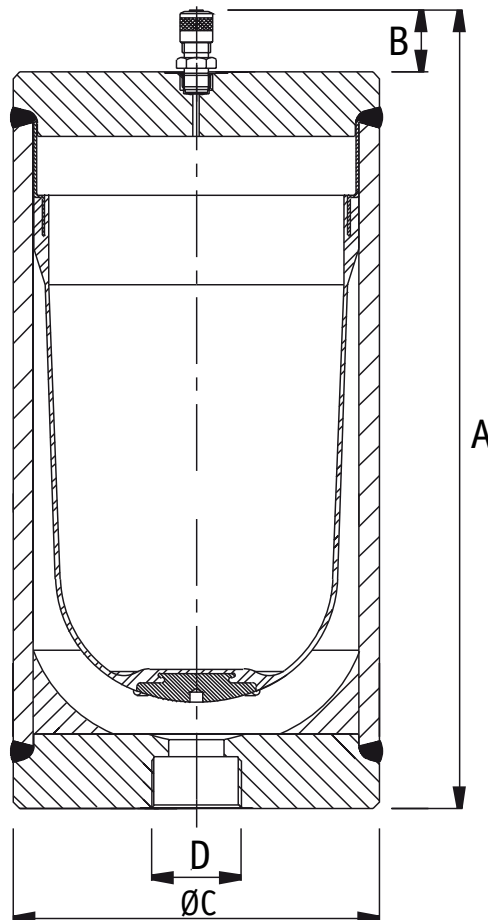
Capacities & Dimensions

Maximum Working Pressure 172 bar

Part Number	Gas Volume (litres)	Approx. Weight (kg)	Max. Flow Rate (litre/min)	Dimensions in mm unless stated otherwise and subject to manufacturer's tolerances			
				A	B	C	D
HCF0E00A-00-17	0.5	3	159	190	30	95	1/2" BSPF
HCF0100A-00-17	1.0	10	204	230	30	120	3/4" BSPF
HCF0200A-00-17	2.0	16	363	282	30	145	1" BSPF
HCF0400A-00-17	4.0	23	470	345	30	172	1 1/4" BSPF

Maximum Working Pressure 210 bar

Part Number	Gas Volume (litres)	Approx. Weight (kg)	Max. Flow Rate (litre/min)	Dimensions in mm unless stated otherwise and subject to manufacturer's tolerances			
				A	B	C	D
HCF0E00A-00-21	0.5	3	159	190	30	95	1/2" BSPF
HCF0100A-00-21	1.0	10	204	230	30	120	3/4" BSPF
HCF0200A-00-21	2.0	16	363	282	30	145	1" BSPF
HCF0400A-00-21	4.0	23	470	345	30	172	1 1/4" BSPF



Accessories for Stainless Steel Range

Charging Sets

A charging set is an indispensable instrument for the verification, pressurization and nitrogen bleeding of most of the hydraulic accumulators available on the market. To use this unit, it is screwed on the gas charging valve of the accumulator and connected via a high pressure hose to the nitrogen source, equipped with a pressure regulator. If only the nitrogen pressure is to be controlled or reduced, this hose is not necessary.

Charging Sets (no case)

Specification

Part Number

10503 Composing:

- Carbon steel body
- Hose including fixed nitrogen adaptor (5/8" BSP Male)
- Bleed valve
- Pressure gauge
- Connection: 1/4" BSP male coned to suit hose assembly



Charging Hose: 11774
Maximum Working Pressure: 345 Bar
End Termination: 5/8" BSP male bullnose
Length: 2.5 metres



For assembly **WITHOUT** hose, part numbers become 10500-02, 10500-03 etc.

Charging Kits (with case)

Specification

Universal Charging Set:

10691-XX Composing:

- Charging set body
- Pressure Gauge (refer to table below)
- 1 x Charging Hose (refer to table below)



Charging Hose: 50096-099
Maximum Working Pressure: 345 Bar
End Termination: 1/4" BSP female swivel
Length: 2.5 metres



Charging Hose: 54248-099
Maximum Working Pressure: 690 Bar
End Termination: 1/4" BSP female swivel
Length: 2.5 metres



Part No	Pressure Range (bar)	Charging Set Contents		
		Pressure Gauge(s)		Charging Hose
		Pressure (bar)	Part No	
10500-02	0-25	0-25	45053-099	n/a
10500-03	0-60	0-60	45084-099	n/a
10500-04	0-160	0-160	45085-099	n/a
10500-05	0-250	0-250	45086-099	n/a
10500-07	0-400	0-400	45087-099	n/a
10503-02	0-25	0-25	45053-099	11774
10503-03	0-60	0-60	45084-099	11774
10503-04	0-160	0-160	45085-099	11774
10503-05	0-250	0-250	45086-099	11774
10503-07	0-400	0-400	45087-099	11774
10520-10	0-690	0-1000	45140-099	n/a
10523-10	0-690	0-1000	45140-099	55354-099

Part No	Pressure Range (bar)	Set/ Kit Contents			
		Pressure Gauge(s)		Charging Hose	Case
		Pressure (bar)	Part No		
10690-02	0-25	0-25	45053-099	50096-099	43183
10690-03	0-60	0-60	45084-099	50096-099	43183
10690-04	0-160	0-160	45085-099	50096-099	43183
10690-05	0-250	0-250	45086-099	50096-099	43183
10690-07	0-400	0-400	45087-099	50096-099	43183

10691-02	0-25	0-25	45053-099	11774	43183
10691-03	0-60	0-60	45084-099	11774	43183
10691-04	0-160	0-160	45085-099	11774	43183
10691-05	0-250	0-250	45086-099	11774	43183
10691-07	0-400	0-400	45087-099	11774	43183

10520-10	0-690	0-1000	45140-099	n/a	n/a
10693-10	0-690	0-1000	45140-099	54248-099	n/a
10694-10	0-690	0-1000	45140-099	n/a	43183
10692-10	0-690	0-1000	45140-099	54248-099	43183

Optional Extras

Country	Part No.	Description
UK	50094-099	Nitrogen Cylinder Adaptor 1/4" BSP (M) x 5/8" BSP (M)
	50096-099	Charging Hose 1/4" BSP (F) 345 bar x 2.5m long 1/4" both ends
	50097-099	Extension Adaptor for Charging Hose 345 bar
	55354-099	Charging Hose 1/4" BSP (F) 690B x 2.5m long
Accessories	50032-V10	Charging Hose Adaptor 1/4" BSP (M) x 1/4" NPT (F)
	43183	Charging Set Carrier Box
	10127	Charging Block Elbow 1/4" BSP (M)
	10128	Charging Block Elbow .302" x 32 TPI (M)
	11015	Tool Kit

How to size

Accumulator Sizing Software

Parker has developed very sophisticated simulation software to optimize sizing recommendations for bladder accumulators. The behaviour of accumulators used in applications such as pulsation dampening, surge alleviation, thermal expansion and energy storage can be simulated. Our software can be downloaded from our website: www.parker.com/ACDE.

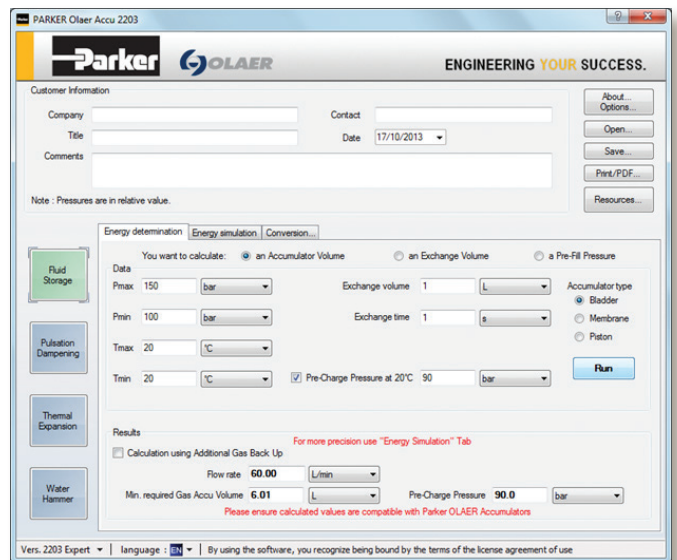
You may also contact your local Parker office for sizing assistance.

Calculating Accumulator Size

Accurate calculation of accumulator size requires many factors to be considered, for example;

- working volume of fluid,
- ambient and maximum operating temperatures,
- working pressure range etc.

In addition, correction factors must be applied to allow for temperature compensation between the ambient and gas temperatures, and the consequent effect on precharge pressure in the accumulator. Where the working cycle is sufficiently rapid that no heat transfer takes place, the process is termed adiabatic. Conversely, where the process takes place at a constant temperature, it is termed isothermal.



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US Product Information Centre

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