



## Bladder Accumulators Oil & Gas

207 bar to 420 bar range

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



ENGINEERING YOUR SUCCESS.

## Design Features and Benefits

### 1 Shell

Forged seamless chrome molybdenum steel, designed and manufactured to PED 97/23/EEC and CE marked. Working pressure 207, 310, 345 and 420 bar.

### 2 Label

With assembly specification and installation details.

### 3 Material Certification

Available on request for all major pressure loaded parts to EN 10204 3.1

### 4 Finish

One coat primer paint as standard. Special paints available.

### 5 Bladder

Totally enclosed construction with an extensive range of elastomers available. See page 5 for Bladder details.

### 6 Fluid Port Assembly

Integral high-flow port and poppet valve assembly with an anti-extrusion ring. For options see page 3.

### 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. See Installation and Servicing data sheet for information regarding installation of accumulators.

### 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.

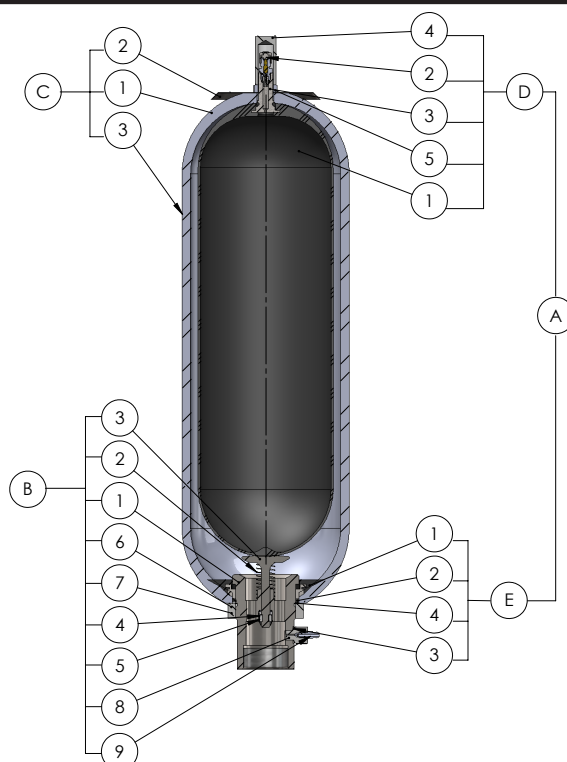
We can also carry out a hydro-pneumatic pressure test on the complete assembly as an optional extra if required. Again this can be witnessed by a specified inspection authority and/or customer.

### 9 Accessories

A complete range of accumulator accessories are available from Parker Olaer.

### 10 Spare Parts

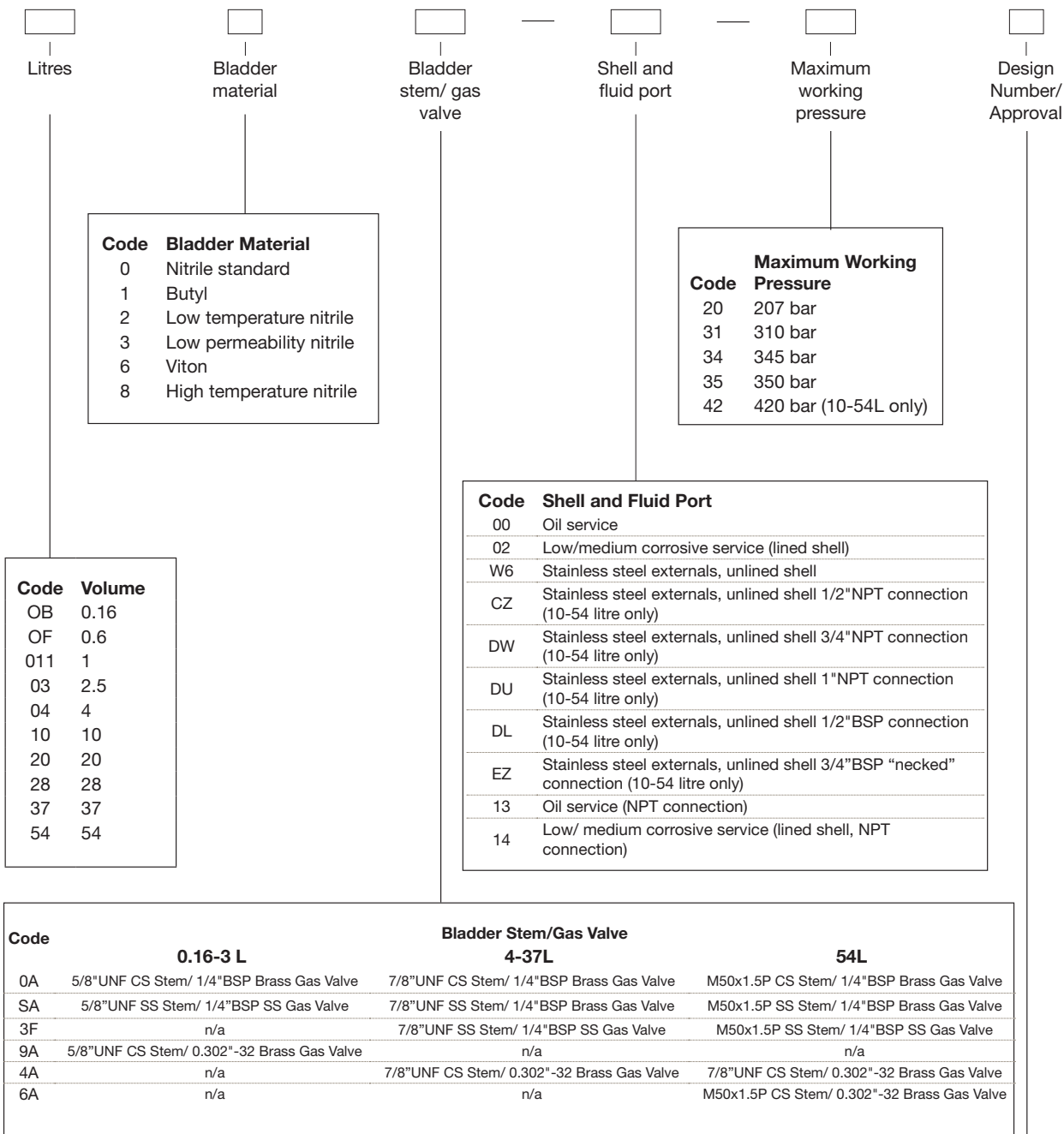
Available on request.



A	Bladder Kit comprising:
D	Bladder assembly
D1	Bladder
D2	Gas valve assembly
D3	Locknut
D4	Protective cap
D5	'O' ring stem
E	Anti extrusion ring assembly
E1	Anti extrusion ring
E2	'O' ring fluid port
E3	Bonded seal*
E4	Back-up ring
B	Fluid port assembly comprising
B1	Fluid port body
B2	Spring
B3	Poppet valve
B4	Collett
B5	Piston
B6	Flanged washer
B7	Locking ring
B8	Bleed adaptor*
B9	Bleed valve*
C	Shell assembly comprising:
C1	Shell
C2	Label
C3	Label warning

Note: Models 1/54 litres detailed above. Models 0.6 litres have Gas Valve assembly integral with bladder stem without protective cap fitted. \* Not fitted on all models

**Please Note:** The information in this datasheet is subject to change without prior notice.


**Example: 0400A-00-341**

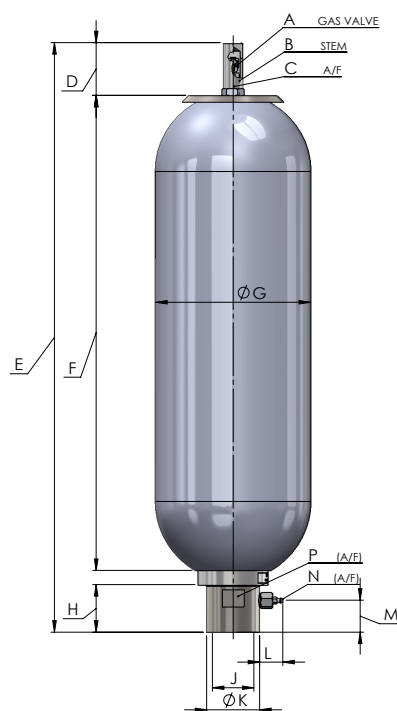
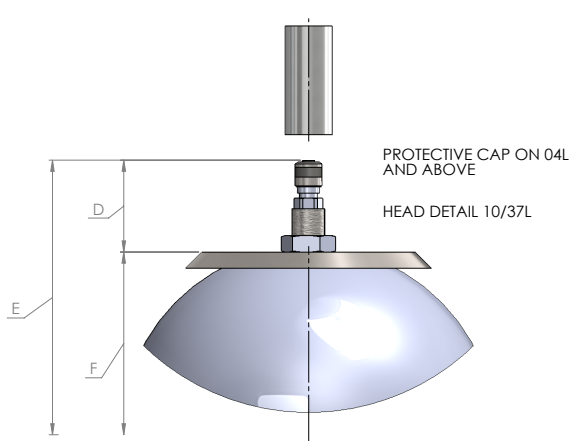
<b>Litres:</b>	04
<b>Bladder Material:</b>	Nitrile Standard
<b>Bladder Stem/ Gas Valve:</b>	7/8" UNF/1/4" BSPM
<b>Shell &amp; Fluid Port:</b>	Oil Service
<b>Maximum working pressure:</b>	345 bar
<b>Design Number/Approval:</b>	Lloyds/CE Approval

Code	Design Standard/ Authority Approval
1	Lloyds/CE

**Dimensions**
**Capacities and Dimensions**

Nominal Capacity Litres	Effective Gas vol. Litres	Work press. bar	Max Flow Rate lt/min	Weight Dry Kilo	Dimensions in mm unless stated otherwise and subject to manufacturer's tolerances													
					A Inches	B Inches	C	D	E	F	G	H	J Inches	K	L	M	N	P
OB	0.16	345	27	2.00	¼ BSP	5/8 UNF	24	40	292	205	55	36	½ BSPF	26	-	-	-	23
OF	0.60	345	109	2.70	¼ BSP	5/8 UNF	24	40	266	175	90	37	¾ BSPF	35	-	-	-	32
011	1.15	207	109	5.4	¼ BSP	5/8 UNF	24	40	292	200	115	37	¾ BSPF	35	-	-	-	32
011	1.15	345	109	5.7	¼ BSP	5/8 UNF	23	40	292	200	115	37	¾ BSPF	35	-	-	-	32
03	2.5	345	215	10.00	¼ BSP	5/8 UNF	23	40	506	402	115	49	1 BSPF	44	5	32	15	41
04	3.8	207	477	15.20	¼ BSP	7/8 UNF	33	78	455	289	169	74	1 ¼ BSPF	60	36	39	9	55
04	3.8	345	477	15.20	¼ BSP	7/8 UNF	33	78	455	289	169	74	1 ¼ BSPF	60	36	39	9	55
10	9.4	207	749	35.00	¼ BSP	7/8 UNF	33	78	575	407	219	70	2 BSPF	76	36	46	9	69
10	9.4	310	749	35.00	¼ BSP	7/8 UNF	33	78	575	407	219	70	2 BSPF	76	36	46	9	69
10	9.4	345	749	35.00	¼ BSP	7/8 UNF	33	78	575	407	221	70	2 BSPF	76	36	46	9	69
10	9.4	420	749	34.00	¼ BSP	7/8 UNF	33	78	575	407	229	70	2 BSPF	76	36	46	9	69
20	18.8	207	749	55.00	¼ BSP	7/8 UNF	33	78	886	718	219	70	2 BSPF	76	36	46	9	69
20	18.8	310	749	55.00	¼ BSP	7/8 UNF	33	78	886	718	219	70	2 BSPF	76	36	46	9	69
20	18.8	345	749	55.00	¼ BSP	7/8 UNF	33	78	886	718	221	70	2 BSPF	76	36	46	9	69
20	18.8	420	749	54.00	¼ BSP	7/8 UNF	33	78	886	718	229	70	2 BSPF	76	36	46	9	69
28	25.8	207	749	61.00	¼ BSP	7/8 UNF	33	78	1158	990	221	70	2 BSPF	76	36	46	9	69
28	25.8	345	749	61.00	¼ BSP	7/8 UNF	33	78	1158	990	221	70	2 BSPF	76	36	46	9	69
37	35.2	207	749	91.00	¼ BSP	7/8 UNF	33	78	1407	1239	219	70	2 BSPF	76	36	46	9	69
37	35.2	310	749	91.00	¼ BSP	7/8 UNF	33	78	1407	1239	219	70	2 BSPF	76	36	46	9	69
37	35.2	345	749	91.00	¼ BSP	7/8 UNF	33	78	1407	1239	221	70	2 BSPF	76	36	46	9	69
37	35.2	420	749	86.00	¼ BSP	7/8 UNF	33	78	1407	1239	229	70	2 BSPF	76	36	46	9	69
54	49.2	207	749	130.00	¼ BSP	M50x 1.5	69	66	1922	1766	219	70	2 BSPF	76	36	46	9	69
54	49.2	310	749	130.00	¼ BSP	M50x 1.5	69	66	1922	1766	219	70	2 BSPF	76	36	46	9	69
54	49.2	345	749	130.00	¼ BSP	M50x 1.5	69	66	1922	1766	221	70	2 BSPF	76	36	46	9	69
54	49.2	420	749	119.00	¼ BSP	M50x 1.5	69	66	1922	1766	229	70	2 BSPF	76	36	46	9	69

Note: Dimensions are based on current stock and are subject to change without prior notice.



# Accessories

## Safety Blocks



### Carbon Steel Safety Block (345 bar)

**Materials:** Carbon steel. All blocks are fully tested.

**Seals:** Nitrile fitted as standard. Viton and other options also available.

**Connections :**

- Pressure gauge connection (M port).
- Wide range of adaptors for accumulator connection.
- All G threads (BSP) to BS2779 1986. Performance data available.

**Other:**

- Pressure relief valve for the protection of accumulator.
- Manual dump to tank valve as standard.
- Optional additional electromagnetic dump to tank valve.

### Stainless Steel Safety Block (345 bar & 690 bar)



**Materials:** 316 Stainless steel. All blocks are fully tested.

**Seals:** Nitrile fitted as standard. Viton and other options also available.

**Connections:**

- Pressure gauge connection (M port).
- Wide range of adaptors for accumulator connection.
- All G threads (BSP) to BS2779 1986.
- For 760 bar only - All NPT to ANSI/ASME B.1.20.1 1983
- Performance data available.

**Other:**

- Pressure relief valve for the protection of accumulator.
- Manual dump to tank valve as standard.

## Burst Discs and Permanent Charging Heads

Parker Olaer burst disc assemblies and/or permanent charging heads are available for most accumulators. For the Oil & Gas range of accumulators, we use a specially designed stainless steel adaptor which can be filled with gas volume, burst disc and pressure gauge in numerous combinations.



Burst discs are a safety device which releases the gas pressure independent of the pressure being caused by a fire or a failure of other safety equipment in the system. This is a secondary safety device, and it should be set higher than the normal hydraulic safety devices in the system.

## Bladder Details

### Bladder Kit

Comprises of:

- Bladder assembly (bladder, integral stem, gas valve, protective cap\*, stem 'O' seal)
- Anti-extrusion ring
- 'O' fluid port ring
- Back-up ring
- Seal and bleed plug\*

\*4 Litres capacity and above

Always quote full part number e.g. 5410A-00 54L, capacity, Butyl Rubber, 1/4" BSP.

### Material According to Temperature Range

Material Code	Bladder Material	Temperature Range (°C)			
		Static		Dynamic	
0	Nitrile	-20	100	-15	100
1	Butyl	-15	120	-15	120
2	Low Temp Nitrile	-40	70	-25	70
3	Low Permeability Nitrile	0	105		
6	Fluorocarbon (Viton)	-20	130		
7	High Aromatic Nitrile	0	105		
8	High Temp Nitrile	0	150		
9	EPI - Chlorohydrin 100	-20	120		
A	Ethylene Propylene (EP)	-20	120		
B	EPI - Chlorohydrin 200	-40	120		
K	Special Low Temp Nitrile	-79	100	-59	100
L	Peroxide Cured EPDM	Please contact us for details			
M	High Temperature Fluorocarbon	-10	200		
N	Low Temp Nitrile	-45	70		

Note: Models 1/54 litres detailed above. Models 0.6 litres have Gas Valve assembly integral with bladder stem without protective cap fitted. \* Not fitted on all models

### Bladder Capacity / Overall Dimensions

Accumulator Capacity (L) Nominal	Dimension				
	H	D	5/8" (16mm)	7/8" (22mm)	2" (50mm)
0.16	154	41	•		
0.6	132	73	•		
1.15 (1.25)	147	91	•	•	
3	335	100	•	•	
4	203	142		•	
5	680	100		•	
6	305	142		•	
9 (10)	570	142		•	
12.5	655	142		•	
10	283	198		•	•
12	406	198			•
20	610	198		•	•
24.5	719	198			•
28	880	198		•	
37	1128	198		•	•
42	1280	198		•	
54	1603	198		•	•



Note: Dimensions are based on current stock and are subject to change without prior notice.

## 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.

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

#### 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

### 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



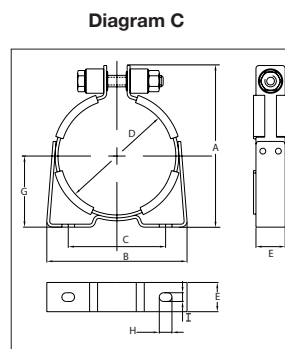
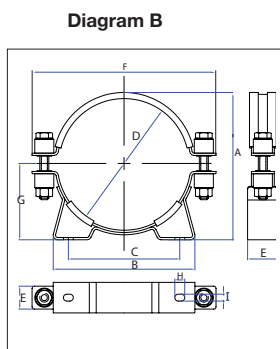
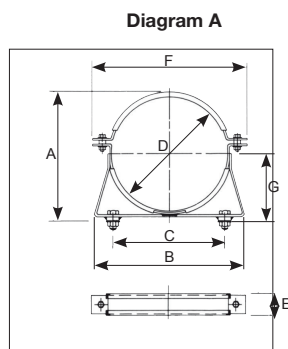
**Charging Hose:** 54248-099  
**Maximum Working Pressure:** 690 Bar  
**End Termination:** 1/4" BSP female swivel  
**Length:** 2.5 metres



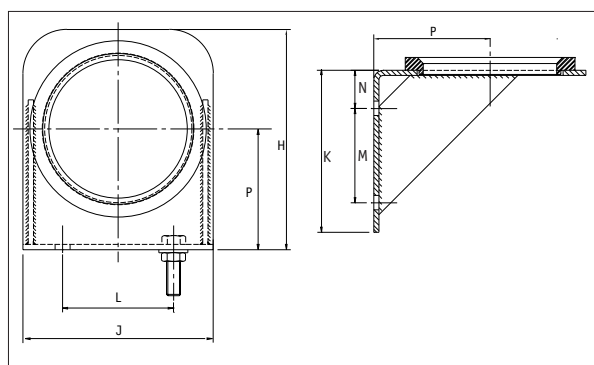
Part No	Pressure Range (bar)	Set/ Kit Contents			
		Pressure Gauge(s)		Charging Hose	Case
		Pressure (bar)	Part No		
10690-02	0-25	0-25	45053-099	50096-099	43183
10690-03	0-60	0-60	45084-099	50096-099	43183
10690-04	0-160	0-160	45085-099	50096-099	43183
10690-05	0-250	0-250	45086-099	50096-099	43183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

Clamps

Part Number	Diagram	Accumulator Capacity (Litres)	Dimensions in mm									Mounting Bolts	Mass kg
			A	B	C	D	E	F	G (ref)	H	I		
10957	C	0.6	143	127	90	96	30	-	60	13	9	M8 x 30	0.59
10981	C	1 - 3	137	144	100	111 - 116	30	-	73	13	9	M8 x 80	0.75
10982-DEE	B	4 - 9	190	186	146	170	30	244	100	13	9	M8 x 80	1.25
10983	B	10 - 54	250	267	211	218 - 228	40	306	129	21	15	M12 x 80	1.50
11060-DEE	A	12 - 54 HP200	270	280	220	256 - 261	40	345	140	10.5	10.5	M10 x 50	2



Brackets



Brackets are manufactured from carbon steel

Support bracket assembly (c/w cushion ring)  
Mounting bolts - M16 X 70

Spare cushion rings:

4 to 9L part number: 48472-A00

10 to 54L part number: 48473-A00

Model Number	Accumulator Capacity (L)	Dimensions							Mass (kg)
		H	J	K	L	M	N	P	
10962-DEE	4 - 9	185	165	150	85	85	40	102	2.5
10961	10 - 54	250	216	191	108	111	45	130	6
11061	12 - 54	250	240	191	108	111	45	140	7

Adaptors

Male/Male Adaptor (BSP/BSP)

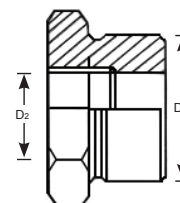
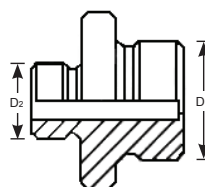
Part Number	D1	D2
50304-***	G1¼"M	G1"M
50716-***	G1¾"M	G½"M
50715-***	G1"M	G½"M
50713-***	G1¼"M	G½"M
50053-***	G1¾"M	G¾"M
50714-***	G1"M	G¾"M
50712-***	G1¼"M	G¾"M
50711-***	G2"M	G¾"M
50054-***	G1"M	G1"M
50055-***	G1¼"M	G1¼"M
50056-***	G2"M	G2"M
52012-***	G2"M	G1¼"M
50454-***	G2"M	G½"M

Male/Female Adaptor (BSP/BSP)

Part Number	D1	D2
50036-***	G1 1/4"M	G1/4"F
50037-***	G1 1/4"M	G3/8"F
50038-***	G1 1/4"M	G1/2"F
50039-***	G1 1/4"M	G5/8"F
50040-***	G1 1/4"M	G3/4"F
50033-***	G2"M	G1/4"F
50015-***	G2"M	G3/8"F
50042-***	G2"M	G1/2"F
50043-***	G2"M	G3/4"F
50044-***	G2"M	G1"F
50045-***	G2"M	G1 1/4"F
50046-***	G2"M	G1 1/2"F

Replace \*\*\* with appropriate material code e.g. 50073-V10

Code Description  
V10 Carbon Steel  
006 Stainless Steel



More adaptor options available upon request

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