

Rexroth Accumulators Spare Parts Manual

RA 51 530/10.04
Replaces: 04.04

Fluid power storage



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For bladder type accumulators, there are three possible bottom repairable designs from Bosch Rexroth that could be encountered (not including top repairable units) in the field:

1. TUV type units, manufactured in Europe.
2. ASME type units, manufactured in USA.
3. CE type units, manufactured in Europe.

For accumulator types 1 and 2, the internal seals and bladder design are interchangeable even though the ASME units are rated for 3000 psi, whereas the TUV type units are rated up to 4785 psi. Service kits for the ASME / TUV units will just be considered as the standard units in the following pages.

Due to changes in the CE oil valve construction (change in sealing concept from axial to radial), the CE type bladder accumulators require different service kits. The bladder is the same between CE / TUV / ASME units, but since the kits offered are a complete rebuild kit that include the seals for the oil valve, it was necessary to create different part numbers for the CE designed units. Since the CE design has only been released with BSP type threaded pressure port connections, the service information offered in this document will reflect different parts for BSP ported units when they deviate from the standard design.

To help further differentiate accumulator types, the 10 digit part number can be used to identify the type of manufacture.

The ASME part numbers in the following chart are the historic Racine numbers. Since SAP implementation in January 2003 at BRI-Bethlehem, these Racine numbers have changed to R978 numbers which again is another indication of an ASME designed unit. All imported TUV and CE type accumulators have maintained the 0531 part number structure in SAP.

A few exceptions to the chart exist:

1. For ASME designed SAE 4 bolt flange connections, the Racine part numbering for these units started with 9530 (now R978 in SAP).
2. For ASME designed top repairable units, the Racine part numbering for these units started with 9530 (now R978 in SAP).

So in general, anytime there is an accumulator number that begins 0531 11* ***, 9530 *** ***, or R978 *** ***, then this unit is clearly an ASME designed accumulator.

Service kits for top repairable accumulators are identified in a separate section of this document. As indicated with the bottom repairable units, top repairable units with BSP threaded oil valves require different service kits in place of the standard parts. For top repairable accumulators, there is no unique rebuild kit available, and a supplemental seal set must be ordered in addition to the standard bottom repairable rebuild kit to get all the seals necessary to service a top repairable unit.

Diaphragm accumulators are non-repairable and no service information can be provided.

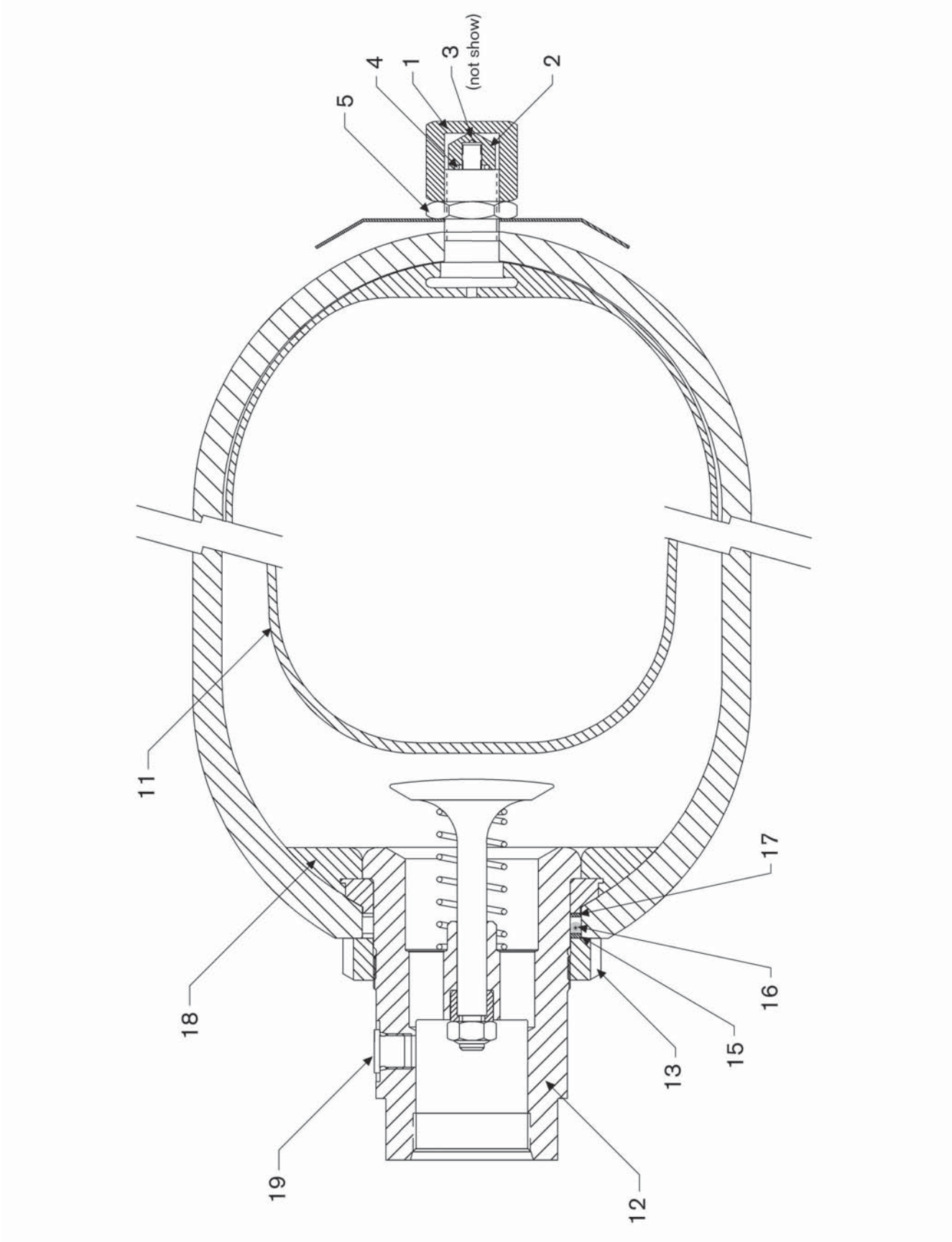
Type	1/4 gallon	1 gallon	2.5 gallon	5 gallon	10 gallon	14 gallon
TUV	0531012500	0531013200	0531014500	0531015600	0531015300	0531016500
	— 0531012729	— 0531013729	— 0531014729	— 0531015769	— 0531015769	— 0531016729
ASME	0531112600	0531113600	0531114600	0531115600	0531115630	0531116600
	— 0531112650	— 0531113650	— 0531114650	— 0531115645	— 0531115660	— 0531116650
CE	0531012730 & Higher	0531013730 & Higher	0531014730 & Higher	0531015770 & Higher	0531015771 & Higher	0531016730 & Higher

Bladder Accumulator Model Code

<div> <div>HAB</div> <div></div> <div></div> <div>2X / 10</div> <div></div> <div></div> <div>G</div> <div>2</div> <div></div> <div>1</div> <div></div> <div></div> <div></div> <div></div> <div>*</div> </div>									
Nominal Capacity 0.25 G (1 L) = 1 1 G (4 L) = 4 2.5 G (10 L) = 10 5 G (20 L) = 20 10 G (35 L) = 35 14 G (50 L) = 50									
Max. operating pressure 3000 PSI (207 bar) = 207 3800 PSI (262 bar) = 262 4786 PSI (330 bar) = 330									
Series 20 to 29 = 2X (20 to 29; unchanged installation and connection dimensions)									
Pre-charge pressure 145 PSI (10 bar) = 10									
Connection size for hydraulic fluid 3/4" NPT (only 1/4 gallon) = N04 1-1/4" NPT (only 1 gallon) = N06 2" NPT (2.5–14 gallon) = N08 1-3/16 - 12 UN (#14 SAE) (only 1/4 gallon) = U12 1-5/8 - 12 UN (#20 SAE) (only 1 gallon) = U08 1-7/8 - 12 UN (#24 SAE)(2.5–14 gallon) = U09 2" SAE 4 bolt flange (2.5–14 gallon) = S09 G 3/4 (only 1/4 gallon) = G05 G 1-1/4 (only 1 gallon) = G07 G 2 (2.4–14 gallon) = G09 M50 x 1.5 (2.5–14 gallon) = Z16									
Type of mounting (form of oil connection) Bottom repairable threaded connection = G Bottom repairable flange connection = F Top repairable threaded connection = GT Top repairable flange connection = FT									
					Special versions				
					Certification (acceptance) CE = Acceptance to 97/23/EG ASME = Acceptance to ASME BA = Operating instructions SOLO = China certificate				
					Surface on the connection side 1 = Steel 2 = Steel, galvanized				
					Interior surface of the vessel 1 = Steel 2 = Plastic, coated				
					Vessel material 1 = Steel				
					Bladder material N = NBR E = ECO F = Viton I = Butyl T = Low-temperature NBR				
					Form of gas connection 2 = 7/8" - 14 UNF gas valve connection, use charge kit 0 538 103 013				

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Bottom Repairable Accumulator



Bottom Repairable Accumulator

Item No.	Descriptions	Part Number
1	Outer gas valve cap	R978713000
2	Inner gas valve cap	R978713001
3	Gas valve core	R978700830
4	Gas valve o-ring	See kit
5	Hex nut	R978713003
9	Steel washer (oil) Not shown, no longer used in bottom rep. units	R978713286
9	Steel washer (water) Not shown, no longer used in bottom rep. units	R978713300
11	Bladder	see chart
12	Oil valve assembly	see chart
13	Locknut (std)	1533342013

Item No.	Descriptions	Part Number
13	Locknut (BSP ported only)	1533342016
14	Spacer sleeve (BSP ported only) Shown in top rep. section	1530221078
15	Back-up ring	See kit
16	O-ring	See kit
17	Back-up ring (BSP only, sizes 10L – 50L)	See kit
18	Anti-extrusion ring	see chart
19	Oil valve plug (SAE thread)	R978702826
19	Oil valve plug (NPT thread)	R978702549
19	Oil valve plug (BSP thread)	R978704178

Bladder Rebuild Kits

	1/4 gal (1L)	1 gal (4L)	2.5 gal (10L)	5 gal (20L)	10 gal (35L)	14 gal (50L)
Buna	R978713134	R978713135	R978713136	R978713137	R978713138	R978713139
Buna (BSP ports, CE)	1535490124	1535490114	1535490116	1535490118	1535490120	1535490122
Butyl	R978713142	R978713143	R978713144	R978713145	R978713146	R978713147
Viton	R978713132	R978713133	R978713127	R978713128	R978713129	R978713130
Lo-temp buna	R978713140	R978713141	R978713125	R978713126	R978713131	C/F

Rebuild kits include item numbers 3, 11, and seal kit.

Seal Kits

	1/4 gal (1L)	1 gal (4L)	2.5 gal (10L) – 14 gal (50L)
Buna	R978712084	R978712088	R978711979
Buna (BSP ports, CE)	1537010317	1537010318	1537010319
Butyl	R978712087	R978712091	R978711980
Viton	R978712086	R978712090	R978711982
Lo-temp buna	R978712084	R978712088	R978711979

Seal kits include item numbers 4, 9, 15, 16, and 18, except BSP seal kit.

BSP seal kit includes item numbers 4, 15, 16, and 17.

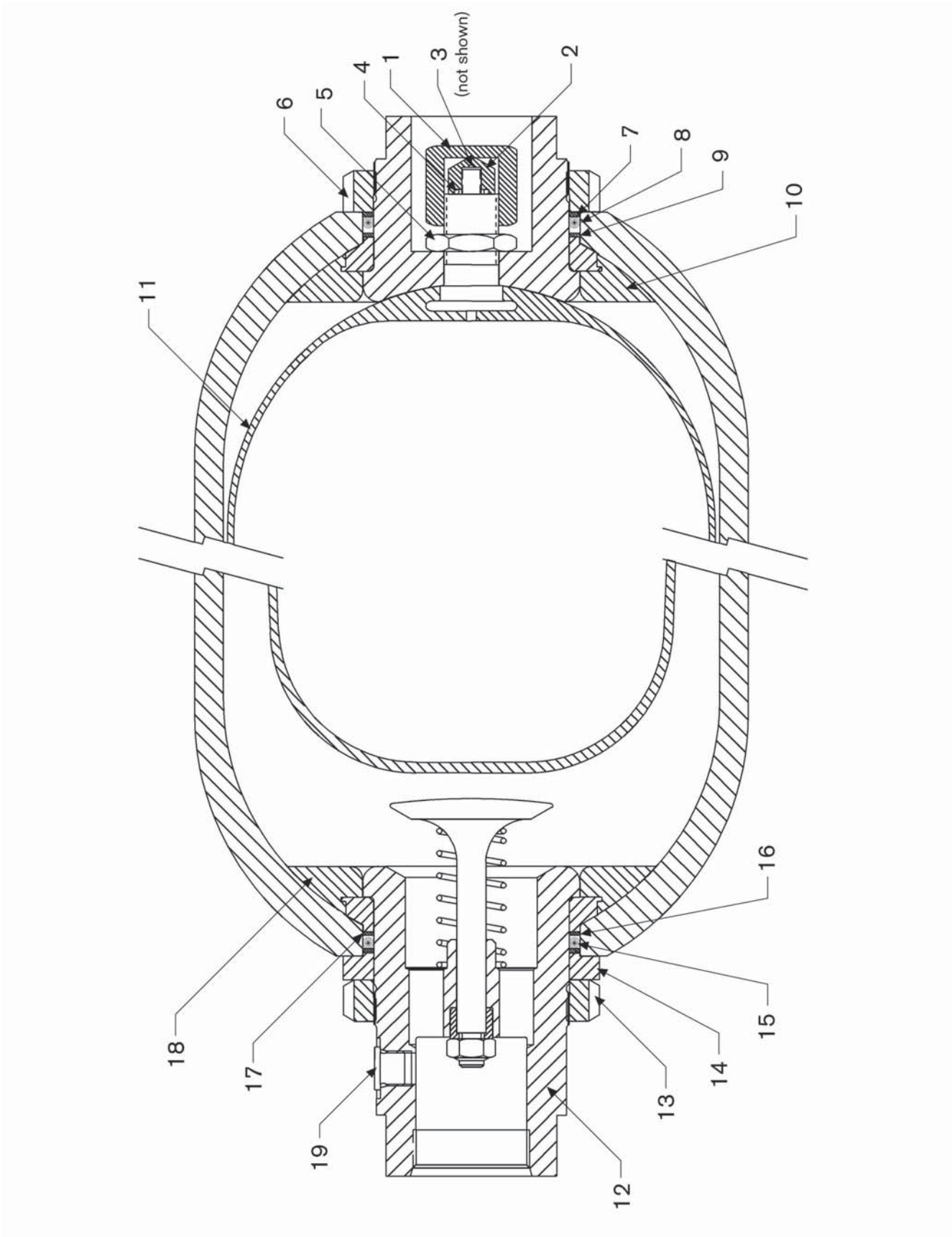
Anti-Extrusion Rings

	1/4 gal (1L)	1 gal (4L)	2.5 gal (10L) – 14 gal (50L)
Buna	R978713021	R978713018	R978713002
Buna (BSP ports, CE)	1530221045	1530221047	1530221050
Butyl	R978713022	R978713019	R978713005
Viton	R978713023	R978713020	R978713006
Lo-temp buna	R978713021	R978713018	R978713002

Oil Valve Assemblies

	1/4 gal (1L)	1 gal (4L)	2.5 gal (10L) – 14 gal (50L)
SAE thread (oil)	1537410043	1537410044	1537413016
SAE thread (water)	1537410046	1537410047	R978713723
SAE 4 bolt flange (oil)	Not Available		R978713738
SAE 4 bolt flange (water)	Not Available		R978713742
NPT connection (oil)	1537410032	1537410033	1537413015
BSP connection (oil, CE)	1537410077	1537410078	1537410079

Top Repairable Accumulator



Top Repairable Accumulator

Item No.	Descriptions	Part Number
1	Outer gas valve cap	R978713000
2	Inner gas valve cap	R978713001
3	Gas valve core	R978700830
4	Gas valve o-ring	See kit
5	Hex nut	R978713003
6	Locknut (top)	R978712391
7	Back-up ring (top)	See kit
8	O-ring (top)	See kit
9	Steel washer (oil service)	R978713286
9	Steel washer (water service)	R978713300
10	Anti-extrusion ring (top, buna)	R978713002
10	Anti-extrusion ring (top, butyl)	R978713005
10	Anti-extrusion ring (top, viton)	R978713006
10	Anti-extrusion ring (top, water service)	R978713029
10	Anti-extrusion ring (top, BSP ported)	R978713002
11	Bladder	see chart
12	Oil valve (SAE thread, oil service)	1537413016
12	Oil valve (SAE thread, water service)	R978713723
12	Oil valve (SAE 4 bolt flange, oil service)	R978713738

Item No.	Descriptions	Part Number
12	Oil valve (SAE 4 bolt flange, water service)	R978713742
12	Oil valve (NPT thread, oil service)	1537413015
12	Oil valve (NPT thread, water service)	1537410037
12	Oil valve (BSP thread, oil service, CE design)	1537410079
13	Locknut (bottom, std)	1533342013
13	Locknut (bottom, BSP ported only)	1533342016
14	Spacer sleeve (BSP ported only)	1530221078
15	Back-up ring (bottom)	See kit
16	O-ring (bottom)	See kit
17	Back-up ring (bottom BSP only)	See kit
18	Anti-extrusion ring (bottom, buna)	R978713002
18	Anti-extrusion ring (bottom, butyl)	R978713005
18	Anti-extrusion ring (bottom, viton)	R978713006
18	Anti-extrusion ring (bottom, water service)	R978713029
18	Anti-extrusion ring (bottom, BSP ported only)	1530221050
19	Oil valve plug (SAE thread)	R978702826
19	Oil valve plug (NPT thread)	R978702549
19	Oil valve plug (BSP thread)	R978704178

Bladder Rebuild Kits

	2.5 gal (10L)	5 gal (20L)	10 gal (35L)	14 gal (50L)
buna	R978713136	R978713137	R978713138	R978713139
Buna (BSP ports, CE)	1535490116	1535490118	1535490120	1535490122
butyl	R978713144	R978713145	R978713146	R978713147
viton	R978713127	R978713128	R978713129	R978713130
lo-temp buna	R978713125	R978713126	R978713131	C/F

Rebuild kits include item numbers 3, 11, and seal kit.

Seal Kits

	2.5 gal (10L) – 14 gal (50L)
Buna	R978711979
Buna (BSP ports, CE)	1537010319
Butyl	R978711980
Viton	R978711982
Lo-temp buna	R978711979

Seal kits include item numbers 4, 9, 15, 16, and 18, except BSP seal kit.

BSP seal kit includes item numbers 4, 15, 16, and 17.

Since the rebuild and seal kits listed above are really designed for bottom repairable units, an additional "supplementary" seal set must be ordered separately to obtain all the necessary seals for a top repairable unit.

Supplementary Seal Sets for Top Repairable Units Only

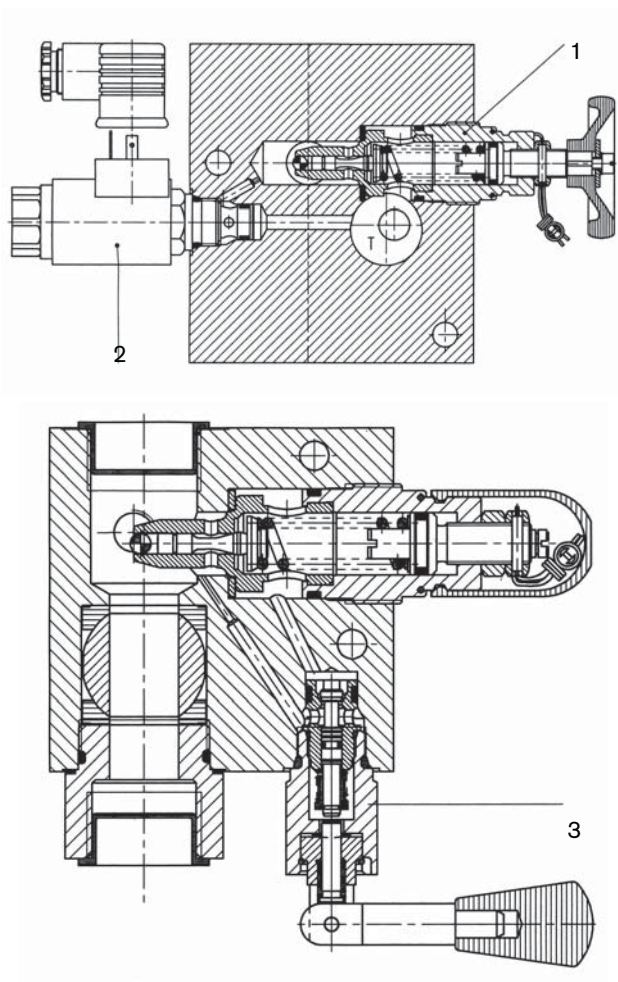
	2.5 gal (10L) – 14 gal (50L)
Buna	R978715540
Buna (BSP ports, CE)	R978715541
Butyl	R978715542
Viton	R978715543
Lo-temp buna	R978715540

Supplementary kits include item numbers 7, 8, and 10, except BSP seal kit set.

BSP supplementary kit includes item numbers 7, 8, 10, and 18.

Safety Cartridge Valves

Safety and shut-off blocks



How to Order

Symbol	Description	Part Number
1	Cartridge valves 0 532 004 ...	see page 40
2	Solenoid valve 2/2, open without flow	24 V DC 1 537 410 071
		105 V DC* 1 537 410 072
3	Directional control valve 2/2, manually operated	1 537 410 074
	Set of seals Solenoid and directional control valve	1 537 010 304
	Set of seals for Safety blocks VAW 20, VAW 32	1 537 010 300

*Must order separately, a rectifier plug P/N 1 834 484 134 for 115 VAC/60 Hz input.

Charging and Testing Kits

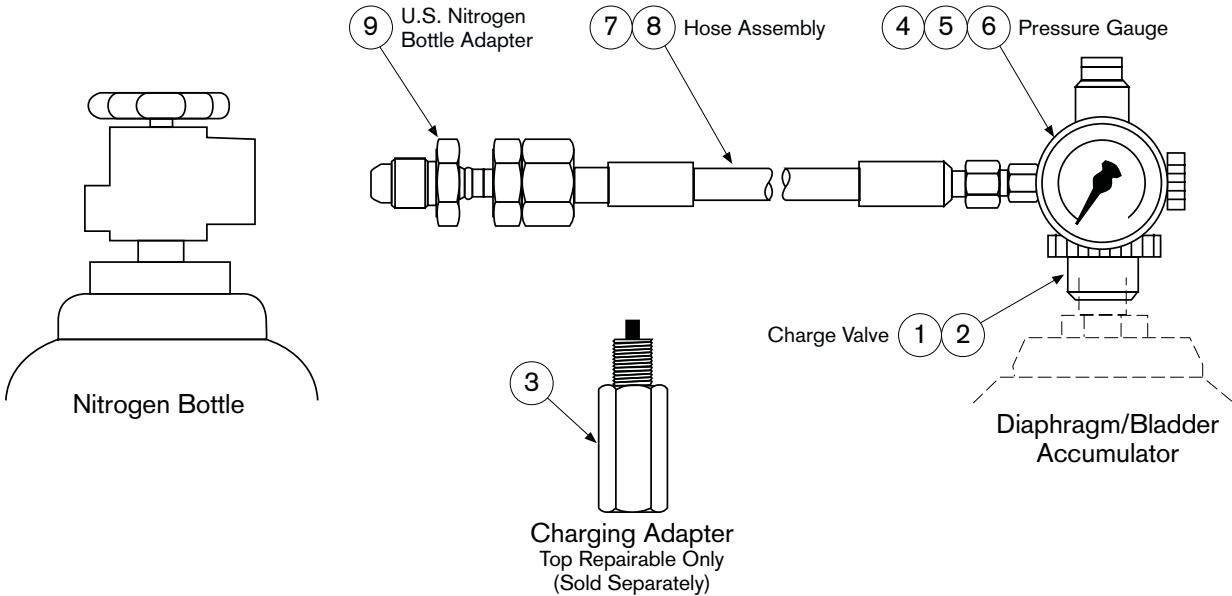


How to Order

Description	Part Number
Complete Assembly – Metric diaphragm accumulators (Includes items: 2, 5, 7, and 9) M28 x 1.5	0 538 103 015
Complete Assembly – Bladder type & U.S. version Diaphragm type (Includes items 1, 5, 7, & 9) SAE 7/8" – 14 UNF (#10 SAE)	0 538 103 013
Dual Assembly – Bladder type, U.S. version & Metric Diaphragm type (Includes items 1, 2, 5 [2 pcs.], 7, & 9)	0 538 103 014

Note: Maximum charge valve pressure – 5000 psi

Spare Parts



How to Order

Item #	Description			Part Number
0	Seal kits	For charge valve 0 538 103 005		1 537 010 194
		For charge valve 0 538 103 006		1 537 010 196
0	Carrying case only			1 537 000 002
1	Charge and testing valve	bladder & U.S. version diaphragm	SAE 7/8" – 14 UNF	0 538 103 005
2		diaphragm type European	M28 x 1.5	0 538 103 006
3	Adapter – for charging top repairable accumulators			R978711977
4	Pressure gauge	0–870 psi (0–60 bar) optional		1 537 231 002
5		0–3626 psi (0–250 bar)		1 537 231 001
6		0–5802 psi (0–400 bar) optional		1 537 231 005
7	Hose	98 inches (2.5 meters)		1 530 712 005
8		197 inches (5 meters) optional		1 530 712 006
9	Adapter – for connecting the Metric hose to American nitrogen bottles.			1 533 391 012

Bosch Rexroth Corporation
Industrial Hydraulics
2315 City Line Road
Bethlehem, PA 18017-2131
Telephone (610) 694-8300
Facsimile (610) 694-8467
www.boschrexroth-us.com

Bosch Rexroth Corporation
Service Automation
5150 Prairie Stone Parkway
Hoffman Estates, IL 60192-3707
Telephone (847) 645-3600
Facsimile (847) 645-0804

2315 City Line Road
Bethlehem, PA 18017-2131
Telephone (610) 694-8300
Facsimile (610) 694-8467

Bosch Rexroth Corporation
Mobile Hydraulics
1700 Old Mansfield Road
Wooster, OH 44691-0394
Telephone (330) 263-3300
Facsimile (330) 263-3333

Bosch Rexroth Corporation
Corporate Headquarters
5150 Prairie Stone Parkway
Hoffman Estates, IL 60192-3707
Telephone (847) 645-3600
Facsimile (847) 645-6201

Bosch Rexroth Corporation
Electric Drives and Controls
5150 Prairie Stone Parkway
Hoffman Estates, IL 60192-3707
Telephone (847) 645-3600
Facsimile (847) 645-6201

Bosch Rexroth Corporation
Linear Motion and
Assembly Technologies
816 E. Third Street
Buchanan, MI 49107
Telephone (269) 695-0151
Facsimile (269) 695-5363

14001 South Lakes Drive
Charlotte, NC 28273
Telephone (800) 438-5983
Facsimile (704) 583-0523

Bosch Rexroth Corporation
Pneumatics
1953 Mercer Road
Lexington, KY 40511-1021
Telephone (859) 254-8031
Facsimile (859) 281-3491