

Accumulator stations

Type ABSBG

RE 50135

Edition: 2013-05

Replaces: 11.07



H7858_d

Features

- ▶ Accumulator station with shut-off block
- ▶ Diaphragm-type or bladder-type accumulator
- ▶ Shut-off block with integrated isolator valve, safety valve (type-tested) and drain valve
- ▶ Drain valve can be operated manually or electrically
- ▶ Glycerin-filled pressure gauge with red indication of the maximum admissible operating pressure on the dial
- ▶ Console for weld or screw connection
- ▶ Assembly prepared for external equipotential bonding

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Ordering code

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
ABSBG	-	1X	/		N	/			G24	V	/	6		DC

01	Accumulator station	ABSBG
02	Component series 10 to 19 (10 to 19: Unchanged installation and connection dimensions)	1X

Hydraulic accumulator

03	Design	
	Bladder-type accumulator according to data sheet 50170	B
	Diaphragm-type accumulator according to data sheet 50150	M

Accumulator volume in liters (design)

04	Diaphragm-type accumulator	
	0.7 liters	0,7
	1.4 liters	1,4
	2.0 liters	2,0
	2.8 liters	2,8
	3.5 liters	3,5
	Bladder-type accumulator	
	1.0 liters	1,0
	2.5 liters	2,5
	4.0 liters	4,0
	10 liters	10
	20 liters	20
	35 liters	35
	50 liters	50

Bladder/diaphragm material

05	NBR	N
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Country acceptance for hydraulic accumulator

06	Short symbol for country acceptance in Europe, Russia and China from the manufacturer's type key, e.g.	
	Acceptance according to 97/23/EC by DC	CE
	Acceptance according to SELO (China)	88/CHN
	Acceptance according to GOST (Russia)	71/GOST
	Operating instructions	BA

Accumulator shut-off block according to data sheet 50131

07	Size	
	ABZSS 10 pressure relief valve 6E	10
	ABZSS 20 pressure relief valve 10E	20
	ABZSS 30 pressure relief valve 20E	30

Unloading

08	Manual and electro-magnetic	E
	Manual	M

Set pressure at the pressure relief valve

09	100 bar	100
	140 bar	140
	210 bar	210
	330 bar	330

Ordering code

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
ABSBG	-	1X	/		N	/			G24	V	/	6		DC

Voltage type

10	Direct voltage 24 V	G24
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Accumulator shut-off block according to data sheet 50131

11	Seal material (elastomer)	
	FKM	V

Mounting construction kit

12	Mounting using assembly kit A (console C)	A
	Mounting using assembly kit B (clamps and strip)	B
	Mounting using assembly kit K (console K)	K

ABZMM pressure gauge according to data sheet 50205

13	DN63	6
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Pressure gauge scale

14	bar/MPa	M
	bar/psi	P

Options/structural design

15	Accumulator manufacturer	
	Bosch Rexroth	DC

Order example:**ABSBG-1X/B4,0N-CE/10M330V/A6MDC**

Technical data

(for applications outside these parameters, please consult us!)

Accumulators		
Design		Bladder- and diaphragm-type accumulator
Installation position		Any, preferably with the fluid connection socket at the bottom
Ambient temperature range	°C	-15 ... +65
Line connection		Screw-in thread
Hydraulic fluid		Hydraulic oil according to DIN 51524; other liquids on request
Hydraulic fluid temperature range (others on request)	°C	-10 ... +80 (NBR seals) -35 ... +80 (ECO)
Acceptance specification for the accumulator	CE/BA	Acceptance according to 97/23/EC or the operating instructions
	China	SELO
	Russia	GOST

hydraulic, diaphragm-type accumulator									
Nominal volume	V_{rated}	l	0.7	1.4	2.0	2.8	3.5		
Effective gas volume	V_{eff}	l	0.75	1.4	1.95	2.7	3.5		
Maximum admissible flow	q_{max}	l/min	40	40	60	60	60		
Maximum admissible operating pressure	p_{max}	bar	350	350	350	350	350		
Maximum admissible pressure fluctuation range	Δp_{dyn}	bar	130	130	130	130	130		

hydraulic, bladder-type accumulator									
Nominal volume	V_{rated}	l	1	2.5	4.0	10	20	35	50
Effective gas volume	V_{eff}	l	1.0	2.4	3.7	9.2	18.1	33.4	48.7
Maximum admissible flow	q_{max}	l/min	240	600	600	900	900	900	900
Maximum admissible operating pressure	p_{max}	bar	350	350	350	330	330	330	330
Maximum admissible pressure fluctuation range	Δp_{dyn}	bar	200	200	200	200	200	200	200

pneumatic		
Charging gas		Nitrogen, cleanliness class 4.0, $N_2 = 99.99$ vol. %
Gas filling pressure	p_0	bar 2 (Exception: Diaphragm-type accumulators with SELO acceptance are not prestressed)

Hydraulic fluids			
		Temperature range	Material
Mineral oils	°C	-15 ... +80	NBR
	°C	-35 ... +80	ECO
HFC	°C	-10 ... +60	NBR

For other hydraulic fluids and temperatures, please contact us.

Technical data

(for applications outside these parameters, please consult us!)

Shut-off block		
Seal material		FKM seals (NBR seals on request)
Operating temperature range	°C	-15 ... +80
Maximum operating pressure	bar	350
Block material		Steel
Direct operated pressure relief valve		DBDS...K1X/...VB or DBDS...K1X/...E according to data sheet 25402
Cartridge seat valve		KSDER1PB/HN9V according to data sheet 18136-20
Protection class according to VDE 0470-1 - version "K4" (DIN EN 60529), DIN 40050-9		IP 65 with mating connector mounted and locked
Voltage type	V	24 (in case of electro-magnetic unloading "E")
Maximum admissible degree of contamination of the hydraulic fluid - cleanliness class according to ISO 4406 (C)		Class 20/18/15

Hydraulic fluid	Classification	Suitable sealing materials	Standards
Mineral oils	HL, HLP	NBR, FKM	DIN 51524
Bio-degradable	- insoluble in water	HETG	VDMA 24568
		HEES	
	- soluble in water	HEPG	VDMA 24568

Important information on hydraulic fluids.

- ▶ For more information and data on the use of other hydraulic fluids refer to data sheet 90220 or contact us!
- ▶ There may be limitations regarding the technical valve data (temperature, pressure range, life cycle, maintenance intervals, etc.)!
- ▶ The flash point of the hydraulic fluid used must be 40 K higher than the maximum solenoid surface temperature.
- ▶ **Flame-resistant – containing water:** The maximum pressure differential per control edge is 50 bar. Pressure pre-loading at the tank port > 20 % of the pressure differential; otherwise, increased cavitation. The pressure peaks should not exceed the maximum operating pressures!
- ▶ **Bio-degradable:** When using bio-degradable hydraulic fluids that are also zinc-solvent, zinc may accumulate in the fluid (per pole tube 700 mg zinc).

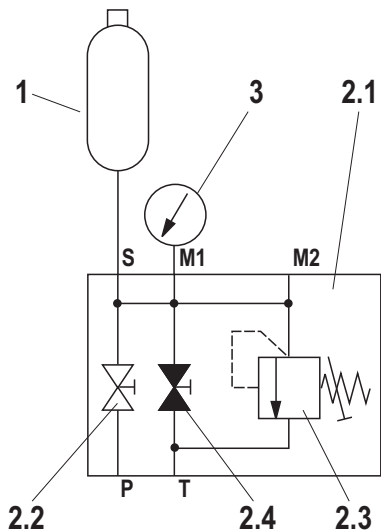
Pressure gauge		
Size	bar	63
Pressure gauge		Glycerin
Double scale		bar/MPa

Surface treatment:

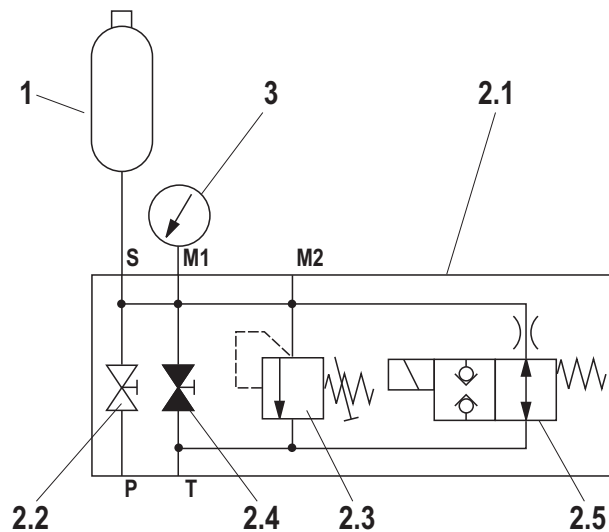
All steel components and components without protective coating are coated prior to installation (minimum corrosion protection time of 12 h in salt spray test). Then, the devices, components and the piping are installed. All components, assemblies, controls, pipes, fittings and standard parts keep the supplied surface protection and are not additionally coated. The corrosion protection is determined by the least protected element in the assembly.

Symbols

Accumulator station with manually operated drain valve



Accumulator station with electro-mechanically operated drain valve



- 1** Hydraulic accumulator
- 2.1** Accumulator shut-off block with:
- 2.2** System shut-off cock
- 2.3** Pressure relief valve (type-tested)
- 2.4** Manual unloading
- 2.5** Electro-magnetic unloading (only version E)
- 3** Pressure gauge with red indication of the maximum admissible operating pressure

Spare parts and accessories

- ▶ Bladder-type accumulator according to data sheet 50170
- ▶ Diaphragm-type accumulator with CE/BA acceptance according to data sheet 50150
- ▶ Shut-off block manual/electrical according to data sheet 50131
- ▶ Pressure gauge according to data sheet 50205
- ▶ Warning sign according to RNI 17506-001

Consoles contained in the assembly kit are intended for mounting by means of screws and nuts or for welding to suitable frames or structural components.

Standard program including preferred types: Accumulator stations

Standard program including preferred types with manually operated drain valve (other versions on request)

Accumulator type	Nominal volume in liters	Relief pressure in bar	Shut-off block DN	CE/BA acceptances				Acceptance China		Acceptance Russia		
				Description	Material no.	Weight in kg	MKZ ¹⁾	Type of mounting	Material no.	MKZ ¹⁾	Material no.	MKZ ¹⁾
Bladder-type accumulator	1	100	10	ABSBG-1X/B 1,0N-BA /10M100 V/B6M DC	R901301857	14	A3	B	R901301912	A3	R901302202	A3
		140	10	ABSBG-1X/B 1,0N-BA /10M140 V/B6M DC	R901301858	14	A3		R901301913	A3	R901302203	A3
		210	10	ABSBG-1X/B 1,0N-BA /10M210 V/B6M DC	R901301863	14	A3		R901301914	A3	R901302204	A3
		330	10	ABSBG-1X/B 1,0N-BA /10M330 V/B6M DC	R901246327	15	A2		R901301915	A3	R901302205	A3
	2.5	100	10	ABSBG-1X/B 2,5N-CE /10M100 V/B6M DC	R901290495	20	A2	B	R901301921	A3	R901302212	A3
		140	10	ABSBG-1X/B 2,5N-CE /10M140 V/B6M DC	R901301865	20	A3		R901301922	A3	R901293215	A3
		210	10	ABSBG-1X/B 2,5N-CE /10M210 V/B6M DC	R901301866	20	A3		R901301923	A3	R901302213	A3
		330	10	ABSBG-1X/B 2,5N-CE /10M330 V/B6M DC	R901246328	20	A3		R901301924	A3	R901302214	A3
	4	100	10	ABSBG-1X/B 4,0N-CE /10M100 V/A6M DC	R901301871	28	A3	A	R901301929	A3	R901302219	A3
		140	10	ABSBG-1X/B 4,0N-CE /10M140 V/A6M DC	R901301872	28	A3		R901301930	A3	R901302220	A3
		210	10	ABSBG-1X/B 4,0N-CE /10M210 V/A6M DC	R901301874	28	A3	A	R901301931	A3	R901302222	A3
		330	10	ABSBG-1X/B 4,0N-CE /10M330 V/A6M DC	R901246329	28	A2		R901296166	A3	R901292707	A3
	10	210	20	ABSBG-1X/B10,0N-CE /20M210 V/A6M DC	R901261438	55	A3	A	R901302134	A3	R901302229	A3
		330	20	ABSBG-1X/B10,0N-CE /20M330 V/A6M DC	R901246330	55	A2		R901302135	A3	R901302230	A3
	20	210	20	ABSBG-1X/B20,0N-CE /20M210 V/A6M DC	R901261440	66	A3	A	R901302137	A3	R901302237	A3
		330	20	ABSBG-1X/B20,0N-CE /20M330 V/A6M DC	R901246331	66	A2		R901302139	A3	R901293695	A3
35	330	30	ABSBG-1X/B35,0N-CE /30M330 V/A6M DC	R901246332	121	A3	A	R901302143	A3	R901302239	A3	
50	330	30	ABSBG-1X/B50,0N-CE /30M330 V/A6M DC	R901246334	147	A3	A	R901302145	A3	R901302243	A3	
Diaphragm-type accumulator	0.7	100	10	ABSBG-1X/M 0,7N-BA /10M100 V/K6M DC	R901301879	10	A3	K	R901302149	A3	R901302248	A3
		140	10	ABSBG-1X/M 0,7N-BA /10M140 V/K6M DC	R901301881	10	A3		R901302150	A3	R901302250	A3
		210	10	ABSBG-1X/M 0,7N-BA /10M210 V/K6M DC	R901280011	11	A3		R901302151	A3	R901302251	A3
		330	10	ABSBG-1X/M 0,7N-BA /10M330 V/K6M DC	R901280012	10	A3		R901302152	A3	R901302252	A3
	1.4	100	10	ABSBG-1X/M 1,4N-CE /10M100 V/K6M DC	R901301884	13	A3	K	R901302157	A3	R901302259	A3
		140	10	ABSBG-1X/M 1,4N-CE /10M140 V/K6M DC	R901280013	13	A2		R901290489	A3	R901302261	A3
		210	10	ABSBG-1X/M 1,4N-CE /10M210 V/K6M DC	R901301885	13	A3		R901302158	A3	R901302262	A3
		330	10	ABSBG-1X/M 1,4N-CE /10M330 V/K6M DC	R901280014	13	A3		R901302159	A3	R901302263	A3
	2	100	10	ABSBG-1X/M 2,0N-CE /10M100 V/K6M DC	R901280015	15	A3	K	R901302167	A3	R901302269	A3
		140	10	ABSBG-1X/M 2,0N-CE /10M140 V/K6M DC	R901301889	16	A3		R901302168	A3	R901302270	A3
		210	10	ABSBG-1X/M 2,0N-CE /10M210 V/K6M DC	R901301890	16	A3		R901302169	A3	R901302271	A3
		330	10	ABSBG-1X/M 2,0N-CE /10M330 V/K6M DC	R901280016	16	A3		R901302170	A3	R901302272	A3
	2.8	100	10	ABSBG-1X/M 2,8N-CE /10M100 V/K6M DC	R901301893	21	A3	K	R901302175	A3	R901302277	A3
		140	10	ABSBG-1X/M 2,8N-CE /10M140 V/K6M DC	R901301894	21	A3		R901302176	A3	R901302278	A3
		210	10	ABSBG-1X/M 2,8N-CE /10M210 V/K6M DC	R901301895	21	A3		R901302177	A3	R901302279	A3
		330	10	ABSBG-1X/M 2,8N-CE /10M330 V/K6M DC	R901280017	21	A3		R901302178	A3	R901302281	A3
3.5	100	10	ABSBG-1X/M 3,5N-CE /10M100 V/K6M DC	R901301900	23	A3	K	R901302186	A3	R901302286	A3	
	140	10	ABSBG-1X/M 3,5N-CE /10M140 V/K6M DC	R901301901	24	A3		R901302187	A3	R901302287	A3	
	210	10	ABSBG-1X/M 3,5N-CE /10M210 V/K6M DC	R901301902	24	A3		R901302188	A3	R901302289	A3	
	330	10	ABSBG-1X/M 3,5N-CE /10M330 V/K6M DC	R901280018	24	A3		R901302189	A3	R901302290	A3	

¹⁾ MKZ = Material mark: A2 = Preferred delivery range; A3 = Standard delivery range

Standard program including preferred types: Accumulator stations

Standard program including preferred types with electrically operated drain valve (other versions on request)

Accumulator type	Nominal volume in liters	Relief pressure in bar	Shut-off block DN	CE/BA acceptances					Acceptance China		Acceptance Russia		
				Description	Material no.	Weight in kg	MKZ ¹⁾	Type of mounting	Material no.	MKZ ¹⁾	Material no.	MKZ ¹⁾	
Bladder-type accumulator	1	100	10	ABSBG-1X/B 1,0N-BA /10E100G 24V/B6M DC	R901301859	15	A3	B	R901301907	A3	R901302206	A3	
		140	10	ABSBG-1X/B 1,0N-BA /10E140G 24V/B6M DC	R901301861	15	A3	B	R901301908	A3	R901302207	A3	
		210	10	ABSBG-1X/B 1,0N-BA /10E210G 24V/B6M DC	R901301862	15	A3	B	R901301909	A3	R901302208	A3	
		330	10	ABSBG-1X/B 1,0N-BA /10E330G 24V/B6M DC	R901246335	15	A3	B	R901301910	A3	R901302209	A3	
	2.5	100	10	ABSBG-1X/B 2,5N-CE /10E100G 24V/B6M DC	R901302148	20	A3	B	R901301917	A3	R901302215	A3	
		140	10	ABSBG-1X/B 2,5N-CE /10E140G 24V/B6M DC	R901301868	20	A3	B	R901301918	A3	R901302216	A3	
		210	10	ABSBG-1X/B 2,5N-CE /10E210G 24V/B6M DC	R901301869	20	A3	B	R901301919	A3	R901302217	A3	
		330	10	ABSBG-1X/B 2,5N-CE /10E330G 24V/B6M DC	R901246336	20	A2	B	R901301920	A3	R901302218	A3	
	4	100	10	ABSBG-1X/B 4,0N-CE /10E100G 24V/A6M DC	R901301875	29	A3	A	R901301925	A3	R901302223	A3	
		140	10	ABSBG-1X/B 4,0N-CE /10E140G 24V/A6M DC	R901301876	29	A3	A	R901301926	A3	R901302224	A3	
		210	10	ABSBG-1X/B 4,0N-CE /10E210G 24V/A6M DC	R901301877	29	A3	A	R901301927	A3	R901302225	A3	
		330	10	ABSBG-1X/B 4,0N-CE /10E330G 24V/A6M DC	R901246337	29	A2	A	R901301928	A3	R901302227	A3	
	10	210	20	ABSBG-1X/B10,0N-CE /20E210G 24V/A6M DC	R901292794	55	A3	A	R901299040	A2	R901302231	A3	
		330	20	ABSBG-1X/B10,0N-CE /20E330G 24V/A6M DC	R901246338	55	A2	A	R901302133	A3	R901302233	A3	
	20	210	20	ABSBG-1X/B20,0N-CE /20E210G 24V/A6M DC	R901301878	67	A3	A	R901302141	A3	R901302238	A3	
		330	20	ABSBG-1X/B20,0N-CE /20E330G 24V/A6M DC	R901246339	67	A2	A	R901302142	A3	R901293218	A3	
	35	330	30	ABSBG-1X/B35,0N-CE /30E330G 24V/A6M DC	R901246340	121	A2	A	R901302144	A3	R901302241	A3	
	50	330	30	ABSBG-1X/B50,0N-CE /30E330G 24V/A6M DC	R901246341	147	A2	A	R901295289	A3	R901291911	A3	
	Diaphragm-type accumulator	0.7	100	10	ABSBG-1X/M 0,7N-BA /10E100G 24V/K6M DC	R901301882	11	A3	K	R901302153	A3	R901302254	A3
			140	10	ABSBG-1X/M 0,7N-BA /10E140G 24V/K6M DC	R901301883	11	A3	K	R901302154	A3	R901302255	A3
210			10	ABSBG-1X/M 0,7N-BA /10E210G 24V/K6M DC	R901280001	11	A3	K	R901302155	A3	R901302256	A3	
330			10	ABSBG-1X/M 0,7N-BA /10E330G 24V/K6M DC	R901280002	11	A3	K	R901302156	A3	R901302258	A3	
1.4		100	10	ABSBG-1X/M 1,4N-CE /10E100G 24V/K6M DC	R901301886	14	A3	K	R901302160	A3	R901302264	A3	
		140	10	ABSBG-1X/M 1,4N-CE /10E140G 24V/K6M DC	R901280003	14	A2	K	R901302161	A3	R901302265	A3	
		210	10	ABSBG-1X/M 1,4N-CE /10E210G 24V/K6M DC	R901301887	14	A3	K	R901302163	A3	R901302266	A3	
		330	10	ABSBG-1X/M 1,4N-CE /10E330G 24V/K6M DC	R901280004	14	A3	K	R901302164	A3	R901302267	A3	
2		100	10	ABSBG-1X/M 2,0N-CE /10E100G 24V/K6M DC	R901280005	16	A3	K	R901302171	A3	R901302273	A3	
		140	10	ABSBG-1X/M 2,0N-CE /10E140G 24V/K6M DC	R901301891	16	A3	K	R901302172	A3	R901302274	A3	
		210	10	ABSBG-1X/M 2,0N-CE /10E210G 24V/K6M DC	R901301892	16	A3	K	R901302173	A3	R901302275	A3	
		330	10	ABSBG-1X/M 2,0N-CE /10E330G 24V/K6M DC	R901280006	16	A3	K	R901302174	A3	R901302276	A3	
2.8		100	10	ABSBG-1X/M 2,8N-CE /10E100G 24V/K6M DC	R901301896	21	A3	K	R901302181	A3	R901302282	A3	
		140	10	ABSBG-1X/M 2,8N-CE /10E140G 24V/K6M DC	R901301898	21	A3	K	R901302182	A3	R901302283	A3	
		210	10	ABSBG-1X/M 2,8N-CE /10E210G 24V/K6M DC	R901301899	22	A3	K	R901302183	A3	R901302284	A3	
		330	10	ABSBG-1X/M 2,8N-CE /10E330G 24V/K6M DC	R901280007	21	A3	K	R901302185	A3	R901302285	A3	
3.5		100	10	ABSBG-1X/M 3,5N-CE /10E100G 24V/K6M DC	R901301903	24	A3	K	R901302190	A3	R901302291	A3	
		140	10	ABSBG-1X/M 3,5N-CE /10E140G 24V/K6M DC	R901301904	24	A3	K	R901302191	A3	R901302292	A3	
		210	10	ABSBG-1X/M 3,5N-CE /10E210G 24V/K6M DC	R901301905	24	A3	K	R901302192	A3	R901302293	A3	
		330	10	ABSBG-1X/M 3,5N-CE /10E330G 24V/K6M DC	R901280008	24	A3	K	R901302193	A3	R901302294	A3	

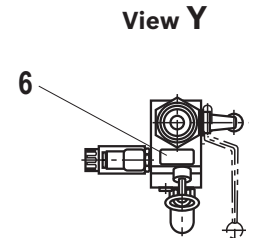
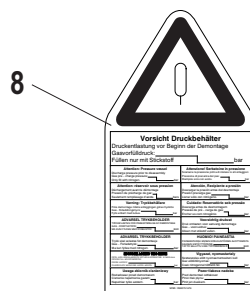
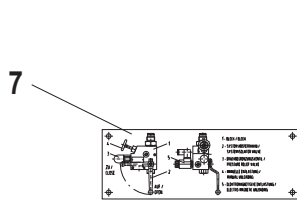
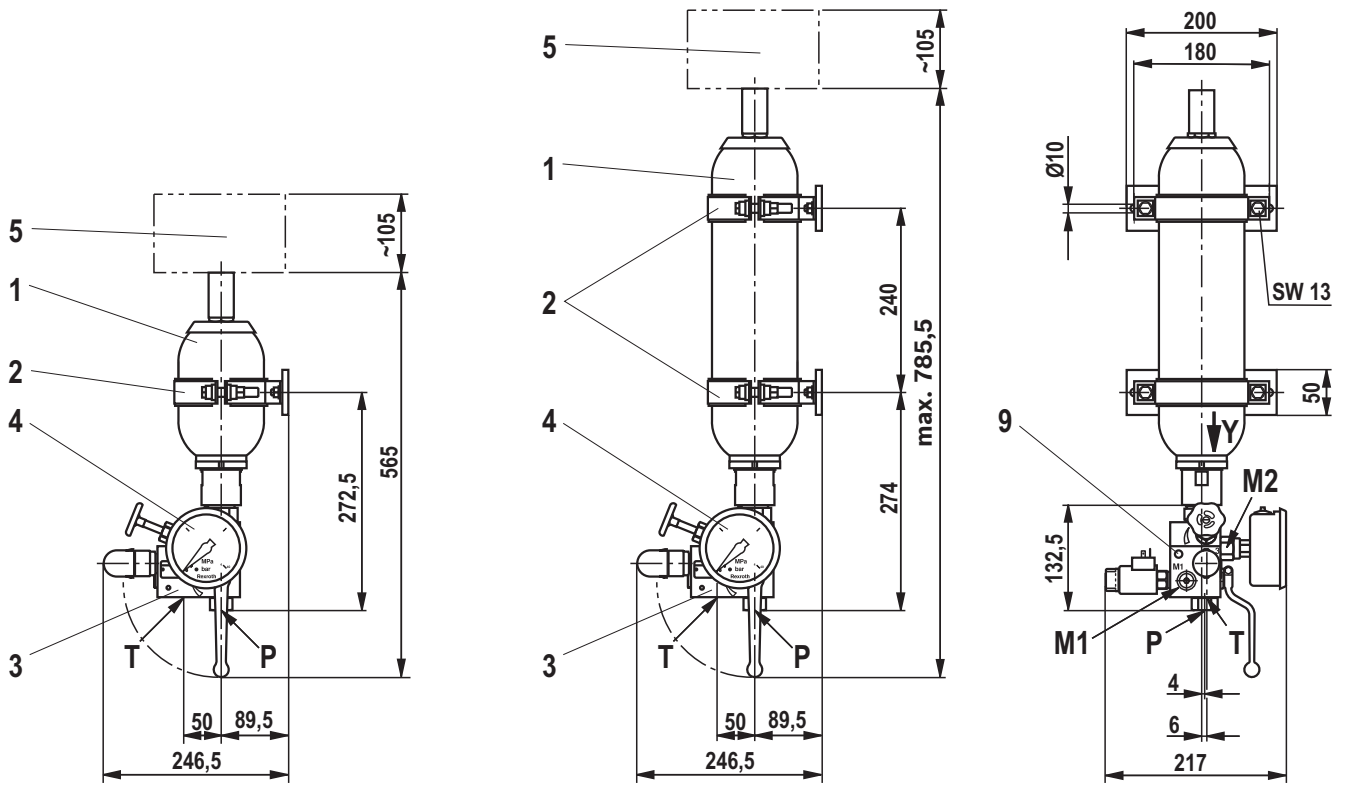
¹⁾ MKZ = Material mark: A2 = Preferred delivery range; A3 = Standard delivery range

Dimensions: Mounting B with clamps (dimensions in mm)

Accumulator station with bladder-type accumulator 1.0 to 2.5 liters

Bladder-type accumulator 1.0 liter

Bladder-type accumulator 2.5 liter



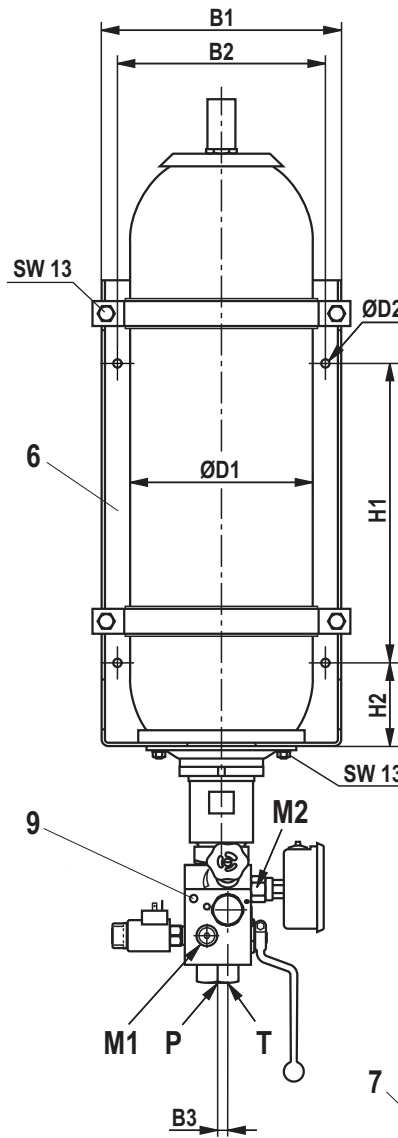
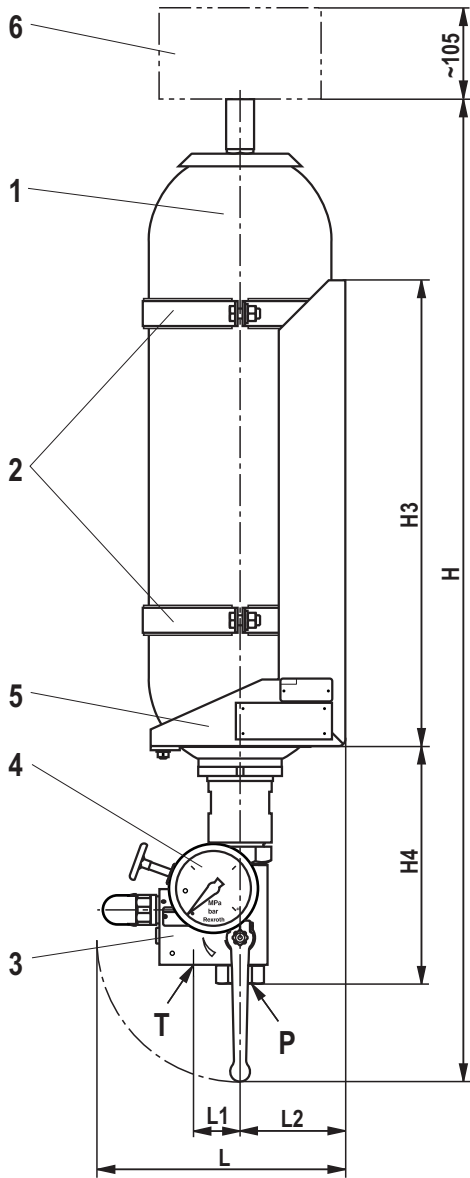
- 1 Hydraulic accumulator
- 2 Clamp(s)
- 3 Shut-off block
- 4 Pressure gauge with red indication of the maximum admissible operating pressure
- 5 Space required for filling device
- 6 Nameplate of the accumulator station
- 7 Functional sign (loose)
- 8 Warning sign (loose)
- 9 Threaded connection M8 for equipotential bonding

- Connection designations:
- M1** Measuring port G 1/4
 - M2** Pressure gauge connection G 1/4
 - P** Pump connection G 1/2
 - T** Tank port G 3/8

The gas filling pressure of the accumulators upon delivery is 2 bar.

Dimensions: Mounting A in console (dimensions in mm)

Accumulator station with bladder-type accumulator 4.0 to 50 liters

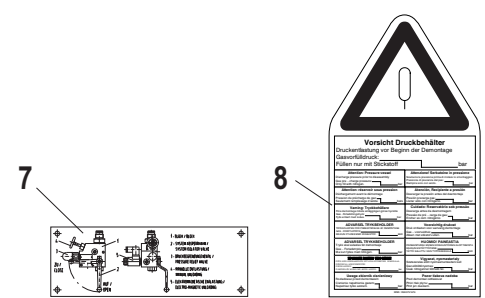


- 1 Hydraulic accumulator
- 2 Clamps
- 3 Shut-off block
- 4 Pressure gauge with red indication of the maximum admissible operating pressure
- 5 Console
- 6 Space required for filling device
- 7 Functional sign
- 8 Warning sign (loose)
- 9 Threaded connection M8 for equipotential bonding

Connection designations:

- M1** Measuring port G 1/4
- M2** Pressure gauge connection G 1/4
- P** Pump connection
- T** Tank port

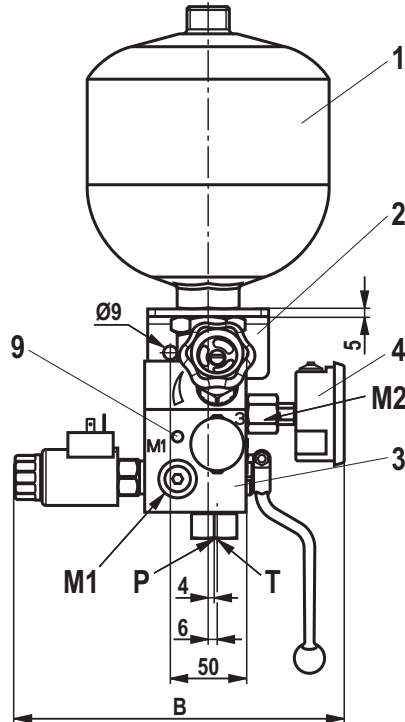
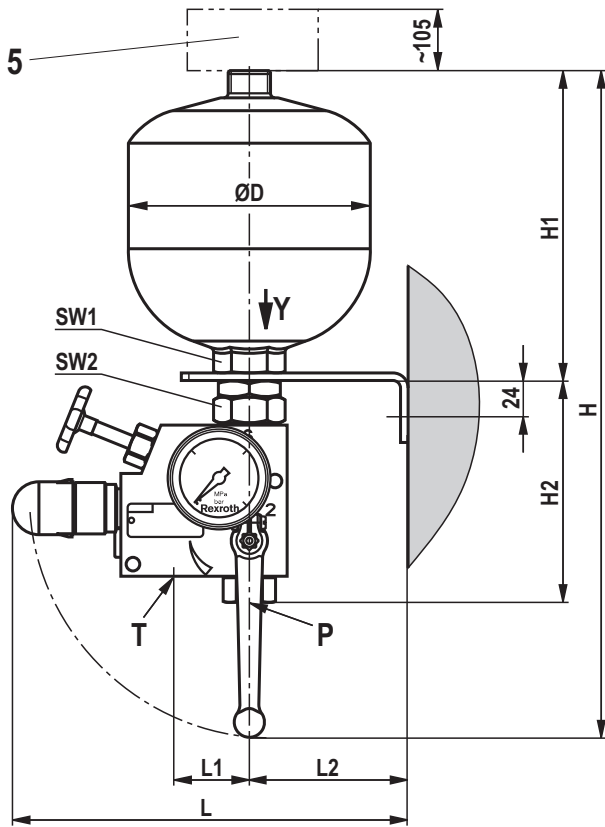
The gas filling pressure of the accumulators upon delivery is 2 bar.



ABSBG-... assembly kit	ØD1 _{max}	ØD2	B1	B2	B3	H _{max}	H1	H2	H3	H4	L	L1	L2
B4,0.../10...	170	10	230	170	2	670	120	50	250	200±10	209	50	112
B10.../20...	225.5	10	285	250	7	882	130	75	280	270±10	301	56	128
B20.../20...	225.5	10	285	250	7	1192	360	100	560	270±10	299	56	126
B35.../20...	225.5	12	285	250	7	1715.5	820	150	1120	270±10	300	56	127
B50.../30...	225.5	12	285	250	2	2303.5	820	150	1120	306±10	343	79.7	127

Dimensions: Mounting with bracket K (dimensions in mm)

Accumulator station with diaphragm-type accumulator 0.7 to 3.5 liters

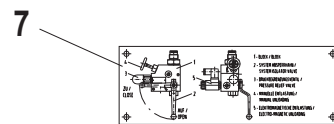
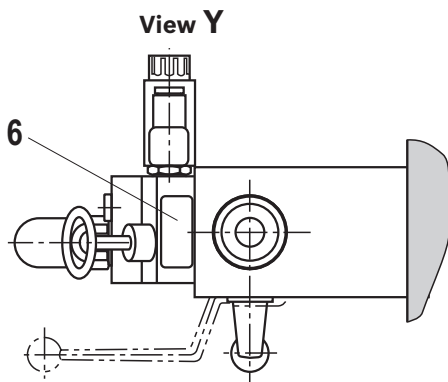


- 1 Hydraulic accumulator
- 2 Bracket
- 3 Shut-off block
- 4 Pressure gauge with red indication of the maximum admissible operating pressure
- 5 Space required for filling device
- 6 Nameplate of the accumulator station
- 7 Functional sign (loose)
- 8 Warning sign (loose)
- 9 Threaded connection M8 for equipotential bonding

Connection designations:

- M1** Measuring port G 1/4
- M2** Pressure gauge connection G 1/4
- P** Pump connection G 1/2
- T** Tank port G 3/8

The gas filling pressure of the accumulators upon delivery is 2 bar.



ABSBG-... assembly kit	ØD	H	H1	H2	L	L1	L2	B	SW1	SW2
M0,7/10	128.5	402.5	171	132.5	237	50	80	217	SW 41	SW 41
M1,4/10	156	427.5	196						262	105
M2,0/10		512.5	281		SW 55					
M2,8/10	180	501.5	270							
M3,5/10		541.5	310							

Commissioning, maintenance and operating instructions

General Information

- ▶ Observe the documentation for the machinery.
 - ▶ Also observe the documentation pertaining to the other components, assemblies and partly completed machinery, which form part of the complete machinery.
 - ▶ Observe the generally applicable, legal or otherwise binding European and national regulations as well as the relevant legislation for your country pertaining to the prevention of accidents and protection of the environment.
 - ▶ Operating instructions according to data sheet of the accumulator.
 - ▶ Depending on the country of installation, national pressure vessel regulations need to be complied with.
 - ▶ In the standard, the country acceptance is effected according to BA, CE as well as for China and Russia. Other acceptances on request.
 - ▶ Please indicate the country of installation in the order.
 - ▶ Keep all documents included in the delivery in a safe place; they will be required by the expert in recurring tests.
 - ▶ The machine end-user will have sole responsibility for complying with existing provisions.
- ▶ The accumulator stations in this edition are assemblies in the sense of directive 97/23/EC section 2.1.5 (Pressure Equipment Directive).
 - ▶ The accumulator assemblies described here contain the entire equipment which is required for safety reasons according to DIN EN ISO 4413.
 - ▶ The accumulator assemblies must not be modified; otherwise, the operating license according to directive 97/23/EC will be lost and the dealer and/or manufacturer warranty will be forfeited.
 - ▶ The accumulator assemblies may only be operated within the admissible limit values.
 - ▶ Repairs may only be carried out by the manufacturer or their authorized dealers and agencies. Repairs performed by third parties invalidate the approval and release the manufacturer from all claims resulting from an unauthorized intervention.
 - ▶ Assembly and maintenance must be implemented by authorized, instructed persons only.

Commissioning, maintenance and operating instructions

► The accumulator assemblies are provided with signs: **1**

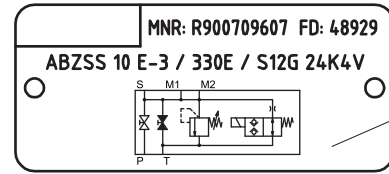
- 1. Name plate** specifying the pressure rating, identifies the device.
- 2. Functional sign**, identifies the components and elementary lever positions.
- 3. Warning sign**, has to be clearly visible and attached at the device or next to it.

Usually, the warning sign is in the languages according to the country acceptance. Other languages on request. **2**

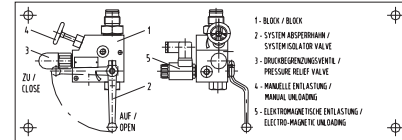
For hydraulic systems with one or several hydraulic accumulators whose warning signs are not visible after installation into the machine, an additional warning sign has to be attached visibly to the system, stating: **3**

"CAUTION -- system contains hydraulic accumulators."

The circuit diagram has to contain the same notice. With mounting "B" and "K", the warning signs and functional signs are supplied separately and must be attached to or close to the accumulator assembly in a clearly visible position. The attachment of the signs must already be considered in the design.





Example




Vorsicht Druckbehälter	
Druckentlastung vor Beginn der Demontage	
Gasvorfülldruck: _____ bar	
Füllen nur mit Stickstoff _____ bar	
<p>Attention: Pressure vessel Discharge pressure prior to disassembly Gas pre - charge pressure: _____ bar Only fill with nitrogen.</p>	<p>Attenzione! Serbatoio in pressione Scaricare la pressione prima di iniziare lo smontaggio Pressione di precarica del gas: _____ bar Riempiere solo con azoto.</p>
<p>Attention: réservoir sous pression Déchargement avant le démontage Pression de précharge de gaz: _____ bars Seulement remplissage d'azote.</p>	<p>Atención. Recipiente a presión Descargar la presión antes del desmontaje Presión precarga gas: _____ bar Llenar sólo con nitrógeno.</p>
<p>Varning: Tryckbehållare Före demontering måste anläggningen göras trycklös Gas - försladdningstryck: _____ bar Fylls enbart med kväve.</p>	<p>Cuidado: Reservatório sob pressão Descarga antes da desmontagem Pressão de pré - carga de gás: _____ bar Encher só com nitrogênio.</p>
<p>ADVARSEL TRYKBEHOLDER TRYKFLASTES FOR FÆRDYNDELSE AF DEMONTAGE GAS - FØRSLADDNINGSTRYK: _____ BAR MA KUN FYLDES MED KVÆLSTOF.</p>	<p>Voorzichtig drukvat Druk ontlasten voor aanvang demontage Gas - voorvuldruk: _____ bar Alleen met stikstof vullen.</p>
<p>ADVARSEL TRYKBEHOLDER Trykk skal avlastes før demontasje Gas - Førladdingstrykk: _____ bar Ma kun fylles med nitrogen.</p>	<p>HUOMIOI PAINEASTIA PAINEEPURKU ENHIN KORLAUSTOIDEN ALOITTAMISTA KAASUN ESITÄYTTÄMINEN TÄTTÖ SALLITTU VAIN TYPIKKAASULLA _____ BAR</p>
<p>ΠΡΟΣΟΧΗ ΔΕΙΞΤΕ ΤΗΝ ΠΙΕΣΗ ΕΠΙΣΤΡΕΦΕΤΕ ΤΗΝ ΠΙΕΣΗ ΠΡΙΝ ΑΠΟ ΤΗΝ ΑΝΤΙΜΟΝΩΣΗ ΕΠΙΣΤΡΕΦΕΤΕ ΤΗΝ ΠΙΕΣΗ ΠΡΙΝ ΑΠΟ ΤΗΝ ΑΝΤΙΜΟΝΩΣΗ ΕΠΙΣΤΡΕΦΕΤΕ ΜΟΝΟ ΜΕ ΑΖΩΤΟ _____ BAR</p>	<p>Vigyázat, nyomastartály Szétcszerelés előtt nyomásmérsztereni kell Gáz - előtöltőnyomás: _____ bar Csak nitrogénnel tölthető fel.</p>
<p>Uwaga zbiornik ciśnieniowy Pozostać nacisk przed demontażem Ciśnienie napełnienia gazem: _____ bar Napełniać tylko azotem.</p>	<p>Pozor tlakova nadoba Pred demontazjo odslakovaj Princ tlak pnytu: _____ bar Pintni jen dusikem.</p>
MNR - R900751679	

Commissioning, maintenance and operating instructions

Commissioning - Operating instructions according to data sheet of the accumulator!

	<p>DANGER Do not charge hydraulic accumulators with oxygen or air. Risk of explosion!</p> <ul style="list-style-type: none"> ▶ Prior to the initial commissioning, the hydraulic accumulator must be filled with nitrogen of class 4.0, pure (N₂ content 99.99 vol. %). The preset gas pressure necessary for the operation is indicated in the circuit diagrams and operating instructions. ▶ Only use suitable filling and testing devices for filling. We recommend using the filling and testing devices by Bosch Rexroth according to data sheet 50150.
	<p>WARNING</p> <ul style="list-style-type: none"> ▶ Risk of injury caused by improper assembly. ▶ Hydraulic accumulators are energy stores. They may supply the energy for uncontrolled movements to actuators. ▶ Before beginning any repairs, the system must be depressurized on the oil and gas side and protected against unauthorized re-start. ▶ Do not carry out welding and soldering work or any mechanical processing at the accumulator tank! Any kind of work at the product invalidates the declaration of conformity and the operating license! <ul style="list-style-type: none"> – Risk of explosion due to welding and soldering work! – Danger of bursting during and after mechanical work. ▶ A warning sign is enclosed to the accumulator station. It is to be attached to or close to the accumulator station in a clearly visible position.

Maintenance

	<p>Attention</p> <ul style="list-style-type: none"> ▶ In case of damage at the accumulator bladder or diaphragm, the accumulator will lose its function immediately. ▶ Loss of the initial gas tension will lead to damage at the accumulator bladder or the accumulator diaphragm if operation of the system is continued nevertheless. ▶ Check the initial gas tension in regular intervals.
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Legal provisions

- ▶ Hydraulic accumulators are pressure vessels and subject to the application of national provisions and/or regulations valid at the place of installation.
- ▶ In Germany, the Ordinance on Industrial Safety and Health (BetrSichV) applies.
- ▶ As a standard, country acceptances are effected according to BA, CE as well as for China and Russia. Other acceptances on request.
- ▶ Special regulations are to be observed in shipbuilding, aircraft construction, mining, etc.
- ▶ Design, production and testing are effected according to the data sheets according to AD 2000. Installation, equipment and operation are controlled by the "Technical rules for pressure vessels" (TRB).

Note pursuant to the EC Machinery Directive 2006/42/EC, according to annex II part 1, section A, manufacturer's declaration:

- ▶ The assemblies were manufactured in accordance with the harmonized standards DIN EN ISO 4413, DIN EN ISO 12100, EN 983, and EN 60204-1.
- ▶ Commissioning is prohibited until it was confirmed that the machine into which the assemblies are to be integrated complies with the regulations laid down in the EC Directives.

Bosch Rexroth AG
Hydraulics
Zum Eisengießer 1
97816 Lohr am Main, Germany
Phone +49 (0) 93 52 / 18-0
documentation@boschrexroth.de
www.boschrexroth.de

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