

Accumulator stations

Type ABSBG

RE 50136

Edition: 2016-08



- ▶ Component series 2X
- ▶ With bladder-type accumulator according to data sheet 50171

Features

- ▶ Accumulator station with shut-off block
- ▶ Bladder-type accumulator
- ▶ Shut-off block with integrated shut-off valve, safety valve (type-examination 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

Contents

Features	1
Ordering code	2, 3
Technical data	4, 5
Symbols	6
Spare parts and accessories	6
Standard program including preferred types	7, 8
Accumulator stations for advanced flows	9
Dimensions	10 ... 12
Commissioning, maintenance and operating instructions	13 ... 15

Ordering code

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
ABSBG	-	2X	/	B		N	-		/		G24	V	/	6

01	Accumulator station	ABSBG
02	Component series 20 ... 29 (20 ... 29; unchanged installation and connection dimensions) Accumulator stations with bladder-type accumulator according to directive 2014/68/EU	2X

Hydraulic accumulator, design

03	Bladder-type accumulator according to data sheet 50171	B
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Accumulator volume in liters

04	1.0 liter	1.0
	2.5 liters	2.5
	4.0 liters	4.0
	10.0 liters	10.0
	20.0 liters	20.0
	24.0 liters	24.0
	32.0 liters	32.0
	50.0 liters	50.0

Bladder material

05	e.g. acrylonitrile-butadiene rubber (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	
	Acceptance according to 2014/68/EU	CE
	Acceptance according to SELO (China)	534
	Acceptance according to GOST (Russia)	520
	Operating instructions	BA

Accumulator shut-off block according to data sheet 50131

07	ABZSS 10 pressure relief valve 6E	10
	ABZSS 20 pressure relief valve 10E	20
	ABZSS 30 pressure relief valve 20E	30
	ABZSS 30 SO30 pressure relief valve 30E	31

Accumulator shut-off block - Unloading

08	Manual and electro-magnetic	E
	Manual	M

Accumulator shut-off block - Set pressure at the pressure relief valve

09	100 bar	100
	140 bar	140
	210 bar	210
	315 bar	315
	330 bar	330

Accumulator shut-off block - Voltage type

10	Direct voltage 24 V	G24
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Accumulator shut-off block - Seal material

11	FKM	V
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Mounting construction kit

12	Mounting with assembly kit A according to DCCS 10060 (console C)	A
	Mounting with clamp according to DCCS 10060	B

Ordering code

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
ABSBG	-	2X	/	B		N	-	/			G24	V	/	6

ABZMM pressure gauge according to data sheet 50205

13	DN 63	6
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Pressure gauge scale

14	bar/MPa	M
	bar/psi	P

Accumulator manufacturer

15	Bosch Rexroth	DC
	Roth Hydraulics	RH

Order example:**ABSBG-2X/B32,0N-CE/30E315G24V/A6MDC**

Technical data

(For application outside these values, please consult us!)

Accumulators		
Design		Bladder-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	-15 ... +80 (NBR bladder) -32 ... +80 (ECO bladder)
Acceptance specification for the accumulator	CE/BA	Acceptance according to 2014/68 EU operating instructions
	China	SELO
	Russia	GOST

hydraulic, bladder-type accumulator										
Nominal volume	V_{rated}	l	1	2.5	4.0	10	20	24	32	50
Effective gas volume	V_{eff}	l	1.0	2.4	3.7	9.2	18.1	24.5	33.4	48.7
Maximum flow	q_{max}	l/min	240	600	600	900	900	900	900	900
Maximum operating pressure	p_{max}	bar	350	350	350	330	330	330	330	330
Max. adm. pressure fluctuation range	Δp_{dyn}	bar	200	200	200	125	125	125	125	125

pneumatic		
Charging gas		Nitrogen, cleanliness class 4.0, N ₂ = 99.99 vol. %
Gas filling pressure	p_0	bar CE, BA: 0
	p_0	bar RU, CN: 2 ... 5

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, please 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 zinc-soluble, zinc may accumulate in the fluid (700 mg zinc per pole tube).

Technical data

(For application outside these values, please consult us!)

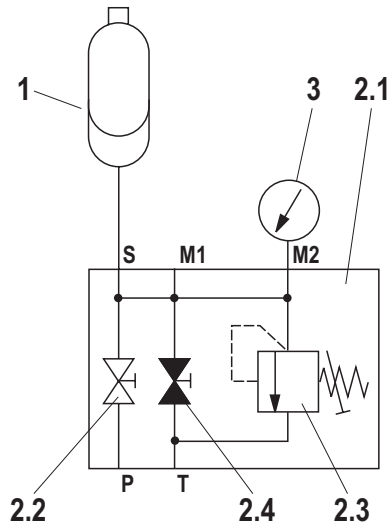
Pressure gauge		
Size	bar	63
Pressure gauge		Glycerin
Double scale		bar/MPa

Surface treatment:

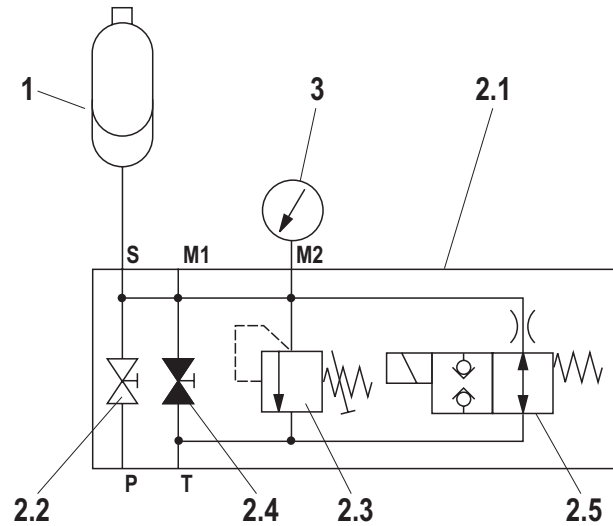
All steel components and components without protective coating are coated prior to installation (minimum corrosion protection time of 12 h in salt spray test). Then, the devices, components and the piping are installed. All components, assemblies, controls, pipes, fittings and standard parts keep the 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-examination 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 50171
- ▶ 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 design 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	Q _{Vmax} DBDS in l/min	Acceptance CE/BA				Acceptance China		Acceptance Russia		
					Denomination	Material no.	Weight in kg	MKZ ¹⁾	Type of mounting	Material no.	MKZ ¹⁾	Material no.	MKZ ¹⁾
Bladder-type accumulator	1.0	100	10	25	ABSBG-2X/B 1,0N-BA /10M100 V/B6M DC	R901450000	14	A3	B	R901450018	A3	R901450036	A3
		140	10	52	ABSBG-2X/B 1,0N-BA /10M140 V/B6M DC	R901450001	14	A3		R901450019	A3	R901450037	A3
		210	10	52	ABSBG-2X/B 1,0N-BA /10M210 V/B6M DC	R901450002	14	A3		R901450020	A3	R901450038	A3
		330	10	52	ABSBG-2X/B 1,0N-BA /10M330 V/B6M DC	R901450003	14	A2		R901450021	A3	R901450039	A3
	2.5	100	10	25	ABSBG-2X/B 2,5N-CE /10M100 V/B6M DC	R901450004	18	A2	B	R901450022	A3	R901450040	A3
		140	10	52	ABSBG-2X/B 2,5N-CE /10M140 V/B6M DC	R901450005	18	A3		R901450023	A3	R901450041	A3
		210	10	52	ABSBG-2X/B 2,5N-CE /10M210 V/B6M DC	R901450006	18	A3		R901450024	A3	R901450042	A3
		330	10	52	ABSBG-2X/B 2,5N-CE /10M330 V/B6M DC	R901450007	18	A3		R901450025	A3	R901450043	A3
	4.0	100	10	25	ABSBG-2X/B 4,0N-CE /10M100 V/A6M DC	R901450008	28	A3	A	R901450026	A3	R901450044	A3
		140	10	52	ABSBG-2X/B 4,0N-CE /10M140 V/A6M DC	R901450009	28	A3		R901450027	A3	R901450045	A3
		210	10	52	ABSBG-2X/B 4,0N-CE /10M210 V/A6M DC	R901450010	28	A3		R901450028	A3	R901450046	A3
		330	10	52	ABSBG-2X/B 4,0N-CE /10M330 V/A6M DC	R901450011	28	A2		R901450029	A3	R901450047	A3
	10.0	210	20	140	ABSBG-2X/B10,0N-CE /20M210 V/A6M DC	R901450012	49	A3	A	R901450030	A3	R901450048	A3
		330	20	140	ABSBG-2X/B10,0N-CE /20M330 V/A6M DC	R901450013	49	A2		R901450031	A3	R901450049	A3
	20.0	210	20	140	ABSBG-2X/B20,0N-CE /20M210 V/A6M DC	R901450014	75	A3	A	R901450032	A3	R901450050	A3
		330	20	140	ABSBG-2X/B20,0N-CE /20M330 V/A6M DC	R901450015	75	A2		R901450033	A3	R901450051	A3
	24.0	210	20.0	140	ABSBG-2X/B24,0N-CE /20M210 V/A6M DC	R901450115	83	A3	A	R901450117	A3	R901450119	A3
		330	20.0	140	ABSBG-2X/B24,0N-CE /20M330 V/A6M DC	R901450116	83	A3		R901450118	A3	R901450120	A3
	32.0	315	30	165	ABSBG-2X/B32,0N-CE /30M315 V/A6M DC	R901450016	132	A3	A	R901450034	A3	R901450052	A3
	50.0	315	30	165	ABSBG-2X/B50,0N-CE /30M315 V/A6M DC	R901450017	170	A3	A	R901450035	A3	R901450053	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	Q_{Vmax} DBDS in l/min	Acceptance CE/BA				Acceptance China		Acceptance Russia		
					Denomination	Material no.	Weight in kg	MKZ ¹⁾	Type of mounting	Material no.	MKZ ¹⁾	Material no.	MKZ ¹⁾
Bladder-type accumulator	1.0	100	10	25	ABSBG-2X/B 1,0N-BA /10E100G 24V/B6M DC	R901450054	14	A3	B	R901450072	A3	R901450090	A3
		140	10	52	ABSBG-2X/B 1,0N-BA /10E140G 24V/B6M DC	R901450055	14	A3		R901450073	A3	R901450091	A3
		210	10	52	ABSBG-2X/B 1,0N-BA /10E210G 24V/B6M DC	R901450056	14	A3		R901450074	A3	R901450092	A3
		330	10	52	ABSBG-2X/B 1,0N-BA /10E330G 24V/B6M DC	R901450057	14	A2		R901450075	A3	R901450093	A3
	2.5	100	10	25	ABSBG-2X/B 2,5N-CE /10E100G 24V/B6M DC	R901450058	18	A3	B	R901450076	A3	R901450094	A3
		140	10	52	ABSBG-2X/B 2,5N-CE /10E140G 24V/B6M DC	R901450059	18	A3		R901450077	A3	R901450095	A3
		210	10	52	ABSBG-2X/B 2,5N-CE /10E210G 24V/B6M DC	R901450060	18	A3		R901450078	A3	R901450096	A3
		330	10	52	ABSBG-2X/B 2,5N-CE /10E330G 24V/B6M DC	R901450061	18	A2		R901450079	A3	R901450097	A3
	4.0	100	10	25	ABSBG-2X/B 4,0N-CE /10E100G 24V/A6M DC	R901450062	28	A3	A	R901450080	A3	R901450098	A3
		140	10	52	ABSBG-2X/B 4,0N-CE /10E140G 24V/A6M DC	R901450063	28	A3		R901450081	A3	R901450099	A3
		210	10	52	ABSBG-2X/B 4,0N-CE /10E210G 24V/A6M DC	R901450064	28	A3		R901450082	A3	R901450100	A3
		330	10	52	ABSBG-2X/B 4,0N-CE /10E330G 24V/A6M DC	R901450065	28	A2		R901450083	A3	R901450101	A3
	10.0	210	20	140	ABSBG-2X/B10,0N-CE /20E210G 24V/A6M DC	R901450066	49	A3	A	R901450084	A3	R901450102	A3
		330	20	140	ABSBG-2X/B10,0N-CE /20E330G 24V/A6M DC	R901450067	49	A2		R901450085	A3	R901450103	A3
	20.0	210	20	140	ABSBG-2X/B20,0N-CE /20E210G 24V/A6M DC	R901450068	75	A3	A	R901450086	A3	R901450104	A3
		330	20	140	ABSBG-2X/B20,0N-CE /20E330G 24V/A6M DC	R901450069	75	A2		R901450087	A3	R901450105	A3
	24.0	210	20.0	140	ABSBG-2X/B24,0N-CE /20E210G 24V/A6M DC	R901450121	83	A3	A	R901450123	A3	R901450125	A3
		330	20.0	140	ABSBG-2X/B24,0N-CE /20E330G 24V/A6M DC	R901450122	83	A3		R901450124	A3	R901450126	A3
	32.0	315	30	165	ABSBG-2X/B32,0N-CE /30E315G 24V/A6M DC	R901450070	132	A2	A	R901450088	A3	R901450106	A3
	50.0	315	30	165	ABSBG-2X/B50,0N-CE /30E315G 24V/A6M DC	R901450071	170	A2	A	R901450089	A3	R901450107	A3

¹⁾ MKZ = material mark: **A2** = preferred delivery range; **A3** = standard delivery range

Accumulator stations for advanced flows

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	Q _{Vmax} DBDS in l/min	Acceptance CE/BA				Acceptance China		Acceptance Russia		
					Denomination	Material no.	Weight in kg	MKZ ¹⁾	Type of mounting	Material no.	MKZ ¹⁾	Material no.	MKZ ¹⁾
Bladder-type accumulator	1.0	330	20	140	ABSBG-2X/B 1,0N-BA /20M330 V/B6M DC	R901448603	17	A3	B	-	-	-	-
	2.5	330	20	140	ABSBG-2X/B 2,5N-CE /20M330 V/B6M DC	R901448605	21	A3	B	-	-	-	-
	4.0	330	20	140	ABSBG-2X/B 4,0N-CE /20M330 V/A6M DC	R901448607	31	A3	A	-	-	-	-
	10.0	315	30	165	ABSBG-2X/B10,0N-CE /30M315 V/A6M DC	R901448609	63	A3	A	-	-	-	-
		315	31	165	ABSBG-2X/B10,0N-CE /31M315 V/A6M DC	R901448612	71	A3	A	-	-	-	-
	20.0	315	30	165	ABSBG-2X/B20,0N-CE /30M315 V/A6M DC	R901448615	89	A3	A	-	-	-	-
		315	31	300	ABSBG-2X/B20,0N-CE /31M315 V/A6M DC	R901448617	97	A3	A	-	-	-	-
	32.0	315	31	300	ABSBG-2X/B32,0N-CE /31M315 V/A6M DC	R901448619	141	A3	A	-	-	-	-
50.0	315	31	300	ABSBG-2X/B50,0N-CE /31M315 V/A6M DC	R901448621	179	A3	A	-	-	-	-	

¹⁾ MKZ = material mark: A2 = preferred delivery range; A3 = standard delivery range

Accumulator stations for advanced flows

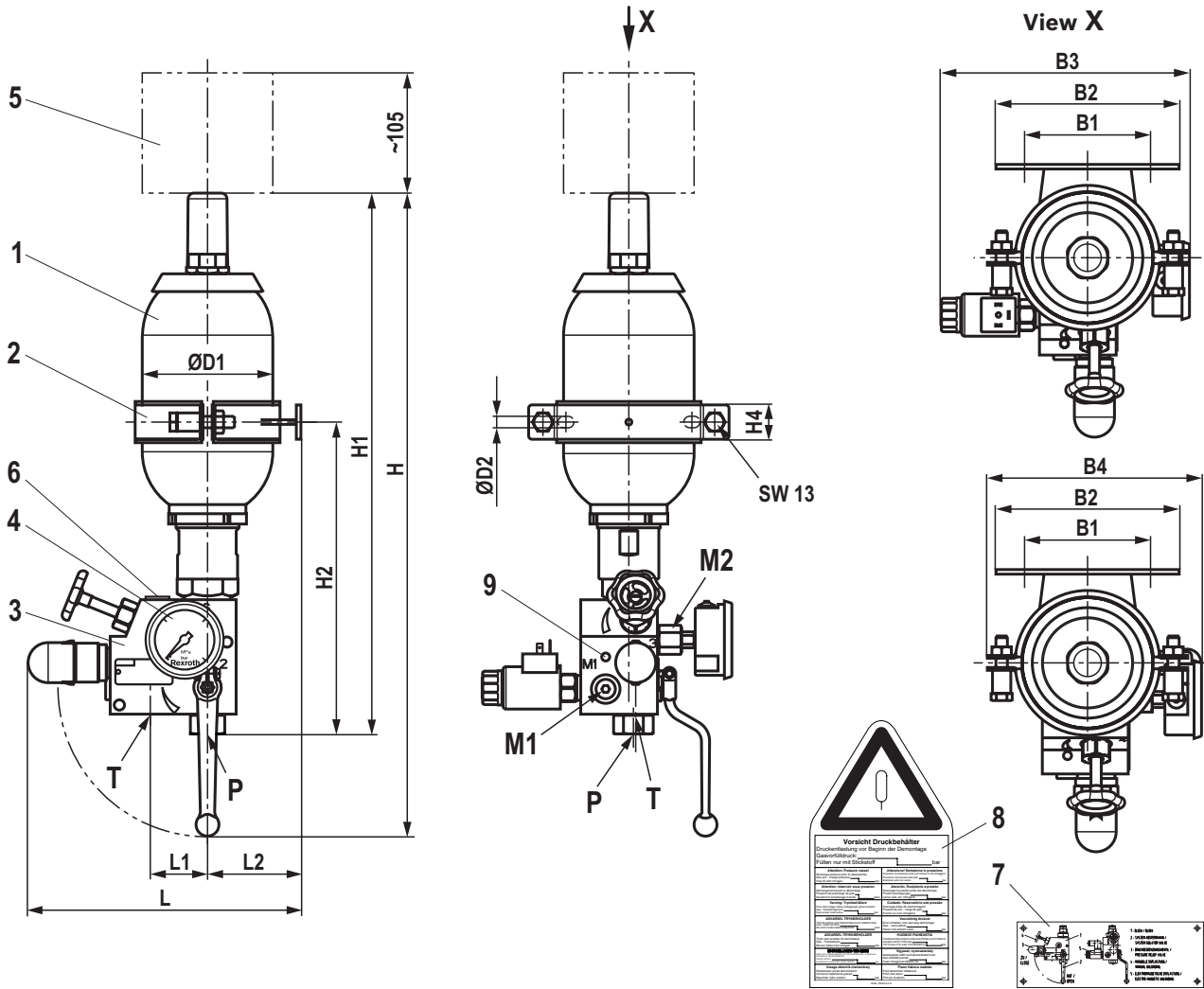
Standard program including preferred types with electrically operated drain valve (other versions on request)

Accumulator type	Nominal volume in liters	Relief pressure in bar	Shut-off block DN	Q _{Vmax} DBDS in l/min	Acceptance CE/BA				Acceptance China		Acceptance Russia		
					Denomination	Material no.	Weight in kg	MKZ ¹⁾	Type of mounting	Material no.	MKZ ¹⁾	Material no.	MKZ ¹⁾
Bladder-type accumulator	1.0	330	20	140	ABSBG-2X/B 1,0N-BA /20E330G 24V/B6M DC	R901448604	14	A3	B	-	-	-	-
	2.5	330	20	140	ABSBG-2X/B 2,5N-CE /20E330G 24V/B6M DC	R901448606	21	A3	B	-	-	-	-
	4.0	330	20	140	ABSBG-2X/B 4,0N-CE /20E330G 24V/A6M DC	R901448608	31	A3	A	-	-	-	-
	10.0	315	30	165	ABSBG-2X/B10,0N-CE /30E315G 24V/A6M DC	R901448611	63	A3	A	-	-	-	-
		315	31	165	ABSBG-2X/B10,0N-CE /31E315G 24V/A6M DC	R901448613	71	A3	A	-	-	-	-
	20.0	315	30	165	ABSBG-2X/B20,0N-CE /30E315G 24V/A6M DC	R901448616	89	A3	A	-	-	-	-
		315	31	300	ABSBG-2X/B20,0N-CE /31E315G 24V/A6M DC	R901448618	97	A3	A	-	-	-	-
	32.0	315	31	300	ABSBG-2X/B32,0N-CE /31E315G 24V/A6M DC	R901448620	141	A3	A	-	-	-	-
50.0	315	31	300	ABSBG-2X/B50,0N-CE /31E315G 24V/A6M DC	R901448622	179	A3	A	-	-	-	-	

¹⁾ MKZ = material mark: A2 = preferred delivery range; A3 = standard delivery range

Dimensions: Mounting B with clamp (dimensions in mm)

Accumulator station with 1.0 liter bladder-type accumulator



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

Connection designations:

M1 Measuring port	G1/4
M2 Pressure gauge connection	G1/4
P Pump connection	s. table
T Tank port	s. table

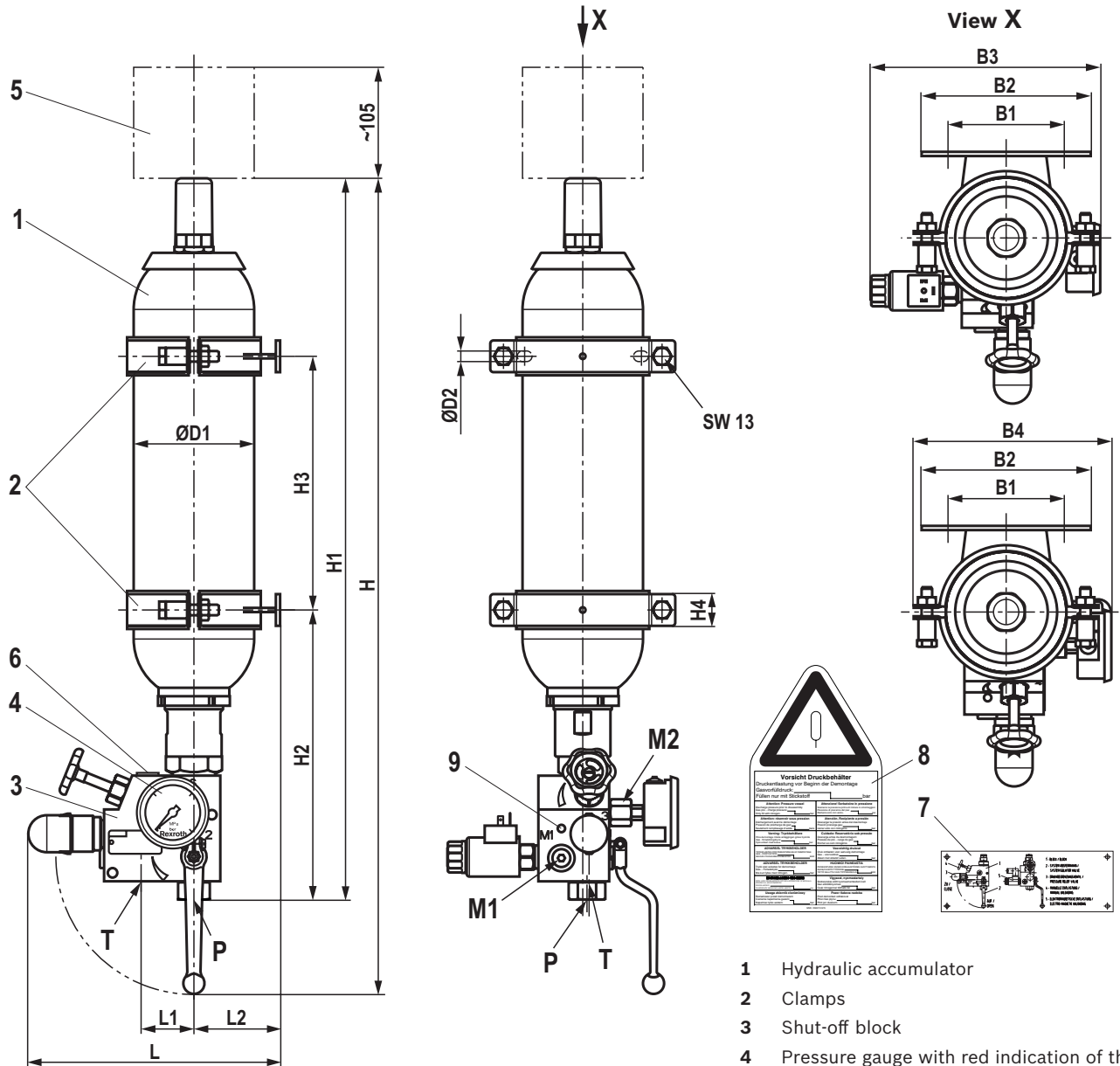
Gas filling pressure of the accumulators upon delivery:

BA	0 bar
CE	0 bar
Russia	2 ... 5 bar
China	2 ... 5 bar

ABSBG... assembly kit	ØD1 _{max}	ØD2	B1	B2	B3	B4	H1	H2	H4	H _{max}	L1	L2	L	P	T
B 1.0.../10M	116	10	110	160	-	178	490	275	30	557	50	82	239	G1/2	G3/8
B 1.0.../10E	116	10	110	160	223	-	490	275	30	557	50	82	239	G1/2	G3/8
B 1.0.../20M	116	10	110	160	-	191	516	301	30	631	56	82	253	G1	G1/2
B 1.0.../20E	116	10	110	160	234	-	516	301	30	631	56	82	253	G1	G1/2

approx. dimensions - for precise dimensions, please refer to the dimensional drawings

Dimensions: Mounting B with clamps (dimensions in mm)

Accumulator station with 2.5 liters bladder-type accumulator

Connection designations:

M1 Measuring port	G1/4
M2 Pressure gauge connection	G1/4
P Pump connection	s. table
T Tank port	s. table

Gas filling pressure of the accumulators upon delivery:

BA	0 bar
CE	0 bar
Russia	2 ... 5 bar
China	2 ... 5 bar

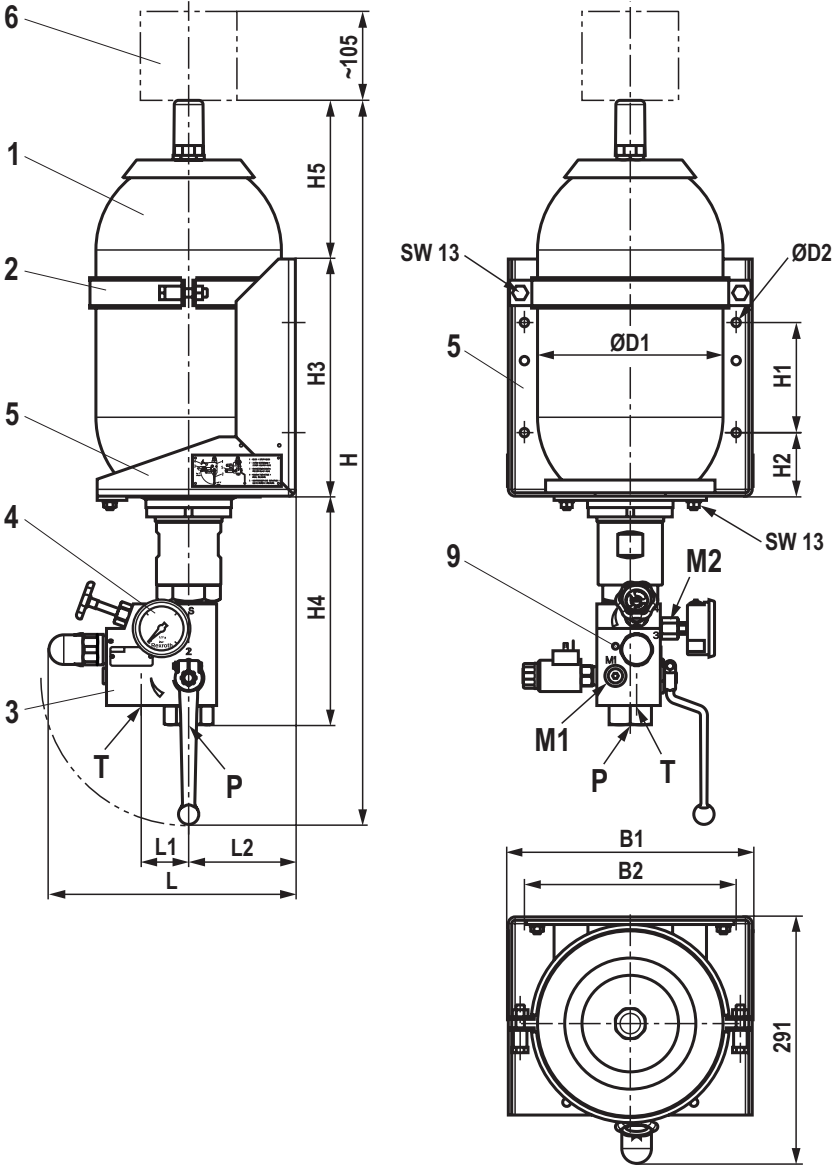
- 1 Hydraulic accumulator
- 2 Clamps
- 3 Shut-off block
- 4 Pressure gauge with red indication of the maximum admissible operating pressure
- 5 Space required for filling device
- 6 Name plate of the accumulator station
- 7 Functional sign (loose)
- 8 Warning sign (loose)
- 9 Threaded connection M8 for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

ABSBG-... assembly kit	ØD1 _{max}	ØD2	B1	B2	B3	B4	H1	H2	H3	H4	H _{max}	L1	L2	L	P	T
B 2.5.../10M...	116	10	110	160	-	178	699	276	240	30	766	50	82	239	G1/2	G3/8
B 2.5.../10E...	116	10	110	160	223	-	699	276	240	30	766	50	82	239	G1/2	G3/8
B 2.5.../20M...	116	10	110	160	-	191	725	302	240	30	840	56	82	253	G1	G1/2
B 2.5.../20E...	116	10	110	160	234	-	725	302	240	30	840	56	82	253	G1	G1/2

approx. dimensions - for precise dimensions, please refer to the dimensional drawings

Dimensions: Mounting A in console (dimensions in mm)

Accumulator station with 4.0 ... 50.0 liters bladder-type accumulator



- 1 Hydraulic accumulator
- 2 Clamp
- 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 (loose)
- 8 Warning sign (loose)
- 9 Threaded connection M8 for equipotential bonding

Connection designations:

- M1** Measuring port G1/4
- M2** Pressure gauge connection G1/4
- P** Pump connection s. table
- T** Tank port s. table

Gas filling pressure of the accumulators upon delivery:

- BA 0 bar
- CE 0 bar
- Russia 2 ... 5 bar
- China 2 ... 5 bar

ABSBG... assembly kit	ØD1 _{max}	ØD2	B1	B2	H1	H2	H3	H4±10	H5	H _{max}	L1	L2	L	P	T
B 4.0.../10...	170	10	210	170	120	50	250	193	136	646	50	112	269	G1/2	G3/8
B 4.0.../20...	170	10	210	170	120	50	250	219	136	720	56	112	283	G1	G1/2
B10.0.../20...	221	10	288	250	130	75	280	269	208	872	56	128	299	G1	G1/2
B10.0.../30...	221	10	288	250	130	75	280	314	208	972	80	128	361	G1 1/2	G1/2
B10.0.../31...	221	10	288	250	130	75	280	336	208	994	111	128	361	G1 1/2	G1 1/2
B20.0.../30...	221	10	288	250	360	100	560	314	238	1282	80	126	359	G1 1/2	G1/2
B20.0.../31...	221	10	288	250	360	100	560	336	238	1304	111	126	359	G1 1/2	G1 1/2
B24.0.../20...	221	10	288	250	360	100	560	269	373	1317	56	126	297	G1	G1/2
B32.0.../30...	221	12	288	250	820	150	1120	314	198	1802	80	127	360	G1 1/2	G1/2
B32.0.../31...	221	12	288	250	820	150	1120	336	198	1824	111	127	360	G1 1/2	G1 1/2
B50.0.../30...	221	12	288	250	820	150	1120	314	713	2317	80	127	360	G1 1/2	G1/2
B50.0.../31...	221	12	288	250	820	150	1120	336	713	2339	111	127	360	G1 1/2	G1 1/2

approx. dimensions - for precise dimensions, please refer to the dimensional drawings

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 2014/68/EU, article 2, section 6 (Pressure Equipment Directive). However, they are not intended for exclusive commissioning. They are installed as a component of a larger assembly or system.
- ▶ The accumulator stations described here contain the entire equipment which is required for safety reasons according to DIN EN ISO 4413.
- ▶ The accumulator stations 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 stations 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

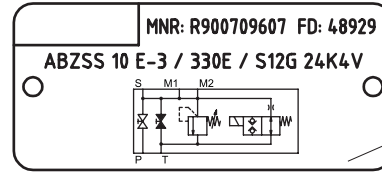
- ▶ The accumulator stations are provided with signs:
 1. **Name plate** specifying the pressure rating, identifies the device
 2. **Functional sign**, identifies the components and elementary lever positions
 3. **Warning sign**, has to be clearly visible and attached at the device or next to it.

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

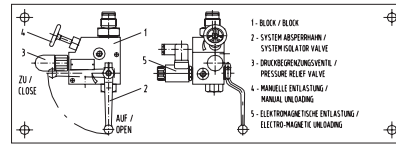
For hydraulic systems with one or several hydraulic accumulators whose warning signs are not visible after installation into the machine, an additional warning sign has to be attached visibly to the system, stating:

"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 loosely and must be attached to or close to the accumulator station 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

Attention: Pressure vessel Discharge pressure prior to disassembly Gas pre-charge pressure: _____ bar Only fill with nitrogen.	Attenzione! Serbatoio in pressione Scaricare la pressione prima di iniziare lo smontaggio. Pressione di precarica del gas: _____ bar Riempire solo con azoto.
Attention: réservoir sous pression Déchargement avant le démontage Pression de précharge de gaz: _____ bars Seulement remplissage d'azote.	Atención. Recipiente a presión Descargar la presión antes del desmontaje Presión precarga gas: _____ bar Llenar sólo con nitrógeno.
Varning: Tryckbehållare Före demontering måste anläggningen göras trycklös Gas: Förladdningsgas: _____ bar Fylls enbart med kväve.	Cuidado: Reservatorio sob presión Descarga antes de desmontar Presión de pre-carga de gas: _____ bar Llenar só con nitrógeno.
ADVARSEL TRYKBEHOLDER TRYKFLÆSTES FOR PÅBEYNDTELSE AF DEMONTAGE GAS - FØRULÆSTING: _____ BAR MA KUN FYLDES MED KVÆLSTOF.	Voorzichtig drukvat Druk ontlasten voor aanvang demontage Gas - voorvuldruk: _____ bar Alleen met stikstof vullen.
ADVARSEL TRYKBEHOLDER Trykk skal avlastes for demontasje Gas - Førladetrykk: _____ bar Ma kun fylles med nitrogen.	HUOMIOI PAINEASTIA PAINEENPURKU ENEN KÖRLAUSITOIDEN ALOITTAMISTA KAASUN ESITTÄMÄNÄ TÄTTÖ SALLITTU VAIN TYPPIKAAASULLA. _____ BAR
ИПОВОЖЕ АЗОРНО ТИЛО ПИВЕЖЕ ПРЕН ДЕМОНТАЖЕТИ ПИВЕЖЕ ПИВЕЖЕТИ И ПИВЕЖЕТИ ОПИТЕТИ НА АЗОРНО ПИВЕЖЕТИ ГАЗИТЕ АЗОРНО ПИВЕЖЕТИ МОЖЕ АЗОРНО АЗОРНО. _____ бар	Vigyázat, nyomtartály Szétzerelés előtt nyommentesíteni kell Gáz: előtöltőnyomás: _____ bar Csak nitrogénnel tölthető fel.
Uwaga zbiornik ciśnieniowy Rozładować przed demontażem Ciężenie napełnienia gazem: _____ bar Napełniać tylko azotem.	Pozor tlakova nadoba Pred demontazaj odtlakovat Plinej tak plinu: _____ bar Plinej jen dusikom.

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. Explosion hazard!</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 charging and test 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 works 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"> – Explosion hazard due to welding and soldering works! – Danger of bursting during and after mechanical processing. <hr/> <ul style="list-style-type: none"> ▶ 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. <hr/> <ul style="list-style-type: none"> ▶ Check the initial gas tension in regular intervals.
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Legal provisions

- ▶ Hydraulic accumulators are pressure vessels and subject to the application 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 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.

Notes

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