Globe Valve

BOA-W

Type Series Booklet

Legal information/Copyright

Type Series Booklet BOA-W

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Globe Valves

Soft-seated Globe Valves to DIN/EN

BOA-W

Main applications

- Hot-water heating systems
- Air-conditioning systems
- Heat recovery systems

Fluids handled

- Water
- Water/glycol mixtures
- Not suitable for fluids containing mineral oils, steam or fluids liable to attack EPDM and cast iron.
- Other fluids on request.

Operating data

Table 1: Operating properties

Characteristic	Value
Nominal pressure	PN 6/16
Nominal size	DN 15 - 200
Max. permissible pressure [bar]	16
Min. permissible temperature [°C]	≥ -10
Max. permissible temperature [°C]	≤ +120

Valve body materials

Table 2: Overview of available materials

Material	Material number
EN-GJL-250	5.1301

Design details

Design

- Straight-way globe valve with slanted seat
- Slanted seat design
- Face-to-face length to DIN EN 558/1
- Single-piece pressure-retaining body
- Non-rising handwheel
- Flanges to DIN EN 1092-2 Type 21
- Position indicator outside the insulating material
- Locking device, travel stop, position indicator, throttling plug and insulating cap with anti-condensation feature as standard
- Suitable for full insulation in acc. with German energy-saving regulations
- Non-rotating stem with protected, external thread
- Maintenance-free stem seal with EPDM profile ring
- Compact EPDM-encapsulated throttling plug as soft main seat and back seat
- Exterior coating: blue, RAL 5002

Variants

- Lead-sealable cap (prevents unauthorised actuation) as assembly set
- Electric actuators

Product benefits

- Minimum pressure loss by hydraulically favourable flow passage
- Fully equipped at no extra price: internal travel stop, position indicator and locking device included.
- Zero leakage and zero maintenance for life due to lubricated-for-life EPDM profile ring and single-piece body
- One model for shut-off and throttling due to EPDM-encapsulated throttling plug with linear characteristic
- Easy insulation due to simple body design and anti-condensation feature (insulating cap)

Product information

Product information as per Regulation No. 1907/2006 (REACH)

For information as per European chemicals regulation (EC) No. 1907/2006 (REACH) see https://www.ksb.com/en-global/company/corporate-responsibility/reach.

Product information as per Pressure Equipment Directive 2014/68/EU (PED)

The valves satisfy the safety requirements of Annex I of the European Pressure Equipment Directive 2014/68/EU (PED) for fluids in Group 2.

Product information as per Pressure Equipment (Safety) Regulations 2016

The valves satisfy the safety requirements of the UK Pressure Equipment (Safety) Regulations 2016 (PER) for fluids in Group 2.

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Related documents

- Use BOA-Control or BOA-Control IMS valves for flow rate and temperature measurement during hydraulic balancing, and our BOATRONIC MS or BOATRONIC MS-420 measuring computers.
- Use maintenance-free BOA-Compact EKB globe valves for water supply systems and cooling circuits as well as drinking water applications.
- Use maintenance-free BOA-H globe valves for handling fluids containing mineral oils, for temperatures above 120 °C and for low-pressure steam systems.
- The valves are also available as automated variants with electric actuators (continuous-action 24 V AC and 230 V AC) or 3-point (Open/Stop/Closed) actuators (24 V AC and 230 V AC) as BOA-CVE C/CS/W/IMS/EKB/IMS EKB globe valves.

Table 3: Information/documents

Document	Reference number
Flow characteristics	7112.4
Operating manual	0570.8
Assembly instructions "Accessories Set: Lead-sealable Handwheel Cap"	0570.811
BOA-Compact EKB type series booklet	7112.11
BOA-Control IMS type series booklet	7128.1
BOA-H type series booklet	7150.1
BOA-CVE C/CS/W/IMS/EKB/IMS EKB type series booklet	7520.1
Typical tender for BOA-W	7111.521

Purchase order specifications

Please specify the following information in all enquiries or purchase orders:

1. Type
2. Nominal pressure
3. Nominal size
4. Variants
5. Reference number

Pressure/temperature ratings

Table 4: Test pressure and operating pressure

PN	DN	Shell test	Leak test (seat)	Permissible operating pressure[1)]
		With water		
		Tests P10 and P11 to DIN EN 12266-1	Test P12, leakage rate A to DIN EN 12266-1	-10 to +120 °C
		[bar]	[bar]	[bar]
6	15 - 200	9	6,6	6
16	15 - 200	24	17,6	16

1 Static load

Materials

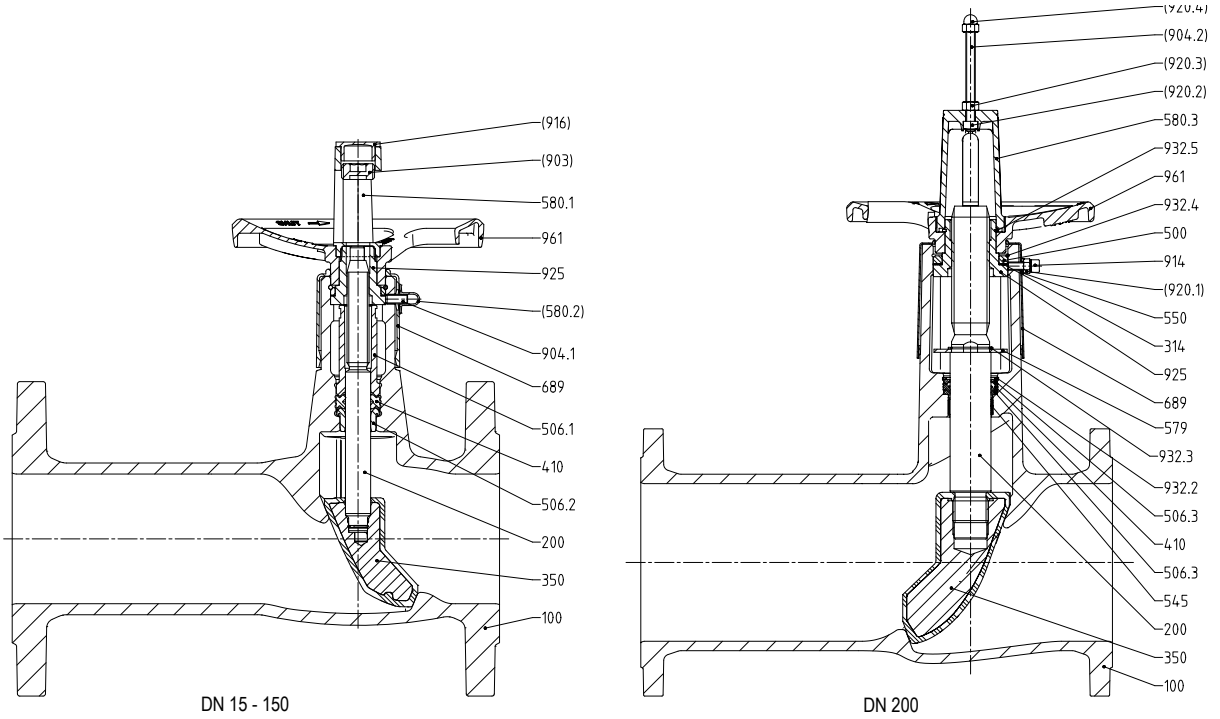

Fig. 1: Sectional drawings

Table 5: Parts list

Part No.		Description	Material	Note
100		Body	EN-GJL-250 (5.1301)	-
200		Stem	Stainless steel, min. 13 % chrome (Cr)	-
314		Thrust bearing	Steel/PTFE	DN 50 - 200
350		Valve disc	EN-GJL-250 (5.1301)	-
410		Profile seal	Elastomer EPDM	-
500		Ring	Steel, electro-galvanised and thick-film passivated	DN 32 - 200
506.1		Retaining ring	Plastic	DN 15 - 150
506.2			Plastic	DN 15 - 150
506.3			Stainless steel	DN 200
545		Bearing bush	Steel/PTFE	DN 200
550		Disc	Steel, electro-galvanised	DN 200
579		Stop	Steel, electro-galvanised and thick-film passivated	DN 200
580.1[2)]		**Cap assembly incl. travel stop, comprising:**		
	580.1	Cap	Plastic, glass-fibre reinforced, impact-resistant	DN 15 - 150
	903	Screw plug	Steel, electro-galvanised, blue chromated	
	916	Plug	Plastic	
580.3[2)]		**Cap assembly incl. travel stop, comprising:**		
	580.3	Cap	Plastic, glass-fibre reinforced, impact-resistant	DN 200
	904.2	Grub screw	Galvanised steel	
	920.2	Square nut	Galvanised steel	
	920.3	Hexagon nut	Galvanised steel	
	920.4	Cap nut	Plastic	
689		Insulation	Plastic	-
904.1[2)]		**Locking device assembly, comprising:**		
	904.1	Grub screw	Galvanised steel	DN 15 - 150
	580.2	Cap	Plastic	
914[2)]		**Locking device assembly, comprising:**		
	914	Hexagon socket head cap screw	Stainless steel	DN 200
	920.1	Hexagon nut	Galvanised steel	

2 Spare part

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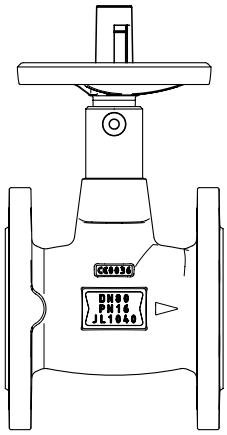
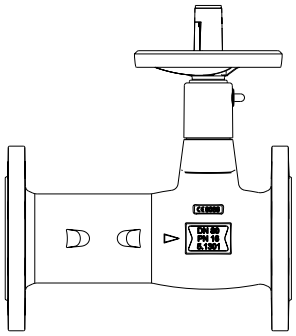
Part No.	Description	Material	Note
925	Stem nut	Steel, electro-galvanised and thick-film passivated	-
932.1	Circlip	Stainless spring steel	DN 15 - 150
932.2			DN 200
932.3			DN 200
932.4			-
932.5			DN 200
961	Handwheel	Plastic, glass-fibre reinforced, impact-resistant	DN 15 - 50
		Die-cast aluminium	DN 65 - 150
		EN-GJL-200 (5.1300)	DN 200

Colour coding system

BOA-Compact	Short face-to-face length to DIN EN 558/14		 Cap: grey / plug: blue
BOA-W	Face-to-face length to DIN EN 558/1		

Dimensions and weights

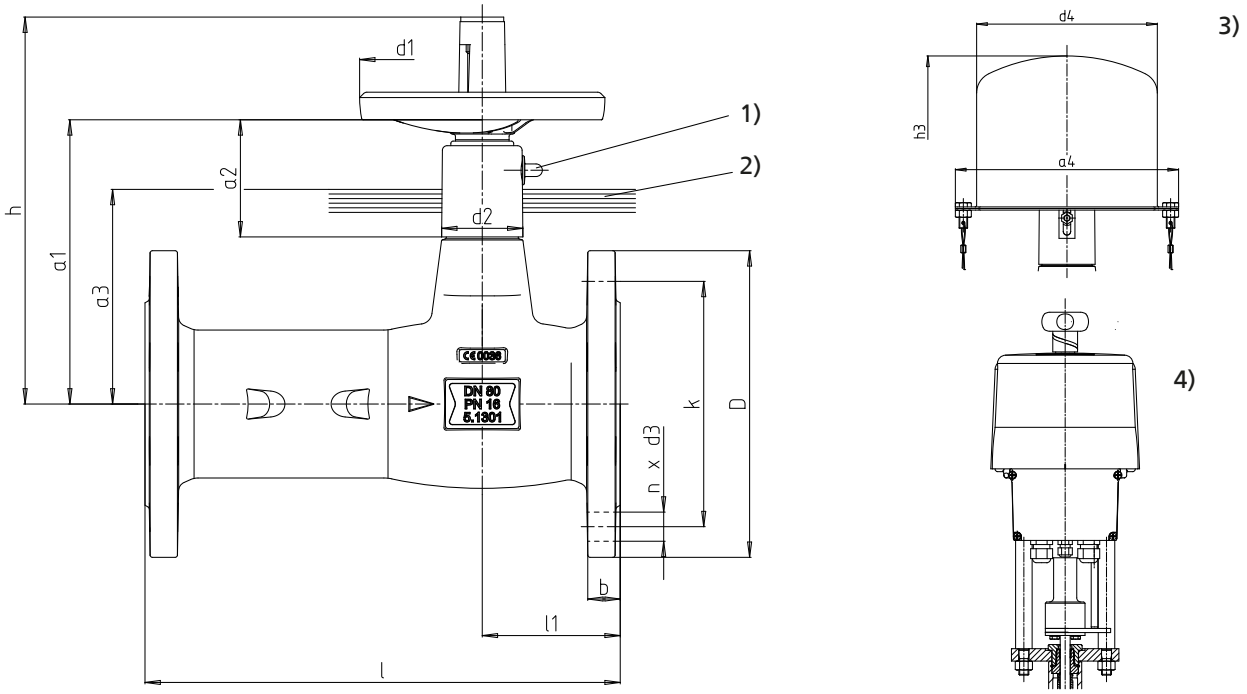


Fig. 2: Dimensions

1)	Locking device	2)	Insulation boundary in acc. with German energy-saving regulations
3)	Lead-sealable cap (prevents unauthorised actuation) as assembly set	4)	With electric actuator

Table 6: Dimensions and weights

										Flange					Capped valve		
PN	DN	a_1	a_2	a_3	d_1	d_2≈	h	l	l_1	b	D	k	n × d_3		a_4	d_4	h_3
		[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[kg]	[mm]	[mm]	[mm]
6	15	93	29	57,5	50	33	130	130	42,5	12	80	55	4 × 11	1,5	166	130	181,5
	20	93	29	62,5	50	33	130	150	48	15	90	65	4 × 11	2,0	166	130	181,5
	25	105	46	72,5	80	35	156	160	54,5	15	100	75	4 × 11	2,6	166	130	191,5
	32	122	46	85	100	35	178	180	65	16	120	90	4 × 14	4,1	166	130	205
	40	122	46	95	100	35	178	200	70	16	130	100	4 × 14	4,8	166	130	207,5
	50	133	46	107,5	100	43	189	230	75	16	140	110	4 × 14	5,7	166	130	218,5
	65	175	66	125	125	47	247	290	85	16	160	130	4 × 14	9,3	166	130	258,5
	80	186	76	140	160	52	251	310	90	18	190	150	4 × 19	12,9	210	170	330,5
	100	224	73	160	160	63	305	350	95	18	210	170	4 × 19	18,4	210	170	346,5
	125	271	115	175	200	85	371	400	125	20	240	200	8 × 19	26,1	270	220	431
	150	283	113	192,5	250	85	385	480	150	20	265	225	8 × 19	36,0	390	340	453
	200	434	175	220	315	136	697	600	180,5	22	320	280	8 × 19	82,7	390	340	596,5
16	15	93	29	57,5	50	33	130	130	42,5	14	95	65	4 × 14	1,9	166	130	181,5
	20	93	29	62,5	50	33	130	150	48	16	105	75	4 × 14	2,4	166	130	181,5
	25	105	46	72,5	80	35	156	160	54,5	16	115	85	4 × 14	3,1	166	130	191,5
	32	122	46	85	100	35	178	180	65	18	140	100	4 × 19	5,0	166	130	205
	40	122	46	95	100	35	178	200	70	18	150	110	4 × 19	5,8	166	130	207,5
	50	133	46	107,5	100	43	189	230	75	20	165	125	4 × 19	7,6	166	130	218,5
	65	175	66	125	125	47	247	290	85	20	185	145	4 × 19	11,5	166	130	258,5
	80	186	76	140	160	52	251	310	90	22	200	160	8 × 19	14,5	210	170	330,5
	100	224	73	160	160	63	305	350	95	24	220	180	8 × 19	20,7	210	170	346,5
	125	271	115	175	200	85	371	400	125	26	250	210	8 × 19	31,7	270	220	431
	150	283	113	192,5	250	85	385	480	150	26	285	240	8 × 23	41,6	390	340	453
	200	434	175	220	315	136	697	600	180,5	30	340	295	12 × 23	90,7	390	340	596,5

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Mating dimensions as per standard

Face-to-face lengths:	DIN EN 558/1, ISO 5752/1
Flanges:	DIN EN 1092-2, flange type 21
Flange facing:	DIN EN 1092-2, type B

Installation instructions

Flow through BOA-W globe valves should be in the direction of the embossed arrow on the valve body. An alternating direction of flow is permissible. For DN 200 valves, however, alternating flow is only permitted up to a differential pressure of 12 bar.

For higher differential pressures use BOA-H globe valves in balanced plug design.

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Chemical resistance chart

The information provided in this chemical resistance chart is based on experience, the Dechema lists as well as manufacturer information. Corrosion resistance is largely dependent on the operating conditions, temperatures and concentrations. Hydroabrasive wear in fluids containing solids is not covered in this list. The information provided in this list is for orientation only. Warranty claims may not be asserted on the basis of this list.

Table 7: Symbols key

Symbol	Description
✓	The fluid handled is not normally aggressive toward the materials. Valve can be used if [3] and [4] are observed.
✖	The fluid handled is aggressive toward the materials. Valve cannot be used.
○	The materials and/or the valve can only be used under certain operating conditions. Please enquire accordingly, stating the operating conditions such as concentration, temperature, pH and composition of the fluid handled.

Table 8: Chemical resistance chart for water[3]

Fluids handled	
Bathing water (fresh water)	○
Bathing water (seawater)	✖
Brackish water	✖
Service water	○
Chlorinated water (≤ 0.6 mg/kg)	✓
Deionised water (demineralised water)[5]	○
Distilled water[5]	○
Heating water[5]	✓
Condensate	○
Oil-free cooling water	○
Oil-containing cooling water	✖
Seawater	✖
Ozonised water (≤ 0.5 mg/kg)	✓
Pure water	✓
Raw water	○
Waste water[4]	✓
Partly desalinated water[5]	○
Thermal water	✖
Drinking water	✖
Fully desalinated water[5]	○

Table 9: Chemical resistance chart for oils (aromatic content 5 mg/kg)

Fluids handled	
Vegetable oils	✖
Mineral oils	✖
Synthetic oils	✖
Petroleum	✖
Oil/water emulsion	✖
Kerosene	✖

Table 10: Chemical resistance chart for refrigerants

Fluids handled	
Ammonium hydroxide (≤ 25 %, ≤ 25 °C)	✓
Glycol (ethylene glycol)	✓
Water/glycol mixture (20 % ≤ c ≤ 50 %, ≤ 90 °C)	✓
Inorganic cooling brine, pH 7.5	✓

Table 11: Chemical resistance chart for cleaning agents

Fluids handled	
Lye for bottle rinsers (e.g. P3)	✓
Lye for metal cleaning	✖

Table 12: Chemical resistance chart for other fluids

Fluids handled	
Landfill gas	○
Oil-containing compressed air	✖
Aqueous glycerine	○
Carbon dioxide (gas)	✓
Carbon dioxide (aqueous solution)	✖
Oxygen O_2	✖

3 General criteria for water to be handled by products made of non-alloyed materials: pH > 7; chlorides (Cl-) < 150 mg/kg; chlorine (Cl) < 0.6 mg/kg. Other factors to be considered: hardness, carbon dioxide content (CO_2), oxygen (O_2) and dissolved substances. Contact KSB if limits are exceeded!

4 Without larger solids or stringy material

5 Can only be used for installations and the respective water quality as specified in the VdTÜV 1466 or VDI 2035 guidelines. A pH ≥ 9.5 and an oxygen content of ≤ 0.02 mg/l are also recommended.

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KSB SE & Co. KGaA
Johann-Klein-Straße 9 • 67227 Frankenthal (Germany)
Tel. +49 6233 86-0
www.ksb.com