

Globe Valve

## BOA-Compact

### Type Series Booklet



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Type Series Booklet BOA-Compact

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## Globe Valves

### Soft-seated Globe Valves to DIN/EN

## BOA-Compact



### 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

#### 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

#### 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
- Short face-to-face length to DIN EN 558/14
- 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
- The valves satisfy the safety requirements of Annex I of the European Pressure Equipment Directive 2014/68/EU (PED) for fluids in Group 2.
- Type-tested to the specifications of Germanischer Lloyd and Bureau Veritas.

### Variants

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

### Product benefits

- Zero leakage and zero maintenance for life due to lubricated-for-life EPDM profile ring and single-piece body
- Minimum pressure loss by hydraulically favourable flow passage
- 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)
- Fully equipped at no extra price: internal travel stop, position indicator and locking device included.
- Cost-effective transport and handling due to short face-to-face length and low weight

### Product information

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



For information as per chemicals Regulation (EC) No. 1907/2006 (REACH), see <http://www.ksb.com/reach>.

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

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

## Certifications

### Overview

Label	Effective in:	Comment
	Worldwide	Approved for marine applications
	Worldwide	Approved for marine applications

### 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 available as automated variants with electric actuators (continuous-action 24 V AC, 230 V AC) and 3-point actuators (24 V AC, 230 V AC) as BOA-CVE globe valves.

### 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-Compact	7112.521

### 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

### Test pressure and operating pressure

PN	DN	Shell test	Leak test (seat)	Permissible operating pressure <sup>1)</sup>
		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

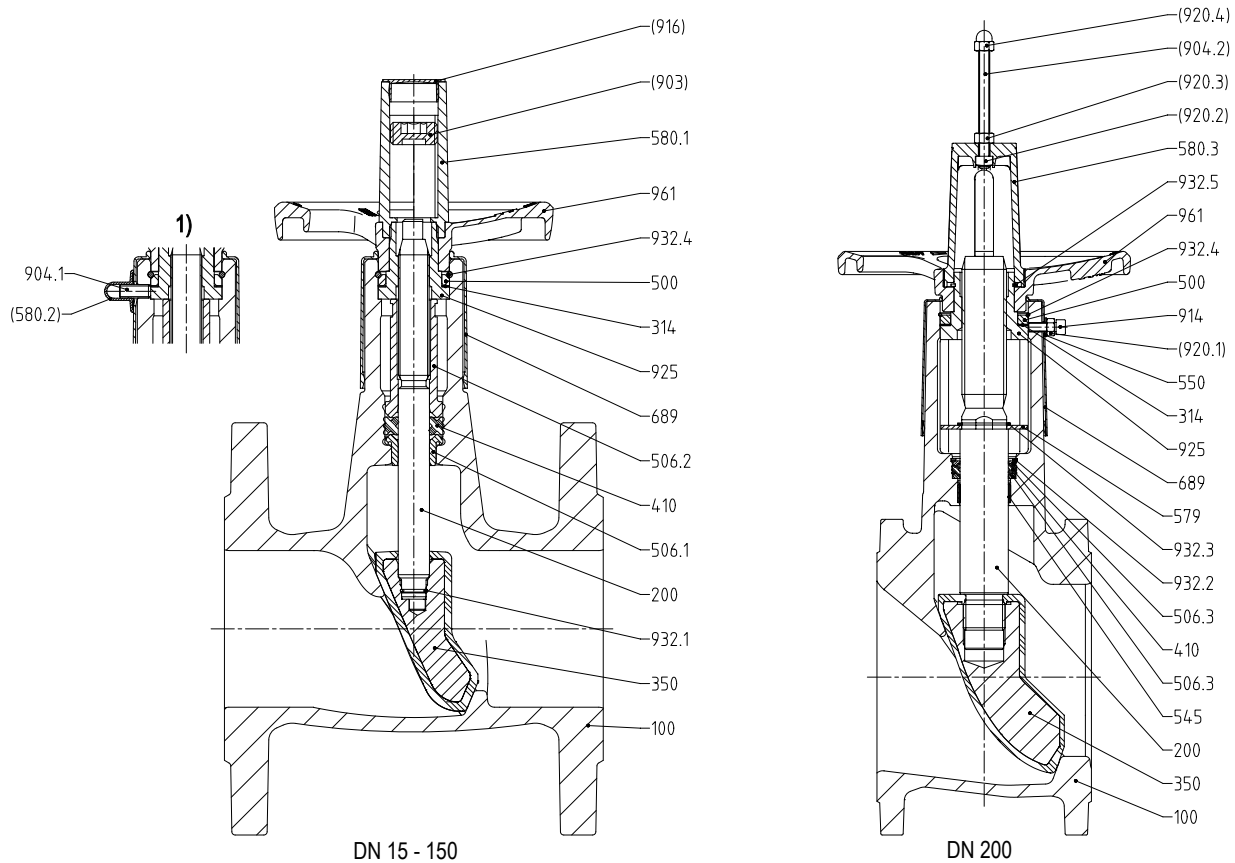


Fig. 1: Sectional drawings; 1) shown offset by 90 °C

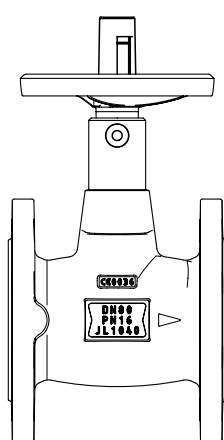

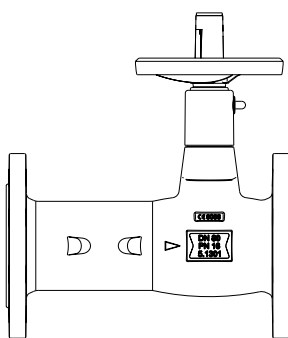

### Parts list

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) / EPDM	-
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, galvanised	DN 200
579	Stop	Steel, electro-galvanised and thick-film passivated	DN 200
580.1 <sup>2)</sup>		Cap assembly incl. travel stop, comprising:	
	580.1	Cap	DN 15 - 150
	903	Screw plug	
	916	Plug	
580.3 <sup>2)</sup>		Cap assembly incl. travel stop, comprising:	
	580.3	Cap	DN 200
	904.2	Grub screw	
	920.2	Square nut	
	920.3	Hexagon nut	
	920.4	Cap nut	
689	Insulation	Plastic	-
904.1 <sup>2)</sup>		Locking device assembly, comprising:	
	904.1	Grub screw	DN 15 - 150

2) Spare part

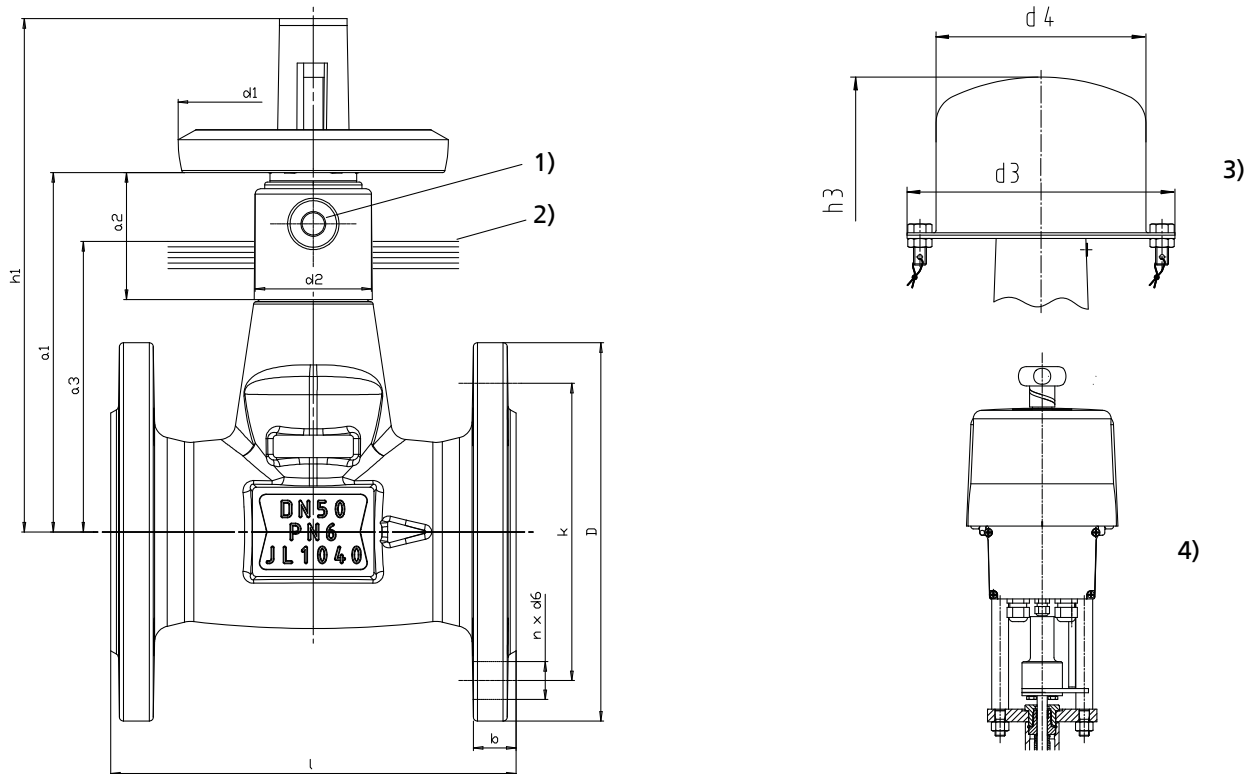
Part No.	Description	Material	Note
580.2	Cap	Plastic	DN 15 - 150
914 <sup>2)</sup>	<b>Locking device assembly, comprising:</b>		
914	Hexagon socket head cap screw	Stainless steel	DN 200
920.1	Hexagon nut	Galvanised steel	
925	Stem nut	Steel, electro-galvanised and thick-film passivated	-
932.1	Circlip	Stainless spring steel	DN 15 - 150
932.2		Stainless spring steel	DN 200
932.3		Stainless spring steel	DN 200
932.4		Stainless spring steel	-
932.5		Stainless spring steel	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		
BOA-W	Face-to-face length to DIN EN 558/1		

Cap: grey / plug: blue

## Dimensions and weights



**Fig. 2: BOA-Compact**

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 (BOA-CVE C/CS/IMS/W/EKB)

Dimensions [mm] and weights [kg]

PN	DN	a <sub>1</sub>	a <sub>2</sub>	a <sub>3</sub>	d <sub>1</sub>	d <sub>2</sub>	h <sub>1</sub>	l	Flange					[kg]	Capped valve		
		[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	b	d <sub>6</sub>	D	k	n		d <sub>3</sub>	d <sub>4</sub>	h <sub>3</sub>
6	15	105	46	50	80	35	156	115	12	11	80	55	4	1,7	166	130	195
	20	105	46	55	80	35	156	120	14	11	90	65	4	2,1	166	130	195
	25	105	46	65	80	35	156	125	14	11	100	75	4	2,3	166	130	195
	32	122	46	75	100	43	179	130	16	14	120	90	4	3,8	166	130	210
	40	122	46	85	100	43	179	140	16	14	130	100	4	4,3	166	130	210
	50	131	46	95	100	43	189	150	16	14	140	110	4	4,9	166	130	220
	65	174	66	112,5	125	47	252	170	16	14	160	130	4	7,7	166	130	260
	80	185	76	135	160	52	252	180	18	19	190	150	4	10,9	210	170	310
	100	215	73	155	160	63	298	190	18	19	210	170	4	14,7	210	170	350
	125	270	115	170	200	85	373	200	20	19	240	200	8	21,0	270	220	435
	150	282	113	182,5	250	85	386	210	20	19	265	225	8	26,5	390	340	460
16	200	434	174	220	315	136	693	230	30	19	340	280	8	71,0	390	340	600
	15	105	46	57,5	80	35	156	115	14	14	95	65	4	2,3	166	130	195
	20	105	46	62,5	80	35	156	120	16	14	105	75	4	2,7	166	130	195
	25	105	46	72,5	80	35	156	125	16	14	115	85	4	3,0	166	130	195
	32	122	46	85	100	43	179	130	18	19	140	100	4	4,8	166	130	210
	40	122	46	95	100	43	179	140	18	19	150	110	4	5,5	166	130	210
	50	131	46	107,5	100	43	189	150	20	19	165	125	4	6,9	166	130	220
	65	174	66	125	125	47	252	170	20	19	185	145	4	10,0	166	130	260
	80	185	76	140	160	52	252	180	22	19	200	160	8	12,5	210	170	310
	100	215	73	160	160	63	298	190	24	19	220	180	8	17,1	210	170	350
	125	270	115	175	200	85	373	200	26	19	250	210	8	26,5	270	220	435
	150	282	113	192,5	250	85	386	210	26	23	285	240	8	31,0	390	340	460
	200	434	174	220	315	136	693	230	30	23	340	295	12	71,0	390	340	600



### **Mating dimensions as per standard**

Face-to-face lengths: DIN EN 558/14, ISO 5752/14  
Flanges: DIN EN 1092-2, flange type 21  
Flange facing: DIN EN 1092-2, type B

### **Installation instructions**

Flow through the globe valves should be in the direction of the embossed flow direction arrow. An alternating direction of flow is permissible.

## 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.

### Symbols key

Symbol	Description
✓	The fluid handled is not normally aggressive toward the materials. Valve can be used if <sup>3)</sup> and <sup>4)</sup> 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.

### Chemical resistance chart for water<sup>3)</sup>

Fluids handled	
Bathing water (fresh water)	○
Bathing water (seawater)	✗
Brackish water	✗
Service water	○
Chlorinated water ( $\leq 0.6$ mg/kg)	✓
Deionised water (demineralised water) <sup>5)</sup>	○
Distilled water <sup>5)</sup>	○
Heating water <sup>5)</sup>	✓
Condensate	○
Oil-free cooling water	○
Oil-containing cooling water	✗
Seawater	✗
Ozonised water ( $\leq 0.5$ mg/kg)	✓
Pure water	✓
Raw water	○
Waste water <sup>4)</sup>	✓
Partly desalinated water <sup>5)</sup>	○
Thermal water	✗
Drinking water	✗
Fully desalinated water <sup>5)</sup>	○

### Chemical resistance chart for oils (aromatic content 5 mg/kg)

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

### Chemical resistance chart for refrigerants

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

### Chemical resistance chart for cleaning agents

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

### 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 <sub>2</sub>	✗

- 3) General criteria for water to be handled by products made of non-alloyed materials: pH > 7; chlorides (Cl<sup>-</sup>) < 150 mg/kg; chlorine (Cl) < 0.6 mg/kg. Other factors to be considered: hardness, carbon dioxide content (CO<sub>2</sub>), oxygen (O<sub>2</sub>) 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  $\geq 9.5$  and an oxygen content of  $\leq 0.02$  mg/l are also recommended.





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