

Globe Valve

## BOA-Compact EKB

### Type Series Booklet



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Type Series Booklet BOA-Compact EKB

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## Globe Valves

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

# BOA-Compact EKB



#### Main applications

- Domestic water supply
- Water supply systems
- Air-conditioning systems
- Cooling circuits

#### Fluids handled

- Drinking water
- Service water
- Not suitable for steam or fluids liable to attack EPDM and the electrostatic plastic coating.
- Other fluids on request.

#### Operating data

Table 1: Operating properties

Characteristic	Value
Nominal pressure	PN 10/16
Nominal size	DN 15 - 200
Max. permissible pressure [bar]	16
Min. permissible temperature [°C]	≥ -10
Max. permissible temperature [°C]	≤ +80 <sup>1)</sup>

#### 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
- 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
- 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
- Corrosion protection: internal and external electrostatic plastic coating (EKB), anthracite grey
- Locking device, travel stop, position indicator and throttling plug as standard

##### Variants

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

##### Product benefits

- Approved for drinking water due to electrostatic plastic coating (EKB) and approved internal parts.
- 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 thanks to simple body design with short, smooth valve neck.
- 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

<sup>1</sup> As stipulated by EN 806-2 Section 3.4 Table 2, the valve can withstand temperatures of up to 95 °C for short periods in the event of incorrect system operation.

**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.

**Certifications**

**Table 3: Overview**

Label	Effective in:	Comment
	Germany	Approved in accordance with German drinking water regulation

Note on DVGW approval:

Nominal sizes DN 15-100 are DIN-DVGW-approved for water in acc. with DIN 3546-1: NV-6150BQ0465.

The elastomers and plastic parts in contact with the fluid handled and the (EKB) body coating of all nominal sizes comply with the KTW recommendations for the use of elastomers in drinking water issued by the German Federal Office of Health.

**Pressure/temperature ratings**

**Table 5: Test pressure and operating pressure**

PN	DN	Shell test	Leak test (seat)	Permissible operating pressure <sup>2)</sup>
		With water		
		Tests P10 and P11 to DIN EN 12266-1 [bar]	Test P12, leakage rate A to DIN EN 12266-1 [bar]	-10 to +80 °C [bar]
16	15 - 200	24	17,6	16 or 10 to DIN 3546-1

**Related documents**

- Use BOA-Control or BOA-Control IMS valves for flow rate and temperature measurement during hydraulic balancing, and our BOATRONIC M5 or BOATRONIC M5-420 measuring computers.
- BOA-Compact for heating systems up to 120 °C.
- 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.

**Table 4: Information/documents**

Document	Reference number
Operating manual	0570.8
BOA-Compact type series booklet	7112.1
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
Flow characteristics	7112.41
Assembly instructions "Accessories Set: Lead-sealable Handwheel Cap"	0570.811
Typical tender for BOA-Compact EKB	7112.522

**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

<sup>2</sup> Static load

**Materials**

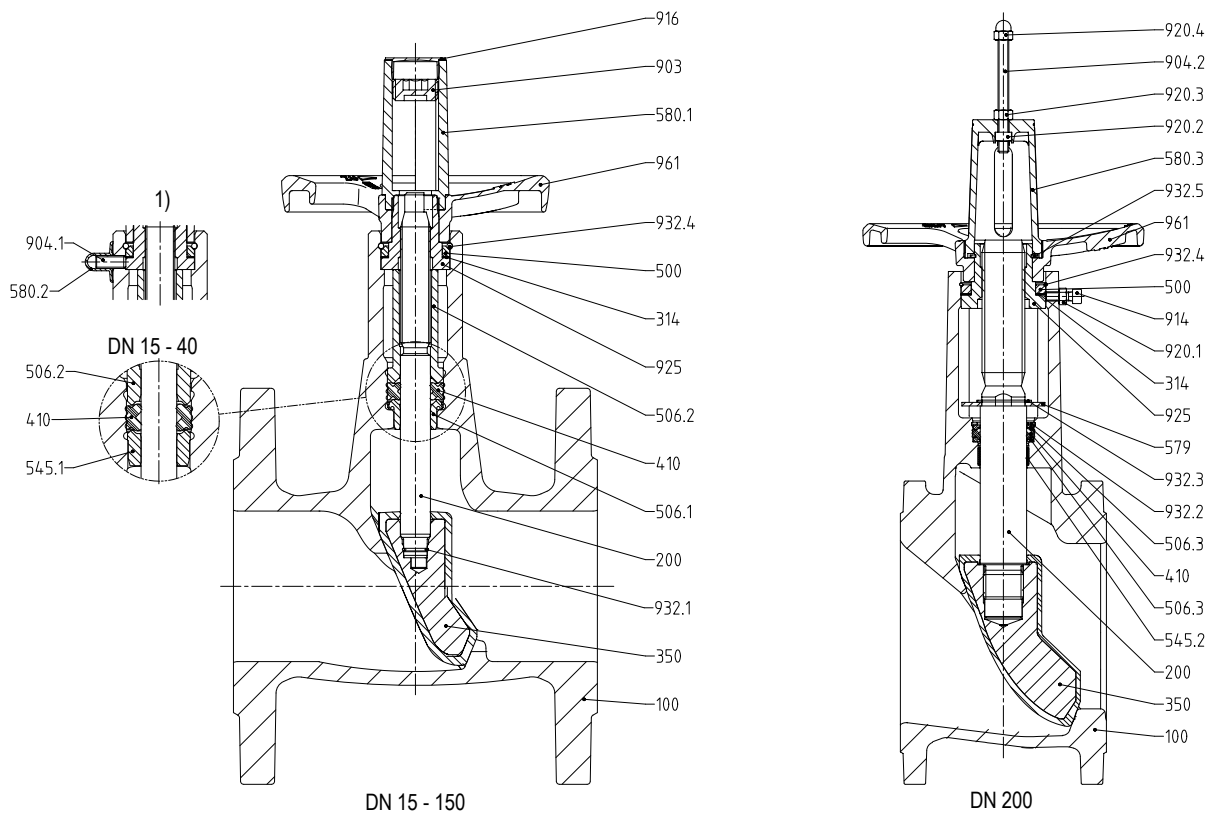


Fig. 1: Sectional drawings; 1) shown offset by 90°

Table 6: Parts list

Part No.	Description	Material	Note
100	Body	EN-GJL-250 (5.1301) / EKB (with internal and external electrostatic coating), as per KTW recommendation	-
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, as per KTW recommendation	-
410	Profile seal	Elastomer EPDM, as per KTW recommendation	-
500	Ring	Steel, electro-galvanised and thick-film passivated	DN 32 - 200
506.1	Retaining ring	Plastic, as per KTW recommendation	DN 50 - 150
506.2		Plastic	DN 15 - 150
506.3		Stainless steel	DN 200
545.1	Bearing bush	Brass (CW614N)	DN 15 - 40
545.2		Plastic	DN 200
579	Stop	Steel, electro-galvanised and thick-film passivated	DN 200
<b>580.1<sup>3)</sup></b>	<b>Cap assembly incl. travel stop, comprising:</b>		
580.1	Cap	Plastic, glass-fibre reinforced, impact-resistant	DN 15 - 150
903	Screw plug	Steel, electro-galvanised, blue chromated	
916	Plug	Plastic	
<b>580.3<sup>3)</sup></b>	<b>Cap assembly incl. travel stop, comprising:</b>		
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	
<b>904.1<sup>3)</sup></b>	<b>Locking device assembly, comprising:</b>		

<sup>3)</sup> Spare part

Part No.	Description	Material	Note
904.1	Grub screw	Galvanised steel	DN 15 - 150
580.2	Cap	Plastic	
<b>914<sup>3)</sup></b>	<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**



### Dimensions and weights

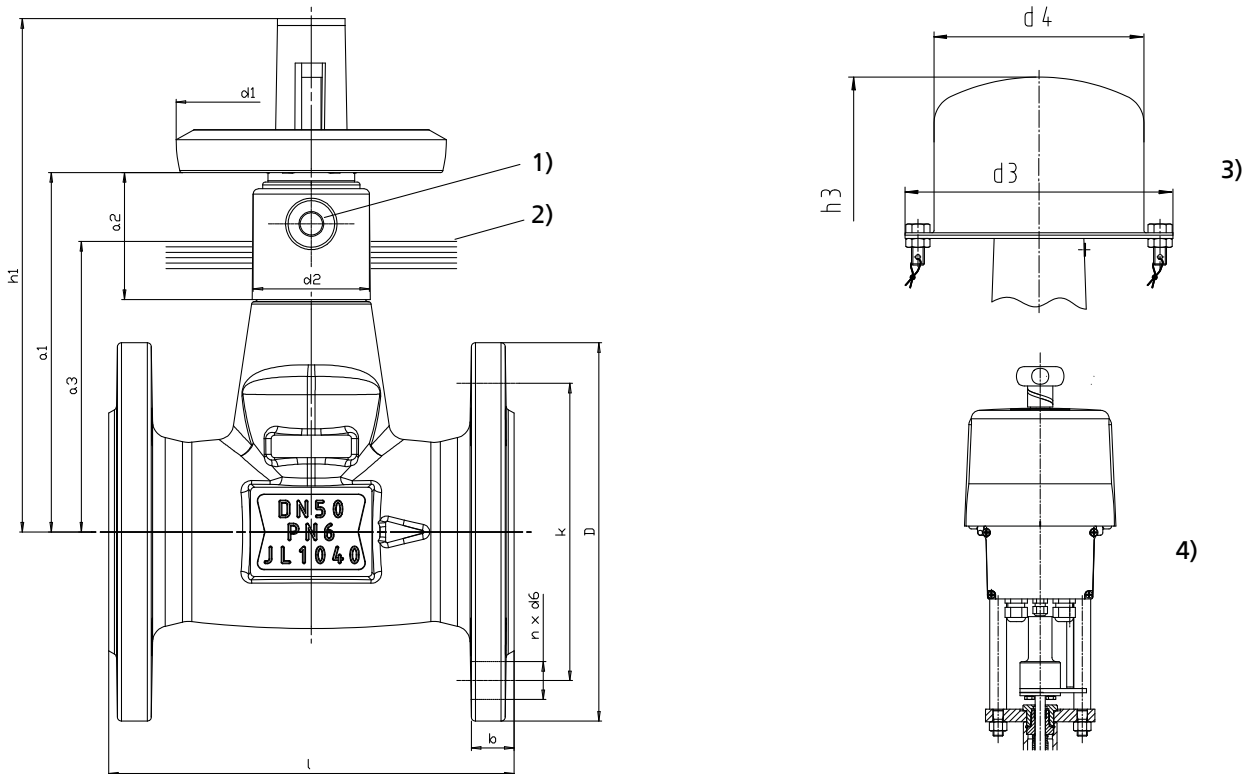


Fig. 2: Dimensions

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

Table 7: Dimensions and weights

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		
									b	d <sub>6</sub>	D	k	n		d <sub>3</sub>	d <sub>4</sub>	h <sub>3</sub>
		[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
10/16	15	105	46	57,5	80	32	156	115	14	14	95	65	4	2,3	166	130	195
	20	105	46	62,5	80	32	156	120	16	14	105	75	4	2,7	166	130	195
	25	105	46	72,5	80	32	156	125	16	14	115	85	4	3,0	166	130	195
	32	122	46	85	100	40	179	130	18	19	140	100	4	4,8	166	130	210
	40	122	46	95	100	40	179	140	18	19	150	110	4	5,5	166	130	210
	50	131	46	107,5	100	40	189	150	20	19	165	125	4	6,9	166	130	220
	65	174	66	125	125	44	252	170	20	19	185	145	4	10,0	166	130	260
	80	185	76	140	160	47	252	180	22	19	200	160	8	12,5	210	170	310
	100	215	73	160	160	58	298	190	24	19	220	180	8	17,1	210	170	350
	125	270	115	175	200	75	373	200	26	19	250	210	8	26,5	270	220	435
150	282	113	192,5	250	75	386	210	26	23	285	240	8	31,0	390	340	460	
16	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 information

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

In hot water and high-temperature hot water applications the globe valves must always be insulated. If the globe valves are not insulated, fluid temperatures higher than 50 °C may result in reduced valve life.

### 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 8:** Symbols key

Symbol	Description
✓	The fluid handled is not normally aggressive toward the materials. Valve can be used if <sup>4)</sup> and <sup>5)</sup> are observed.
✗	The fluid handled is aggressive toward the materials. Valve cannot be used.
○	The material or 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 9:** Chemical resistance chart for water<sup>4)</sup>

Fluids handled	
Bathing water (fresh water)	✓
Bathing water (seawater)	✗
Brackish water	✗
Service water	✓
Chlorinated water (max. 0.6 mg/kg)	✓
Deionised water (demineralised water)	✓
Distilled water	✓
Heating water (max. 80 °C)	✓
Condensate	✓
Oil-free cooling water	✓
Oil-containing cooling water	✗
Seawater	✗
Ozonised water (max. 0.5 mg/kg)	✓
Pure water	✓
Raw water	✓
Grey water <sup>5)</sup>	✓
Partly desalinated water	✓
Thermal water	○
Drinking water	✓
Fully desalinated water	✓

**Table 10:** Chemical resistance chart for oils (aromatic content 5 mg/kg)

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

**Table 11:** Chemical resistance chart for refrigerants

Fluids handled	
Ammonium hydroxide (max. 25 %, max. 25 °C)	○
Glycol (ethylene glycol)	✗
Water/glycol mixture (max. 50 %, max. 80 °C)	○
Inorganic cooling brine, pH 7.5	✓

**Table 12:** Chemical resistance chart for cleaning agents

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

**Table 13:** 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>	✗

<sup>4)</sup> General criteria for water to be handled by valves made of non-alloyed materials: pH 6.5 - 12; 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!

<sup>5)</sup> Without larger solids or stringy material







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