

Globe Valve

# BOA-SuperCompact

PN 6/10/16  
DN 20-200  
Soft-seated  
Alignment Lugs

## Type Series Booklet



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Type Series Booklet BOA-SuperCompact

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## Globe Valves

### Soft-seated Globe Valves

## BOA-SuperCompact



### 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 6/10/16
Nominal size	DN 20-200 <sup>1)</sup>
Max. permissible pressure	16 bar
Max. permissible temperature	120 °C

### Design details

#### Design

- Straight-way globe valve with slanted seat
- Alignment lugs for centering, downstream dismantling and dead-end valve duties
- Slanted seat design

- Face-to-face length to EN 558/94 (DN 25-150), EN 558/14 (DN 200)
- Single-piece pressure-retaining body
- Non-rising handwheel
- 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 throttling plug with EPDM coating as soft main and back seat
- Exterior coating: blue RAL 5002
- The valves satisfy the safety requirements of Annex I of the European Pressure Equipment Directive 97/23/EC (PED) for fluids in Group 2.
- Type-tested to the specifications of Germanischer Lloyd

### Variants

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

### Body materials

Overview of available materials

Material	Material number	Temperature limit
EN-GJL-250	JL 1040	up to 120 °C

### Product benefits

- Zero leakage and zero maintenance for life due to lubricated-for-life EPDM profile ring and single-piece body.
- Minimal pressure drop due to hydraulically favourable flow passage.
- One model for shut-off and throttling: fully EPDM-coated throttling plug with linear characteristic.
- Easy insulation thanks 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.
- Suitable for universal use for PN 6/10/16: complete bolt hole pattern for PN 6/10/16 in a single body.
- Space-saving body design with face-to-face length to EN 558/94 (up to DN 150: face-to-face length = nominal size).
- Very low component weight for easy installation.
- Suitable for dead-end service due to alignment lugs with flange thickness to DIN EN 1092-2.

<sup>1)</sup> DN 200: type BOA-Compact

### Related documents

- For hydraulic balancing we recommend our BOA-Control IMS control valve with integrated sensor for flow rate and temperature measurement, and our BOATRONIC M measuring computer.
- For water supply systems and cooling circuits as well as drinking water applications we recommend our maintenance-free BOA-Compact EKB globe valves.
- For fluids containing mineral oils, temperatures exceeding 120 °C and low-pressure steam systems we recommend our maintenance-free BOA-H globe valves.
- The valves are also available as automated variants with electric actuators (continuous-action 24 V AC, 230 V AC) and 3-point (Open/Stop/Closed) actuators (24 V AC, 230 V AC) as BOA-CVE globe valves.

Other applicable documentation

Document	Reference No.
Valve characteristics	7113.4
Operating manual	0570.8

Document	Reference No.
Installation instructions "Accessories set for capped valves"	0570.811
BOA-Compact EKB type series booklet	7112.11
BOA-Control IMS type series booklet	7128.1
BOA-CVE globe valves type series booklet	7520.1
BOA-H type series booklet	7150.1

### On all enquiries/orders please specify

1. Type
2. Nominal pressure
3. Nominal size
4. Variants
5. Number of type series booklet

### Pressure/temperature ratings

Test and operating pressures

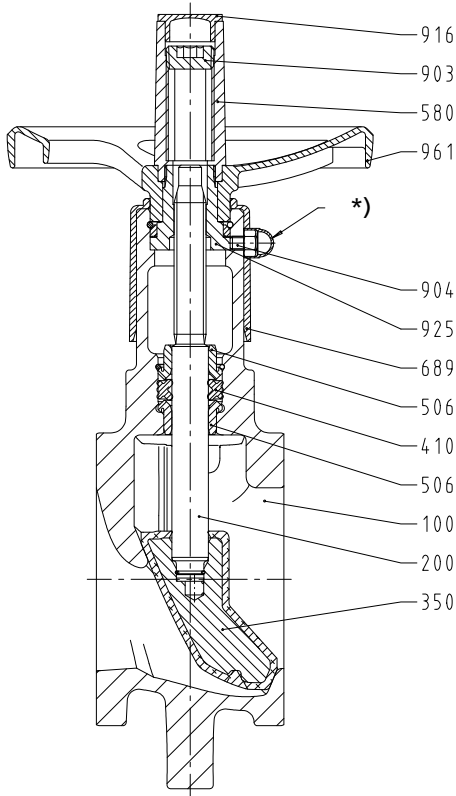
Nominal pressure	Nominal size	Body pressure test	Seat tightness test	Permissible operating pressures <sup>2)</sup>
		with water		
		P10, P11 <sup>3)</sup>	P12 <sup>4)</sup>	-10 to 120 °C
PN	DN	[bar]	[bar]	[bar]
16	20/25-200	24	17,6	16

<sup>2)</sup> Static load

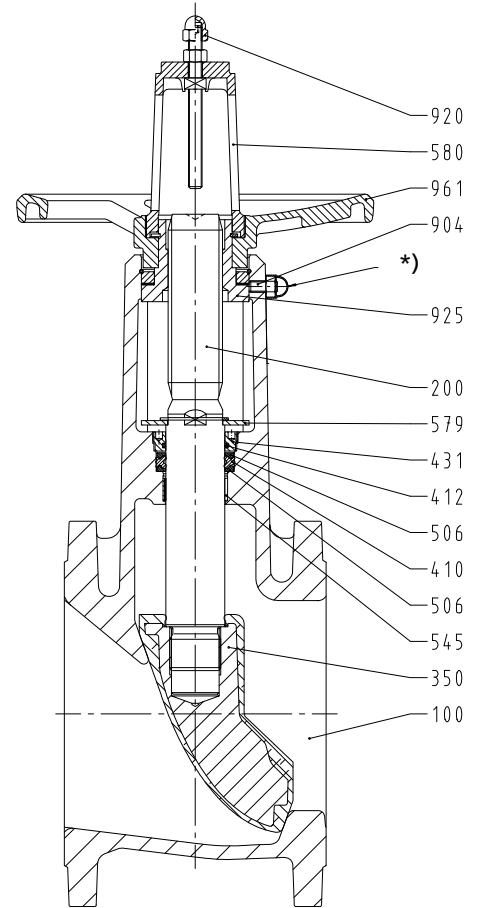
<sup>3)</sup> DIN EN 12266-1 (P10, P11)

<sup>4)</sup> Test procedure to DIN EN 12266-1 (P12, leakage rate A)

Materials



DN 20-150



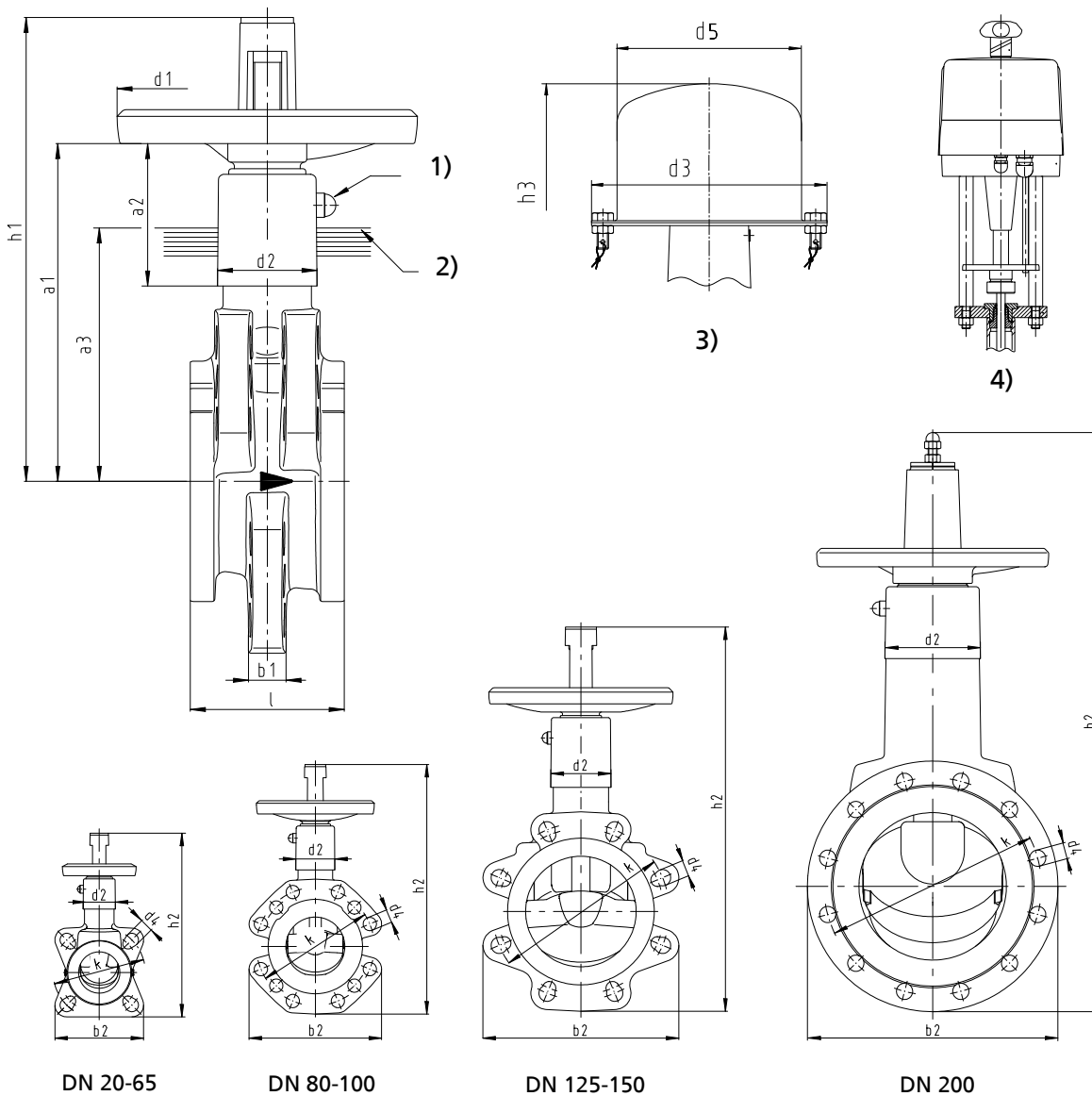
DN 200

\*) shown offset by 90°

Overview of available materials

Part No.	Description	Material	Note
100	Body	EN-GJL-250 (JL1040)	
200	Stem	Stainless steel, min. 13 % chrome (Cr)	
350	Valve disc	Grey cast iron/EPDM	
410	Profile joint	Elastomer EPDM	
412	O-ring	Elastomer EPDM	DN 200
431	Gland	Galvanised steel	DN 200
506	Retaining ring	Plastic	
		Galvanised steel	DN 200
545	Bearing bush	Stainless steel/PTFE	
579	Stop	Galvanised steel	DN 200
580	Cap	Plastic, glass-fibre reinforced, impact-resistant	
689	Insulating cap	Plastic	
903	Travel stop	Galvanised steel	
904	Locking device	Galvanised steel	
916	Plug	Plastic	
920	Travel stop	Galvanised steel	
925	Stem nut	Galvanised steel	
961	Handwheel	Plastic, glass-fibre reinforced, impact-resistant	DN 20-40
		Aluminium, die-cast	DN 50-150
		Grey cast iron (JL1030)	DN 200

**Dimensions**



1)	Locking device (shown offset by 90°)	2)	Insulating boundary in acc. with German energy-saving regulations
3)	Lead-sealable cap (prevents unauthorised actuation) as assembly set	4)	With electric actuator (BOA-CVE globe valves)

Dimensions in mm

PN	DN	l	h <sub>1</sub>	h <sub>2</sub>	h <sub>3</sub>	d <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub>	d <sub>5</sub>	a <sub>1</sub>	a <sub>2</sub>	a <sub>3</sub>	k	n x d <sub>4</sub>	b <sub>1</sub>	b <sub>2</sub>	[kg]
6	20 <sup>5)</sup>	25	128	170	180	50	33	166	130	90	29	72,5	65	4 x 11	13	85	0,8
	25 <sup>5)</sup>	25	128	170	180	50	33	166	130	90	29	72,5	75	4 x 11	13	85	0,8
	32	32	169	220	205	80	35	166	130	118	46	85	90	4 x 14	16	103	1,5
	40	40	169	224	205	80	35	166	130	118	46	95	100	4 x 14	16	110	2
	50	50	189	250	220	100	43	166	130	131	46	107,5	110	4 x 14	20	120	3

5) One valve size: DN 20/25

PN	DN	l	h <sub>1</sub>	h <sub>2</sub>	h <sub>3</sub>	d <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub>	d <sub>5</sub>	a <sub>1</sub>	a <sub>2</sub>	a <sub>3</sub>	k	n x d <sub>4</sub>	b <sub>1</sub>	b <sub>2</sub>	[kg]
	65	65	248	316	260	125	47	166	130	174	66	125	130	4 x 14	24	135	5
	80	80	248	339	300	160	52	210	170	180	76	140	150	4 x 18	20	180	7,5
	100	100	298	401	340	160	63	210	170	215	73	160	170	4 x 18	20	203	10,5
	125	125	373	490	430	200	80	270	220	270	115	175	200	8 x 18	23	230	15
	150	150	386	522	455	250	80	390	340	282	113	192,5	225	8 x 18	23	266	21
	200	230	693	863	600	315	136	390	340	434	174	220	280	8 x 19	30	340	68
10	20 <sup>5)</sup>	25	128	170	180	50	33	166	130	90	29	72,5	75	4 x 14	13	85	0,8
	25 <sup>5)</sup>	25	128	170	180	50	33	166	130	90	29	72,5	85	4 x 14	13	85	0,8
	32	32	169	220	205	80	35	166	130	118	46	85	100	4 x 18	16	103	1,5
	40	40	169	224	205	80	35	166	130	118	46	95	110	4 x 18	16	110	2
	50	50	189	250	220	100	43	166	130	131	46	107,5	125	4 x 18	20	120	3
	65	65	248	316	260	125	47	166	130	174	66	125	145	4 x 18	24	135	5
	80	80	248	339	300	160	52	210	170	180	76	140	160	8 x 18	20	180	7,5
	100	100	298	401	340	160	63	210	170	215	73	160	180	8 x 18	20	203	10,5
	125	125	373	490	430	200	80	270	220	270	115	175	210	8 x 18	23	230	15
150	150	386	522	455	250	80	390	340	282	113	192,5	240	8 x 22	23	266	21	
16	20 <sup>5)</sup>	25	128	170	180	50	33	166	130	90	29	72,5	75	4 x 14	13	85	0,8
	25 <sup>5)</sup>	25	128	170	180	50	33	166	130	90	29	72,5	85	4 x 14	13	85	0,8
	32	32	169	220	205	80	35	166	130	118	46	85	100	4 x 18	16	103	1,5
	40	40	169	224	205	80	35	166	130	118	46	95	110	4 x 18	16	110	2
	50	50	189	250	220	100	43	166	130	131	46	107,5	125	4 x 18	20	120	3
	65	65	248	316	260	125	47	166	130	174	66	125	145	4 x 18	24	135	5
	80	80	248	339	300	160	52	210	170	180	76	140	160	8 x 18	20	180	7,5
	100	100	298	401	340	160	63	210	170	215	73	160	180	8 x 18	20	203	10,5
	125	125	373	490	430	200	80	270	220	270	115	175	210	8 x 18	23	230	15
150	150	386	522	455	250	80	390	340	282	113	192,5	240	8 x 22	23	266	21	
200	230	693	863	600	315	136	390	340	434	174	220	295	12 x 23	30	340	68	

### Mating dimensions - Standards

Face-to-face DN 25-150: DIN EN 558 FTF-94

length: DN 200: DIN EN 558 FTF-14

Flange facing: DIN EN 1092-2, type A

### Installation instructions

Flow through the shut-off globe valves should be in the direction of the embossed arrow on the valve body. An alternating direction of flow is permissible, however.

**i** EN 1515-4 "Selection of bolting for equipment subject to the Pressure Equipment Directive 97/23/EC" and any plant regulations governing the application in question must be observed when selecting connecting elements between the valve flange and the pipe flange.

Further installation instructions

Bolt dimensions

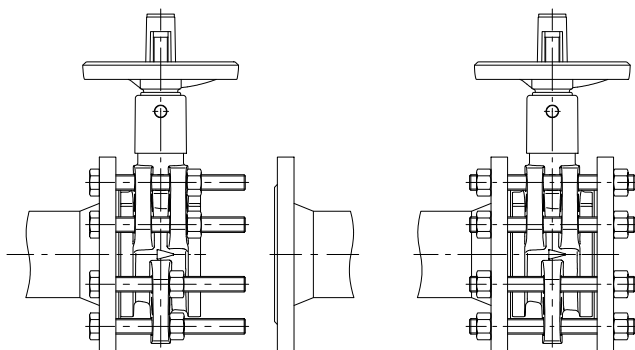
Dimensions

Nominal pressure PN	Nominal size DN	Qty.	Thread size	Hex. head bolts used on		Threaded rods/stud bolts used on	
				steel flanges DIN EN 1092-1	cast iron flanges DIN EN 1092-2	steel flanges DIN EN 1092-1	cast iron flanges DIN EN 1092-2
				Standardised bolt length [mm]		Length [mm]	
6	20	4	M10	80	80	90	90
	25	4	M10	80	80	90	90
	32	4	M12	90	90	105	105
	40	4	M12	100	100	110	110
	50	4	M12	110	110	120	120
	65	4	M12	120	130	135	135
	80	4	M16	150	150	160	160
	100	4	M16	180	180	180	180
	125	8	M16	200	200	210	210
	150	8	M16	220	220	240	240
	200	16	M16	70	80	90	90
10/16	20	4	M12	90	90	95	95
	25	4	M12	90	90	95	95
	32	4	M16	100	100	110	110
	40	4	M16	110	110	120	120
	50	4	M16	120	120	135	135
	65	4	M16	140	140	150	150
	80	8	M16	160	160	170	170
	100	8	M16	180	180	190	190
	125	8	M16	200	220	220	220
150	8	M20	240	240	255	255	
16	200	24	M20	80	90	110	110

Minimum spacings at distribution manifold

With BOA-SuperCompact valves, no minimum spacings between the manifold branches must be allowed for.

Suitable for downstream dismantling and dead-end service



The alignment lugs of BOA-SuperCompact comply with flange thickness requirements to DIN EN 1092-2 PN 16 (incl. tolerance) and are provided with the full bolt hole pattern. They are suitable for downstream dismantling and dead-end service just like normal flanges, e.g. on BOA-Compact.



**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. All information provided herein, therefore, only serves as an orientation. Warranty claims may not be asserted on the basis of this list!

 Chemical resistance chart for water<sup>6)</sup>

Fluid handled	Max. content	Max. temp.	
Bathing water (fresh water)			○
Bathing water (seawater)			✘
Brackish water			✘
Service water			○
Chlorinated water	0,6 mg/kg		✓
Deionised water (demineralised water)			✘
Distilled water			✘
Heating water			✓
Condensate			○
Oil-free cooling water			○
Oil-containing cooling water			✘
Seawater			✘
Ozonised water	0,5 mg/kg		✓
Pure water			✓
Raw water			○
Waste water <sup>7)</sup>			✓
Partly desalinated water			○
Thermal water			✘
Drinking water			✘
Fully desalinated water			✘

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

Fluid handled	Max. content	Max. temp.	
Vegetable oils			✘
Mineral oils			✘
Synthetic oils			✘
Petroleum			✘
Oil-water emulsion			✘
Kerosene			✘

## Chemical resistance chart for refrigerants

Fluid handled	Max. content	Max. temp.	
Ammonium hydroxide	25 %	25 °C	✓
Glycol (ethylene glycol)			✓
Water-glycol mixture	50 %	90 °C	✓
Inorganic cooling brine, ph 7,5 inhibited			✓

## Chemical resistance chart for cleaning agents

Fluid handled	Max. content	Max. temp.	
Lye for bottle rinsers (e.g. P3)			✓
Lye for metal cleaning			✘

## Chemical resistance chart for other fluids

Fluid handled	Max. content	Max. temp.	
Landfill gas			○
Oil-containing compressed air			✘
Aqueous glycerine			○
Carbon dioxide (gas)			✓
Carbon dioxide (aqueous solution)			✘
Oxygen O <sub>2</sub>			✘

## Key to the symbols

Symbol	Description
✓	The fluid handled is not normally aggressive toward the materials. Valve can be used if <sup>6)</sup> and <sup>7)</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 value and composition of the fluid handled.

<sup>6)</sup> General criteria for water to be handled by valves made of non-alloyed materials: pH value 6,5 - 12; chlorides (Cl-) < 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>7)</sup> Without larger solids or stringy material



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16.05.2011

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