# BOA® -H

**Maintenance-free metal-seated globe valves**

with bellows

| | | |
|---|---|---|
| **Grey cast iron** | **PN 16** | **DN 15-300** |
| **Nodular cast iron** | **PN 16** | **DN 15-350** |
| **Nodular cast iron** | **PN 25** | **DN 15-150** |

## Applications

- Hot-water heating systems
- High-temperature hot-water heating systems
- Heat transfer systems
- Pressure vessel equipment to AD 2000
- Other fluids on request

  The limits given in the technical codes must be complied with. Please contact us for details.

## Operating data

- Temperature range:
  −10 to +300 °C for EN-GJL-250, JL 1040
  −10 to +350 °C for EN-GJS-400-18-LT, JS 1025
- Max. operating pressure: up to 16 bar
  (up to 25 bar for EN-GJS-400-18-LT, JS 1025)

## Materials

**Body:**

- Straight-way pattern:
  Lamellar graphite cast iron EN-GJL-250, JL 1040
  Nodular cast iron EN-GJS-400-18-LT, JS 1025
- Angle pattern
  Lamellar graphite cast iron EN-GJL-250, JL 1040
- For further details, see list of materials.

## Standard design

- Straight-way or angle pattern with horizontal seat
- Throttling valve plug up to DN 100
  (> DN 100: on-off valve plug)
- Position indicator, locking device and travel stop for all valve sizes (DN)
- Compact bonnet
- Maintenance-free stem seal with bellows and back-up gland packing
- Non-rising handwheel
- Flanges to DIN EN 1092-2 Type 21
- Free from asbestos, CFC and PCB
- Exterior coating: blue RAL 5002

## Variants

- Throttling valve plug for DN > 100
- Valve plug with PTFE gasket (200 °C max., throttling valve plug DN 15-100, on/off valve plug DN 125-200)
- Lead-sealable cap (prevents unauthorised actuation)
- Pilot plug from DN 200
- High-temperature resistant paint (grey aluminium)
- Oil- and grease-free version
- Other flange designs
- Low-temperature steel bolts down to −30 °C
  (for JS 1025 only)
- Certification to customer specification

## Additional information

- Flow characteristics 7150.4
- Chemical resistance chart 7150.2
- Operating instructions 0570.8
- Type-tested to the specifications of Germanischer Lloyd

## Purchase order data

Globe valve

1. BOA®-H as per type series booklet 7150.1
2. PN 16 or PN 25
3. EN-GJL-250, JL 1040 or EN-GJS-400-18-LT, JS 1025
4. Straight-way or angle pattern (angle pattern only in EN-GJL-250, JL 1040
5. DN 15-350 (DN 350 only in EN-GJS-400-18-LT, JS 1025
6. Variant

The valves satisfy the safety requirements of Annex I of the European Pressure Equipment Directive 97/23/EC (PED) for fluids in Groups 1 and 2.

TÜV CERT PED 97/23/EC

CE

The valves do not have a potential internal source of ignition and can be used in potentially explosive atmospheres, group II, category 2 (zones 1+21) and category 3 (zones 2+22) to ATEX 94/9/EC.

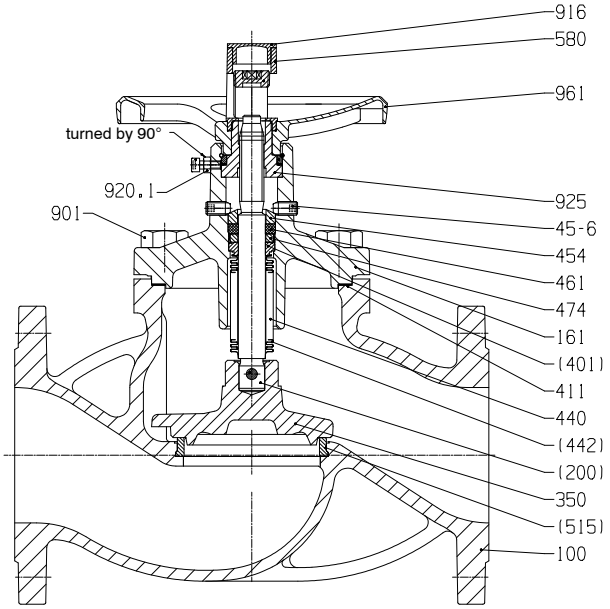
KSB

## Test and operating pressures

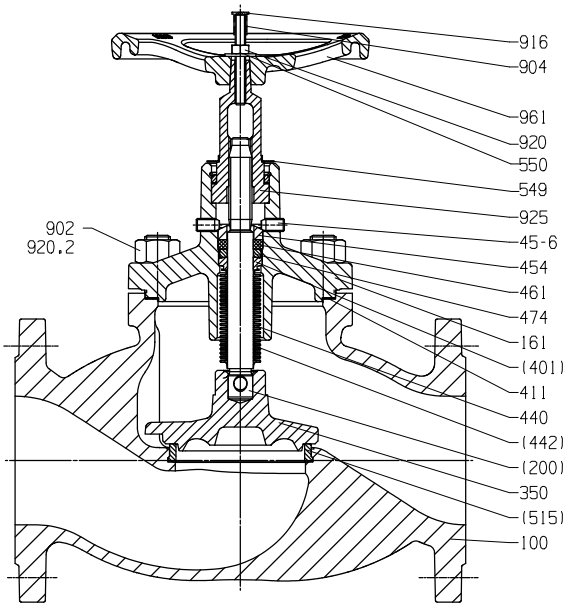
| Nominal pressure | Material | Shell / Body test pressure with water | Leak test with water | Pressure / Temperature ratings 3) 4) | | | | |
|---|---|---|---|---|---|---|---|---|
| PN | | P10, P11 bar 1) | P12 bar 2) | -10 to +120 °C | 200 | 250 | 300 | 350 |
| 16 | EN-GJL-250 | 24 | 17.6 | 16 | 12.8 | 11.2 | 9.6 | - |
| | EN-GJS-400-18-LT | | | 16 | 14.7 | 13.9 | 12.8 | 11.2 |
| 25 | EN-GJS-400-18-LT | 37.5 | 27.5 | 25 | 23 | 21.8 | 20 | 17.5 |

1) DIN EN 12266-1 (P10, P11)
2) DIN EN 12266-1 (P12 Leakage rate A)
3) Intermediate temperatures can be derived by linear interpolation.
4) Static load

Please note: DIN EN 1092-2 para. 5.3, AD W7, TRD 106 and any plant regulations governing the application in question must be observed when selecting connecting elements between the valve flanges and the piping flanges.




EN-GJL-250

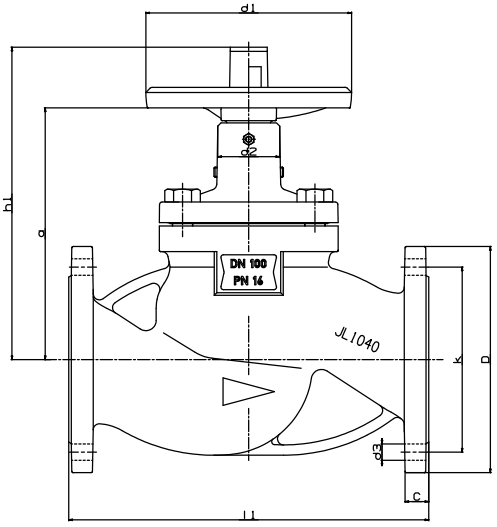



EN-GJS-400-18-LT

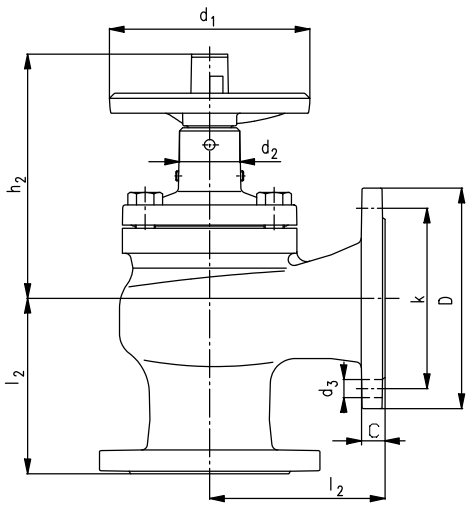
## Materials

| Part No. | | Description | DN | Material name/Designation | Material No. |
|---|---|---|---|---|---|
| 100 | | Body | 15-300 | EN-GJL-250 | JL1040 |
| | | | 15-350 | EN-GJS-400-18-LT | JS1025 |
| 161 | | Bonnet | 15-300 | EN-GJL-250 | JL1040 |
| | | | 15-350 | EN-GJS-400-18-LT | JS1025 |
| 350 | | Valve plug | 15-150 | X 20 Cr 13 | 1.4021+QT (1.4021) |
| | | | 200-350 | C 22 / X 15 CrNi 18 8 | 1.0402 / 1.4370 |
| 411 | | Joint ring | | CrNiSt graphite | |
| 440 | | Bellows set consisting of: | | | |
| | 200 | Stem | | Stainless steel (min. 13% Cr) | |
| | 401 | Weld ring | | Stainless steel | |
| | 442 | Bellows | | X 6 CrNiTi 18 10 | 1.4541 |
| 454 | | Stuffing box ring | | Stainless steel | |
| 45-6 | | Stuffing box screw | | Steel | |
| 461 | | Gland packing | | Pure graphite | |
| 474 | | Thrust ring | | Stainless steel | |
| 515 | | Seat ring | | Stainless steel | |
| 543 | | Spacer bush | 15-65 | Plastic, glass-fibre reinforced | |
| 549 | | Collar bush | | | |
| 550 | | Disc | | Steel | |
| 580 | | Cap | 15-150 | Plastic, glass-fibre reinforced, impact-resistant | |
| | | | 200-350 | Steel | |
| 901 | | Hex. head bolt | | 8.8 on EN-GJL-250 version | |
| 902 | | Stud | | CK 35 V on EN-GJS-400-18-LT version | |
| 904 | | Grub screw | | Steel | |
| 920 | | Hex. nut | | C35 on EN-GJS-400-18-LT version | |
| 916 | | Plug | | Plastic | |
| 925 | | Stem nut | | Coated steel | |
| 961 | | Handwheel | 15-150 | Die-cast aluminium on EN-GJL-250 version | |
| | | | 200-300 | EN-GJL-200 on EN EN-GJL-250 version | JL1030 |
| | | | 15-350 | EN-GJL-200 on EN-GJS-400-18-LT version | JL1030 |

## Dimensions for PN 16, cast iron




Straight-way valve

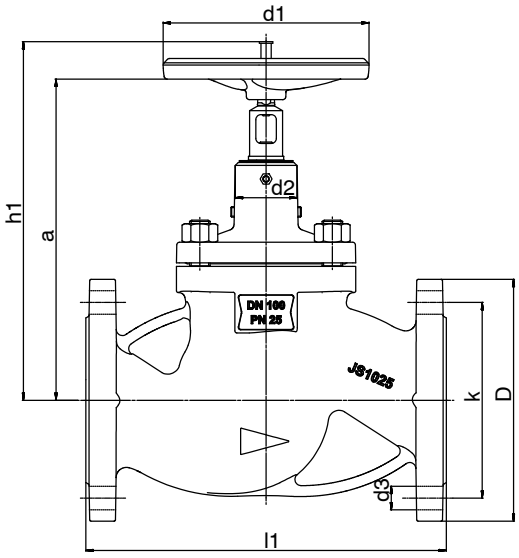



Angle valve

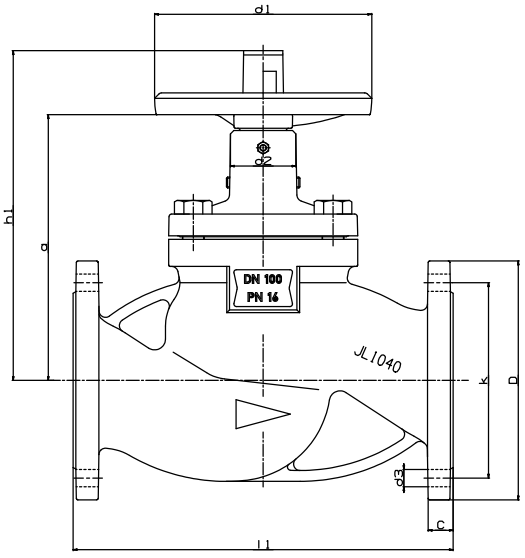
a and $d_2$ insulation dimensions

| Dimensions (mm) | | | | | | | | | | | | | Weight (approx.) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PN | DN | l1 | l2 | h1 | h2 | d1 | d2 | a | D | k | n x d3 | C | Straight-way valve | Angle valve |
| | | | | | | | | | | | | | kg | kg |
| 16 JL1040 | 15 | 130 | 90 | 175 | 150 | 125 | 47 | 137 | 95 | 65 | 4 x 14 | 14 | 3.1 | 3.2 |
| | 20 | 150 | 95 | 178 | 153 | 125 | 47 | 140 | 105 | 75 | 4 x 14 | 16 | 4.0 | 4.0 |
| | 25 | 160 | 100 | 184 | 151 | 125 | 47 | 146 | 115 | 85 | 4 x 14 | 16 | 4.7 | 4.8 |
| | 32 | 180 | 105 | 205 | 170 | 125 | 47 | 161 | 140 | 100 | 4 x 19 | 18 | 7.3 | 7.5 |
| | 40 | 200 | 115 | 210 | 172 | 125 | 47 | 166 | 150 | 110 | 4 x 19 | 18 | 7.7 | 7.7 |
| | 50 | 230 | 125 | 235 | 198 | 160 | 51 | 190 | 165 | 125 | 4 x 19 | 20 | 10.2 | 9.6 |
| | 65 | 290 | 145 | 246 | 198 | 160 | 51 | 201 | 185 | 145 | 4 x 19 | 20 | 17.0 | 16.3 |
| | 80 | 310 | 155 | 282 | 226 | 200 | 60 | 223 | 200 | 160 | 8 x 19 | 22 | 22.0 | 21.8 |
| | 100 | 350 | 175 | 304 | 244 | 200 | 60 | 245 | 220 | 180 | 8 x 19 | 24 | 32.0 | 30.8 |
| | 125 | 400 | 200 | 390 | 316 | 250 | 86 | 310 | 250 | 210 | 8 x 19 | 26 | 54.0 | 48.3 |
| | 150 | 480 | 225 | 408 | 320 | 250 | 86 | 328 | 285 | 240 | 8 x 23 | 26 | 70.5 | 65.7 |
| | 200 | 600 | 275 | 570 | 468 | 400 | 100 | 440 | 340 | 295 | 12 x 23 | 30 | 130.0 | 114.2 |
| | 250 | 730 | 325 | 606 | 480 | 400 | 100 | 476 | 405 | 355 | 12 x 28 | 32 | 230.0 | 180.5 |
| | 300 | 850 | 375 | 660 | 510 | 400 | 93 | 530 | 460 | 410 | 12 x 28 | 32 | 328.0 | 267.5 |

## Dimensions of PN 16 and PN 25, nodular cast iron




PN 16/25 up to DN 150




PN 16 DN 200 – 350

a and $d_2$ insulation dimensions

| Dimensions (mm) | | | | | | | | | | | Weight (approx.) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| PN | DN | l1 | h1 | d1 | d2 | a | D | k | n x d3 | C | Straight-way valve kg |
| 16 JS1025 | 15 | 130 | 211 | 125 | 47 | 179 | 95 | 65 | 4 x 14 | 14 | 3.1 |
| | 20 | 150 | 214 | 125 | 47 | 182 | 105 | 75 | 4 x 14 | 16 | 4.1 |
| | 25 | 160 | 220 | 125 | 47 | 188 | 115 | 85 | 4 x 14 | 16 | 4.6 |
| | 32 | 180 | 238 | 125 | 47 | 203 | 140 | 100 | 4 x 19 | 18 | 8.1 |
| | 40 | 200 | 243 | 125 | 47 | 208 | 150 | 110 | 4 x 19 | 18 | 8.5 |
| | 50 | 230 | 266 | 160 | 51 | 240 | 165 | 125 | 4 x 19 | 20 | 11.0 |
| | 65 | 290 | 290 | 160 | 51 | 250 | 185 | 145 | 4 x 19 | 20 | 17.0 |
| | 80 | 310 | 324 | 200 | 60 | 290 | 200 | 160 | 8 x 19 | 22 | 21.0 |
| | 100 | 350 | 348 | 200 | 60 | 312 | 220 | 180 | 8 x 19 | 24 | 31.0 |
| | 125 | 400 | 460 | 250 | 80 | 400 | 250 | 210 | 8 x 19 | 26 | 51.0 |
| | 150 | 480 | 479 | 250 | 80 | 418 | 285 | 240 | 8 x 23 | 26 | 68.5 |
| | 200 | 600 | 570 | 400 | 93 | 440 | 340 | 295 | 12 x 23 | 30 | 139.0 |
| | 250 | 730 | 606 | 400 | 93 | 476 | 405 | 355 | 12 x 28 | 32 | 239.0 |
| | 300 | 850 | 660 | 400 | 93 | 530 | 460 | 410 | 12 x 28 | 32 | 343.0 |
| | 350 | 980 | 660 | 400 | 93 | 530 | 520 | 470 | 16 x 28 | 36 | 390.0 |
| 25 JS1025 | 15 | 130 | 211 | 125 | 47 | 179 | 95 | 65 | 4 x 14 | 14 | 3.1 |
| | 20 | 150 | 214 | 125 | 47 | 182 | 105 | 75 | 4 x 14 | 16 | 4.1 |
| | 25 | 160 | 220 | 125 | 47 | 188 | 115 | 85 | 4 x 14 | 16 | 4.6 |
| | 32 | 180 | 238 | 125 | 47 | 203 | 140 | 100 | 4 x 19 | 18 | 8.2 |
| | 40 | 200 | 243 | 125 | 47 | 208 | 150 | 110 | 4 x 19 | 18 | 8.5 |
| | 50 | 230 | 266 | 160 | 51 | 240 | 165 | 125 | 4 x 19 | 20 | 11.0 |
| | 65 | 290 | 290 | 160 | 51 | 250 | 185 | 145 | 8 x 19 | 20 | 17.0 |
| | 80 | 310 | 324 | 200 | 60 | 290 | 200 | 160 | 8 x 19 | 22 | 28.9 |
| | 100 | 350 | 348 | 200 | 60 | 312 | 235 | 190 | 8 x 23 | 24 | 40.0 |
| | 125 | 400 | 460 | 250 | 80 | 400 | 270 | 220 | 8 x 28 | 26 | 65.0 |
| | 150 | 480 | 479 | 250 | 80 | 418 | 300 | 250 | 8 x 28 | 26 | 89.0 |

## Installation instructions

Flow through BOA®-H shut-off valves should be in the direction of the embossed arrow on the valve body. An alternating direction of flow is permissible for valves with standard valve plug, but not for valves fitted with throttling valve plug. If the following differential pressures are exceeded on BOA®-H from DN 200 upwards, a pilot plug design is required.

| | DN | 150 | 200 | 250 | 300/350 |
|---|---|---|---|---|---|
| PN 16 | Δp bar | – | 12 | 9 | 6 |
| PN 25 | | 21 | | | |

The pilot plug only takes effect if the pressure to be sealed lies above the valve plug. Therefore, flow through valves with pilot plug must be reversed (embossed flow direction arrow is reversed).

## Mating dimensions – Standards

Flanges: DIN EN 1092-2, flange type 21 – JL 1040
flange type 21-2 – JS1025

Flange facing: DIN EN 1092-2, type B

## Face-to-face lengths

Straight-way valve: EN 558/1 (was: DIN 3202/F 1)
ISO 5752/1

Angle valve: EN 558/8 (was: DIN 3202/F 32)
ISO 5752/8

## Product features - to our customers' benefit (1)

**Optimised model made of nodular cast iron for high-temperature applications**

**Your benefit**
- Improved handling even at very high temperatures

**Non-rotating stem, protected outside screw**

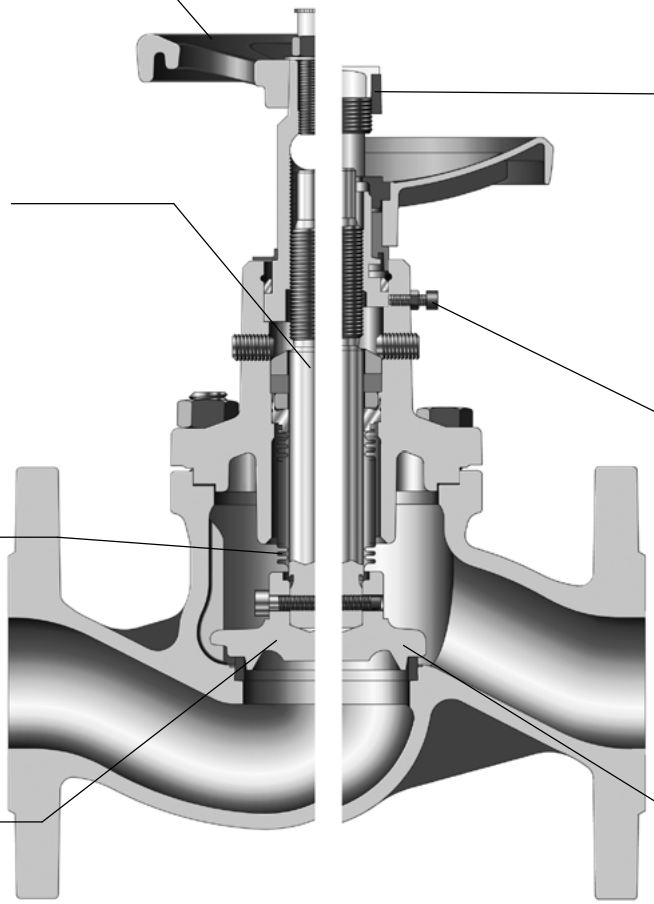
**Your benefit**
- High operating reliability

**Bellows welded to stem**

**Your benefit**
- No vibrations transmitted from valve plug to bellows

**Throttling valve plug as a standard up to DN 100**

**Your benefit**
- Flow modulation at any time and at no extra cost



**Position indicator with travel stop outside the insulation as a standard**

**Your benefit**
- Valve plug position can be checked at any time.
- The valve can be returned to its original setting after closing.

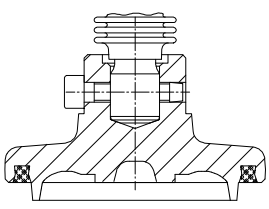
**Locking device as a standard**

**Your benefit**
- Protection against accidental actuation

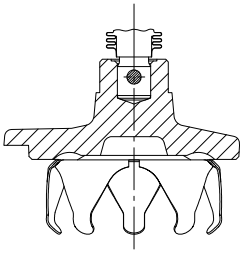
**Replaceable valve plug**

**Your benefit**
- Reduced maintenance costs as the valve plug can be replaced without having to replace the complete bonnet

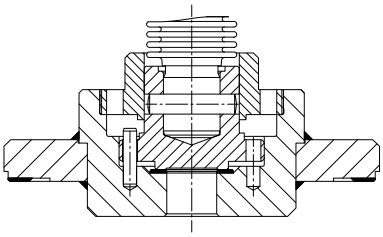
### Variants



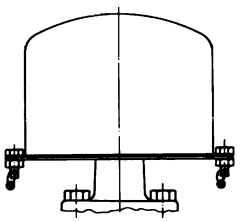
Throttling plug with PTFE gasket, DN 15-100



Throttling plug from DN 125



Pilot plug design from DN 200



Lead-sealable cap

## Product features – to our customers' benefit (2)

### Non-rising handwheel

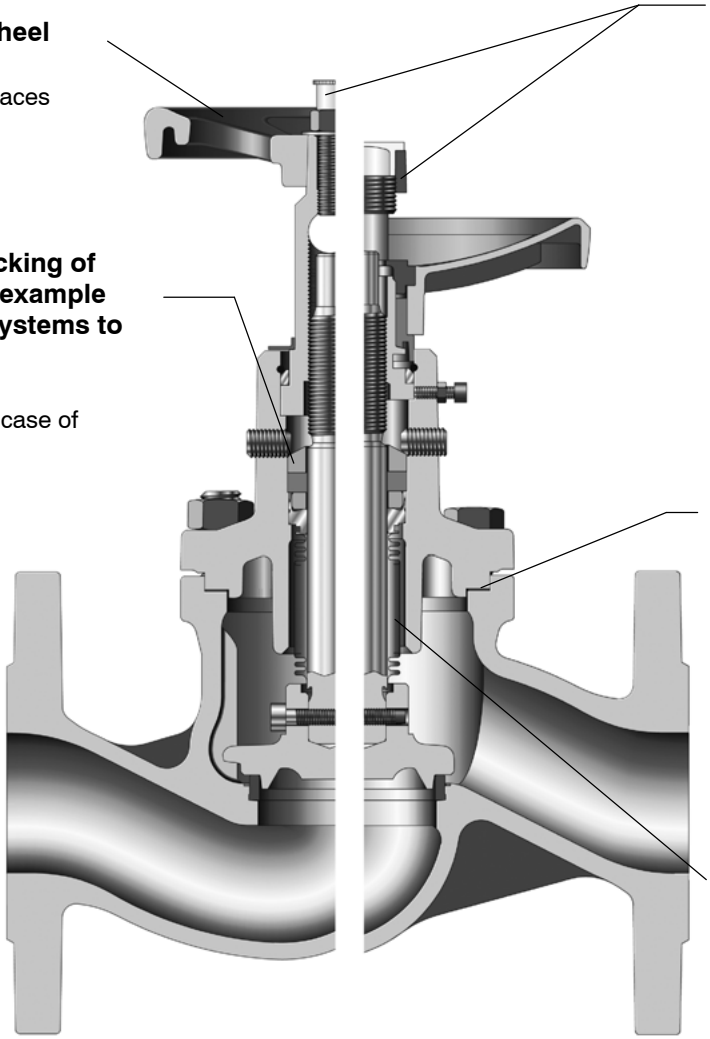
**Your benefit**

- Ideal in confined spaces

### Back-up gland packing of pure graphite, for example for heat transfer systems to DIN 4754

**Your benefit**

- Additional safety in case of defective bellows



### Colour coding system

**Your benefit**

- The plug type and plug/seat interface material can be checked from outside without removing the insulation.
- Correct identification of valve design during replacement work

### Fully confined bonnet gasket

**Your benefit**

- No creeping of the gasket, longer life

### Bellows protected when valve is fully open

**Your benefit**

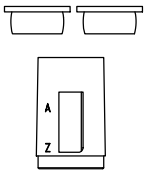
- Bellows protected against surge pressures



## Colour coding system

Blue plug
Design:
on/off valve plug

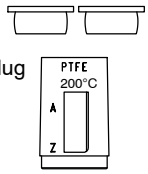
White plug
Design:
throttling valve plug




Crimson cap
Design:
metal-seated valve plug

Blue plug
Design:
on/off valve plug

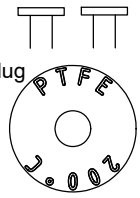
White plug
Design:
throttling valve plug




Red orange cap
Design:
Valve plug with PTFE gasket

Blue plug
Design:
on/off valve plug

White plug
Design:
throttling valve plug




Sheet metal disc
Design:
Valve plug with PTFE gasket

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