



## BSA3BD Bellows Sealed Stop Valves

### Description

A range of sealed, in-line stop valves having tri-ply bellows as standard throughout the range. These valves have been designed for use on steam, gas, liquid, thermal oils, condensate and water systems.

The **BSA3BD** is fitted with a flat, balanced pressure plug as standard.

### Standards

The product fully complies with the requirements of the European Pressure Equipment Directive and carries the **CE** mark when so required.

### Certification

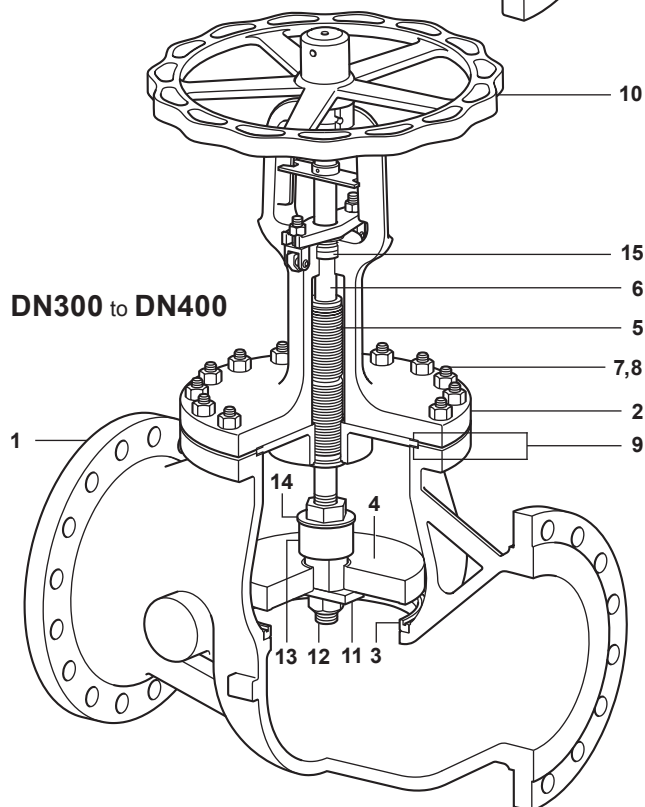
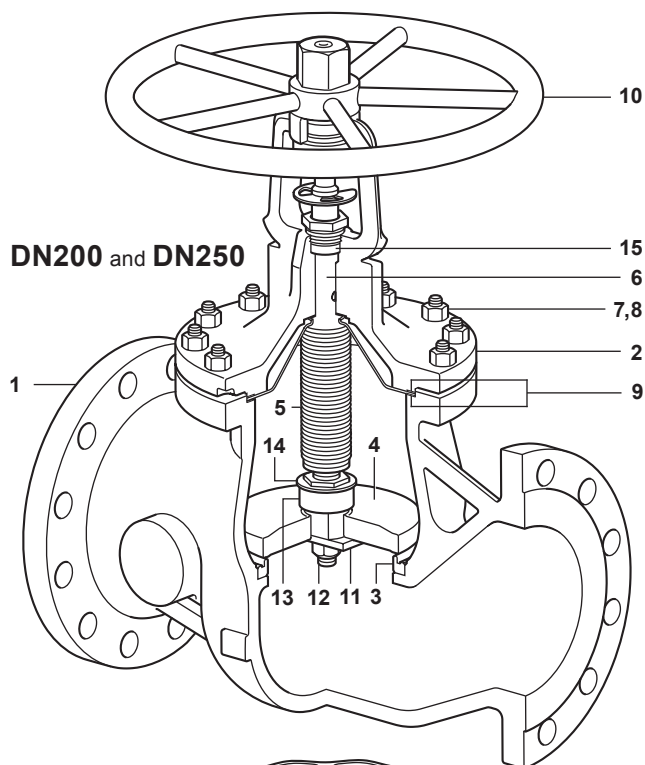
The BSA3BD is available with certification to EN 10204 3.1. **Note:** All certification/inspection requirements must be stated at the time of order placement.

### Size and pipe connection

DN200, DN250, DN300, DN350 and DN400  
 EN 1092 and EN 12516-1 PN16, PN25 and PN40

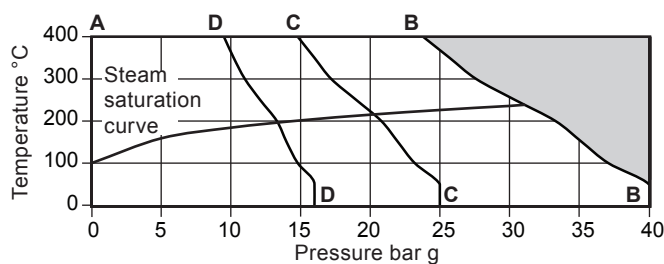
### Materials

No.	Part	Material	
1	Body	Cast steel	1.0619+N
2	Bonnet	Cast steel	1.0619+N
3	Seat	A105 and Stellite	
4	Disc	Stainless steel	DIN 17440 X30 Cr13 and Stellite
5	Bellows	Stainless steel	DIN 17440 X6 Cr Ni Ti 1810
6	Stem	Stainless steel	AISI 420
7	Bonnet nut	Steel	ASTM A194 2H
8	Bonnet stud	Steel	ASTM A193 B7
9	Body / bonnet gasket	Graphite laminated with stainless steel insert	
10	Handwheel	Carbon steel	DN200 and DN250
		Cast iron	DN300 to DN400
11	Strap	Stainless steel	ASTM A276 304
12	Self locking nut	Stainless steel	
13	Balance plug	Stainless steel	DIN 17440 x 30 Cr13 and Stellite
14	Locking washer	ASTM A276 304	
15	Stem packing	Graphite	



## Pressure / temperature limits - EN 1092 and EN 12516-1

**Flanged:**  
**PN16**  
**PN25**  
**PN40**



The product **must not** be used in this region or beyond the parameter of the PMA or TMA of the relative end connection.

<b>A - B - B</b>	<b>PN40</b>	Body design condition	PN40
		PMA Maximum allowable pressure	40 bar g @ 0 °C
		TMA Maximum allowable temperature	400 °C @ 23.8 bar g
		Minimum allowable temperature	-10 °C
		PMO Maximum operating pressure for saturated steam service	31.3 bar g
		TMO Maximum operating temperature	400 °C @ 23.8 bar g
		Minimum operating temperature	-10 °C
		Minimum operating pressure	0 bar g
		Maximum differential pressure is limited to the PMO	
		Designed for a maximum cold hydraulic test pressure of:	60 bar g
<b>A - C - C</b>	<b>PN25</b>	Body design condition	PN25
		PMA Maximum allowable pressure	25 bar g @ 0 °C
		TMA Maximum allowable temperature	400 °C @ 14.8 bar g
		Minimum allowable temperature	-10 °C
		PMO Maximum operating pressure for saturated steam service	20.5 bar g
		TMO Maximum operating temperature	400 °C @ 14.8 bar g
		Minimum operating temperature	-10 °C
		Minimum operating pressure	0 bar g
		Maximum differential pressure is limited to the PMO	
		Designed for a maximum cold hydraulic test pressure of:	37.5 bar g
<b>A - D - D</b>	<b>PN16</b>	Body design condition	PN16
		PMA Maximum allowable pressure	16 bar g @ 0 °C
		TMA Maximum allowable temperature	400 °C @ 9.5 bar g
		Minimum allowable temperature	-10 °C
		PMO Maximum operating pressure for saturated steam service	13.5 bar g
		TMO Maximum operating temperature	400 °C @ 9.5 bar g
		Minimum operating temperature	-10 °C
		Minimum operating pressure	0 bar g
		Maximum differential pressure is limited to the PMO	
		Designed for a maximum cold hydraulic test pressure of:	24 bar g

**Seat leakage** Disc to seat shut-off conforms to EN 12266-1 Rate A leakage and ISO 5208 Rate A.

### **K<sub>v</sub> values**

Please note that the K<sub>v</sub> values for a valve supplied without a balanced disc are shown for comparison purposes only. All BSA3BD valves will be supplied with a balanced disc.

DN200		DN250		DN300		DN350		DN400	
Balanced	Unbalanced	Balanced	Unbalanced	Balanced	Unbalanced	Balanced	Unbalanced	Balanced	Unbalanced
593	735	935	1 170	1 264	1 710	1 804	2 365	2 362	3 225

For conversion:

$$C_v \text{ (UK)} = K_v \times 0.963$$

$$C_v \text{ (US)} = K_v \times 1.156$$

### **To convert K<sub>v</sub> to volume flowrate in m<sup>3</sup>/h:-**

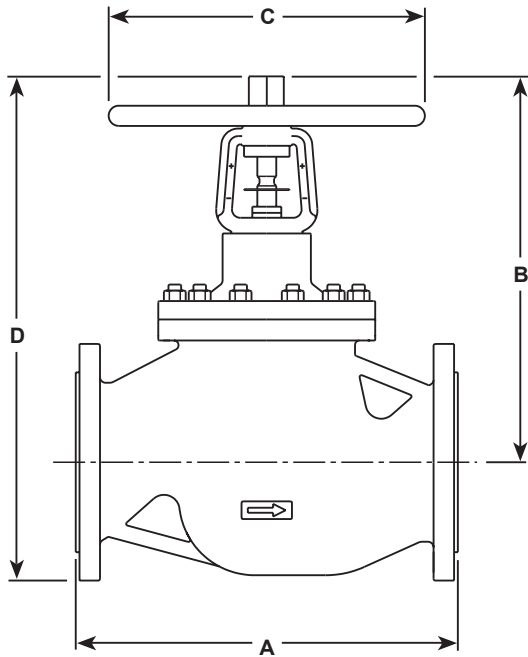
$$\dot{Q} = K_v \times \sqrt{\Delta P}$$

**Where:**  $\dot{Q}$  = Volume flow in cubic m/h

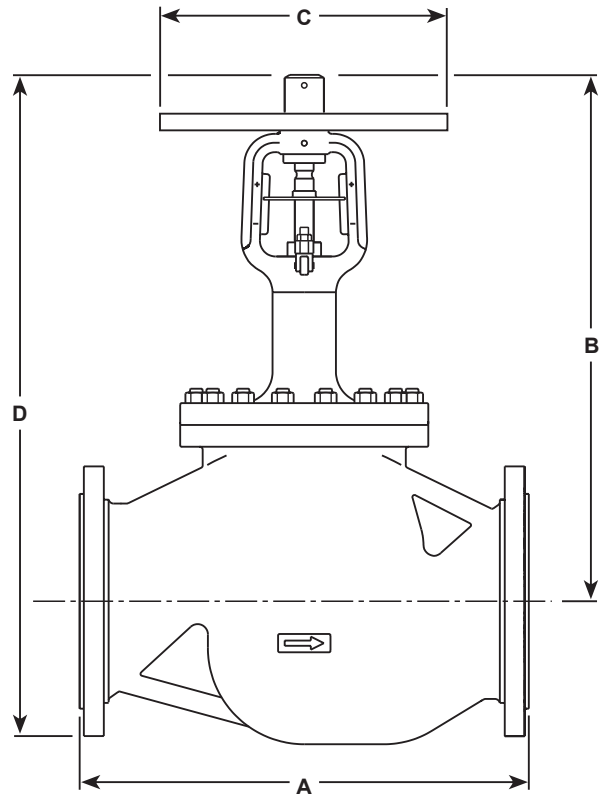
$\sqrt{\Delta P}$  = Pressure drop in bar

**Dimensions/weights (approximate) in mm and kg**

Size	A	B	C	D	Weight
DN200	600	612	500	800	180
DN250	730	765	500	990	316
DN300	850	1005	600	1265	480
DN350	980	1095	650	1420	690
DN400	1 100	1 173	700	1505	950



**DN200 and DN250**



**DN300 to DN400**

**Safety information, installation and maintenance**

For full details see the Installation and Maintenance Instructions (IM-P184-19) supplied with the product.

**Installation note:** Install in the direction of flow given by the arrow on the body with the handwheel in a suitable position.

**Disposal:** These products are recyclable. No ecological hazard is anticipated with the disposal of these products, providing due care is taken

**How to order**

**Example:** 1 off DN200 Spirax Sarco type BSA3BD bellows sealed stop valve, flanged EN 1092 PN40.

## Spare parts - DN200 and DN250

The spare parts available are detailed below. No other parts are supplied as spares.

### Available spares

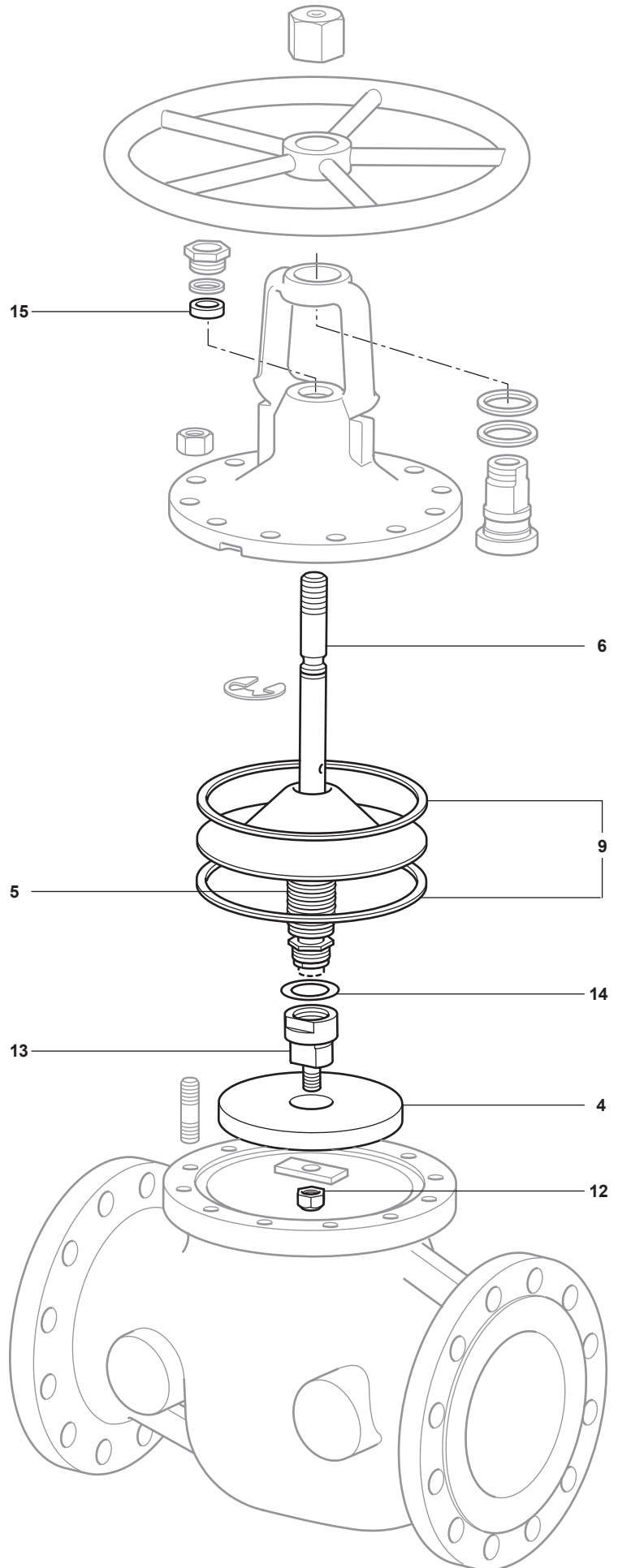
Body/bonnet gasket and stem packing	<b>15</b> and <b>9</b> (2 off)
Stem and bellows assembly	<b>5, 6, 12, 14, 15</b> and <b>9</b> (2 off)
Disc	<b>4, 12, 13, 14, 15</b> (state full description of the valve) and <b>9</b> (2 off)

### How to order spares

Please note: for customer convenience spares are supplied in kits to ensure all the appropriate replacement parts are supplied to carry out a specific maintenance task. e.g. when a stem/bellows assembly is ordered, parts **9, 12, 14** and **15** will be included in the kit.

Always order spares by using the description given in 'Available spares' and state the size and type of stop valve.

**Example:** 1 - Body / bonnet gasket and stem packing for a DN200 Spirax Sarco BSA3BD PN40 bellows sealed stop valve.



## Spare parts - DN300 to DN400

The spare parts available are detailed below. No other parts are supplied as spares.

### Available spares

Body / bonnet gasket and stem packing	15 and 9 (2 off)
Stem and bellows assembly	5, 6, 12, 14, 15 and 9 (2 off)
Disc	4, 12, 13, 14, 15 and 9 (2 off)
(state full description of the valve)	9 (2 off)

### How to order spares

Please note: for customer convenience spares are supplied in kits to ensure all the appropriate replacement parts are supplied to carry out a specific maintenance task. e.g. when a stem/bellows assembly is ordered, parts 9, 12, 14 and 15 will be included in the kit.

Always order spares by using the description given in 'Available spares' and state the size and type of stop valve.

**Example:** 1 - Body / bonnet gasket and stem packing for a DN200 Spirax Sarco BSA3BD PN40 bellows sealed stop valve.

