



**RWTUV**



# BRV2

## Pressure Reducing Valve

### Description

The BRV2 is a direct acting pressure reducing valve suitable for steam, or gases such as compressed air.

### Available types

- BRV2                   Screwed with SG iron body.  
                          Flanged with SG iron body.
- BRV2S               with stainless steel bellows assembly.
- BRV2B               with phosphor bronze/brass bellows assembly.
- BRV2SP             optional types with external pressure sensing.
- BRV2BP             optional types with external pressure sensing.

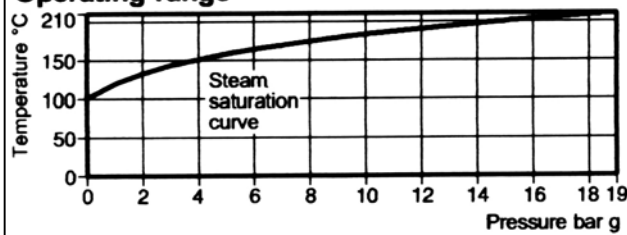
### Sizes and pipe connections

1/2", 3/4" and 1" screwed BSP (BS 21 Rp) or NPT. DN15, 20 and 25 flanged BS 4504 PN25.

### Limiting conditions

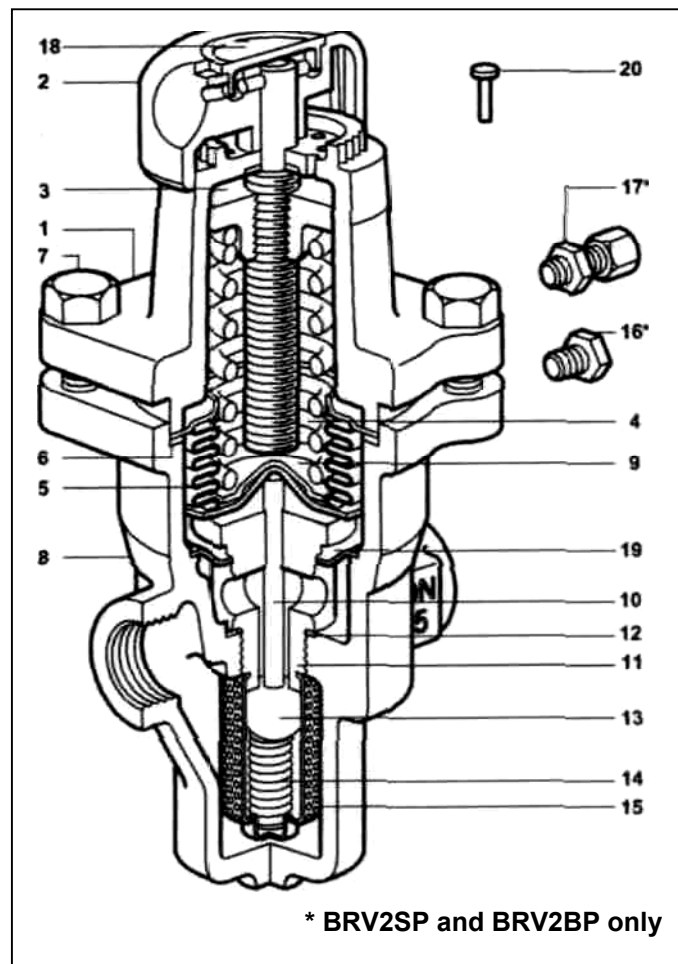
Maximum body design conditions	PN25
Maximum upstream pressure	19 bar
Maximum downstream reduced pressure	8.6 bar
Maximum design temperature	210-C
Maximum recommended turndown ratio 10:1 at maximum flow	
Designed for a maximum cold hydraulic test pressure of 38 bar g	

### Operating range



Pressure reducing valves are supplied with one of three colour coded springs which are identified by the disc (18) located on the adjustment hand wheel:

- Grey   for downstream pressure control  
          : 0.14 to 1.7 bar g
- Green  for downstream pressure control  
          : 1.40 to 4.0 bar g
- Orange for downstream pressure control  
          : 3.50 to 8.6 bar g



## Material:

No	Part	Materials	
1	Spring housing	Aluminium epoxy coated LM 24	
2	Adjustment	Polypropylene	
3	Top spring plate	Cast iron	DIN 1691
4	Pressure adjustment spring	Silicon chrome spring steel	BS 2803 685 A55 Range 2
5	Bellows assembly	S.S	316Ti/316L
		Phosphor bronze brass	BS 2872 CZ 122
6	Bellows assembly gasket	Stainless steel reinforced exfoliated graphite	

Full lift capacity for safety valve sizing purposes are shown below:

Size	½"	¾"	1"
K <sub>VS</sub>	1.5	2.5	3.0

For conversion

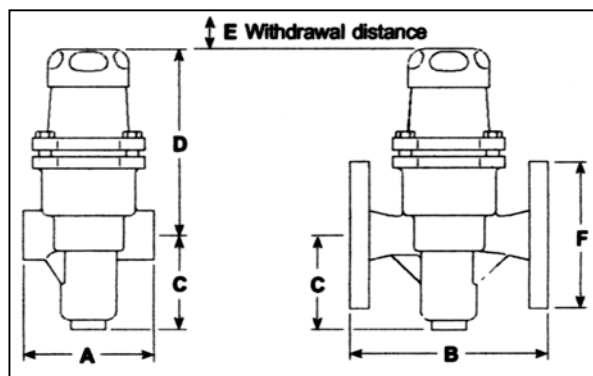
$$C_v \text{ (UK)} = K_v \times 0.97$$

$$C_v \text{ (US)} = K_v \times 1.17$$

**Note:** For steam and compressed air sizing see TI-P045-13.

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

Size	A	B	C	D	E	F	Weight	
							Fig	Scr
3N15 - ½"	83	150	60	130	25	97	1.60	3.90
3N20 - ¾"	96	150	60	130	25	107	1.70	4.25
DN25 -1"	108	160	60	130	25	117	1.95	4.65



## How to order

Example: 1 off Spirax Sarco DN15 BRV2 pressure reducing valve with SG iron body flanged PN25, stainless steel bellows and fitted with an orange spring for downstream pressure control of 3.5 to 8.6 bar g.

## Spare parts

The spare parts available are shown in heavy outline. Parts drawn in broken line are not supplied as spares.

## Available spares

* Pressure adjustment spring	Grey	0.14to1.7barg	4,18
	Green	1.40 to 4.0 bar g	4,18
	Orange	3.50 to 8.6 bar g	4,18
* Bellows assembly specify type	Stainless steel or phosphor bronze		5,6
* Spring housing hex. bolts (set of 4)			7
* Valve and seat assembly			6,11,12,19
* Gasket set			B.12

\* Common to all sizes.

## How to order spares

Always order spares by using the description given in the column headed 'Available spares' and state the size, type and pressure range of the reducing valve.

**Example:** 1 off Spirax Sarco pressure adjustment spring, having a downstream pressure range of 3.5 to 8.6 bar g (orange) for a DN15 type BRV2 pressure reducing valve.

No	Part	Materials	
7	Hex. bolt (M8 x 25)	Steel zinc plated BS 3692 Gr.	
8	Body	SG iron	DIN 1693 GGG
9	Cone shaped	S.S	ASTM A276
10	Push rod	S.S	ASTM A276
11	Valve seat	S.S	BS 970 431 S2?
12	Valve seat gasket	S.S	BS 1449 316
13	Valve	S.S	AISI 420
14	Valve return spring	S.S	BS 20056 316
15	Strainer screen	S.S	BS 1449 316 Sh
16	Blanking plug	S.S	BS 970 431 S2<
17	Compression fitting	Brass	
18	Spring range ID	Polypropyle	
19	Bulkhead plate	S.S	3161
20	Tamper-proof pin	Mild steel copper plated	

## Installation

The valve should be installed in a horizontal pipeline with the direction of flow as indicated by the arrow on the valve body. Full Installation and Maintenance Instructions are supplied with the product

**BRV2SP and BRV2BP:** When external pressure sensing is used, remove the blanking plug (16) and fit the V/6 mm O/D compression fitting (17 supplied). The other end of the 6 mm sensing pipe should be connected into the downstream pipe work at least 1 m downstream from the valve. For more detail, see the Installation and Maintenance Instructions supplied with the product.

## Maintenance

Before carrying out any work on the valve make sure that it is fully isolated and safely vented.

## How to fit a new valve and seat or clean the strainer screen:

1. Release the adjustment spring pressure by turning the adjustment knob (2) fully anticlockwise
2. Remove the spring housing by undoing the 4 spring housing bolts (7).
3. Lift out the bellows assembly (5) and the gasket (6).
4. Using a 32 mm A/F spanner, unscrew the valve seat (11) and remove the valve, the return spring, the strainer screen, the push rod and the guide bush.
5. Clean the strainer screen or replace with a new valve and seat assembly (this incorporates the strainer screen).
6. Reassemble in the reverse order, using new gaskets, ensuring that the components and seating faces are clean.
7. Tighten the valve seat to the following torque 108 -132 N m.
8. Tighten the spring housing bolts to the following torque 18-24Nm.

## How to fit the new bellows:

Follow Steps 1 to 3, then proceed as follows:



9. Remove the cone shaped washer (9) from inside the bellows.
10. Replace the cone shaped washer, bellows gasket and assembly, adjustment spring and the spring housing, and tighten the spring housing bolts to the following torque 18 - 24 N m.

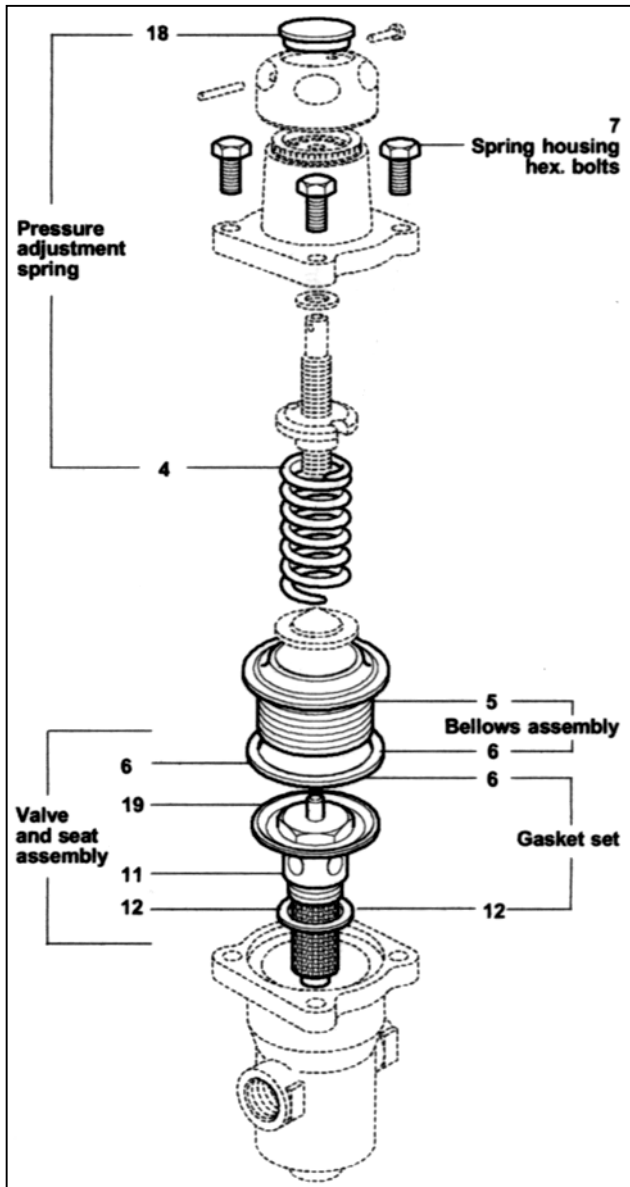
## How to fit a replacement pressure adjustment spring:

Follow Steps 1and 2, then proceed as follows:

11. Replace the spring and bonnet assembly and tighten the spring housing bolts to the following torque 18 - 24 N m.
12. Lift out the spring identification disc (18) and press in a new disc fit spring range has been changed).

**Recommended tightening torques**

Item No.	 or mm		Nm
7 Hex. bolts	M8 x 25		18 – 24
11 Hex. bolts	32 A/F		108 – 132



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