



Cert. No. LRQ 0963008

ISO 9001

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.

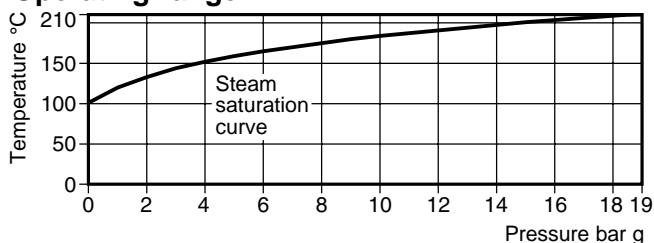
Sizes and pipe connections

½", ¾" 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 g
Maximum downstream reduced pressure	8.6 bar g
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



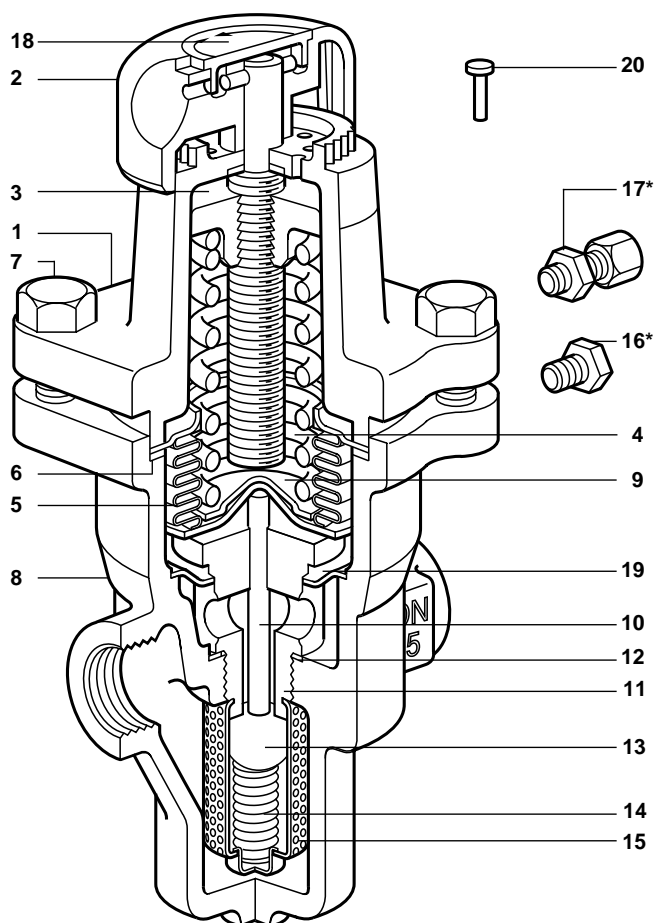
Pressure reducing valves are supplied with one of three colour coded springs which are identified by the disc (18) located on the adjustment handwheel:

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

Note: where control spring ranges overlap always use the lower range to give better control.

Materials

No.	Part	Materials
1	Spring housing	Aluminium epoxy coated LM 24
2	Adjustment handwheel	Polypropylene
3	Top spring plate	Cast iron DIN 1691 GG 20
4	Pressure adjustment spring	Silicon chrome BS 2803 685 A55 spring steel Range 2
5	Bellows assembly	Stainless steel 316Ti/316L Phosphor bronze/brass BS 2872 CZ 122
6	Bellows assembly gasket	Stainless steel reinforced exfoliated graphite



* BRV2SP and BRV2BP only

No.	Part	Materials
7	Hex. bolt (M8 x 25 mm)	Steel zinc plated BS 3692 Gr. 8.8
8	Body	SG iron DIN 1693 GGG 40.3
9	Cone shaped washer	Stainless steel ASTM A276 316L
10	Push rod	Stainless steel ASTM A276 316L
11	Valve seat	Stainless steel BS 970 431 S29
12	Valve seat gasket	Stainless steel BS 1449 316 S11
13	Valve	Stainless steel AISI 420
14	Valve return spring	Stainless steel BS 20056 316 S42
15	Strainer screen	Stainless steel BS 1449 316 SH
16	Blanking plug	Stainless steel BS 970 431 S29
17	Compression fitting	Brass
18	Spring range ID disc	Polypropylene
19	Bulkhead plate	Stainless steel 316L
20	Tamper-proof pin	Mild steel copper plated

Note: Items 10, 11, 13, 14, 15 and 19 are all part of one assembly.

Capacities

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

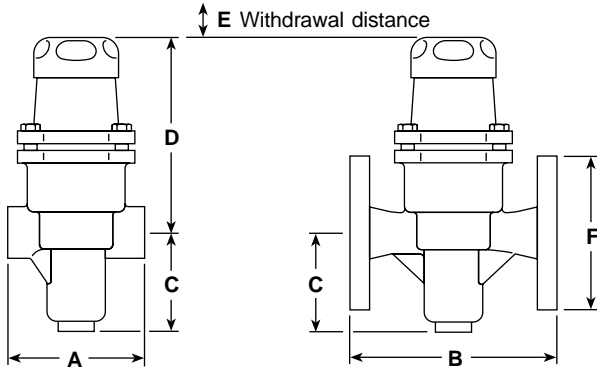
Size	½"	¾"	1"
Kvs	1.5	2.5	3.0

For conversion C_V (UK) = $K_V \times 0.97$ C_V (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 Scr	Weight Flg
DN15 - ½"	83	150	60	130	25	97	1.60	3.90
DN20 - ¾"	96	150	60	130	25	107	1.70	4.25
DN25 - 1"	108	160	60	130	25	117	1.95	4.65



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 ¼" / 6 mm O/D compression fitting (17 supplied). The other end of the 6 mm sensing pipe should be connected into the downstream pipework 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:

- Release the adjustment spring pressure by turning the adjustment knob (2) fully anticlockwise.
- Remove the spring housing by undoing the 4 spring housing bolts (7).
- Lift out the bellows assembly (5) and the gasket (6).
- 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.
- Clean the strainer screen or replace with a new valve and seat assembly (this incorporates the strainer screen).
- Reassemble in the reverse order, using new gaskets, ensuring that the components and seating faces are clean.
- Tighten the valve seat to the following torque 108 - 132 N m.
- Tighten the spring housing bolts to the following torque 18 - 24 N m.

How to fit the new bellows:

Follow Steps i to iii, then proceed as follows:



- Remove the cone shaped washer (9) from inside the bellows.
- 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 i and ii, then proceed as follows:

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

Recommended tightening torques

Item No.	 or 	mm	N m
7 Hex. bolts		M8 x 25	18 - 24
11 Valve seat	32 A/F		108 - 132

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	0.14 to 1.7 bar g	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 **6, 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.

