



TYPE B2 PRESSURE REDUCING VALVE

The **B2 pressure reducing valves** combines high capacity with attendant high accuracy of reduced pressure for steam and gases. These valves are used in a variety of applications throughout industry, where their outstanding accuracy and reliability have been proven.

Valves are supplied in sizes ½" to 6" in SG Iron with ends screwed female or alternatively flanged to customers requirements. Inlet pressures of up to 27.60 Barg for steam and 34.50 Barg for air service can be accommodated, although up to 41.40 Barg can be achieved using a Carbon Steel valve. **(Consult Broadway Technical Sales Engineers for further information).** Reduced pressure ranges of 0.34 – 17.20 Barg are possible. For reduced pressures of 0.07 - 0.34 a low pressure top is necessary. **(Consult Broadway Technical Sales Engineers for further information).**

Description of Action

High pressure steam is admitted to the underside of the main valve and relay valve. By compressing the main spring the relay valve opens, allowing regulated pressure on top of the main piston which in turn opens the main valve lid, allowing reduced pressure through. This pressure is then transmitted through the port in the outlet side acting on the underside of the diaphragm. Any build up in reduced pressure deflects the diaphragm allowing the relay valve to close, thus shutting off regulated steam to the main piston which in turn closes the main valve assisted by the loading spring. When the correct reduced pressure is restored the valves open again as previously described.

Compressing the spring **increases** the reduced pressure, **relaxing** the spring **decreases** the reduced pressure.

Installation

All valves should be fitted in a horizontal pipeline with, flow in the

direction of the arrow cast on the side of the body. The adjusting screw should be directly above pipeline. The pipe must be clean and free from dirt, scale, etc. A fine strainer should be fitted on the upstream side of the valve and a relief valve of adequate size fitted on the downstream side. Stop valves and pressure gauges fitted where required.

A balance pipe should be fitted when the valve is working under difficult conditions (e.g. when the reduced pressure is less than 10% of the inlet pressure). It is important that the lower port is blanked off without restricting the upper port. This is done by inserting a balance pipe connection. This is tapped 3/8" BSP. The balance pipe should be arranged with a fall, this allows it to drain into the downstream pipe (approx. 2 - 3 metres).

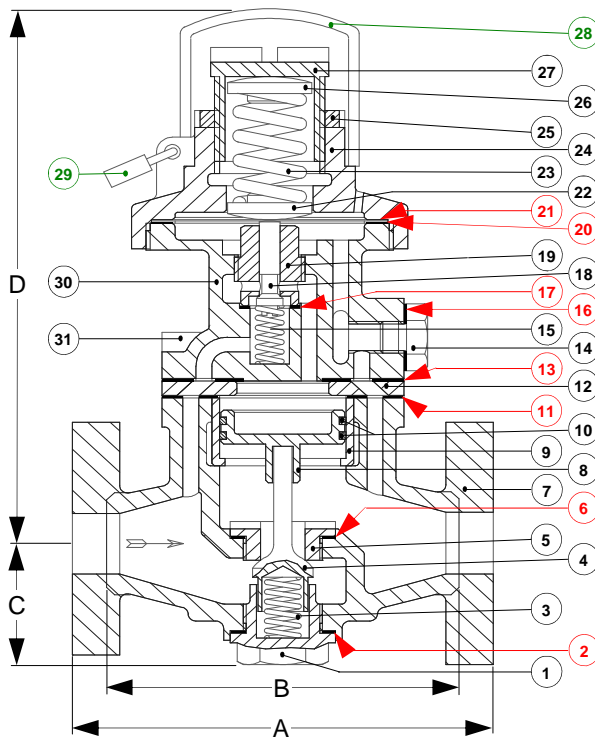
Most pilot operated reducing valve problems arise through faulty installation, condensate or dirt being allowed to enter the pilot valve. We are pleased to assist customers with our detailed recommendations for specific installations.

Regulating Instructions

Stop valve on the high pressure side should be fully open and the stop valve on the reduced pressure side just 'cracked'. Relax the main spring by rotating the adjusting screw anti-clockwise, the reduced pressure should be zero under these conditions.

When condensate has cleared, close the downstream stop valve. Rotate the adjusting screw clockwise slowly until the reduced pressure is reached. If the first setting is too high, remove load on the spring and vent the outlet by opening and closing the stop valve. The valve can also be set with the downstream stop valve open, but this is not as accurate as the dead end procedure above.

Valve for Steam Applications



These Items are recommended spares.

These Items are an optional extra.

Item	Description	Material
1	Cap	Brass
2	Joint, Cap	Copper
3	Loading Spring	Stainless Steel
4	Main Valve Lid	Stainless Steel
5	Main Valve Seat	Stainless Steel
6	Joint, Seat	Copper
7	Body	S. G. Iron
8	Piston	Brass
9	Liner	Stainless Steel
10	Piston Rings	Phosphor Bronze
11	Joint, Body	Non Asbestos
12	Distance Piece	Stainless Steel
13	Joint, Relay Valve	Non Asbestos
14	Plug	Brass
15	Loading Spring	Stainless Steel
16	Joint, Plug	Non Asbestos
17	Joint, Relay Valve Seat	Stainless Steel
18	Relay Valve Lid	Stainless Steel
19	Relay Valve Seat	Stainless Steel
20	Joint, Diaphragm	Non Asbestos
21	Diaphragm	Stainless Steel
22	Relay Valve Piston	Brass
23	Main Spring	Carbon Steel
24	Top Cover	S. G. Iron
25	Locking Ring	Brass
26	Spring Carrier	Brass
27	Adjusting Screw	Brass
28	Bonnet	Aluminium
29	Padlock	Brass
30	Relay Valve Body	S. G. Iron
31	Socket Head Capscrews	Carbon Steel

TYPE B2 PRESSURE REDUCING VALVE

Dimensions (mm)

	Size										
	15	20	25	32	40	50	65	80	100	125	150
A S. G. Iron	150	150	160	180	200	230	290	310	350	387	490
A Carbon Steel	158	158	160	200	220	250	304	344	372	400	508
B	100	125	135	150	-	-	-	-	-	-	-
C	50	53	58	70	75	85	104	125	140	170	206
D	198	218	218	235	250	270	280	323	352	510	546

Inlet Pressure/Temperature

Size	Hard Valve Seats Steam		Air & Gases		Soft Valve Seat Air & Gases	
	Barg	°C	Barg	°C	Barg	°C
15 - 25	27.50	260	34.30	204	34.30	121
32 - 50	24.50	260	30.40	204	30.40	121
65 - 100	20.60	260	27.50	204	27.50	121
125 - 150	20.60	260	27.50	204	27.50	121

All Sizes of valve manufactured in Carbon Steel are suitable for pressures up to 41.40 Barg at 400°C. Special high duty valves are available for up to 69.00 Barg.

Reduced Pressure Ranges: All Sizes

Pressure Barg	Spring Colour
0.34 - 1.96	Brown
1.47 - 5.40	Blue
3.43 - 8.33	Silver
6.87 - 17.16 *	Black

* Two diaphragms must be fitted when reduced pressure is 10.34 Barg and above.

Disclaimer

The information, specifications and technical data contained in this catalogue are subject to change without notice. The user should verify all technical data and specifications prior to use. Broady Valves does not warrant that the material and information contained herein is current or correct and assumes no responsibility for the use or misuse of any such material and information by the user.

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