Pressure Reducing with **Broady Flow Control**

D *Series Range*

Pressure
Reducing Valves

Broady Flow Control

BROADY
FLOW CONTROL

The Company

Broady Flow Control is an **Independent** Valve Manufacturer, specialising in **Innovative** and effective **Solutions** to satisfy it's increasing customer demands, challenges and problems in flow control.

MARKET SECTORS
Naval & Marine
Chemical & Petrochemical
Food & Beverages
Industrial gases
Biotechnology
Mining
Fire protection
Oil & Gas
Pharmaceutical
Power generation

Four key divisions

1 Relief. Safety relief. Pressure reducing & sustaining valves.

2 Valves for Naval, Marine and other specialist applications.

3 Pattern makers & Master founders of corrosion resistant copper based alloys.

4 Overhaul & Refurbishment of Broady valves and other selected valve manufacturer's products and equipment.

Introduction

The D series range of direct acting design, pressure reducing valves are used globally in a variety of applications, throughout industry, where outstanding accuracy and reliability is essential.

The D Series valves.

D SERIES FEATURES

- **Direct acting pressure reducing valve for liquids**
- **Manufactured in either SG Iron or Gunmetal as Standard**
- **Can be supplied in other materials on request**
- **Screwed or flanged from 15mm to 200mm (screwed up to 50mm)**
- **Maximum inlet 20 Barg**
- **Reduced pressure range 0.35 to 13.8 Barg**
- **WRC approval on request**

Flow capacity chart

WATER CAPACITIES LITRES/MIN										
pressure drop Barg	Size									
	15	20	25	40	50	65	80	100	125	150
1	27	36	72	200	315	450	680	950	1290	1565
2	31	45	85	285	450	700	975	1290	1565	1930
3	36	54	100	315	565	885	1180	1520	1790	2200
4	40	60	108	385	635	1020	1340	1635	1995	2475
4	50	68	118	430	700	1110	1430	1750	2130	2630
6	72	90	145	475	770	1155	1500	1815	2270	2770
7	90	113	176	500	840	1200	1540	1885	2340	2860
8	-	-	-	520	860	1225	1565	1905	2405	2950

D *Series* - Operation and Installation

The Type D pressure reducing valves are high performance valves specifically designed to optimise the stringent requirements of the fluids handling industry. Principle features include high capacity, balanced internal parts which permit fluctuating inlet pressures and ensure a stable downstream pressure. Tight shut off results under zero flow conditions. The Type D, by virtue of its inherent advanced design, minimum number of moving parts and simplicity of its operation, provides maximum service life, reliability and accuracy of control. The Type D is also a WRAS - Approved Product, in sizes 2 1/2" to 6".

Valves are supplied in sizes 1/2" to 6" in SG Iron, Bronze, Stainless Steel or materials to suit the process requirements, with ends screwed female or alternatively flanged to customer requirements. Inlet pressures of up 20.0 Barg can be accomodated, reduced pressure ranges of 0.35 - 13.8 Barg are possible. The maximum working temperature of Type D is 100°C.

Specification

All valves are supplied with a nitrile disc and seals for liquids as standard, but other materials are available on request.

Description of Action

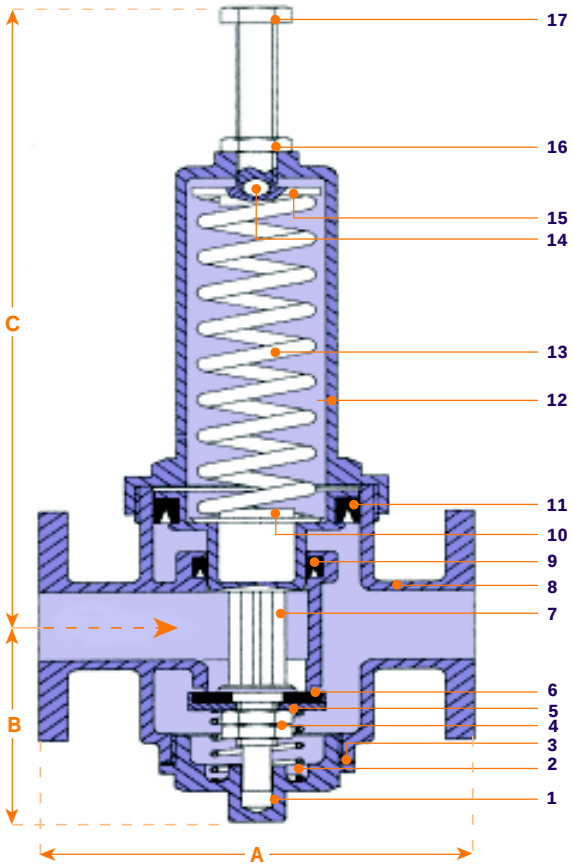
High pressure fluid is admitted to the inlet port and acts both on the seat disc and smaller, lower piston areas, which are collectively balanced and therefore unaffected by any initial pressure variations. Compression of the spring opens the seal disc and permits the flow of fluid downstream pressure side of the valve, and through a cast internal port to the the upper piston area, creating an upward force, which opposes the downward spring load. Therefore, when the force of the reduced pressure in the upward direction exceeds the the adjusted spring opening load, the seat disc tends to close, so restricting fluid flow through the valve and reducing its pressure until until the desired set pressure is restored by the two forces in balance. Conversely, if the reduced pressure should fall, the spring load would be dominant and the seat disc would open, to permit a greater volume of fluid to flow until the set reduced pressure is reached and maintained at the valve outlet port.

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 or below the pipeline. The pipe must be clean and free from dirt, scale etc. It is advisable to fit a stop valve on the high pressure side of the line.

A relief valve should always be fitted where dead end conditions apply.



size	A Flanged	A Screwed	B	C
15NB	105	85	60	110
20NB	105	85	60	110
25NB	155	110	85	250
40NB	172	152	115	335
50NB	172	170	118	345
65NB	230	-	160	420
80NB	280	-	190	535
100NB	320	-	225	630
125NB	380	-	270	840
150NB	425	-	310	860

Parts key list

item	description	material	item	description	material
1	cap	gunmetal	10	spring locator	brass
2	loading spring	stainless steel	11	seal, large	nitrile
3	joint, cap	non asbestos	12	dome	gunmetal
4	locknuts	aluminium bronze	13	spring	carbon steel
5	disc holder	aluminium bronze	14	ball	stainless steel
6	disc	nitrile	15	spring carrier	brass
7	spindle	gunmetal	16	locknut	brass
8	body	gunmetal	17	adjusting screw	brass
9	seal, small	nitrile			

Numbering system code: *To simplify the selection and specifying of Reducing Valves, a numbering system is used in which the digits have a distinct significance.*

EXAMPLE

1 50mm Type D Pressure reducing valve, flanged PN16, manufactured in Gunmetal with aluminium bronze trim and Nitrile disc and seals.

50 - D - 504N

Valve size in millimetres

Model type

end connections	code	body material	code	trim material	code	disc / diaphragm	code
BSP	0	GM	0	brass	0	Nitrile	N
NPT	1	SG	1		1	Viton	V
#150	2	CS	2	CS	2	EPDM	E
#300	3	SS	3	SS	3	PTFE	P
#600	4	AB	4	AB	4	Neoprene	O
PN16	5	Monel	5	Monel	5	Metal	M
PN25	6	Duplex	6	Duplex	6	Special	Z
PN40	7	Hastelloy	7	Hastelloy	7		
Special	8	Special	8	Special	8		

How to order

To enable Broady Flow Control to offer the most suitable valve for your service please provide the following information at the enquiry stage:

1 *Inlet Pressure*
2 *Reduced or controlling pressure*
3 *Medium, with any relevant data, specific gravity or molecular weight etc.*
4 *Flowrate*
5 *Temperature*
6 *PED/CE Category**
7 *Material requirements*
8 *Certification requirements e.g. BS EN 10204 3.1b*

**The first Five are important in selecting the right size, with these five Broady can select the right valve with confidence.*
Reducing valves are classified as pressure accessories; all products are approved by Lloyds and carry the CE mark when applicable. You do not need to state the category level as this is based on the pressure in BARg and the valve size. Please note that sometimes we will be unable to CE mark valves when the duty and valve size require Sound Engineering Practice (SEP) only.

Valves from the Broady range.

Reducing Valves *A, AB, CL, CN, CH, D, B2*

Safety relief valves to API and ASME - *Type 3500*

Other Safety and Relief Valves - *2600*

Fire Fighting *Hydrant Reducing Valves*

Sustaining Valves *Type A, Type D, Type 9*

Pilot Operated Safety Valves *Flowsafe*

- Speciality casting from in-house foundry in non-ferrous metals
- Full repair facilities.
- The Series 3500 Safety Relief valve has been combination flow tested with bursting discs from continental (CDC) Disc Corporation.

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