

Pressure Reducing with Broady Flow Control

C 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 C 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 C Series valves.

C SERIES FEATURES

- Direct acting pressure reducing valves for gases and liquids.
- Manufactured in a variety of materials including Gunmetal, carbon Steel and Stainless Steel as standard.
- Screwed or flanged connections from 6mm to 100mm.
- Maximum inlet pressure is 82 Barg.
- Reduced pressure range from 10 mBarg to 21 Barg.
- Three models; a) CL for pressure reduction, lower than 0.3 Barg. b) CN for pressure reduction between 0.3 to 10 Barg. c) CH for pressure reduction higher than Barg.



C Series - the Products

The full range of Broady C series valves; email sales@flowstar.co.uk for more information

Direct acting pressure reducing valves suitable for use on compressed air, gas, water, oil and steam in a variety of applications in industry, where outstanding accuracy and reliability is essential. Manufactured in a variety of materials, including gunmetal, carbon steel and stainless steel, with flanged and screwed end connections in sizes ranging from 6mm – 100mm.

Maximum inlet pressure is 82 Barg and a reduced pressure range of 10m Barg to 21 Barg. Three model ranges cover the range, **CL** for pressure reduction **lower** than 0.3 Barg, **CN** for pressure reduction between 0.3 Barg to 10 Barg and **CH** for pressure reduction **higher** than 10 Barg.

CN Series Valve Range

Size Range – 6mm to 100mm

Material – Gunmetal, Carbon Steel and Stainless Steel

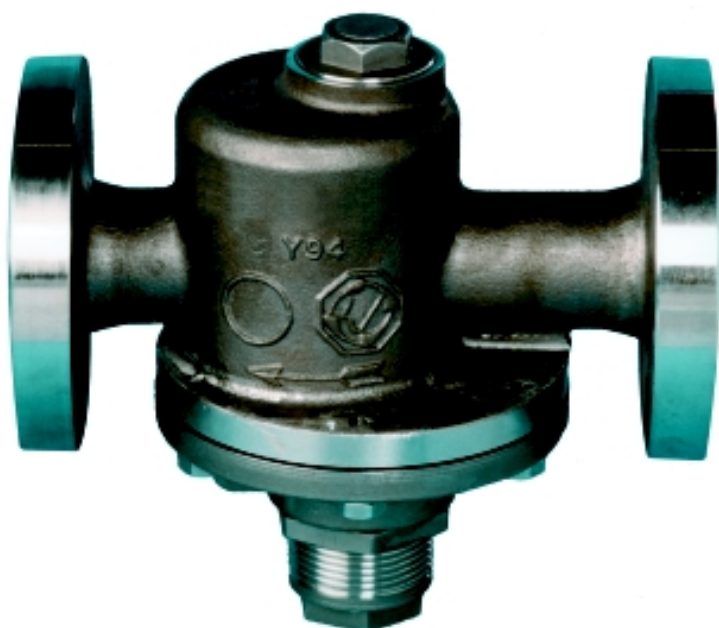
End Connections – Screwed, Flanged, Socket and Butt Weld

Ranging up to 18 Barg inlet pressure for steam and 40 Barg for gas and liquid services

Maximum reduced pressure is 10.3 Bar. Maximum reduced pressure is 0.3 Bar.

Valves supplied with Nitrile diaphragm for gases and liquids as standard

Valves supplied with metallic diaphragm and lid for vapours and steam temperatures on above 90°C



CH Series Valve Range

Size Range – 6mm to 100mm

Material – Gunmetal, Carbon Steel and Stainless Steel

End Connections – Screwed, Flanged, Socket and Butt Weld

Maximum inlet pressure 82.0 Barg

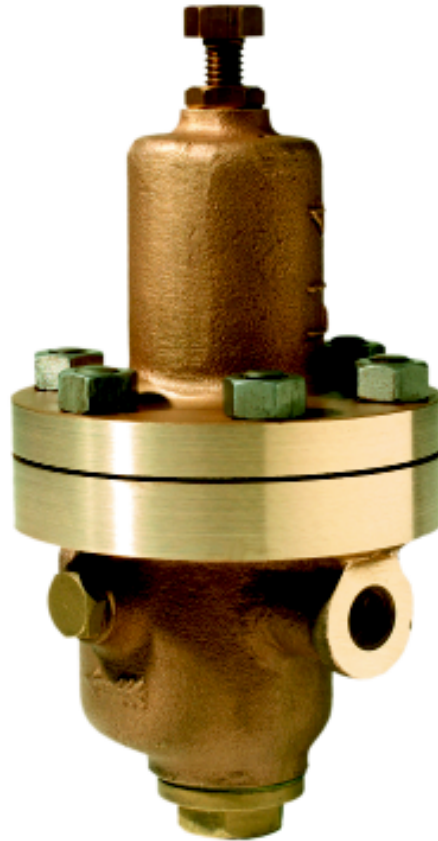
Reduced pressures ranges of 1.70 – 21.0 Barg, although higher reduced pressures can be accommodated to suit a particular application.

Maximum reduced pressure is 10.3 Bar.

Minimum reduced pressure is 0.3 Bar.

Valves supplied with Nitrile diaphragm for gases and liquids as standard

Valves for extremely high inlet pressures up to 470 Barg and reduced pressures of 0.50 to 210 Barg available on request fig CHH



CL Series Valve Range

Size Range – 15mm to 50mm

Material – Stainless Steel as standard

End Connections – Flanged as standard screwed version also available

Balanced inlet design giving little or no variation in reduced pressure when the inlet pressure is variable

Spring loaded to give zero reduced pressure when the main spring is relaxed

Floating disc design giving repeatable shut off on "no flow" conditions

Very low pressure reduction, 10.0 mBar

Available with integral pressure gauge

Large orifice area to give good flow characteristics

Tapered plug giving excellent stability at full and low flows



Flow Capacity charts

FLOW IN LITRES PER MINUTE - WATER											
pressure drop through valve in Bar G	valve sizes in millimetres										
	6	10	12.5	20	25	32	40	50	65	80	100
1	5.6	5.6	19	29	51	77	88	136	215	400	600
2	7.9	7.9	27	38	72	113	127	198	305	570	870
3	9.5	9.5	33	45	81	128	148	235	370	675	1050
4	11	11	38	52	98	152	170	270	430	790	1200
4	13	13	42	61	115	160	200	305	470	870	1350
6	14	14	45	64	122	186	220	335	500	950	1470
7	15	15	54	72	136	200	230	360	560	1040	1580

FLOW OF FREE AIR IN NM ³ /HOUR													
size of valve in millimetres	inlet pressure in Bar G												
	2	5	7	10	13	17	20	24	27	30	35	37.5	40
6 & 10	19	26	44	61	80	92	103	117	138	145	158	165	182
15	65	92	153	212	268	314	357	388	468	487	530	562	615
20	100	128	219	297	380	447	513	565	665	690	752	796	867
25	180	237	408	535	708	812	935	565	665	690	752	796	867
32	297	364	615	850	1070	1260	1418	565	665	690	752	796	867
40	315	419	705	960	1230	1445	1620	<p style="text-align: center;">Note</p> <p style="text-align: center;">At 24 BAR and above 20mm to 30mm valves have the same reducing intervals</p>					
50	518	657	1113	1496	1950	2293	2580						
65	720	960	1470	1900	2295	2670	3020						
80	1430	1895	2906	4216	4500	5313	5915						
100	2150	2830	4351	6290	6730	7990	8840						

pressure ratio LP/HP	factor
44	0.2
153	0.3
219	0.4
408	0.5
615	0.6
705	0.7
1113	0.8
1470	0.9
2906	1.0

Correction factors for air for reduced pressures greater than 0.52 of the inlet pressure the quantities given in the tables must be reduced by multiplying by the capacity factor shown.

C SERIES INSTALLATION AND MAINTENANCE

Description of action

High pressure is admitted to the underside of the needle valve or disc valve. The spring is then compressed the requisite amount and the valve opened permitting pressure to pass to the service side. Expansion and consequent reduction of pressure takes place as it leaves the valve orifice and the reduced pressure acting upon the area of the piston. If the reduced pressure tends to fall, the spring, through the medium of the diaphragm, opens the valve and increases the orifice area.

Conversely, if the pressure rises the valve closes until the required downstream pressure is restored; uniformity of the reduced pressure is thereby maintained within very close limits.

The reduced pressure can be varied to your requirements by compressing or relaxing the spring. An adjusting screw is provided for this purpose.

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

Installation

The valve should be fitted in the pipeline with flow as indicated by the arrow cast on the valve body. It may be fitted with the adjusting screw directly above or below the pipeline. It is most important that the pipe is clean and free from dirt, scale etc. It is also advisable to fit a stop valve on the high pressure side of the line.

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 25mm Type CN Pressure reducing valve, screwed BSP, manufactured in Stainless Steel with Stainless Steel trim and Nitrile disc and diaphragm.

25 - CN - 033N

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, C6, C3, C7, C8, C9, D, B2, W1



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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