

173 Series

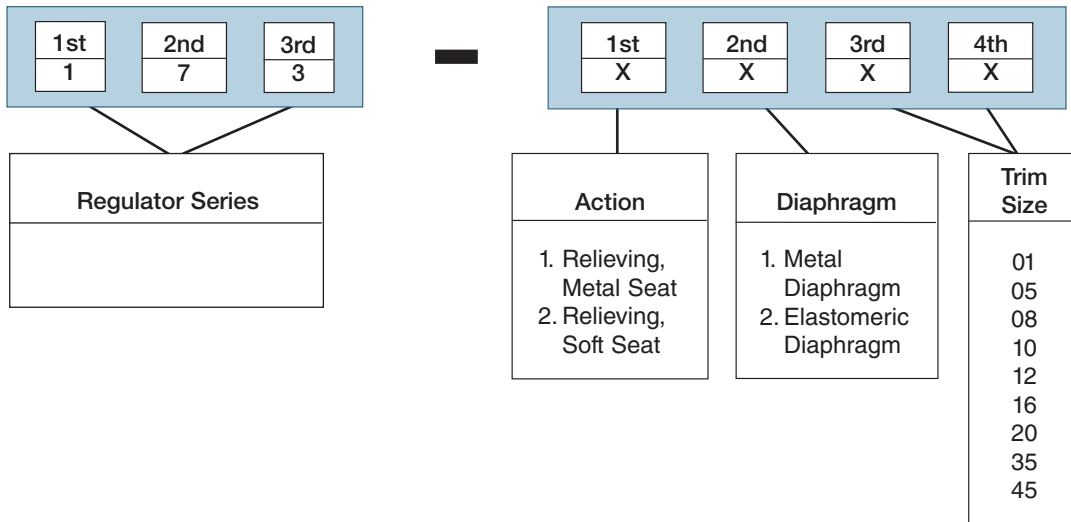
Spring Loaded, Direct-Operated,
Back-Pressure Regulator



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Numbering System



173 Series: Threaded or Flanged Connections Carbon Steel, Stainless Steel & Alloy Constructions

The 173 Series are direct operated, pressure relieving or back pressure regulators designed for steam, gas and liquid services. Available in body sizes 1/2" through 2" (DN15 through DN50) in a variety of end connections to suit most applications. These regulators are designed for continuous, rugged industrial use to provide years of reliable service.

Features

- Versatility
- In-line maintenance
- High stability
- Rugged construction

Specifications

Body

Body Sizes and End Connections

- see table 1

Maximum Inlet Pressure

- see table 2

Set Point Range

- 1.36 to 667 psig (0.094 to 46.0 barg) - see table 2

Temperature Range

- see tables 3, 6, 7

Pressure Sensing

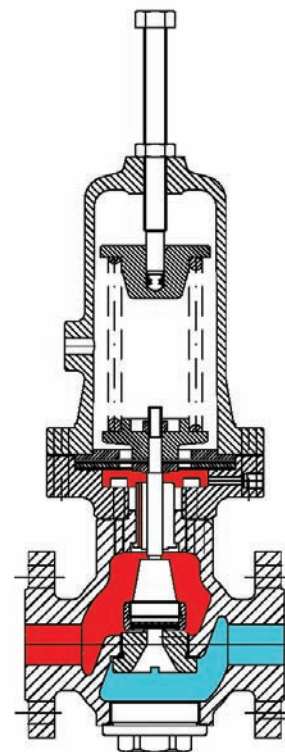
- internal (external on request)

Capacities

- see tables 4, 5

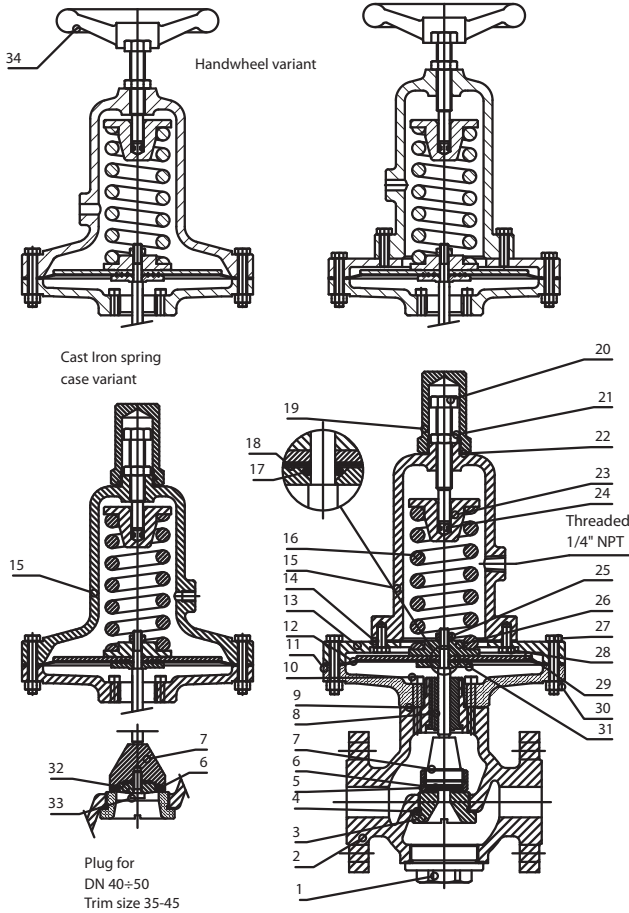
Weight

- see tables 8, 9



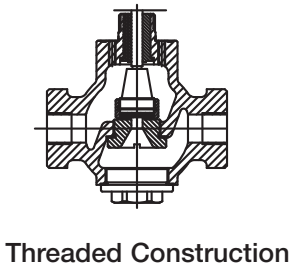
Materials

Actuator Size 220



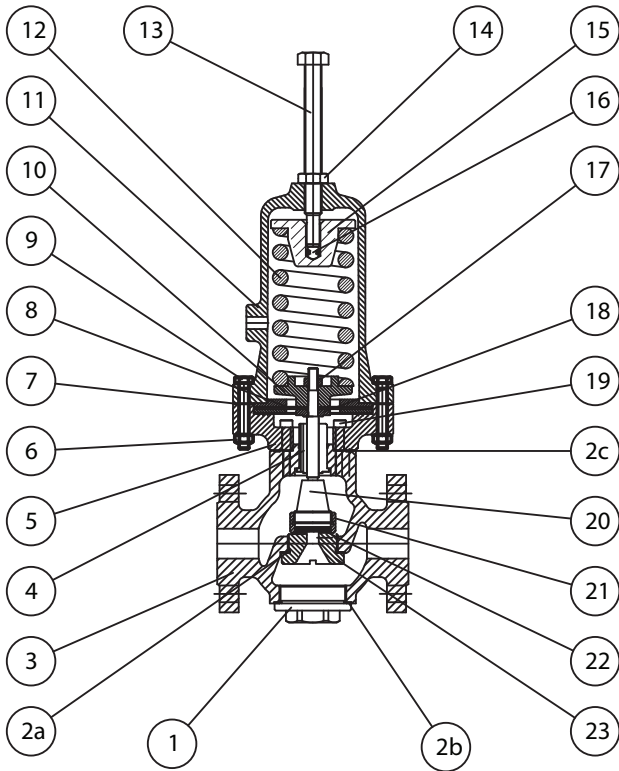
Flanged Construction

Materials			
1	Blindhead	18	Protector (Optional)
2	Body	19	Cap (Optional)
3	Seat	20	Adjusting Screw
4	Gasket	21	Adjusting Screw Locknut
5	Ring	22	Spring Button (Upper)
6	Plug Seal Elastomer	23	Spring Loader
7	Plug	24	Ball
8	Guide Bushing	25	Nut
9	Gasket	26	Spring Button (Lower)
10	Screw	27	Screw
11	Diaphragm Case	28	Screw
12	Diaphragm	29	Diaphragm Plate (Upper)
13	Actuator Upper Flange	30	Nut
14	Gasket	31	Diaphragm Plate (Lower)
15	Spring Case	32	Soft Seat Retainer
16	Spring	33	Plug Screw
17	O-Ring	34	Handwheel (Optional)



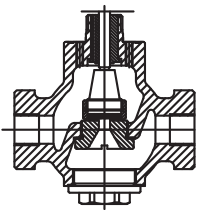
Materials

Actuator Sizes 100 to 140

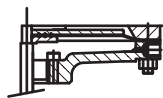


Flanged Construction

Materials			
1	Blindhead	13	Adjusting Screw
2	Gaskets	14	Adjusting Screw Locknut
3	Valve Body	15	Spring Button (Upper)
4	Guide	16	Ball
5	Diaphragm Case	17	Spring Button (Lower)
6	Nut	18	Diaphragm Plate (Upper)
7	Diaphragm Plate (Lower)	19	Screw
8	Diaphragm	20	Plug
9	Protector (Optional)	21	Plug Screw
10	O-Ring	22	Disc
11	Spring Case	23	Seat
12	Spring		



Threaded Construction



External Pressure Sensing (Optional)

Dimensions

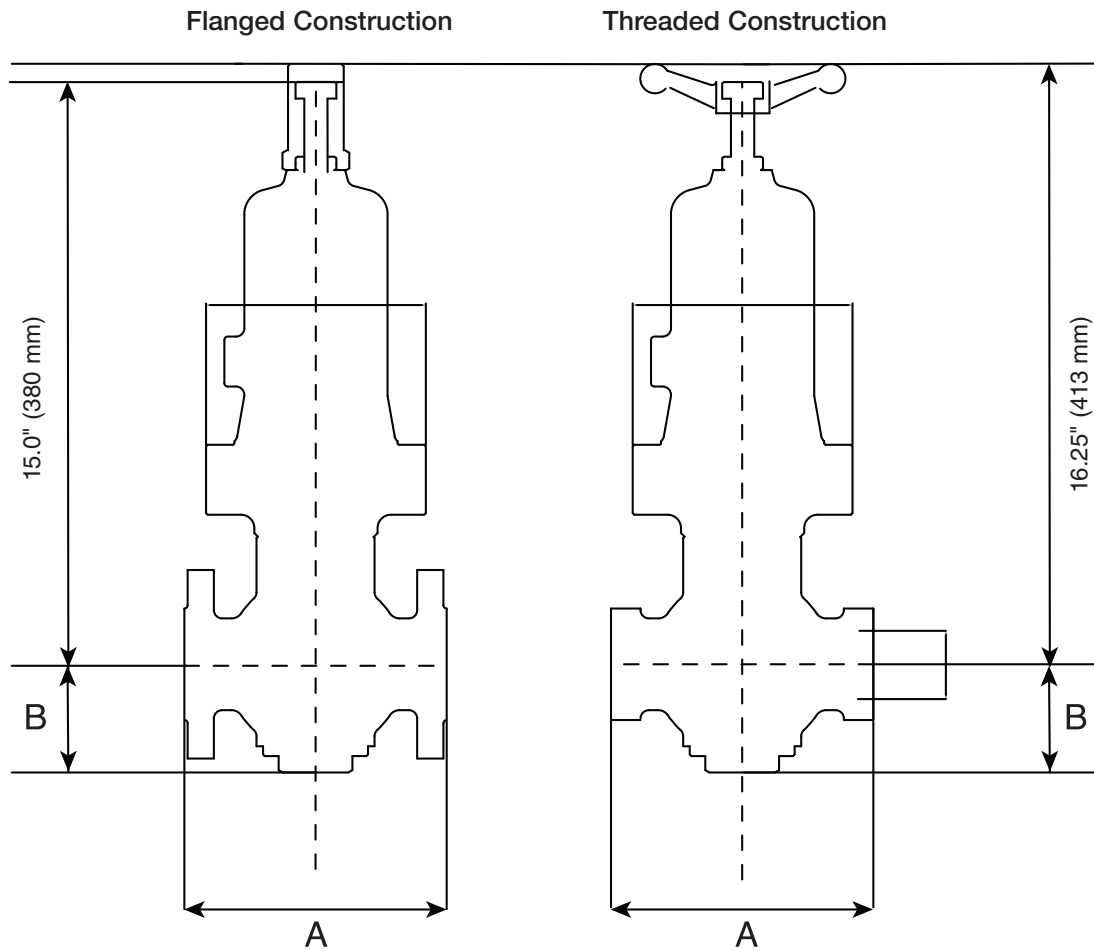


Table 1 - Body Sizes and Face to Face Dimensions

Size (DN)	Flanged			Threaded		All end connections
	PN16	ANSI 150RF	ANSI 300RF	NPT-F	B	
	PN25			GAS-F Con.		
	PN40			BSP-F		
A			A			
1/2" (DN15)	6.3" (160mm)	6.3" (160mm)	6.3" (160mm)	5.8" (148mm)	2.6" (66mm)	
3/4" (DN20)	6.3" (160mm)	6.3" (160mm)	6.3" (160mm)			
1" (DN25)	6.3" (160mm)	6.3" (160mm)	6.3" (160mm)	5.8" (148mm)		
1 1/2" (DN40)	7.25" (185mm)	7.25" (185mm)	7.25" (185mm)	6.7" (170mm)	3.25" (82mm)	
2" (DN50)	7.25" (185mm)	7.25" (185mm)	7.25" (185mm)	6.7" (170mm)		

Materials

Table 2 - Standard Set Pressure Ranges			
psig	barg	Actuator Size	Maximum Inlet Pressure
1.36 to 1.80	0.094 to 0.12	220	42 psig (2.9 barg)
1.54 to 3.0	0.106 to 0.20		
1.84 to 3.4	0.127 to 0.24		
2.1 to 5.4	0.144 to 0.37		
3.8 to 8.7	0.26 to 0.60		
5.8 to 13.4	0.40 to 0.93		
8.4 to 14.3	0.58 to 0.99		
13 to 21	0.89 to 1.5		
16 to 24	1.1 to 1.6		
20 to 26	1.4 to 1.8		
23 to 39	1.6 to 2.7		
10 to 19	0.7 to 1.3	140	145 psig (10 barg)
16 to 31	1.1 to 2.1		
23 to 47	1.6 to 3.3		
32 to 50	2.2 to 3.5		
48 to 75	3.3 to 5.2		
60 to 83	4.1 to 5.7		
74 to 91	5.1 to 6.3		
82 to 133	5.7 to 9.2		
25 to 44	1.7 to 3.0	130	362 psig (25 barg)
39 to 74	2.7 to 4.9		
55 to 110	3.8 to 7.6		
76 to 116	5.2 to 8.0		
113 to 175	7.8 to 12.1		
141 to 192	9.7 to 13.2		
174 to 211	12.0 to 14.5		
193 to 320	13.3 to 22.1		
37 to 59	2.6 to 4.1	120	470 psig (32.4 barg)
56 to 95	3.8 to 6.6		
77 to 147	5.3 to 10.1		
105 to 156	7.3 to 10.8		
156 to 235	10.8 to 16.2		
193 to 258	13.3 to 17.8		
238 to 283	16.4 to 19.5		
263 to 428	18.1 to 29.5		
65 to 126	4.5 to 8.7	100	754 psig (52 barg)
105 to 203	7.2 to 14.0		
151 to 314	10.4 to 21.6		
211 to 334	14.6 to 23.0		
319 to 502	22.0 to 34.6		
397 to 550	27.4 to 37.9		
494 to 604	34.1 to 41.7		
548 to 667	37.8 to 46.0		

Represents Standard Spring Ranges. Others are Optional, Provided Upon Request.

Materials

Table 3 - Standard Material Combinations

Body				
	Carbon Steel*	Full Carbon Steel***	316 SS*	Full 316 SS***
	32° F<T<392° F	-20° F<T<392° F	-20° F<T<392° F	-320.8° F<T<392° F
	(0° C <T < 200° C)	(-29° C <T < 200° C)	(-29° C <T < 200° C)	(-196° C <T < 200° C)
Body	Carbon Steel	Carbon Steel	316 SS	316 SS
Blindhead	Carbon Steel	Carbon Steel	316 SS	316 SS
Gasket	P T F E	P T F E	P T F E	P T F E
Trim				
Seat	316 SS	316 SS	316 SS	316 SS
Disc	See table 6	See table 6	See table 6	See table 6
Plug Stem	316 SS	316 SS	316 SS	316 SS
Guide Bushing	304 SS / 17-4PH	304 SS / 17-4PH	304 SS / Nitronic 60	304 SS / Nitronic 60
Actuator				
Spring Case	Cast Iron	Carbon Steel	Carbon Steel	316 SS
Diaphragm Case	Carbon Steel	Carbon Steel	316 SS	316 SS
Spring	CrV Steel	CrV Steel	CrV Steel	316 SS
Diaphragm	See table 7			
Special constructions are available in LCB, WCC (N.A.C.E.), 316L, 317, Duplex, Superduplex, Monel, Hastelloy B/C				

Configurations/Material Availability

*	Standard - Except Steam Service
**	Steam Service
***	Non Standard - Manufactured on Request

Materials

Table 4 - Rated Cv for All Body Sizes With Elastomer Diaphragm

Trim Number	Body Size				
	1/2" (DN 15)	3/4" (DN 20)	1" (DN 25)	1 1/2" (DN 40)	2" (DN 25)
1	0.033	0.033	0.033	0.033	0.033
5	0.6	0.6	0.6	0.6	0.6
8	1.6	1.6	1.6	1.6	1.6
10	2.5	2.5	2.5	2.5	2.5
12	3.4	3.4	3.4	3.4	3.4
16		7	7	7	7
20			9	9	9
35				19	19
45					35

Table 5 - Rated Cv for All Body Sizes With Metal Diaphragm

Trim Number	Body Size				
	1/2" (DN 15)	3/4" (DN 20)	1" (DN 25)	1 1/2" (DN 40)	2" (DN 25)
1	0.033	0.033	0.033	0.033	0.033
5	0.2	0.2	0.2	0.2	0.2
8	0.33	0.33	0.33	0.33	0.33
10	0.4	0.4	0.4	0.4	0.4
12	0.5	0.5	0.5	0.5	0.5
16		0.9	0.9	0.9	0.9
20			1.4	1.4	1.4
35				3	3
45					5.5

Materials

Table 6 - Temperature Ranges for Disc Elastomers

	min		max	
	°C	°F	°C	°F
Fluorocarbon (FKM-FPM)*	-10	14	200	392
Polytetrafluoroethylene (PTFE)***	-200	-328	250	482
AISI 316**	-196	-321	455	851

Table 7 - Temperature Ranges for Diaphragms

Material	T min		T max	
	°C	°F	°C	°F
Chloroprene (CR)*	-20	-4	90	194
Fluorocarbon (FKM-FPM) + polyester***	-10	14	150	302
Fluorocarbon (FKM-FPM) + polyarylamide***	-10	14	200	392
Ethylene-Propylene (EPDM)**	-35	-31	150	302
AISI 316**	-196	-320.8	455	851

Special diaphragms are available in NBR (nitrile butadiene, Buna-N or equivalent), HNBR (hydrogenated nitrile), VMQ (silicone), FVMQ (fluorosilicone), TFE/P (Aflas or equivalent)

Table 8 - Weights - Actuator Sizes 100, 120, 130 & 140

	NPT/GAS	Class 150 RF	PN 16/25/40	Class 300 RF
1/2" (DN15)	36.6 lbs (16.6 kg)	36.4 lbs (16.5 kg)	38.6 lbs (17.5 kg)	40.8 lbs (18.5 kg)
3/4" (DN20)	36.6 lbs (16.6 kg)	37.5 lbs (17.0 kg)	39.7 lbs (18.0 kg)	43.0 lbs (19.5 kg)
1" (DN25)	36.4 lbs (16.5 kg)	38.6 lbs (17.5 kg)	40.8 lbs (18.5 kg)	44.1 lbs (20.0 kg)
1 1/2" (DN40)	41.0 lbs (18.6 kg)	44.3 lbs (20.1 kg)	47.4 lbs (21.5 kg)	52.9 lbs (24.0 kg)
2" (DN50)	40.8 lbs (18.5 kg)	48.5 lbs (22.0 kg)	50.9 lbs (23.1 kg)	58.0 lbs (26.3 kg)

Table 9 - Weights - Actuator Size 220

	NPT/GAS	Class 150 RF	PN 16/25/40	Class 300 RF
1/2" (DN15)	41.0 lbs (18.6 kg)	40.8 lbs (18.5 kg)	43.0 lbs (19.5 kg)	45.2 lbs (20.5 kg)
3/4" (DN20)	41.0 lbs (18.6 kg)	41.9 lbs (19.0 kg)	44.1 lbs (20.0 kg)	47.4 lbs (21.5 kg)
1" (DN25)	40.8 lbs (18.5 kg)	43.0 lbs (19.5 kg)	45.2 lbs (20.5 kg)	48.5 lbs (22.0 kg)
1 1/2" (DN40)	45.4 lbs (20.6 kg)	48.7 lbs (22.1 kg)	51.8 lbs (23.5 kg)	57.3 lbs (26.0 kg)
2" (DN50)	45.2 lbs (20.5 kg)	52.9 lbs (24.0 kg)	55.3 lbs (25.1 kg)	62.4 lbs (28.3 kg)

Configurations/Material Availability

*	Standard - Except Steam Service
**	Steam Service
***	Non Standard - Manufactured on Request

Notes

DIRECT SALES OFFICE LOCATIONS

BELGIUM Phone: +32-2-344-0970 Fax: +32-2-344-1123	INDIA Mumbai Phone: +91-22- 8354790 Fax: +91-22-8354791 New Delhi Phone: +91-11-2-6164175 Fax: +91-11-5-1659635	RUSSIA Veliky Novgorod Phone: +7-8162-15-7898 Fax: +7-8162-15-7921 Moscow Phone: +7 495-585-1276 Fax: +7 495-585-1279	UNITED KINGDOM Skelmersdale, Phone: +44-1695-52600 Fax: +44-1695-52601 Uxbridge Phone: +44-1895-454-900 Fax: +44-1895-454-919
CANADA Ontario Phone: 905-335-3529 Fax: 905-336-7628	ITALY Phone: +39-081-7892-111 Fax: +39-081-7892-208	SAUDI ARABIA Phone: +966-3-341-0278 Fax: +966-3-341-7624	UNITED STATES Massachusetts Phone: 508-586-4600 Fax: 508-427-8971 Corpus Christi, Texas Phone: 361-881-8182 Fax: 361-881-8246 Dresser Direct Deer Park, Texas Phone: 281-884-1000 Fax: 281-884-1010 (Contractor Sales) Houston, Texas Phone: 832-590-2303 Fax: 832-590-2529 California Phone: 562-941-7610 Fax: 562-941-7810
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FRANCE Courbevoie Phone: +33-1-4904-9000 Fax: +33-1-4904-9010	KOREA Phone: +82-2-2274-0748 Fax: +82-2-2274-0794	SOUTH AFRICA Phone: +27-11-452-1550 Fax: +27-11-452-6542	
GERMANY Viersen Phone: +49-2162-8170-0 Fax: +49-2162-8170-280 Frankfurt Phone: +49-69-439350 Fax: +49-69-4970802	KUWAIT Phone: +965-9061157 Fax: +965-3987879	SOUTH & CENTRAL AMERICA AND THE CARIBBEAN Phone: 832-590-2303 Fax: 832-590-2529	
	MALAYSIA Phone: +60-3-2161-0322 Fax: +60-3-2163-6312	SPAIN Phone: +34-93-652-6430 Fax: +34-93-652-6444	
	MEXICO Phone: 52-5-310-9863 Fax: 52-5-310-5584	UNITED ARAB EMIRATES Phone: +971-4-8838-752 Fax: +971-4-8838-038	
	THE NETHERLANDS Phone: +31-10-438-4122 Fax: +31-10-438-4443		

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Dresser, Inc. is a leader in providing highly engineered infrastructure products for the global energy industry. The company has leading positions in a broad portfolio of products including valves, actuators, meters, switches, regulators, piping products, natural gas-fueled engines, retail fuel dispensers and associated retail point of sale systems and air and gas handling equipment.

Leading brand names within the Dresser portfolio include Dresser Wayne® retail fueling systems, Waukesha® natural gas-fired engines, Masoneilan® control valves, Mooney® regulators, Consolidated® pressure relief valves, and Roots® blowers and rotary gas meters. It has manufacturing and customer service facilities located strategically worldwide and a sales presence in more than 100 countries. The company's website can be accessed at www.dresser.com.

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Dresser Masoneilan

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