

Air-Loaded, Pressure-Reducing Regulators—RA Series

Features

- Balanced poppet design
- Diaphragm sensing
- Air-loaded pressure control with a choice of pilot-to-outlet pressure ratios.
- Remote control
- Captured self-vent
- Choice of dome-to outlet pressure ratios: 1:15, 1:40, or 1:70
- Pneumatic actuation by spring-loaded regulator or proportional regulator

Options

- Gauge connection—choice of 4 configurations
- NACE MR0175/ISO 15156-compliant models
- Special cleaning to ASTM G93 Level C



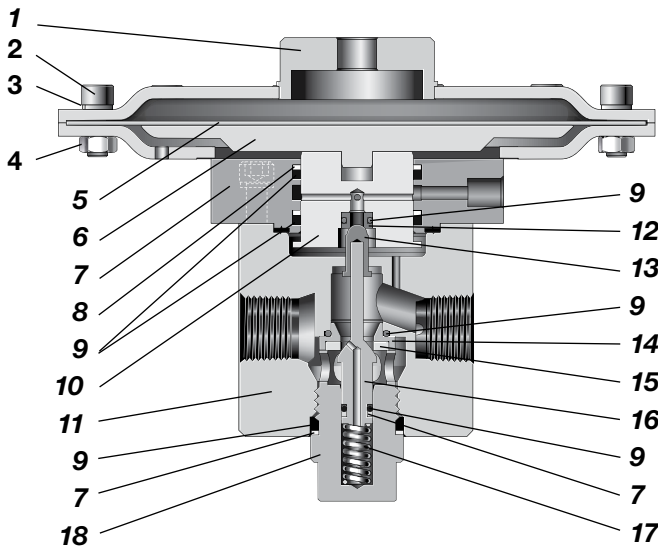
⚠ WARNING: Self-venting regulators can release system fluid to atmosphere. Position the self-vent hole away from operating personnel.

Technical Data

Series	Maximum Inlet Pressure psig (bar)	Maximum Outlet Control Pressure psig (bar)	Temperature Range °C (°F)	Flow Coefficient (C _v)	Seat Diameter in. (mm)	Inlet and Outlet Connections	Gauge / Dome / Vent Connections	Weight (Without Flanges) lb (kg)
RA4	5800 (400)	5800 (400)	-4 to 176 (-20 to 80) See Pressure-Temperature Ratings , page 32.	1.84	0.39 (10.0)	1/2 in. NPT, ISO/BSP parallel thread, EN or ASME flanges	Gauge: 1/4 in. NPT Dome: 1/4 in. ISO/BSP parallel thread Vent: 1/8 in. ISO/BSP parallel thread	12.5 (5.7)
RA6						3/4 in. NPT, ISO/BSP parallel thread, EN or ASME flanges		13.6 (6.2)
RA8						1 in. ISO/BSP parallel thread, EN or ASME flanges		13.6 (6.2)

Materials of Construction

RA4 Series Regulator



Component	Material / Specification
1 Dome assembly	316L SS / A479 or EN10088
2 Cap screw	A4-80
3 Washer	A4
4 Nut	A2
5 Diaphragm	EPDM, FKM, or nitrile
6 Diaphragm plate	316L SS / A479 or EN10088
7 Piston plate assembly	316L SS / A479 or EN10088
8 Backup ring	PTFE
9 O-ring	EPDM, FKM, or nitrile
10 Piston	316L SS / A479 or EN10088
11 Body	316L SS / A479 or EN10088
12 Relief seat	PCTFE or PEEK
13 Venting poppet	316L SS / A479 or EN10088
14 Seat	
15 Seat seal	PCTFE or PEEK
16 Poppet	431 SS / A276
17 Poppet spring	302 SS / A313
18 Body plug	316L SS / A479 or EN10088

Wetted lubricants: Silicone-based and synthetic hydrocarbon-based

Wetted components listed in italics.

Gauge plugs (not shown): 431 SS / A276.

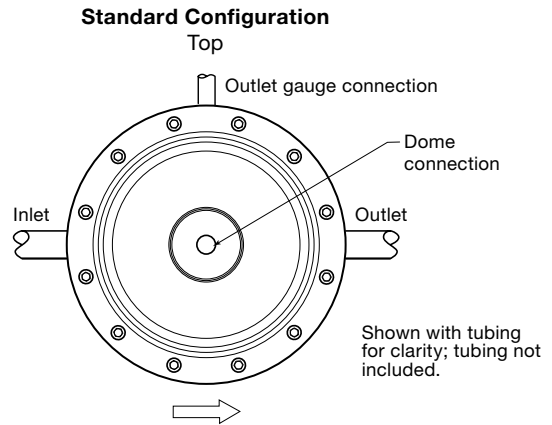
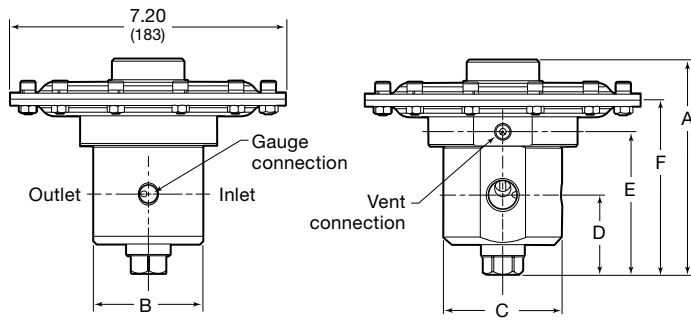
Flow Data

For flow curve information, contact your authorized Swagelok representative.

Dimensions

Dimensions, in inches (millimeters), are for reference only and are subject to change.

Series	End Connection Size	Dimensions, in. (mm)					
		A	B	C	D	E	F
RA4	1/2 in.	5.75 (146)	2.83 (72.0)	3.07 (78.0)	2.13 (54.0)	3.72 (94.6)	4.56 (116)
RA6	3/4 in.		3.20 (82.0)	3.50 (89.0)	2.20 (56.0)	3.72 (94.6)	
RA8	1 in.		3.07 (78.0)	3.50 (89.0)	2.20 (56.0)	4.02 (102)	



Ordering Information

Build an RA series regulator ordering number by combining the designators in the sequence shown below.

1 2 3 4 5 6 7 8 9 10 11
RA FA 4 A 1 - 02 - V V K - 15 - GN2

1 Series

RA = 5800 psig (400 bar) maximum inlet pressure

2 Inlet / Outlet

B = Female ISO/BSP parallel thread

N = Female NPT^①

FA = ASME B16.5 flange

FD = EN 1092 (DIN) flange

^① Available in 1/2 and 3/4 in. sizes *only*.

3 Size

4 = 1/2 in. / DN15

6 = 3/4 in. / DN20

8 = 1 in. / DN25

4 Pressure Class

Omit designator if flanges are not ordered.

A = ASME class 150

B = ASME class 300

C = ASME class 600

E = ASME class 1500

F = ASME class 2500

M = DN class PN16

N = DN class PN40

5 Flange Facing

Omit designator if flanges are not ordered.

1 = Raised face smooth

3 = RTJ

6 Body Material

02 = 316L SS

7 Seal Materials

V = Fluorocarbon FKM

N = Nitrile

E = EPDM

8 Diaphragm Materials

V = Fluorocarbon FKM

N = Nitrile

E = EPDM

9 Seat Seal Materials

K = PCTFE

P = PEEK

10 Ratio (Dome-to-Outlet Pressure)

15 = 1:15

40 = 1:40

70 = 1:70

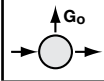

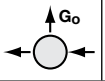

11 Options

GN2 = Gauge connection, see below^①

GN4 = Gauge connection, see below

GN5 = Gauge connection, see below^①

None = Standard connection, see below

Gauge Connection Configuration			
Standard	GN2	GN4	GN5
			

N = NACE MR0175/ISO 15156

G93 = ASTM G93 Level C-cleaned

^① Not available in combination with flanges.