

General-Purpose, Spring-Loaded Pressure-Reducing Regulators—RS(H)4, RS(H)6, and RS(H)8 Series

Features

- Balanced poppet design
- Diaphragm or piston sensing
- Threaded vent to monitor sensing seal integrity

Options

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

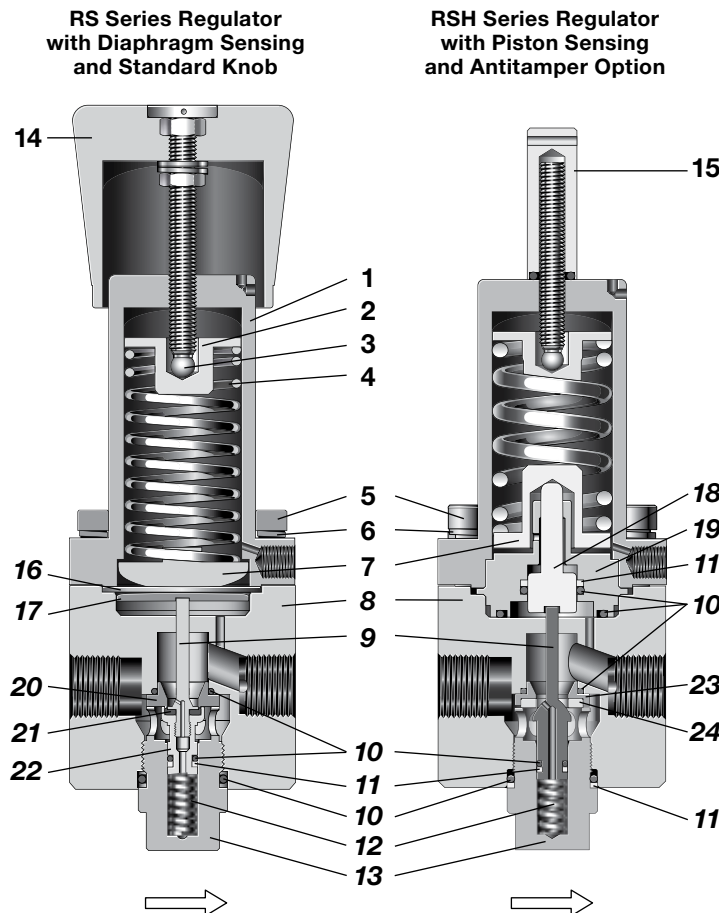


Technical Data

Series	Maximum Inlet Pressure psig (bar)	Maximum Outlet Control Pressure psig (bar)	Sensing Type	Temperature Range °F (°C)	Flow Coefficient (C _v)	Seat Diameter in. (mm)	Connections			Weight (Without Flanges) lb (kg)
							Inlet and Outlet		Gauge and Vent	
							Size	Type		
RS(H)4	RS: 1015 (70.0) RSH: 5800 (400)	RS: 406 (28.0) RSH: 5800 (400)	Diaphragm: RS4: 0 to 406 psig (28.0 bar)	-4 to 176 (-20 to 80) See Pressure-Temperature Ratings , page 8.	1.84	0.39 (10.0)	1/2 in. DN15	NPT ISO/BSP parallel thread ASME or EN flange	Gauge: 1/4 in. NPT Vent: 1/8 in. ISO/BSP parallel thread	7.7 (3.5)
RS(H)6			RS6, 8: 0 to 203 psig (14.0 bar)				3/4 in. DN20			
RS(H)8			Piston: 0 to 5800 psig (400 bar)				1 in. DN25			

See pages 14 to 16 for flow data.

Materials of Construction



Component		Material / Specification	
Common Components	1 Spring housing	316L SS / A479 or EN10088	
	2 Spring guide		
	3 Ball		420 SS (Hardened)
	4 Set spring		302 SS / A313
	5 Cap screw		A4-80
	6 Washer		A4
	7 Bottom spring guide	316L SS / A479 or EN10088	
	8 Body		
	9 Poppet	RS	316L SS / A479 or EN10088
		RSH	431 SS / A276
	10 O-rings	EPDM, FKM, or nitrile	
	11 Backup ring	PTFE	
	12 Poppet spring	302 SS / A313	
13 Body plug	316L SS / A479 or EN10088		
Actuation	14 Knob assembly with adjusting screw, nuts, washers	Red ABS with A2-70	
	15 Antitamper option with O-ring, set screw	316L SS and A2-70 (O-ring same as item 10)	
Sensing Mechanism	Diaphragm Only		
	16 Diaphragm	EPDM, FKM, or nitrile	
	17 Diaphragm plate	316L SS / A479 or EN10088	
	Piston Only		
RS Only	18 Piston	316L SS / A479 or EN10088	
	19 Piston plate		
	20 Seat		
RSH Only	21 Seat seal	EPDM, FKM, or nitrile	
	22 Poppet housing	316L SS / A479 or EN10088	
RSH Only	23 Seat	316L SS / A479 or EN10088	
	24 Seat seal		PEEK or PCTFE

Wetted lubricant: *Silicone-based, synthetic hydrocarbon-based*
 Wetted components listed in *italics*.
 Gauge plugs (not shown): 431 SS / A276.

Flow Data

The graphs illustrate the change or “droop” in outlet pressures as the flow rate increases. For more flow curve information, contact your authorized Swagelok representative.

RS4 Series

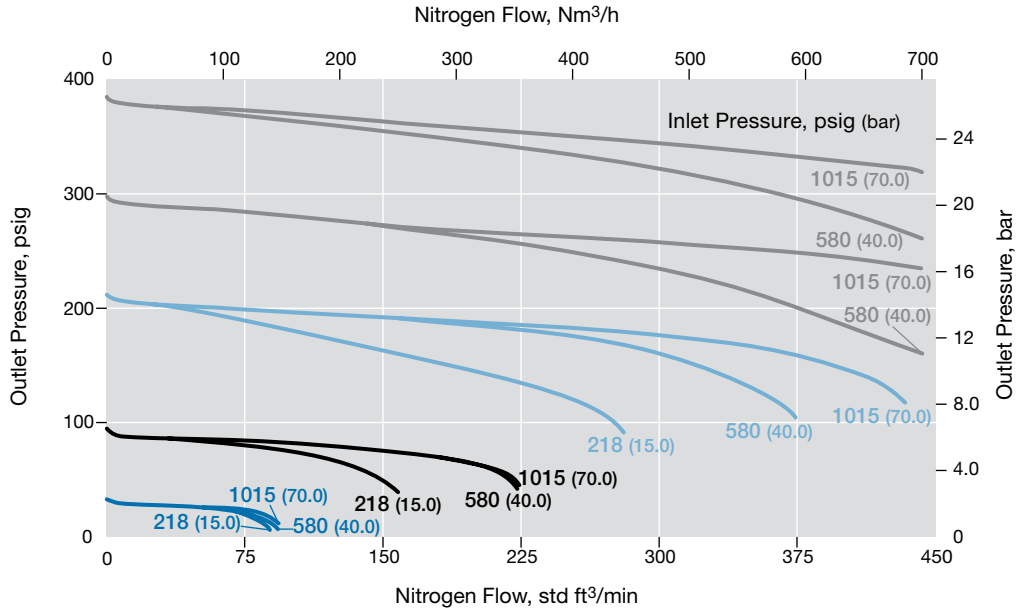
Flow Coefficient: 1.84

Maximum Inlet Pressure: RS4—1015 psig (70.0 bar)

Outlet Pressure Control Range: 0 to 406 psig (0 to 28.0 bar)

Pressure Control Range

- 0 to 43 psig (0 to 3.0 bar)
- 0 to 101 psig (0 to 7.0 bar)
- 0 to 203 psig (0 to 14.0 bar)
- 0 to 406 psig (0 to 28.0 bar)



RS(H)4 Series

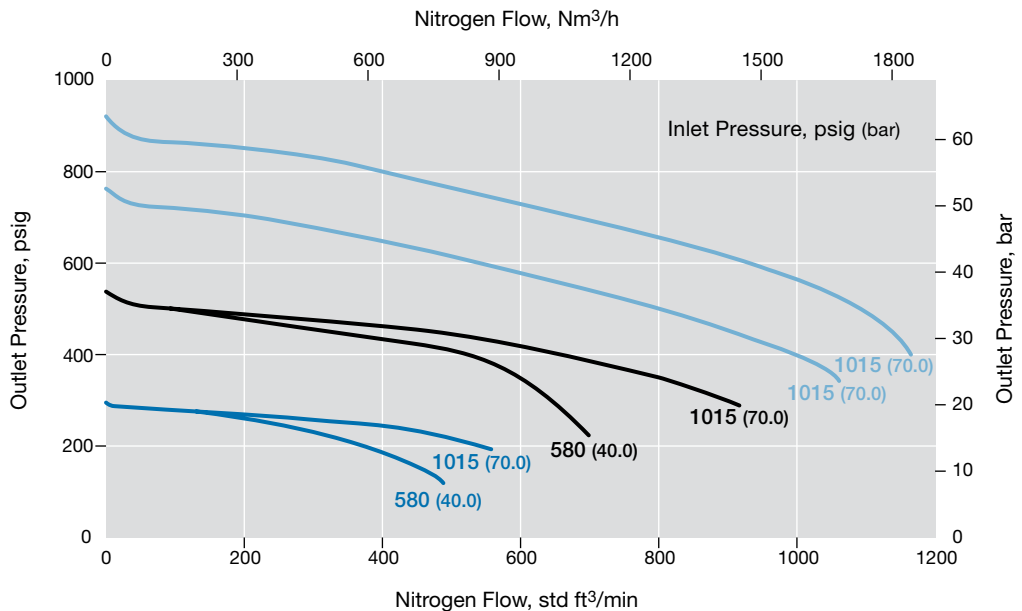
Flow Coefficient: 1.84

Maximum Inlet Pressure: RS4—1015 psig (70.0 bar); RSH4—5800 psig (400 bar)

Outlet Pressure Control Range: 0 to 1160 psig (0 to 80.0 bar)

Pressure Control Range

- 0 to 406 psig (0 to 28.0 bar)
- 0 to 580 psig (0 to 40.0 bar)
- 0 to 1160 psig (0 to 80.0 bar)



Flow Data

The graphs illustrate the change or “droop” in outlet pressures as the flow rate increases. For more flow curve information, contact your authorized Swagelok representative.

RS6 Series

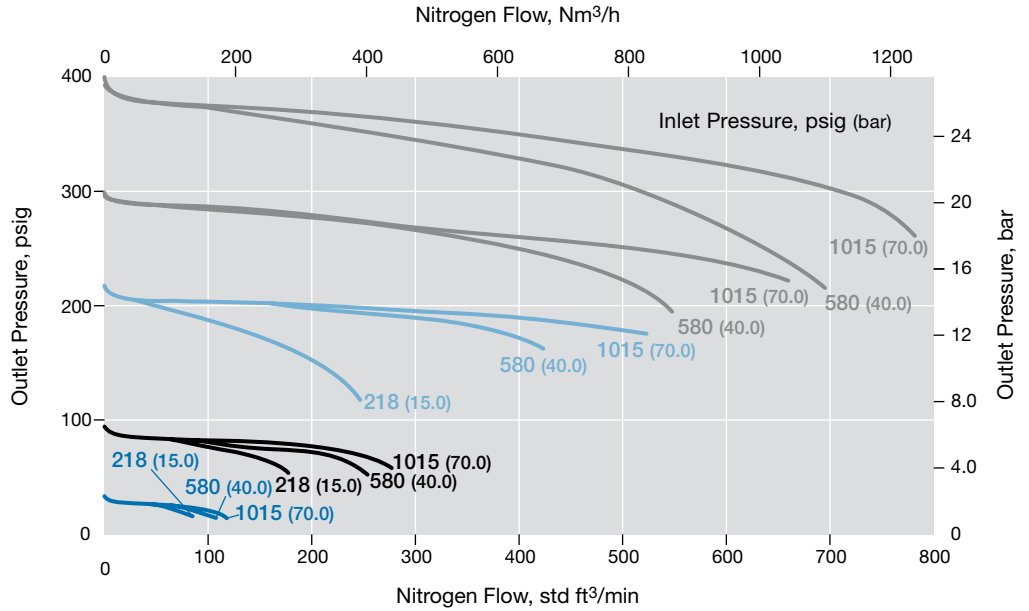
Flow Coefficient: 1.95

Maximum Inlet Pressure: RS6—1015 psig (70.0 bar)

Outlet Pressure Control Range: 0 to 406 psig (0 to 28.0 bar)

Pressure Control Range

- 0 to 43 psig (0 to 3.0 bar)
- 0 to 101 psig (0 to 7.0 bar)
- 0 to 203 psig (0 to 14.0 bar)
- 0 to 406 psig (0 to 28.0 bar)



RS(H)6 Series

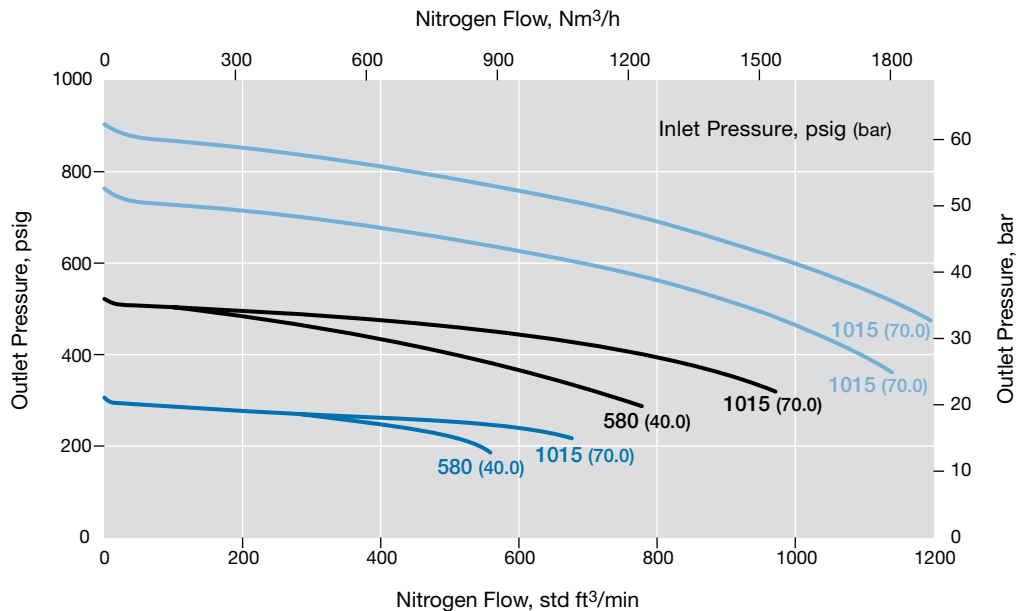
Flow Coefficient: 1.95

Maximum Inlet Pressure: RS6—1015 psig (70.0 bar); RSH6—5800 psig (400 bar)

Outlet Pressure Control Range: 0 to 1160 psig (0 to 80.0 bar)

Pressure Control Range

- 0 to 406 psig (0 to 28.0 bar)
- 0 to 580 psig (0 to 40.0 bar)
- 0 to 1160 psig (0 to 80.0 bar)



Flow Data

The graphs illustrate the change or “droop” in outlet pressures as the flow rate increases. For more flow curve information, contact your authorized Swagelok representative.

RS8 Series

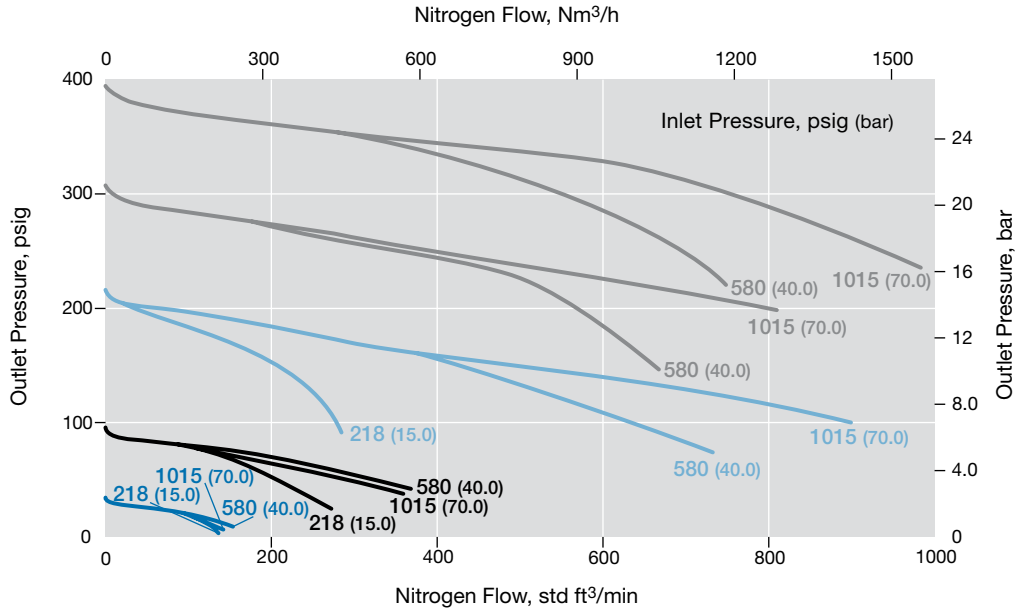
Flow Coefficient: 2.07

Maximum Inlet Pressure: RS8—1015 psig (70.0 bar)

Outlet Pressure Control Range: 0 to 406 psig (0 to 28.0 bar)

Pressure Control Range

- 0 to 43 psig (0 to 3.0 bar)
- 0 to 101 psig (0 to 7.0 bar)
- 0 to 203 psig (0 to 14.0 bar)
- 0 to 406 psig (0 to 28.0 bar)



RS(H)8 Series

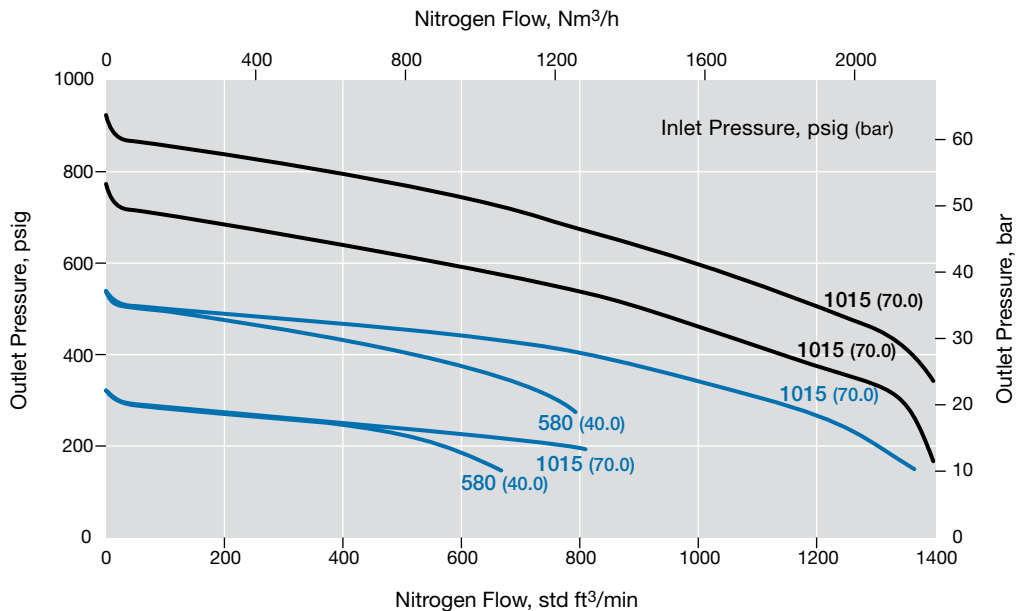
Flow Coefficient: 2.07

Maximum Inlet Pressure: RS8—1015 psig (70.0 bar); RSH8—5800 psig (400 bar)

Outlet Pressure Control Range: 0 to 1160 psig (0 to 80.0 bar)

Pressure Control Range

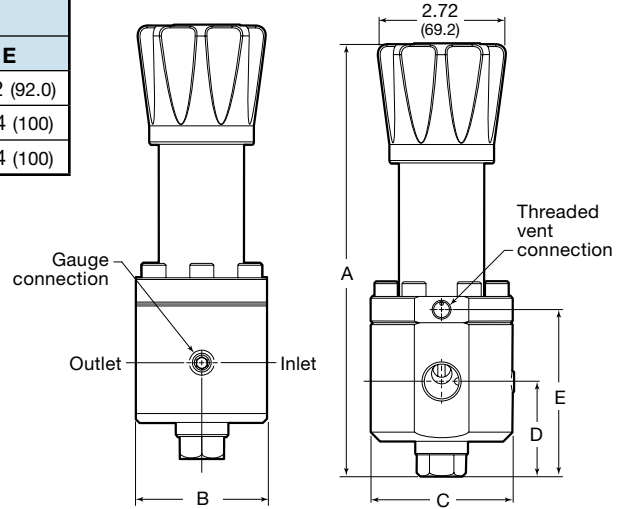
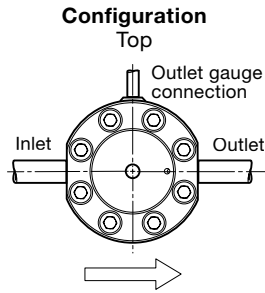
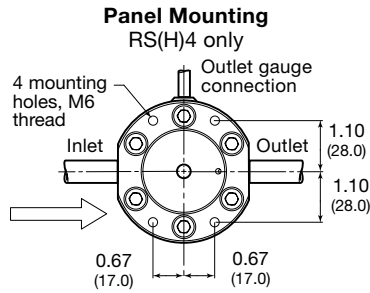
- 0 to 580 psig (0 to 40.0 bar)
- 0 to 1160 psig (0 to 80.0 bar)



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
RS(H)4	1/2 in.	9.06 (230)	2.83 (72.0)	3.07 (78.0)	2.09 (53.0)	3.62 (92.0)
RS(H)6	3/4 in.	9.25 (235)	3.23 (82.0)	3.50 (89.0)	2.20 (56.0)	3.94 (100)
RS(H)8	1 in.	9.25 (235)	3.07 (78.0)	3.50 (89.0)	2.20 (56.0)	3.94 (100)



Shown with tubing for clarity; tubing not included.

Ordering Information

Build an RS(H)4, RS(H)6, and RS(H)8 series regulator ordering number by combining the designators in the sequence shown below.

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

1 Series

RS = 1015 psig (70.0 bar) maximum inlet pressure
RSH = 5800 psig (400 bar) maximum inlet pressure

2 Inlet / Outlet

B = Female ISO/BSP parallel thread
N = Female NPT
FA = ASME B16.5 flange
FD = EN 1092 (DIN) flange

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 Pressure Control Range

Diaphragm sensing
1 = 0 to 43 psig (0 to 3.0 bar)
2 = 0 to 101 psig (0 to 7.0 bar)
3 = 0 to 203 psig (0 to 14.0 bar)
4 = 0 to 406 psig (0 to 28.0 bar)^①
Piston sensing
4 = 0 to 406 psig (0 to 28.0 bar)^②
5 = 0 to 580 psig (0 to 40.0 bar)
6 = 0 to 1160 psig (0 to 80.0 bar)
7 = 0 to 2175 psig (0 to 150 bar)
9 = 0 to 4060 psig (0 to 280 bar)
11 = 0 to 5800 psig (0 to 400 bar)

① RS(H)4 series only.
 ② RS(H)6 and RS(H)8 series only.

8 Seal Material

V = Fluorocarbon FKM
N = Nitrile
E = EPDM

9 Diaphragm / Piston O-Rings

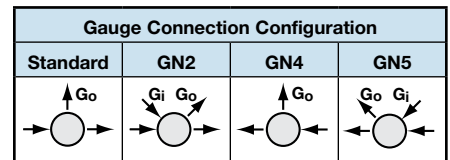
V = Fluorocarbon FKM
N = Nitrile
E = EPDM

10 Seat Seal Material

RS series
V = Fluorocarbon FKM
N = Nitrile
E = EPDM
RSH series
K = PCTFE
P = PEEK

11 Options

A = Antitamper
GN2 = Gauge connection, see below
GN4 = Gauge connection, see below
GN5 = Gauge connection, see below
 None = Standard connection, see below



N = NACE MR0175/ISO 15156
S = Self-venting (with 1/8 in. NPT)
G93 = ASTM G93 Level C-cleaned