

## 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

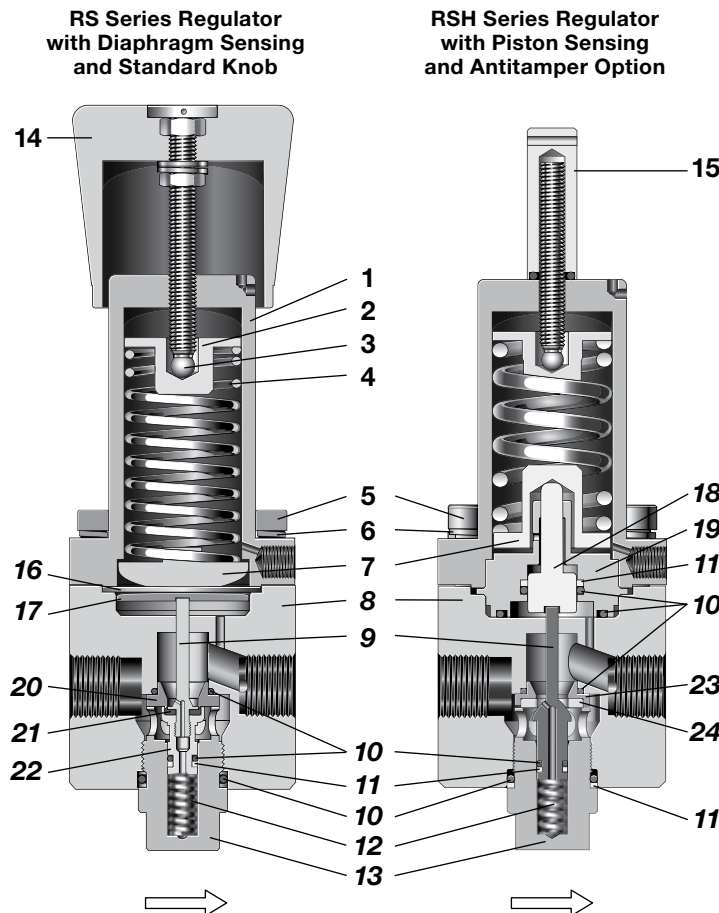


### Technical Data

Series	Maximum Inlet Pressure psig (bar)	Maximum Outlet Control Pressure psig (bar)	Sensing Type	Temperature Range °F (°C)	Flow Coefficient (C <sub>v</sub> )	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	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	ASME or EN flange	9.9 (4.5)	

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	316L SS / A479 or EN10088	
	3 Ball	Commercial stainless steel	
	4 Set spring	302 SS	
	5 Cap screw	A4-80	
	6 Washer	A4	
	7 Bottom spring guide	316L SS / A479 or EN10088	
	8 Body	316L SS / A479 or EN10088	
	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 / A240	
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, nitrile, A2-70	
Sensing Mechanism	<b>Diaphragm Only</b>		
	16 Diaphragm	EPDM, FKM, or nitrile	
	17 Diaphragm plate	316L SS / A479 or EN10088	
	<b>Piston Only</b>		
RS Only	18 Piston	316L SS / A479 or EN10088	
	19 Piston plate	316L SS / A479 or EN10088	
	20 Seat	316L SS / A479 or EN10088	
	21 Seat seal	EPDM, FKM, or nitrile	
RSH Only	22 Poppet housing	316L SS / A479 or EN10088	
	23 Seat	316L SS / A479 or EN10088	
	24 Seat seal	PEEK or PCTFE	

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

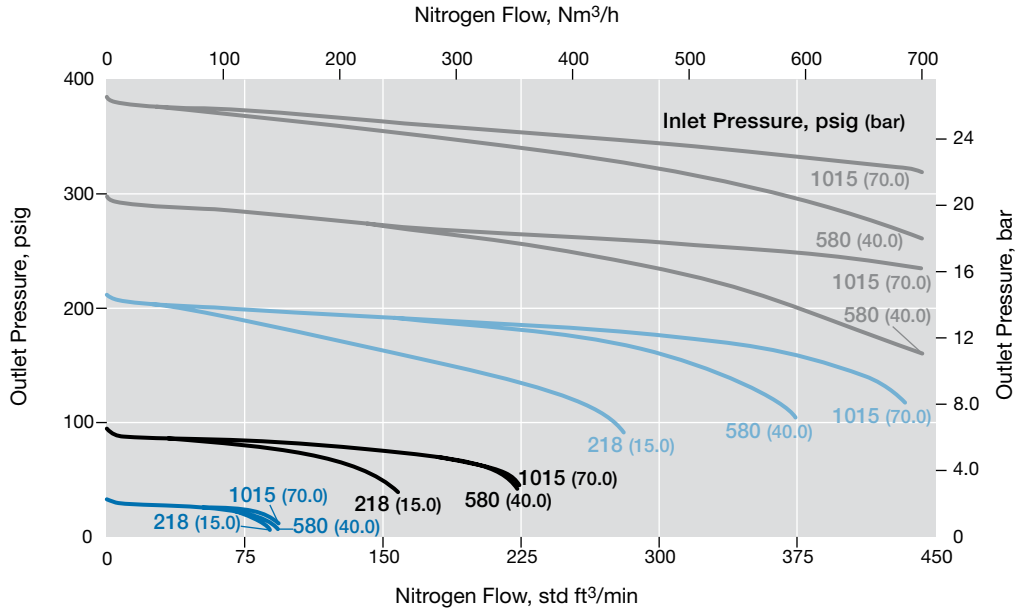
**Flow Coefficient: 1.84**

**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

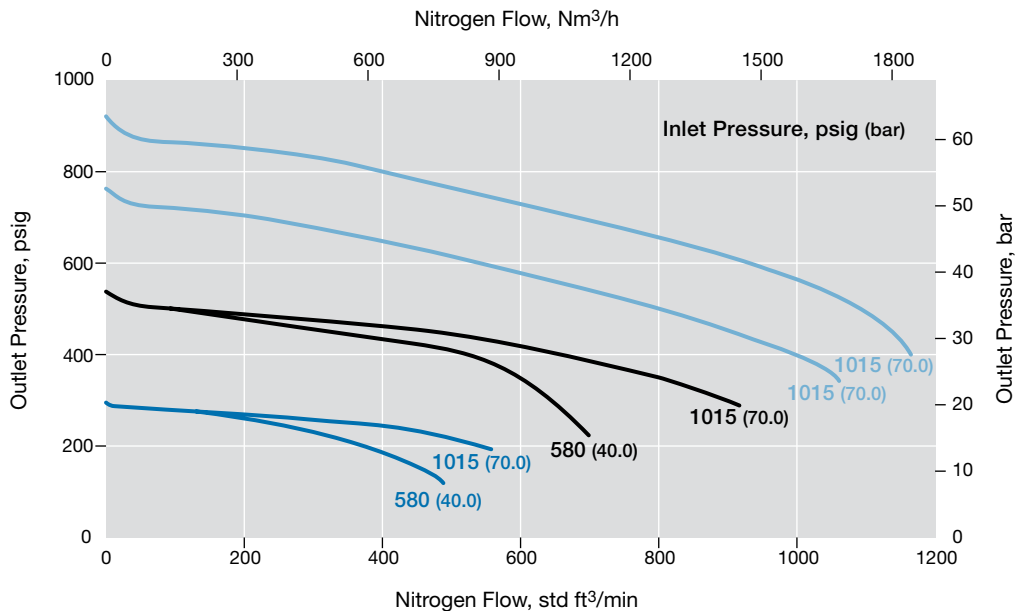
**Flow Coefficient: 1.84**

**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

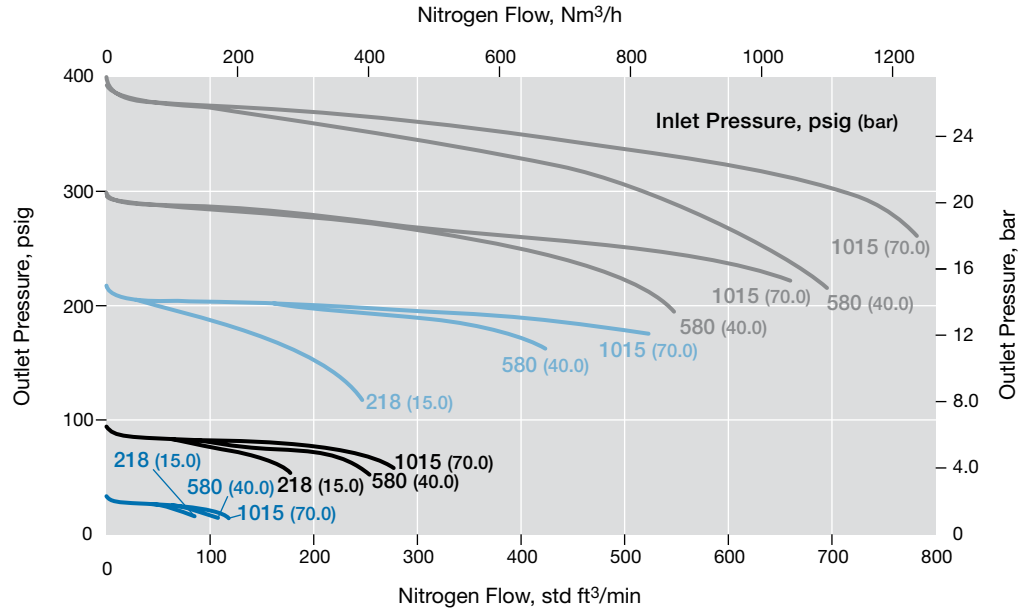
**Flow Coefficient: 1.95**

**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

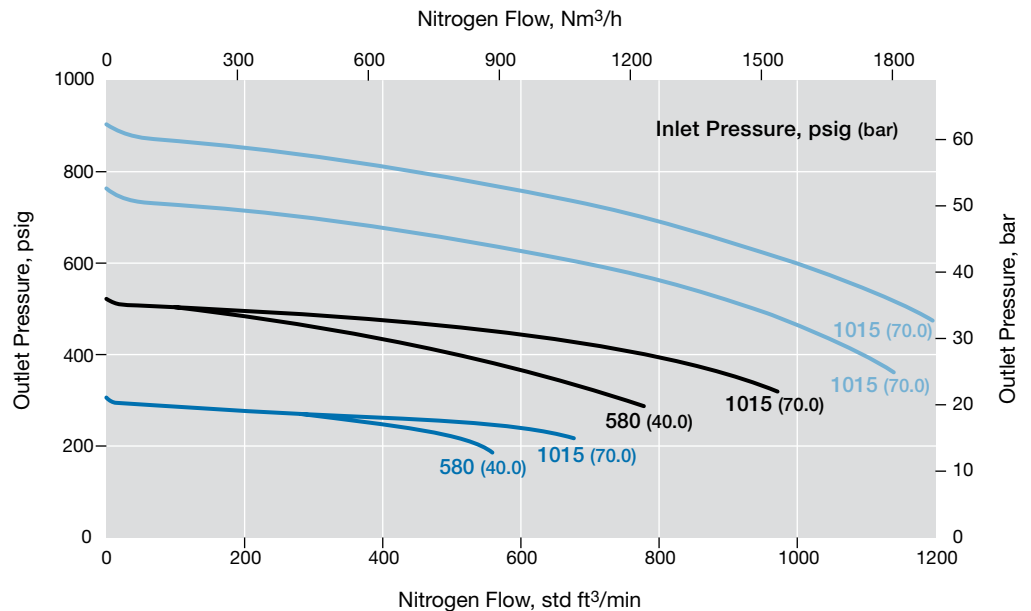
**Flow Coefficient: 1.95**

**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

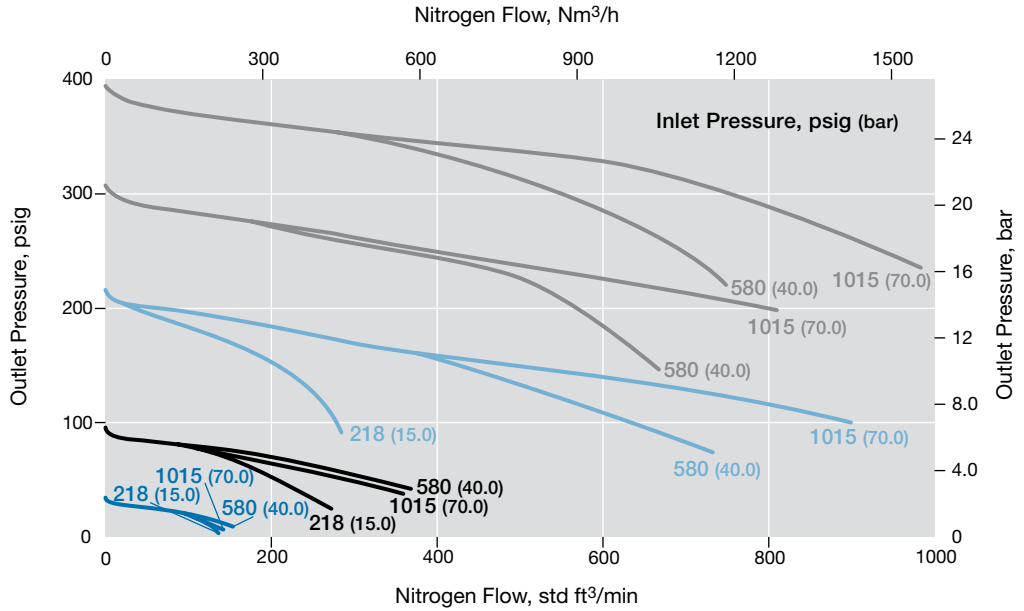
**Flow Coefficient: 2.07**

**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

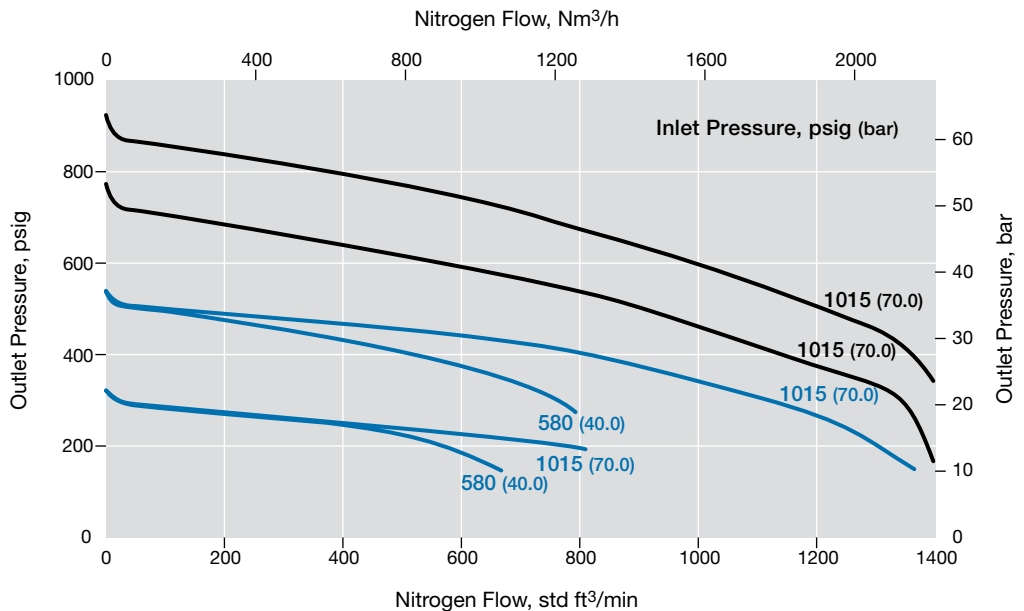
**Flow Coefficient: 2.07**

**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**

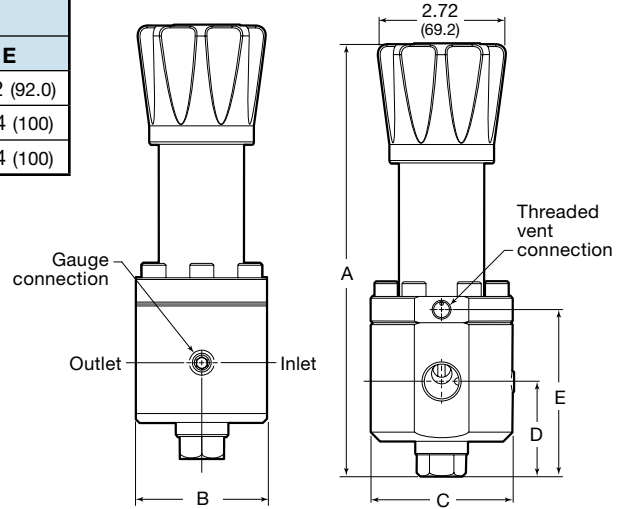
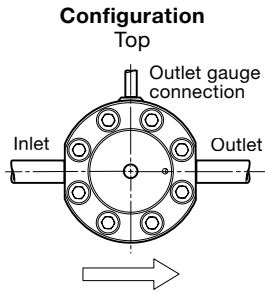
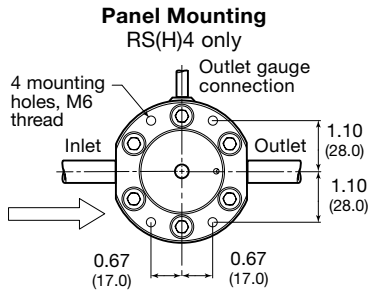
- 0 to 580 psig (0 to 40.0 bar)
- 0 to 1160 psig (0 to 80.0 bar)



### 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 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)<sup>①</sup>  
*Piston sensing*  
**4** = 0 to 406 psig (0 to 28.0 bar)<sup>②</sup>  
**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

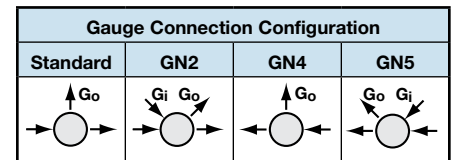
**V** = Fluorocarbon FKM  
**N** = Nitrile  
**E** = EPDM

#### 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