

Integral Pilot-Operated, Dome-Loaded Pressure-Reducing Regulators—RD(H)10 and RD(H)15 Series

Features

- Balanced poppet design
- Diaphragm sensing
- Integral pilot regulator with dynamic regulation
- Dome-to-outlet pressure ratio approximately 1:1
- Large dome for improved stability
- Pilot regulator for improved performance

Options

- External feedback (EF) for improved performance
 - EF to main regulator limited by standard outlet pressure range
 - EF to pilot regulator limited to 290 psig (20.0 bar)
- Gauge connections
- NACE MR0175/ISO 15156-compliant models
- 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)	Inlet and Outlet Connections		Gauge / Dome Connection	Weight (Without Flanges and PR) lb (kg)
							Size	Type		
RD10 RDH10	RD: 1015 (70.0) (507 [35.0] with LRS4 pilot regulator)	RD: 1015 (70.0) RDH: 3625 (250)	Diaphragm	-4 to 176 (-20 to 80) See Pressure-Temperature Ratings , page 32.	3.79	0.55 (14.0) 0.53 (13.5)	1 in.	NPT, ISO/BSP parallel thread, EN or ASME flange	Gauge / pilot: 1/4 in. NPT or ISO/BSP parallel thread ^① Dome: 1/4 in. ISO/BSP parallel thread	17.6 (8.0)
RD15 RDH15	RDH: 5800 (400)	7.30				0.75 (19.0)				1 1/2 in.

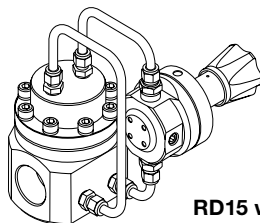
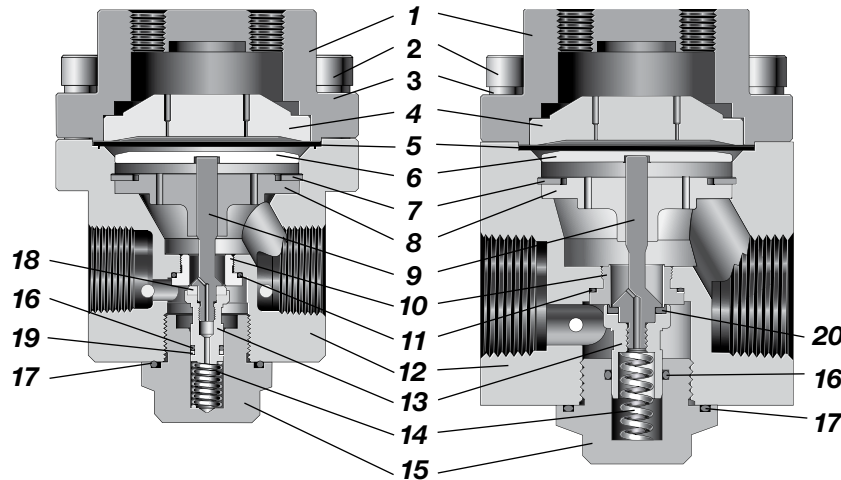
See pages 44 to 47 for flow data.

① Regulators with NPT inlet / outlet connections have 1/4 in. NPT gauge connections.

Materials of Construction

RDH10 Series Regulator with Hard Seat Seal

RD15 Series Regulator with Soft Seat Seal



RD15 with LRS4 pilot regulator

Component	Material / Specification
1 Dome	316L SS / A479 or EN10088
2 Cap screw	A4-80
3 Washer	A4
4 Dome plate	316L SS / A479 or EN10088
5 Diaphragm	EPDM, FKM, or nitrile
6 Diaphragm plate	316L SS / A479 or EN10088
7 Retaining ring	Commercial stainless steel
8 Body plate	316L SS / A479 or EN10088
9 Poppet	
10 Seat	316L SS / A479 or EN10088
11 O-ring	
12 Body	316L SS / A479 or EN10088
13 Poppet housing	
14 Poppet spring	302 SS / A240
15 Body plug	316L SS / A479 or EN10088
16 O-ring	EPDM, FKM, or nitrile
17 Plug O-ring	
RD Series Only Components	
18 Seat seal	EPDM, FKM, or nitrile
RDH Series Only Components	
19 Backup ring	PTFE
20 Seat seal	PCTFE or PEEK
Wetted lubricants: Silicone-based and 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.

RD10 Series

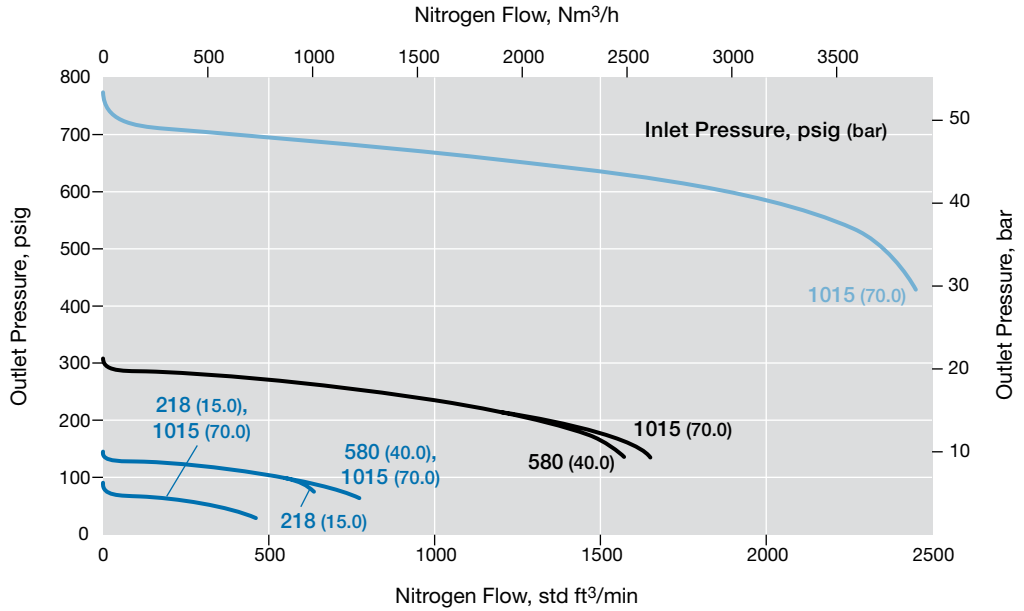
Flow Coefficient: 3.79

Maximum Inlet Pressure: 1015 psig (70.0 bar)

Outlet Pressure Control Range: 0 to 1015 psig (0 to 70.0 bar)

Pressure Control Range

- 0 to 130 psig (0 to 9.0 bar)
- 0 to 290 psig (0 to 20.0 bar)
- 0 to 1015 psig (0 to 70.0 bar)



RDH10 Series

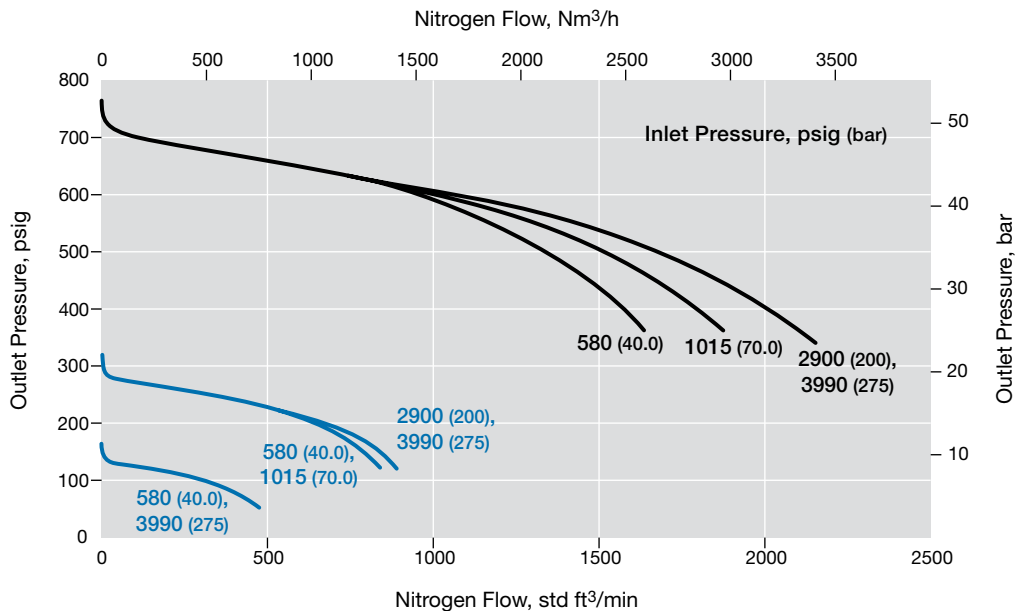
Flow Coefficient: 3.79

Maximum Inlet Pressure: 5800 psig (400 bar)

Outlet Pressure Control Range: 0 to 362 psig (0 to 25.0 bar)

Pressure Control Range

- 0 to 145 psig (0 to 10.0 bar)
- 0 to 362 psig (0 to 25.0 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.

RDH10 Series

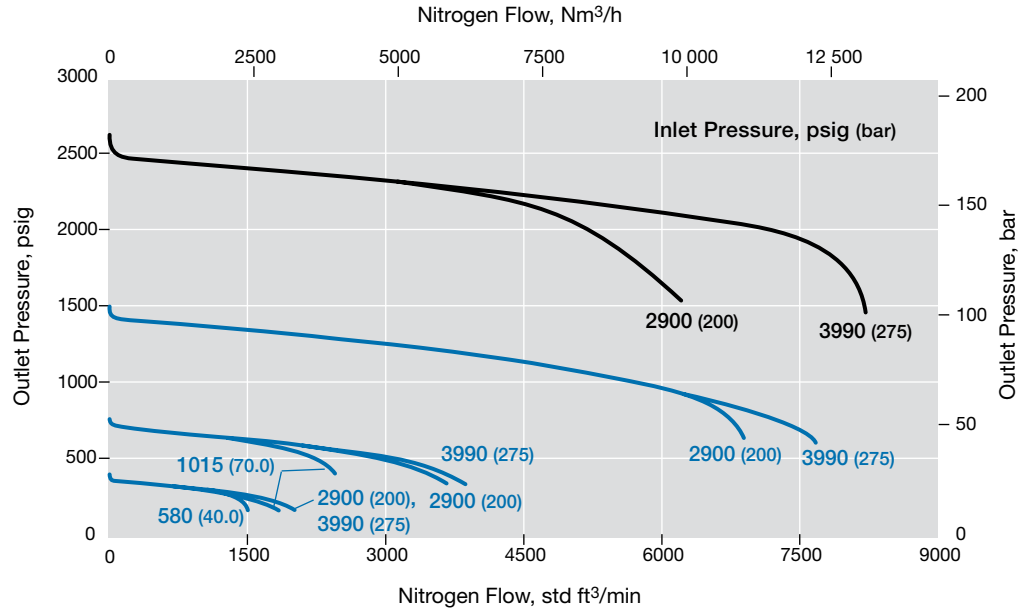
Flow Coefficient: 3.79

Maximum Inlet Pressure: 5800 psig (400 bar)

Outlet Pressure Control Range: 0 to 2537 psig (0 to 175 bar)

Pressure Control Range

- 0 to 1450 psig (0 to 100 bar)
- 0 to 2537 psig (0 to 175 bar)



RDH10 Series

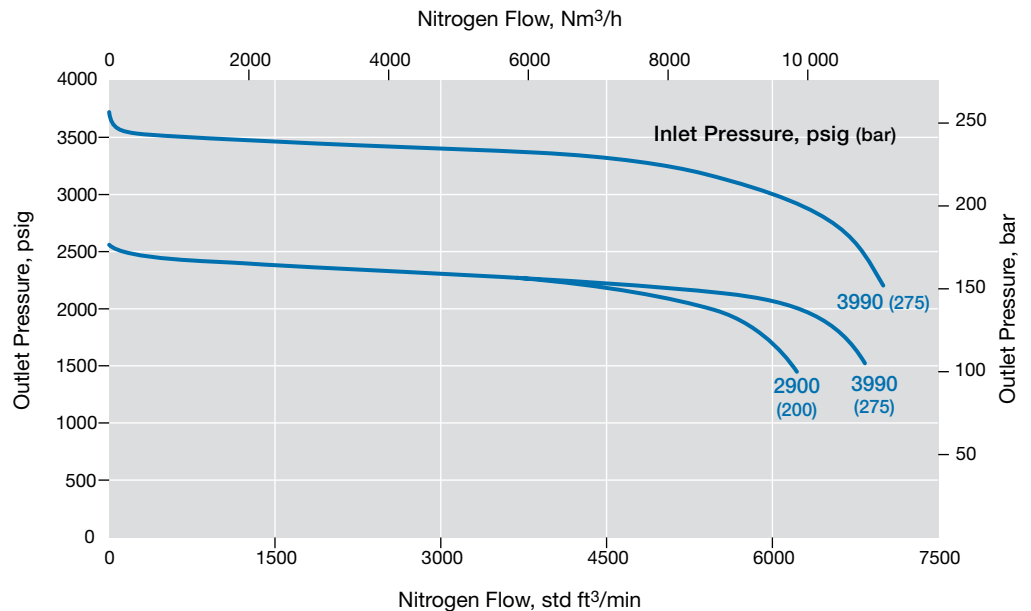
Flow Coefficient: 3.79

Maximum Inlet Pressure: 5800 psig (400 bar)

Outlet Pressure Control Range: 0 to 3625 psig (0 to 250 bar)

Pressure Control Range

- 0 to 3625 psig (0 to 250 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.

RD15 Series

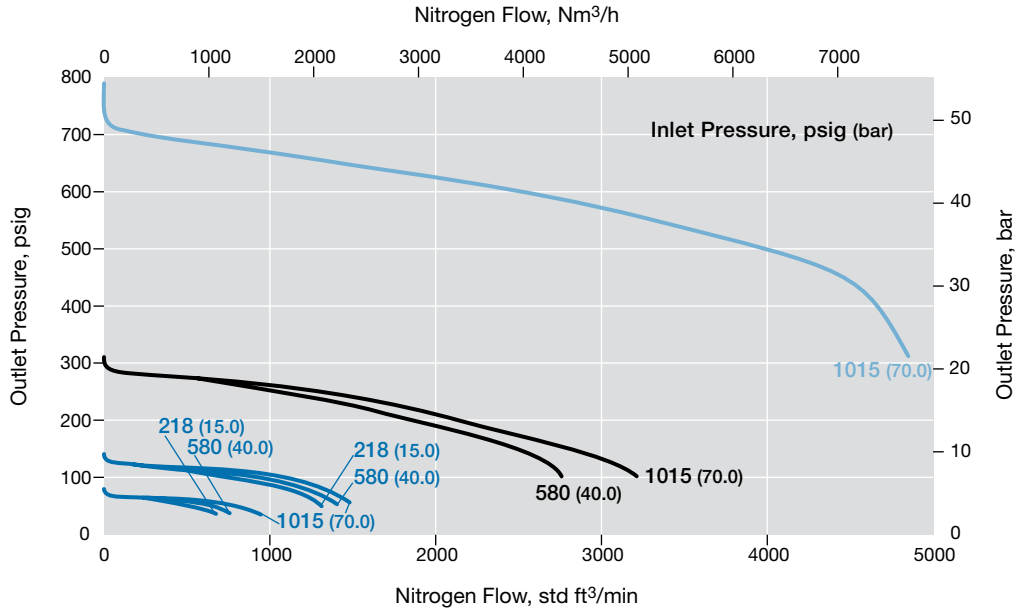
Flow Coefficient: 7.30

Maximum Inlet Pressure: 1015 psig (70.0 bar)

Outlet Pressure Control Range: 0 to 290 psig (0 to 20.0 bar)

Pressure Control Range

- 0 to 43 psig (0 to 3.0 bar)
- 0 to 145 psig (0 to 10.0 bar)
- 0 to 290 psig (0 to 20.0 bar)



RDH15 Series

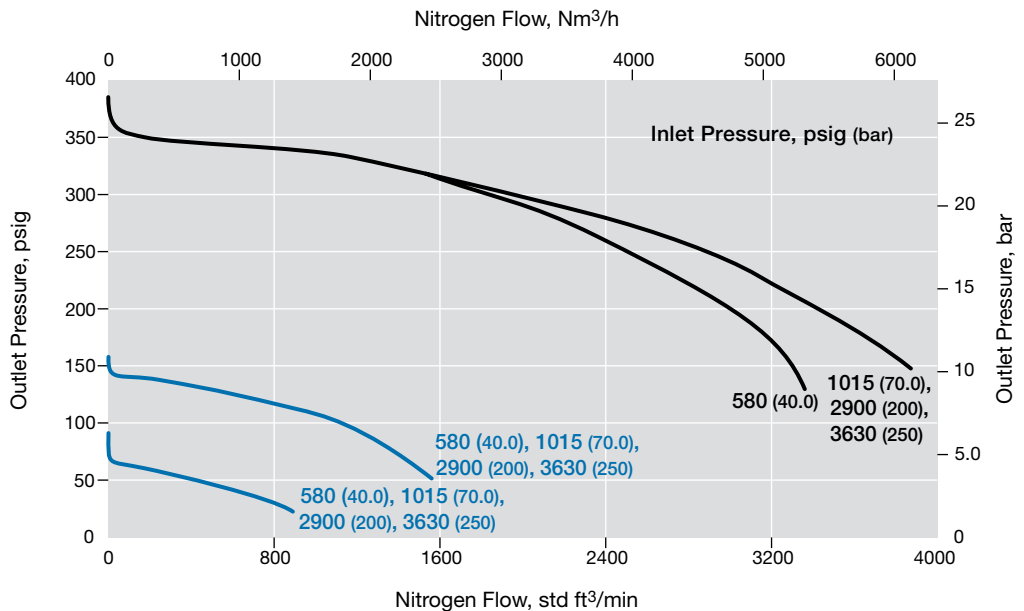
Flow Coefficient: 7.30

Maximum Inlet Pressure: 5800 psig (400 bar)

Outlet Pressure Control Range: 0 to 362 psig (0 to 25.0 bar)

Pressure Control Range

- 0 to 145 psig (0 to 10.0 bar)
- 0 to 362 psig (0 to 25.0 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.

RDH15 Series

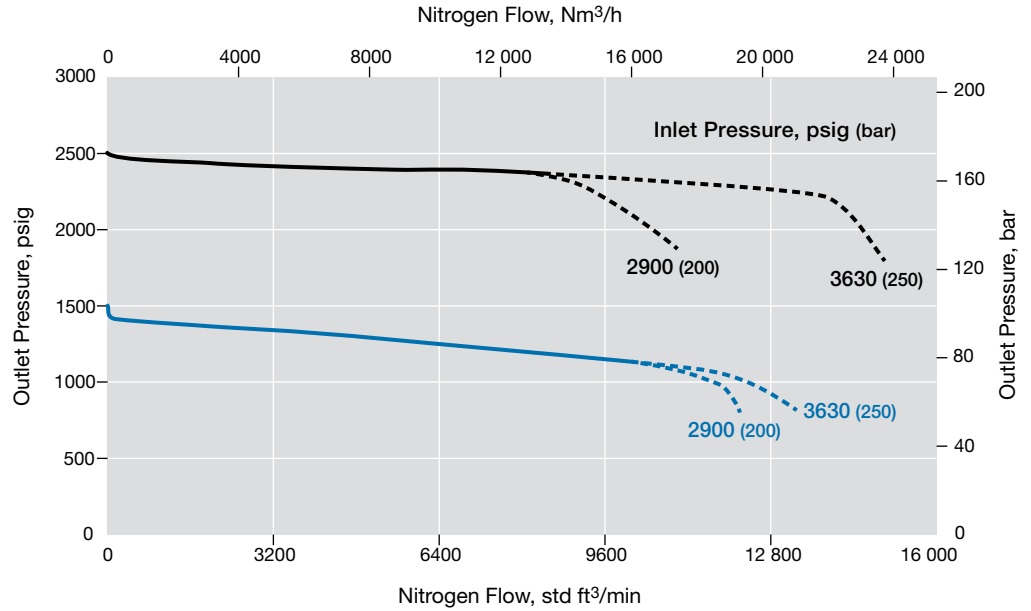
Flow Coefficient: 7.30

Maximum Inlet Pressure: 5800 psig (400 bar)

Outlet Pressure Control Range: 0 to 2537 psig (0 to 175 bar)

Pressure Control Range

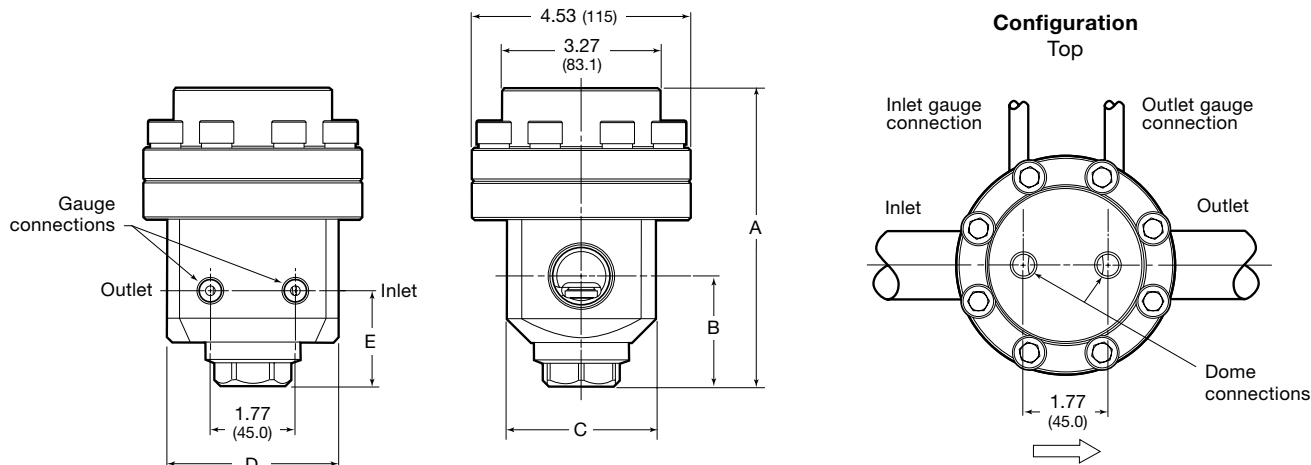
- 0 to 1450 psig (0 to 100 bar)
- - - 0 to 1450 psig (0 to 100 bar), calculated
- 0 to 2537 psig (0 to 175 bar)
- - - 0 to 2537 psig (0 to 175 bar), calculated



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
RD(H)10	1 in.	6.18 (157)	2.28 (58.0)	3.07 (78.0)	3.54 (90.0)	1.97 (50.0)
RD(H)15	1 1/2 in.	6.61 (168)	2.44 (62.0)	3.78 (96.0)	4.53 (115)	2.03 (51.5)



Shown with tubing for clarity; tubing not included.

Ordering Information

Build an RD(H)10 and RD(H)15 series regulator ordering number by combining the designators in the sequence shown below.

1 2 3 4 5 6 7 8 9 10 11
RD FA 10 A 1 - 02 - X - V V V - EF

1 Series

RD = 1015 psig (70.0 bar) maximum inlet pressure (507 psig [35.0 bar] with pilot regulator, options **0**, **1**, or **2**)

RDH = 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

10 = 1 in. / DN25

15 = 1 1/2 in. / DN40

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 Pilot Regulator Options

Pressure Control Range

X = No pilot regulator, optional

RD series with LRS4 series pilot regulator

0 = 0 to 43 psig (0 to 3.0 bar)

1 = 0 to 130 psig (0 to 9.0 bar)

2 = 0 to 290 psig (0 to 20.0 bar)

RD series with RS2 series pilot regulator

3 = 0 to 1015 psig (0 to 70.0 bar)

RDH series with RS2 series pilot regulator

4 = 0 to 145 psig (0 to 10.0 bar)

5 = 0 to 362 psig (0 to 25.0 bar)

6 = 0 to 1450 psig (0 to 100 bar)

7 = 0 to 2537 psig (0 to 175 bar)

8 = 0 to 3625 psig (0 to 250 bar)

8 Seal Material

V = Fluorocarbon FKM

N = Nitrile

E = EPDM

9 Diaphragm Material

V = Fluorocarbon FKM

N = Nitrile

E = EPDM

10 Seat Seal Material

RD series

V = Fluorocarbon FKM

N = Nitrile

E = EPDM

RDH series

K = PCTFE

P = PEEK

11 Options

EF = External feedback to main regulator

EFP = External feedback to pilot regulator, limited to 290 psig (20.0 bar)

N = NACE MR0175/ISO 15156

G93 = ASTM G93 Level C-cleaned