

Proportional Relief Valves

RV1-RV4 Series



Proportional Relief Valves

RV1 Series



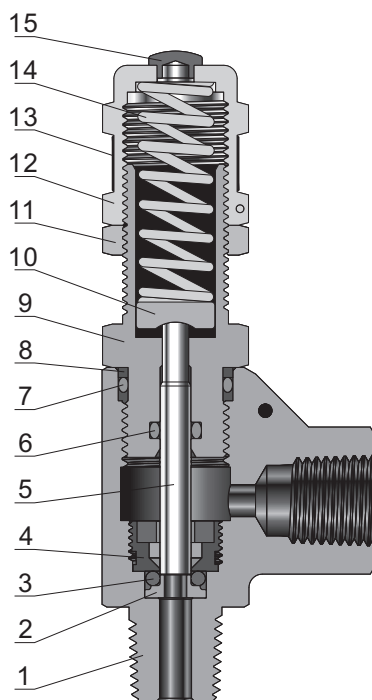
- ❖ Set pressure from 50 to 6000 psig (3.4 to 413 bar)
- ❖ Liquid or gas service
- ❖ Spring adjusts to provide desired set pressure
- ❖ Variety of end connections
- ❖ Variety of body and seal materials

Features

- ❖ Liquid or gas service
- ❖ Set pressure from 50 to 6000 psig (3.4 to 413 bar)
- ❖ Maximum outlet pressure up to 1500 psig (103 bar)
- ❖ Spring adjusts to provide desired set pressure
- ❖ The effect of system back pressure is minimized by the design of these valves.
- ❖ 7 color-coded springs available for a wide range of set pressure

Seal Materials

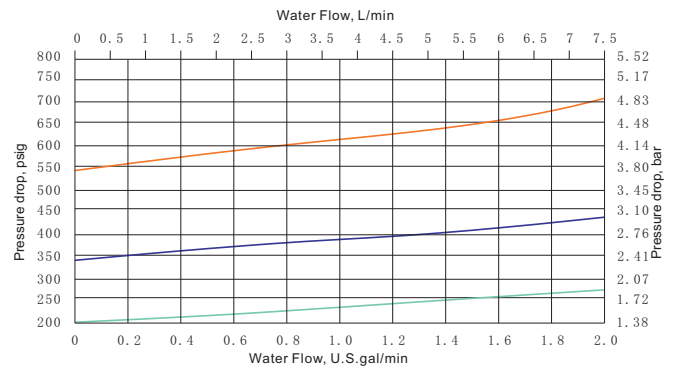
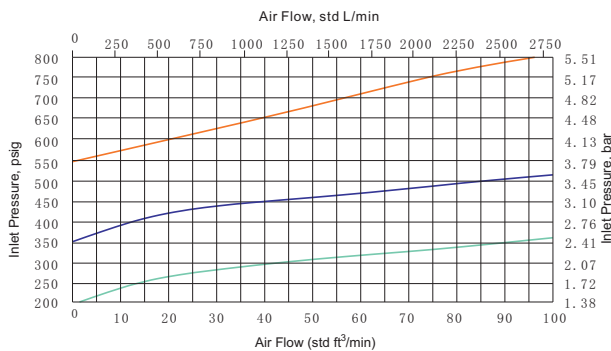
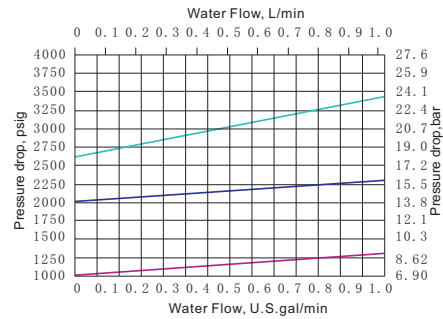
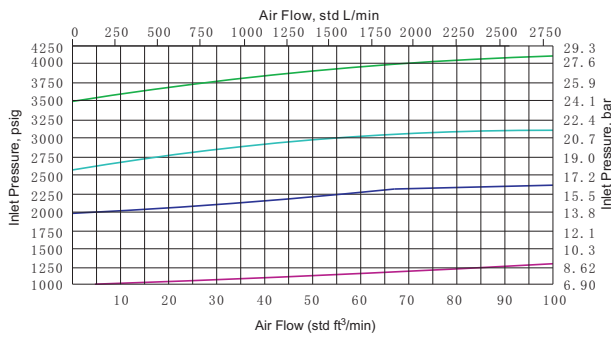
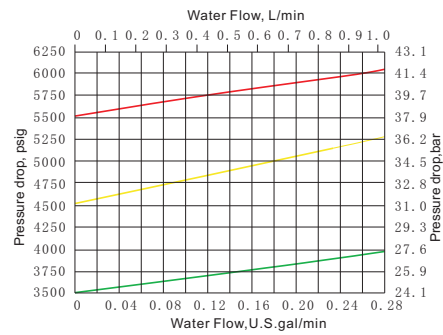
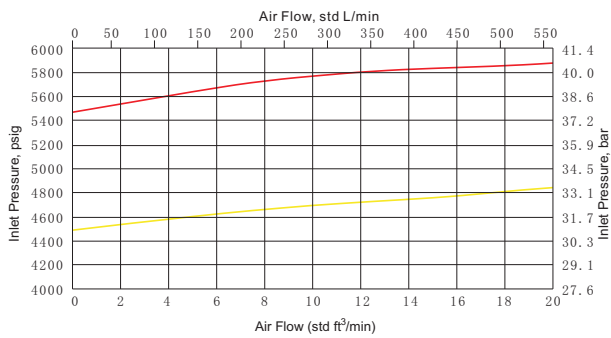
Seal Material	Temperature Range °F (°C)
Fluorocarbon FKM	25 to 250 (-4 to 121)
Buna N	0 to 250 (-17 to 121)
Neoprene	-10 to 300 (-23 to 148)
Ethylene Propylene	30 to 250 (-1 to 121)



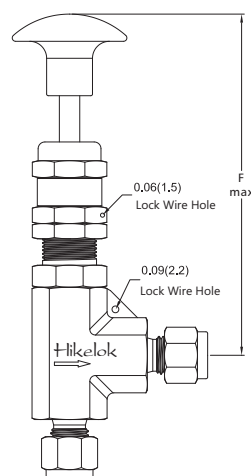
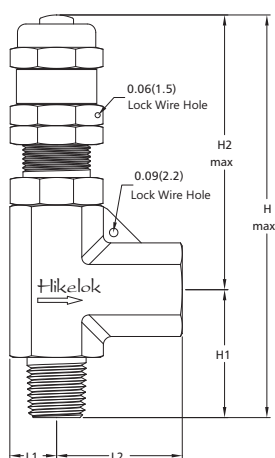
Standard Materials of Construction

Component		Material Grade/ASTM Specification
1	Body	316 S.S./A182
2	Insert	316 S.S./A479
3	O-ring	Fluorocarbon FKM
4	Seat retainer	316 S.S./A479
5	Stem	316 S.S./A479
6	O-ring	Fluorocarbon FKM
7	O-ring	Fluorocarbon FKM
8	Back Up Ring	PTFE
9	Bonnet	316 S.S./A479
10	Spring support	316 S.S./A276
11	Lock nut	316 S.S./A276
12	Cap	316 S.S./A479
13	Label	Polyester
14	Spring	S17700 S.S./AMS 5678
15	Plug	316 S.S./A276

Flow Data at 70°F (20°C)



Dimensions



Basic Ordering Number	Connection Type and Size	Orifice in. (mm)	Dimension, in.(mm)					
			L1	L2	H1	H2max	Hmax	Fmax
RV1-F4-03-	1/4" Hikelok	0.14 (3.6)	0.43 (10.9)	1.60 (40.6)	1.44 (36.6)	2.70 (68.6)	4.14 (105.2)	4.09 (104)
RV1-F6-03-	3/8" Hikelok		0.50 (12.7)	1.72 (43.7)	1.72 (43.7)	4.09 (103.9)	5.81 (147.6)	5.37 (136)
RV1-F8-03-	1/2" Hikelok		0.43 (10.9)	1.60 (40.6)	1.44 (36.6)	2.70 (68.6)	4.14 (105.2)	4.09 (104)
RV1-M6-03-	6 mm Hikelok		0.50 (12.7)	1.83 (46.5)	1.83 (46.5)	4.09 (103.9)	5.92 (150.4)	5.37 (136)
RV1-M8-03-	8 mm Hikelok		0.43 (10.9)	1.38 (34.9)	1.38 (34.9)	2.70 (68.6)	4.08 (103.5)	4.09 (104)
RV1-M12-03-	12 mm Hikelok		0.50 (12.7)	1.43 (36.3)	1.43 (36.3)	4.09 (103.9)	5.52 (140.2)	5.37 (136)
RV1-FNPT4-03-	1/4 Female NPT		0.43 (10.9)	1.17 (29.7)	1.19 (30.2)	2.70 (68.6)	3.89 (98.8)	4.09 (104)
RV1-FNPT8-03-	1/2 Female NPT		0.50 (12.7)	1.43 (36.3)	1.43 (36.3)	4.09 (103.9)	5.52 (140.2)	5.37 (136)
RV1-NPT4-03-	1/4 Male NPT		0.43 (10.9)	1.17 (29.7)	1.19 (30.2)	2.70 (68.6)	3.89 (98.8)	4.09 (104)
RV1-NPT8-03-	1/2 Male NPT		0.50 (12.7)	1.43 (36.3)	1.43 (36.3)	4.09 (103.9)	5.52 (140.2)	5.37 (136)
RV1-FBT4-03-	1/4 Female BSPT		0.43 (10.9)	1.17 (29.7)	1.19 (30.2)	2.70 (68.6)	3.89 (98.8)	4.09 (104)
RV1-FBT8-03-	1/2 Female BSPT		0.50 (12.7)	1.43 (36.3)	1.43 (36.3)	4.09 (103.9)	5.52 (140.2)	5.37 (136)

Spring Kits

Spring Designator	Spring Color	Set Pressure Rang psig (bar)
G	Green	50 to 300 (3.4 to 20.7)
O	Orange	300 to 700 (20.7 to 48.3)
Y	Yellow	700 to 1500 (48.3 to 103)
P	Purple	1500 to 2500 (103 to 172)
W	White	2500 to 3500 (172 to 241)
J	Blue	3500 to 4500 (241 to 310)
R	Red	4500 to 6000 (310 to 413)

How to Order

RV1—	NPT8		— FNPT8 —		03V		— GM		— 316	
Series	Inlet Type	Inlet Size	Outlet Type	Outlet Size	Orifice	Seal Material	Spring KitColor	Manual Override Handle	Body Material	
RV1	FNPT Female NPT	2 1/8 in.	Same as inlet type and inlet size		03 0.14 in. (3.6 mm)	V Fluorocarbon FKM	G Green 50~300 psig	None Manual Override Handle	316 316 S.S.	
	NPT Male NPT	4 1/4 in.				B Buna N	O Orange 300~700 psig		316L 316L S.S.	
	FBT Female BSPT	6 3/8 in. or 6mm	If outlet and inlet are the same, eliminate the outlet designator			E Ethylene propylene	Y Yellow 700~1500 psig		304 304 S.S.	
	MBT Male BSPT	8 1/2 in. or 8mm				N Neoprene	P Purple 1500~2500 psig		304L 304L S.S.	
	FMS Female ISO 261	10 10 mm				Z Kalrez	W White 2500~3500 psig			
	MS Male ISO 261	12 3/4 in. or 12mm					J Blue 3500~4500 psig			
	FBP Female BSPP						R Red 4500~6000 psig			
	MBP Male BSPP									
	F Fractional Tube Fitting									
	M Metric Tube Fitting									

Proportional Relief Valves

RV2 Series



- ❖ Set pressure from 10 to 225 psig (0.68 to 15.5 bar)
- ❖ Liquid or gas service
- ❖ Spring adjusts to provide desired set pressure
- ❖ Variety of end connections
- ❖ Variety of body and seal materials

Features

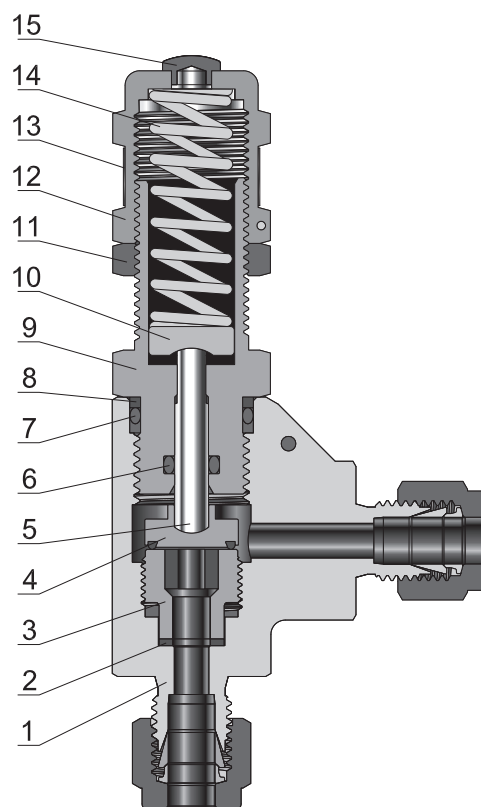
- ❖ Liquid or gas service
- ❖ Set pressure from 10 to 225 psig (0.68 to 15.5bar)
- ❖ Maximum outlet pressure up to 1500 psig (103 bar)
- ❖ Spring adjusts to provide desired set pressure

Seal Materials

Seal Material	Temperature Range °F (°C)
Fluorocarbon FKM	10 to 275 (-12 to 135)
Buna N	-10 to 300 (-23 to 148)
Neoprene	-30 to 300 (-34 to 148)
Ethylene propylene	-40 to 300 (-40 to 148)

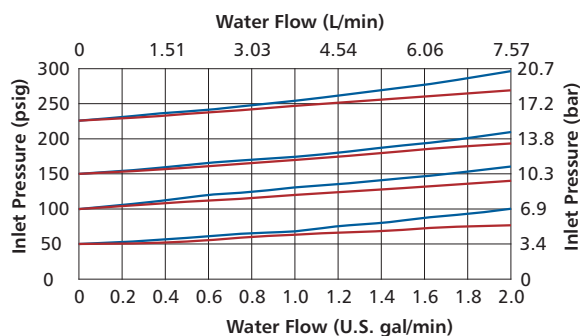
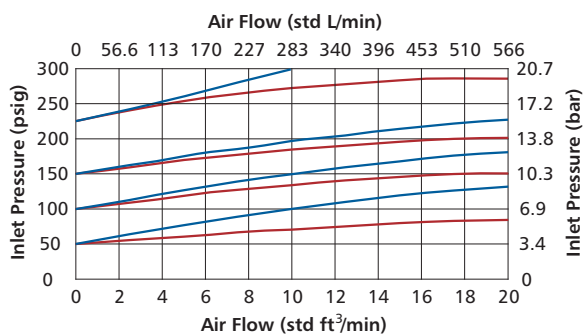
Standard Materials of Construction

Component	Material Grade/ASTM Specification	
1	Body	316 S.S./A182
2	Gasket	PTFE coated 316 S.S./A240
3	Seat	316 S.S./A479
4	Bonded disc	Fluorocarbon FKM bonded 316 S.S./A479
5	Stem	316 S.S./A479
6	O-ring	Fluorocarbon FKM
7	O-ring	Fluorocarbon FKM
8	Back Up Ring	PTFE
9	Bonnet	316 S.S./A479
10	Spring support	316 S.S./A276
11	Lock nut	316 S.S./A276
12	Cap	316 S.S./A479
13	Label	Polyester
14	Spring	S17700 S.S./AMS 5678
15	Plug	316 S.S./A276

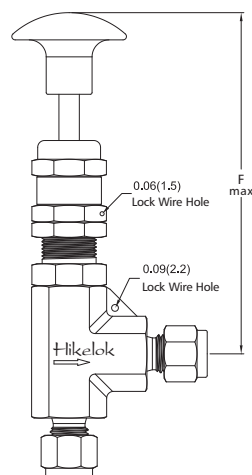
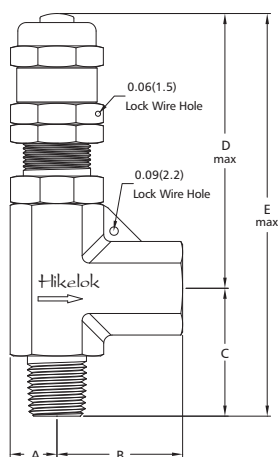


Flow Data at 70°F (20°C)

— 04 (Orifice Size: 0.19") — 06 (Orifice Size: 0.25")



Dimensions



Basic Ordering Number	Connection Type and Size	Orifice in. (mm)	Dimension, in. (mm)					
			A	B	C	D	E	F
RV2-F4-04-	1/4" Hikelok	0.19 (4.8)	0.43 (10.9)	1.60 (40.6)	1.44 (36.6)	2.7 (68.8)	4.14 (105)	4.09 (104)
RV2-M6-04-	6 mm Hikelok			1.44 (36.6)	1.19 (30.2)		3.89 (98.8)	
RV2-NPT4-04-	1/4 Male NPT			1.17 (29.7)	1.19 (30.2)		3.89 (98.8)	
RV2-FNPT4-04-	1/4 Female NPT							
RV2-F8-06-	1/2" Hikelok	0.25 (6.4)	0.5 (12.7)	1.83 (46.5)	1.83 (46.5)	4.09 (104)	5.92 (150)	5.37 (136)
RV2-M12-06-	12 mm Hikelok			1.44 (36.6)	1.44 (36.6)		5.52 (140)	
RV2-NPT8-06-	1/2 Male NPT							
RV2-FNPT8-06-	1/2 Female NPT							

How to Order

RV2 — FNPT8 — M8 — 06V — GM — 316

Series	Inlet Type	Inlet Size	Outlet Type	Outlet Size	Orifice	Seal Material	Spring KitColor	Manual Override Handle	Body Material
RV2	FNPT Female NPT	2 1/8 in.	Same as inlet type and inlet size		04 0.19 in. (4.8 mm)	V Fluorocarbon FKM	G Green 10~225 psig	N None	316 316 S.S.
	NPT Male NPT	4 1/4 in.			06 0.25 in. (6.4 mm)	B Buna N		M Manual Override Handle	316L 316L S.S.
	FBT Female BSPT	6 3/8 in. or 6mm	If outlet and inlet are the same, eliminate the outlet designator			E Ethylene propylene			304 304 S.S.
	MBT Male BSPT	8 1/2 in. or 8mm				N Neoprene			304L 304L S.S.
	FMS Female ISO 261	10 10 mm							
	MS Male ISO 261	12 3/4 in. or 12mm							
	FBP Female BSPP								
	MBP Male BSPP								
	F Fractional Tube Fitting								
	M Metric Tube Fitting								

Proportional Relief Valves

RV3 Series



- ❖ Set pressure from 50 to 1500 psig (3.4 to 103 bar)
- ❖ Spring adjusts to provide desired set pressure
- ❖ Variety of end connections
- ❖ Variety of body and seal materials

Features

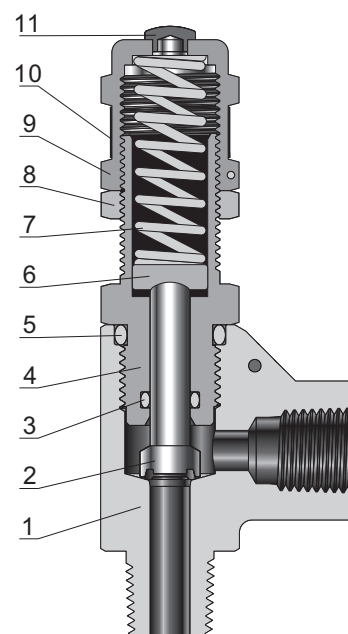
- ❖ Liquid or gas service
- ❖ Set pressure from 50 to 1500 psig (3.4 to 103 bar)
- ❖ Maximum outlet pressure up to 2500 psig (172 bar)
- ❖ Spring adjusts to provide desired set pressure

Seal Materials

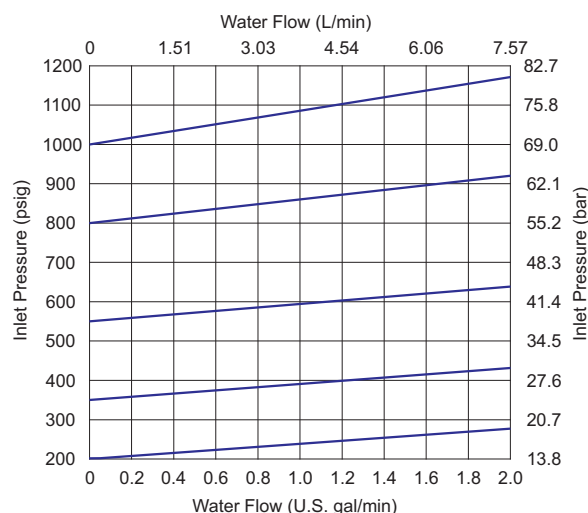
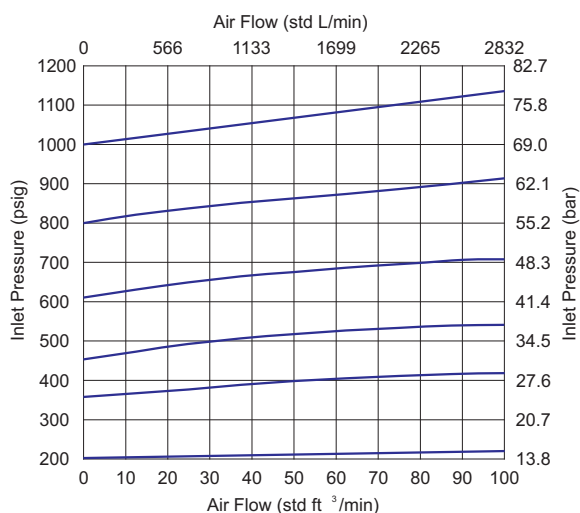
Seal Material	Temperature Range °F (°C)
Fluorocarbon FKM	25 to 300 (-4 to 148)
Buna N	50 to 300 (10 to 148)
Neoprene	50 to 250 (10 to 121)
Ethylene Propylene	50 to 250 (10 to 121)

Standard Materials of Construction

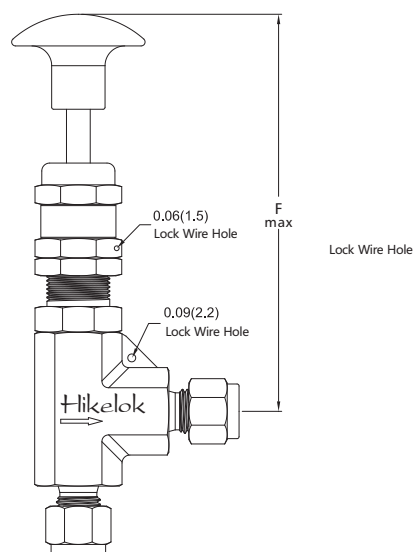
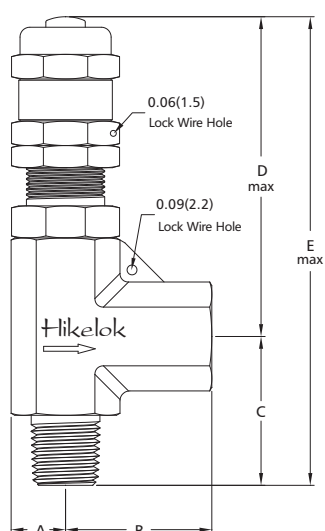
Component	Material Grade/ASTM Specification
1 Body	316 S.S./A182
2 Stem	Fluorocarbon FKM-bonded 316 S.S./A479
3 O-ring	Fluorocarbon FKM
4 Bonnet	316 S.S./A479
5 O-ring	Fluorocarbon FKM
6 Spring Support	316 S.S./A276
7 Spring	S17700 S.S./AMS 5678
8 Lock Nut	316 S.S./A276
9 Cap	316 S.S./A479
10 Label	Polyester
11 Plug	316 S.S./A276



Flow Data at 70°F (20°C)



Dimensions



Basic Ordering Number	Connection Type and Size	Orifice in. (mm)	Dimension, in. (mm)					
			A	B	C	D	E	F
RV3-F8-06-	1/2" Hikelok	0.25 (6.4)	0.5 (12.7)	1.43 (36.3)	1.83 (46.5)	4.09 (104)	5.92 (150)	5.37 (136)
RV3-M12-06-	12 mm Hikelok							
RV3-NPT8-06-	1/2 Male NPT							
RV3-MBT8-06-	1/2 Male BSPT			1.43 (36.3)	1.44 (36.6)		5.52 (140)	
RV3-FNPT8-06-	1/2 Female NPT							
RV3-FBT8-06-	1/2 Female BSPT							

How to Order

RV3 — **FNPT8** — **M8** — **06V** — **GM** — **316**

Series	Inlet Type	Inlet Size	Outlet Type	Outlet Size	Orifice	Seal Material	Spring KitColor	Manual Override Handle	Body Material
RV3	FNPT Female NPT	8 1/2in. or 8mm	Same as inlet type and inlet size		06 0.25 in. (6.4 mm)	V Fluorocarbon FKM	G Green 50~350 psig	None	316 316 S.S.
	NPT Male NPT	10 10 mm				B Buna N	O Orange 350~750 psig	M Manual Override Handle	316L316L S.S.
	FBT Female BSPT	12 3/4 in. or 12mm	If outlet and inlet are the same, eliminate the outlet designator	E Ethylene propylene		Y Yellow 750~1500 psig	304 304 S.S.		
	MBT Male BSPT			N Neoprene			304L 304L S.S.		
	FMS Female ISO 261								
	MS Male ISO 261								
	FBP Female BSPP								
	MBP Male BSPP								
	F Fractional Tube Fitting								
	M Metric Tube Fitting								

Proportional Relief Valves

RV4 Series



- ❖ Set pressure from 5 to 550 psig (0.34 to 37.9 bar)
- ❖ Liquid or gas service
- ❖ Zero friction poppets
- ❖ Spring adjusts to provide desired set pressure
- ❖ Variety of end connections
- ❖ Variety of body and seal materials

Features

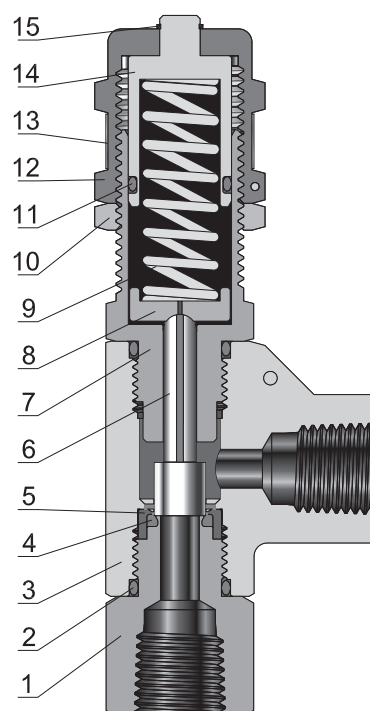
- ❖ Liquid or gas service
- ❖ Set pressure from 5 to 550 psig (0.34 to 37.9 bar)
- ❖ Maximum outlet pressure up to 2800 psig (193 bar)
- ❖ Spring adjusts to provide desired set pressure
- ❖ Zero friction poppets increases accuracy of cracking pressure and reseal pressure

Seal Materials

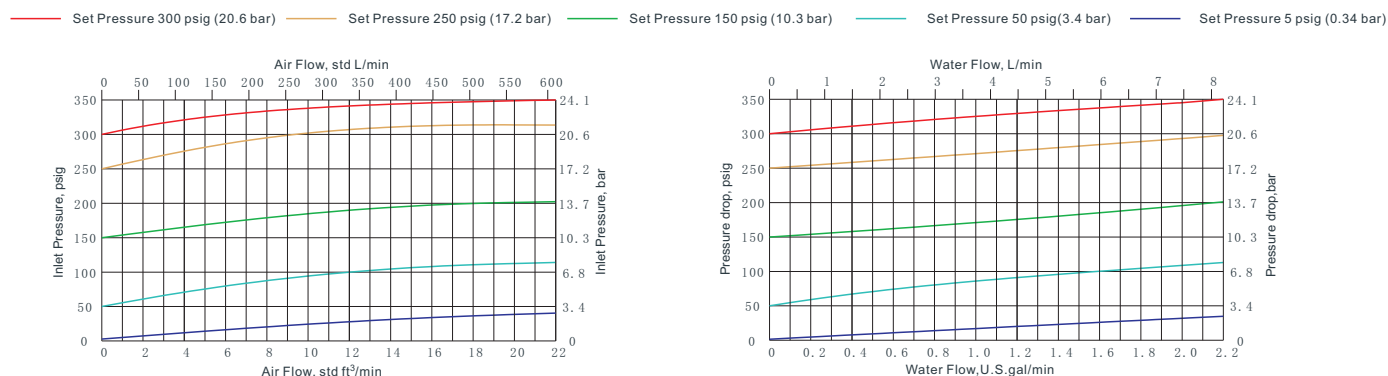
Seal Material	Temperature Range °F (°C)
Fluorocarbon FKM	-20 to 400 (-29 to 204)
Buna N	-65 to 275 (-54 to 135)
Neoprene	-40 to 300 (-40 to 148)
Ethylene propylene	-65 to 300 (-54 to 148)

Standard Materials of Construction

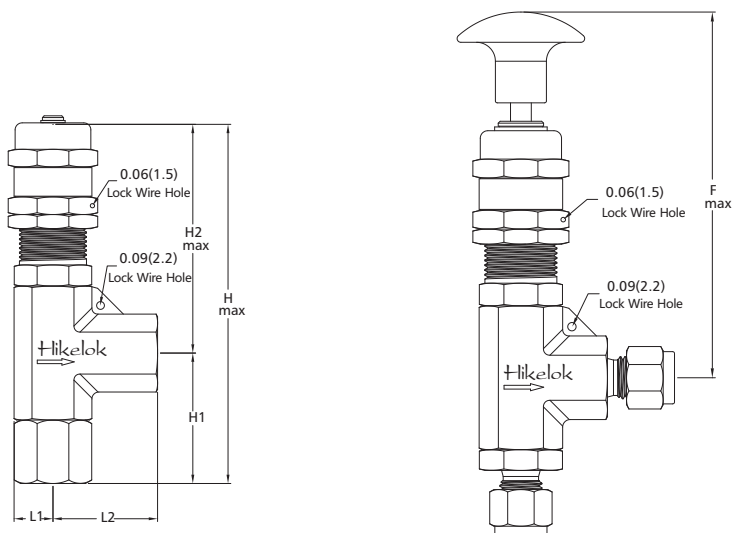
Component	Material Grade/ASTM Specification
1 Connector	316 S.S./A479
2 O-ring	Fluorocarbon FKM
3 Body	316 S.S./A182
4 O-ring	Fluorocarbon FKM
5 Shroud Ring	316 S.S./A479
6 Stem	316 S.S./A479
7 Bonnet	316 S.S./A479
8 Spring support	316 S.S./A276
9 Spring	S17700 S.S./AMS 5678
10 Lock nut	316 S.S./A276
11 O-ring	Fluorocarbon FKM
12 Cap	316 S.S./A479
13 Label	Polyester
14 Spring Holder	316 S.S./A276
15 Retaining Ring	304 S.S.



Flow Data at 70°F (20°C)



Dimensions



Basic Ordering Number	Connection Type and Size	Orifice in. (mm)	Dimension, in. (mm)					
			L1	L2	H1	H2	H	F
RV4-F4-05-	1/4" Hikelok	0.23 (5.8)	0.43 (10.9)	1.60 (40.6)	1.60 (40.6)	2.70 (68.6)	4.30 (109.2)	4.09 (104)
RV4-F6-05-	3/8" Hikelok		0.50 (12.7)	1.72 (43.7)	1.87 (47.7)	4.09 (103.9)	5.96 (151.6)	5.37 (136)
RV4-F8-05-	1/2" Hikelok		0.43 (10.9)	1.60 (40.6)	1.60 (40.6)	2.70 (68.6)	4.30 (109.2)	4.09 (104)
RV4-M6-05-	6 mm Hikelok		0.50 (12.7)	1.83 (46.5)	2.00 (50.5)	4.09 (103.9)	6.07 (154.4)	5.37 (136)
RV4-M8-05-	8 mm Hikelok		0.43 (10.9)	1.38 (34.9)	1.53 (38.9)	2.70 (68.6)	4.23 (107.5)	4.09 (104)
RV4-M12-05-	12 mm Hikelok		0.50 (12.7)	1.43 (36.3)	1.58 (40.3)	4.09 (103.9)	5.67 (144.2)	5.37 (136)
RV4-FNPT4-05-	1/4 Female NPT		0.43 (10.9)	1.17 (29.7)	1.34 (34.2)	2.70 (68.6)	4.04 (102.8)	4.09 (104)
RV4-FNPT8-05-	1/2 Female NPT		0.50 (12.7)	1.43 (36.3)	1.58 (40.3)	4.09 (103.9)	5.67 (144.2)	5.37 (136)
RV4-NPT4-05-	1/4 Male NPT		0.43 (10.9)	1.43 (36.3)	1.58 (40.3)	4.09 (103.9)	5.67 (144.2)	5.37 (136)
RV4-NPT8-05-	1/2 Male NPT		0.43 (10.9)	1.43 (36.3)	1.58 (40.3)	4.09 (103.9)	5.67 (144.2)	5.37 (136)

How to Order

RV4— NPT8 — FNPT8 — 05V — GM — 316

Series	Inlet Type	Inlet Size	Outlet Type	Outlet Size	Orifice	Seal Material	Spring KitColor	Manual Override Handle	Body Material
RV4	FNPT Female NPT	2 1/8 in.	Same as inlet type and inlet size		05 0.23 in. (5.8 mm)	V Fluorocarbon FKM	G Green 50~300 psig	None	316 316 S.S.
	NPT Male NPT	4 1/4 in.				B Buna N	O Orange 300~700 psig	M Manual Override Handle	316L 316L S.S.
	FBT Female BSPT	6 3/8 in. or 6mm	If outlet and inlet are the same, eliminate the outlet designator	E Ethylene propylene		304 304 S.S.			
	MBT Male BSPT	8 1/2 in. or 8mm		N Neoprene		304L 304L S.S.			
	FMS Female ISO 261	10 10 mm		Z Kalrez					
	MS Male ISO 261	12 3/4 in. or 12mm							
	FBP Female BSPP								
	MBP Male BSPP								
	F Fractional Tube Fitting								
	M Metric Tube Fitting								