

Proportional Relief Valves

RV, RL and RM Series

Introduction

Valves open when system pressure reaches the set pressure. Then the medium flow out to release system pressure. Valves close when the system pressure is down to the Resealing Pressure.

The opening height and the system pressure are direct proportional. However, there's no limit for relieving capacity. So valves in these series should be selected carefully according to system requirements.



Features

- ☆ Set Pressure:
 - RV Series: 7 color-coded springs available for a wide range of set pressure, 50 to 6000 psig @ 70°F (0.34 to 414 bar @ 20°C)
 - RL Series: 10 to 225 psig @ 70°F (0.68 to 15.5 bar @ 20°C)
 - RM Series: 3 color-coded springs available for a wide range of set pressure, 50 to 1500 psig @ 70°F (3.4 to 103 bar @ 20°C)
- ☆ Maximum Outlet Pressure
 - RV Series: 1500 psig (103 bar)
 - RL Series: 225 psig (15.5 bar)
 - RM Series: 1500 psig (103 bar)
- ☆ Orifice Size
 - RV Series: 0.14" (3.6 mm)
 - RL Series: 0.19" (4.8 mm) and 0.25" (6.4 mm)
 - RM Series: 0.25" (6.4 mm)
- ☆ Back Pressure and Pre-set Pressure
 - RV and RM Series: Balance stem design to eliminate the effect of system back pressure
 - RL Series: Pre-set pressure = Desired pressure - 0.8 × Back pressure
- ☆ Working Temperature: -10°F to 300°F (-23°C to 148°C)
- ☆ Variety of end connections
- ☆ Liquid or gas service
- ☆ Adjustable bonnet cap and adjustable set pressure
- ☆ Lock wired secure cap to maintain set pressure
- ☆ Variety of seal materials
- ☆ Label identifies the set pressure range
- ☆ Manual override handle available to open the valve without changing the set pressure which pressure lower than 1500 psig

Temperature Range of Sealing Materials

O-ring Material	Temperature Ranges °F (°C)
Fluorocarbon Rubber	25 to 250 (-4 to 121)
Buna-N Rubber	0 to 250 (-17 to 121)
Neoprene Rubber	-10 to 300 (-23 to 148)
Ethylene Propylene Rubber	30 to 250 (-1 to 121)

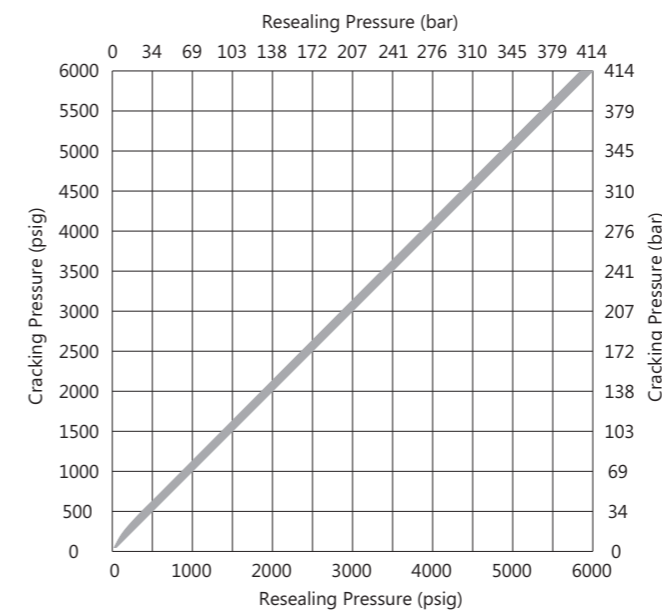
Cracking Pressure and Resealing Pressure

Cracking pressure: The pressure at which the first indication of flow occurs. The repeatability of the cracking pressure of each valve after initial relief is within ±5% at room temperature.

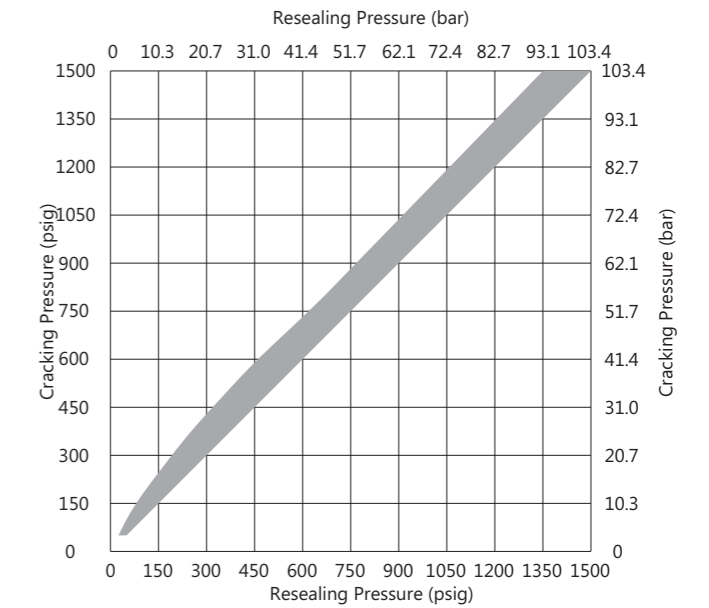
Resealing pressure: The pressure at which there is no indication of flow. Resealing pressure is always lower than the set pressure.

Back pressure: The pressure of the outlet of the valve. It increases the set pressure.

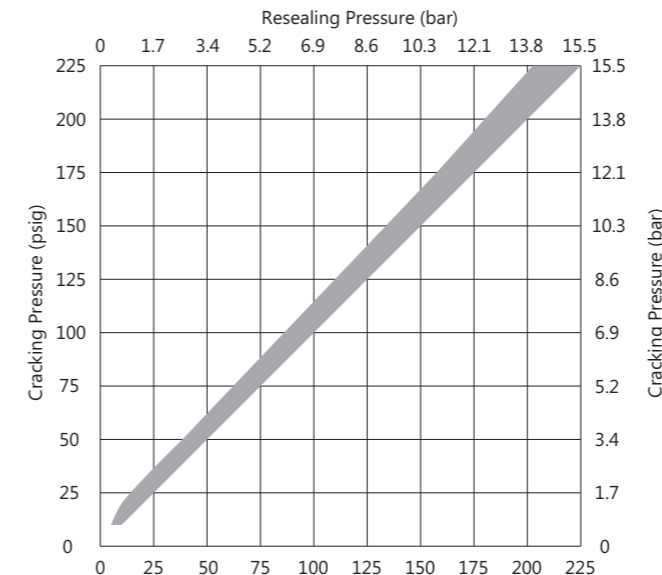
RV Series



RM Series

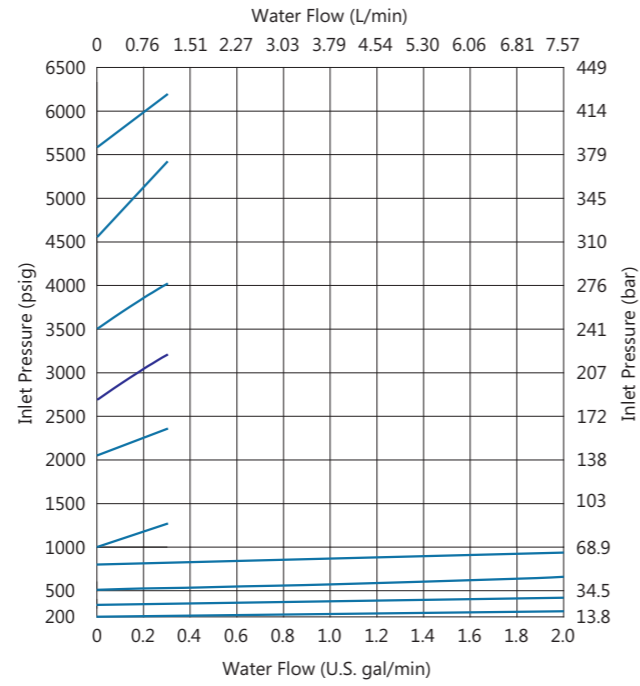
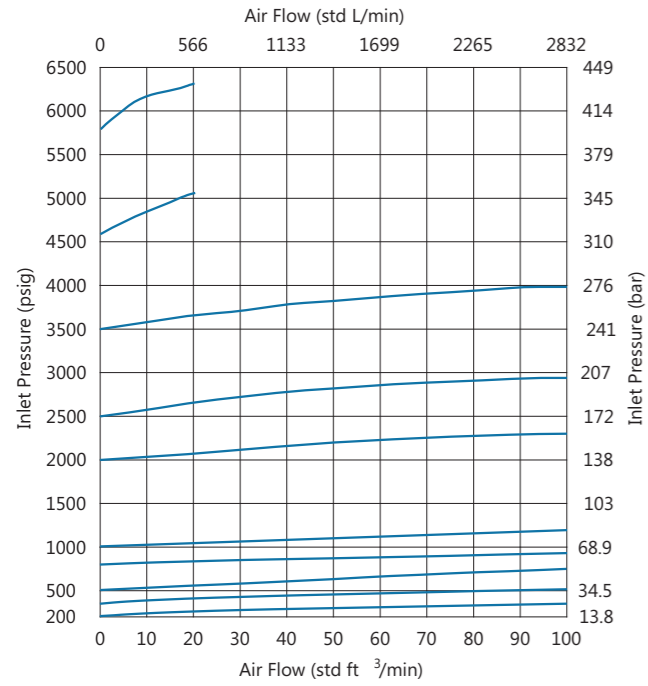


RL Series

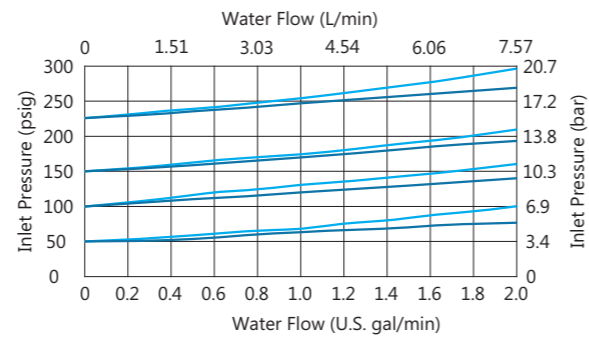
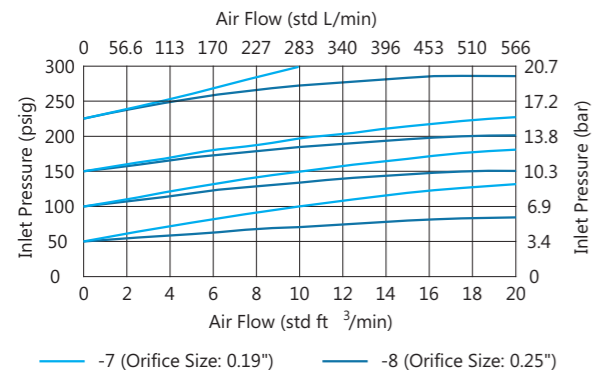


Flow Data at 70°F (20°C)

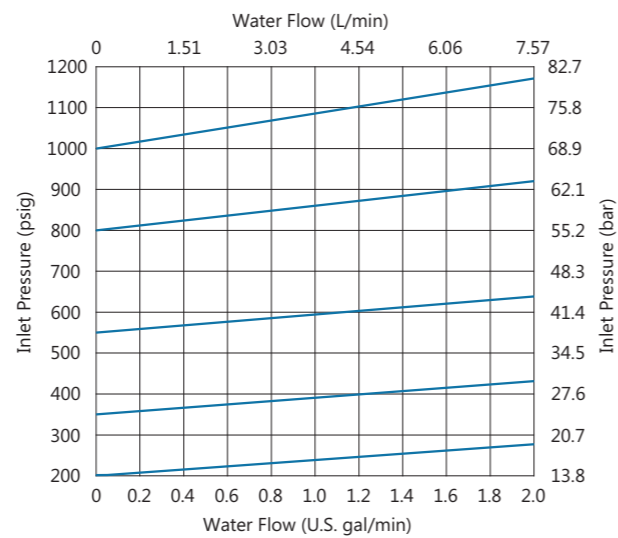
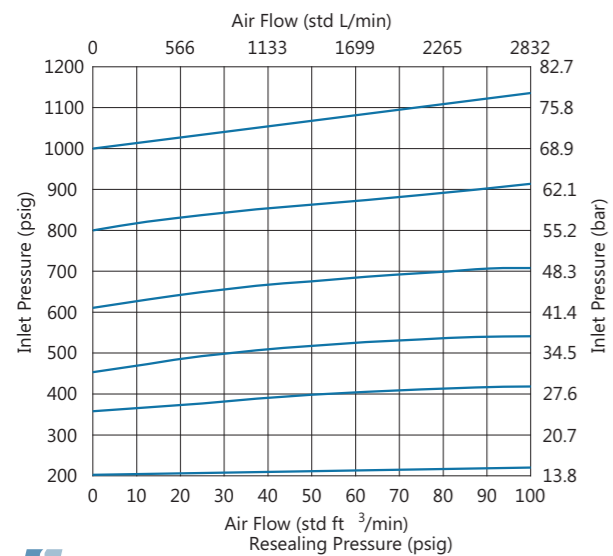
RV Series



RL Series



RM Series



Standard Materials of Construction

RV Series

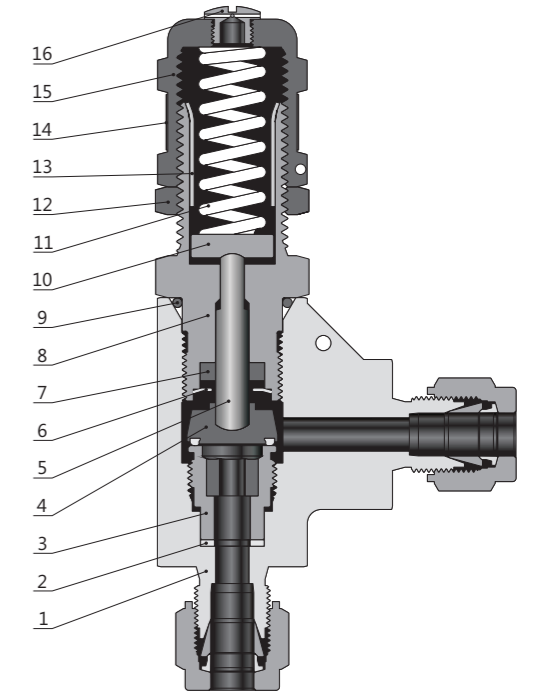
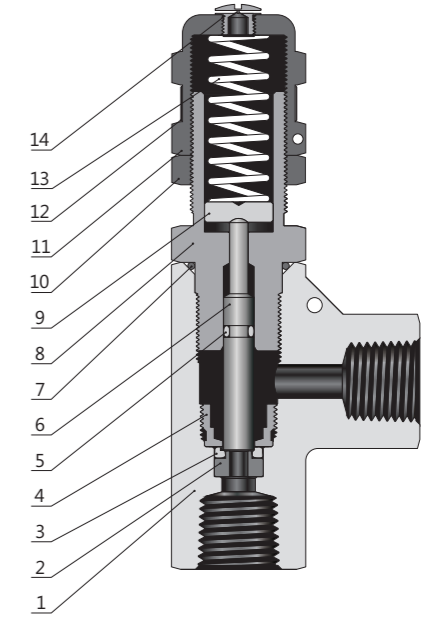
Component	Material Grade/ASTM Specification	
1	Body	316 SS/A182
2	Insert	316 SS/A479
3	O-ring	Fluorocarbon FKM
4	Seat Retainer	316 SS/A479
5	O-ring	Fluorocarbon FKM
6	Stem	316 SS/A479
7	O-ring	Fluorocarbon FKM
8	Bonnet	316 SS/A479
9	Spring Support	316 SS/A276
10	Lock Nut	17-4PH powdered metal
11	Bonnet Cap	316 SS/A479
12	Label	Polyester
13	Spring	S17700 SS/AMS 5678
14	Plug	316 SS/A276

- Lubricant: molybdenum disulfide-based dry film and paste, silicone-based
- Contact the authorized representative or FINELOK for other materials.

RL Series

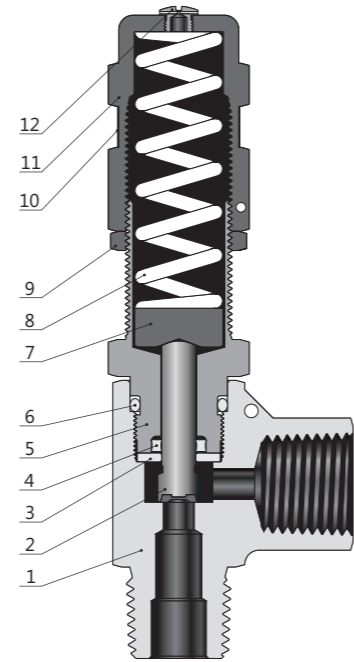
Component	Material Grade/ASTM Specification	
1	Body	316 SS/A182
2	Gasket	316 SS/A479
3	Seat	316 SS/A479
4	Bonded disc	316 SS/A479+Fluorocarbon FKM
5	Stem	316 SS/A479
6	Retainer	316 SS/A479
7	Quad Seal	Fluorocarbon FKM
8	Bonnet	316 SS/A479
9	O-ring	Fluorocarbon FKM
10	Spring Support	316 SS/A276
11	Spring	S17700 SS/AMS 5678
12	Lock Nut	17-4PH powdered metal
13	Sleeve	304SS/A240
14	Label	Polyester
15	Bonnet Cap	316 SS/A479
16	Plug	316 SS/A276

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RM Series

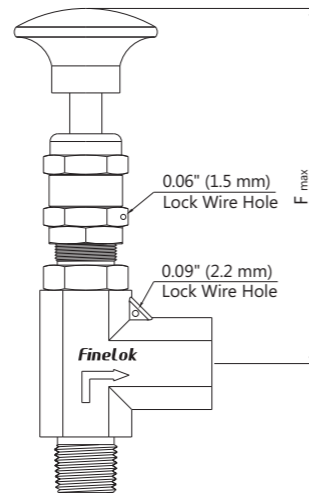
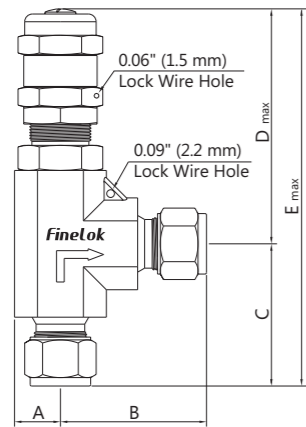
Component	Material Grade/ASTM Specification	
1	Body	316 SS/A182
2	Stem	316 SS/A479+Fluorocarbon FKM
3	Retainer	316 SS/A479
4	Seal	Fluorocarbon FKM
5	Bonnet	316 SS/A479
6	O-ring	Fluorocarbon FKM
7	Spring Support	316 SS/A276
8	Spring	S17700 SS/AMS 5678
9	Lock Nut	17-4PH powdered metal
10	Label	Polyester
11	Bonnet Cap	316 SS/A479
12	Plug	316 SS/A276



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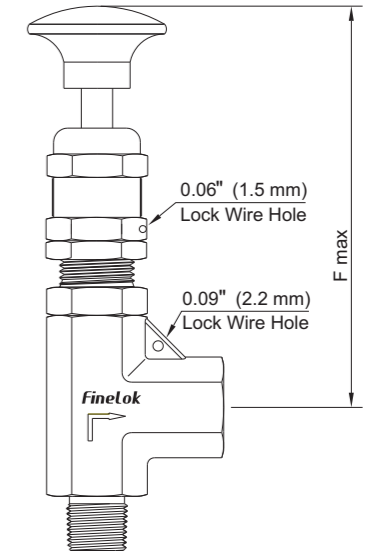
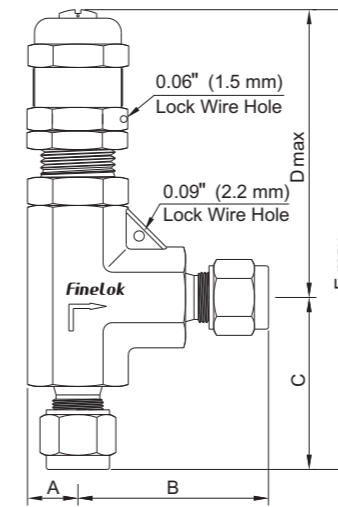
Dimensions

RV Series



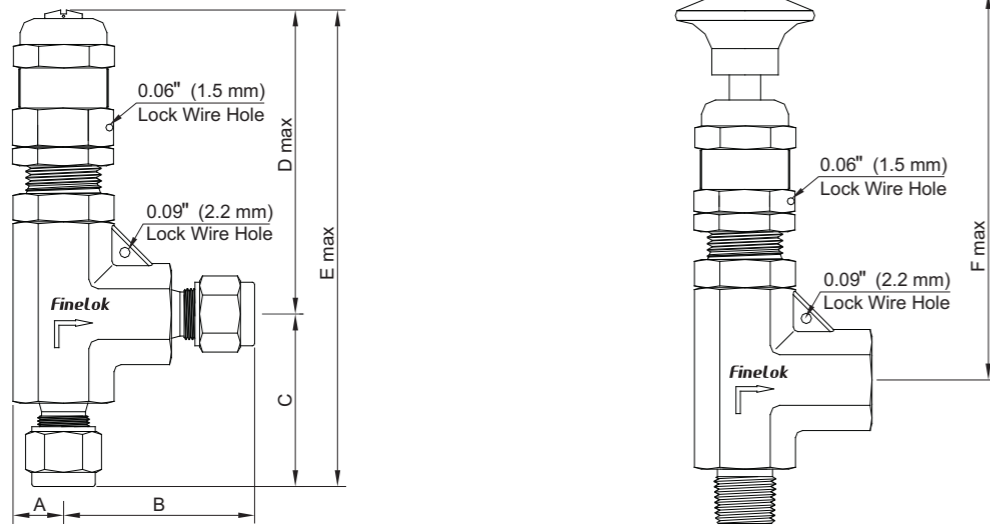
Basic Ordering Number	Connection Type and Size		Orifice in. (mm)	Dimension in. (mm)					
	Inlet	Outlet		A	B	C	Dmax	Emax	Fmax
-RV-S4-4-	1/4" FINELOK	1/4" FINELOK	0.14 (3.6)	0.43 (10.9)	1.60 (40.6)	1.44 (36.6)	2.70 (68.6)	4.14 (105.2)	4.09 (103.9)
-RV-S6-4-	3/8" FINELOK	3/8" FINELOK		0.50 (12.7)	1.72 (43.7)	1.72 (43.7)	4.09 (103.9)	5.81 (147.6)	5.37 (136.4)
-RV-S8-4-	1/2" FINELOK	1/2" FINELOK		0.43 (10.9)	1.60 (40.6)	1.44 (36.6)	2.70 (68.6)	4.14 (105.2)	4.09 (104.9)
-RV-SM6-4-	6 mm FINELOK	6 mm FINELOK		0.50 (12.7)	1.83 (46.5)	1.83 (46.5)	4.09 (103.9)	5.92 (150.4)	5.37 (136.4)
-RV-SM8-4-	8 mm FINELOK	8 mm FINELOK		0.43 (10.9)	1.17 (29.7)	1.38 (34.9)	2.70 (68.6)	4.08 (103.5)	4.28 (108.7)
-RV-SM12-4-	12 mm FINELOK	12 mm FINELOK		0.43 (10.9)	1.17 (29.7)	1.19 (30.2)	2.70 (68.6)	3.89 (98.8)	4.09 (103.9)
-RV-FNT4-4-	1/4 Female NPT	1/4 Female NPT		0.43 (10.9)	1.17 (29.7)	1.38 (34.9)	2.70 (68.6)	4.08 (103.5)	4.28 (108.7)
-RV-NT4-4-	1/4 Male NPT	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 (103.9)
-RV-FRT4-4-	1/4 Female BSPT	1/4 Female BSPT		0.43 (10.9)	1.17 (29.7)	1.38 (34.9)	2.70 (68.6)	4.08 (103.5)	4.28 (108.7)

RL Series



Basic Ordering Number	Connection and Size		Orifice in. (mm)	Dimension in. (mm)					
	Inlet Size	Outlet Size		A	B	C	D	E	F
-RL-S4-5	1/4" FINELOK	1/4" FINELOK	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)
-RL-SM6-5	6 mm FINELOK	6 mm FINELOK			1.44 (36.6)	1.19 (30.2)		3.89 (98.8)	
-RL-NT4-5	1/4 Male NPT	1/4 Male NPT			1.17 (29.7)	1.38 (34.9)		4.08 (103.5)	
-RL-RT4-5	1/4 Male BSPT	1/4 Male BSPT							
-RL-FNT4-5	1/4 Female NPT	1/4 Female NPT							
-RL-FRT4-5	1/4 Female BSPT	1/4 Female BSPT							
-RL-S8-6	1/2" FINELOK	1/2" FINELOK	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)
-RL-SM12-6	12 mm FINELOK	12 mm FINELOK			1.44 (36.6)	1.44 (36.6)		5.52 (140)	
-RL-NT8-6	1/2 Male NPT	1/2 Male NPT							
-RL-RT8-6	1/2 Male BSPT	1/2 Male BSPT							
-FNT8-6	1/2 Female NPT	1/2 Female NPT							
-FRT8-6	1/2 Female BSPT	1/2 Female BSPT							

RM Series

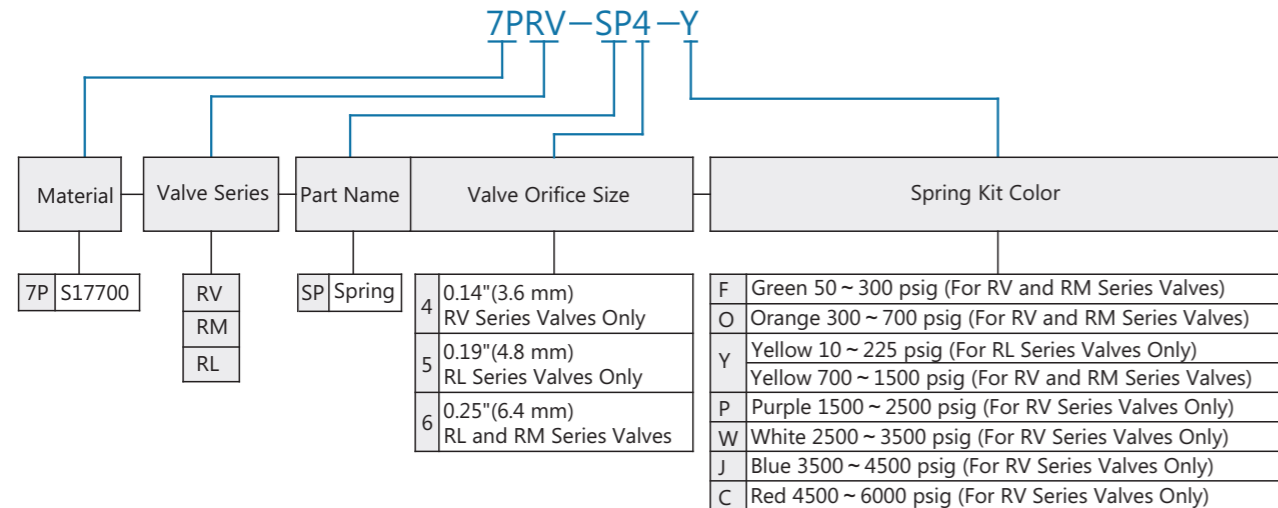


Basic Ordering Number	Connection and Size		Orifice in. (mm)	Dimension in. (mm)					
	Inlet Size	Outlet Size		A	B	C	D	E	F
-RM-S8-6-	½" FINELOK	½" FINELOK	0.25 (6.4)	0.5 (12.7)	1.83 (46.5)	1.83 (46.5)	4.09 (104)	5.92 (150)	5.37 (136)
-RM-SM12-6-	1/2 mm FINELOK	1/2 mm FINELOK						5.52 (140)	
-RM-NT8-6-	1/2 Male NPT	1/2 Male NPT			1.44 (36.6)	1.44 (36.6)		5.52 (140)	
-RM-RT8-6-	1/2 Male BSPT	1/2 Male BSPT							
-RM-FNT8-6-	1/2 Female NPT	1/2 Female NPT			1.44 (36.6)	1.44 (36.6)		5.52 (140)	
-RM-FRT8-6-	1/2 Female BSPT	1/2 Female BSPT							

1. FINELOK means FINELOK double ferrule tube fittings.
2. Dimensions are shown with FINELOK nuts finger-tightened. All dimensions are for reference only and are subject to change. For dimensions not shown above, please contact the authorized representative or FINELOK.
3. Sizes and types listed are standard. Other sizes and types are available upon request. Refer to ordering information.

Ordering Information

Spring For Valves



Ordering Information

