

Check, Excess Flow, Bleed, Purge and Proportional Relief Valves

CV, CH, CO, CA, COA, CL and CW Series;
EV Series; RB Series; RP Series; RV Series



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FITOK
Valves and Fittings

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Check Valves

CV, CH, CO, CA, COA, CL and CW Series



Features

CV, CH and CO Series

Fixed Cracking Pressures

CV Series

- Resilient O-ring seat design for noise-free closing leakage-free
- Maximum working pressure: 3000 psig (207 bar)
- Working temperature: -10°F to 375°F (-23°C to 190°C)
- Cracking pressure: 1/3 to 25 psig (0.02 to 1.7 bar)
- Variety of end connections and materials available

CH Series

- Seat ring continuously cleaned by media, avoiding secondary pollution
- Maximum working pressure: 6000 psig (414 bar)
- Working temperature: -10°F to 400°F (-23°C to 204°C)
- Cracking pressure: 1/3 to 25 psig (0.02 to 1.7 bar)
- Variety of end connections and materials available

CO Series

- Compact, one piece body
- Maximum working pressure: 3000 psig (207 bar)
- Working temperature: -10°F to 375°F (-23°C to 190°C)
- Cracking pressure: 1/3 to 25 psig (0.02 to 1.7 bar)
- Variety of end connections and materials available

CA and COA Series

Adjustable Cracking Pressures, Variety of Springs Available

CA Series

- Maximum working pressure: 3000 psig (207 bar)
- Working temperature: -10°F to 375°F (-23°C to 190°C)
- Cracking pressure: 3 to 600 psig (0.2 to 41.4 bar)
- Variety of end connections and materials available

COA Series

- Compact, one-piece body
- Maximum working pressure: 3000 psig (207 bar)
- Working temperature: -10°F to 375°F (-23°C to 190°C)
- Cracking pressure: 3 to 600 psig (0.2 to 41.4 bar)
- Variety of end connections and materials available

CL Series

- Maximum working pressure: 6000 psig (414 bar)
- Working temperature: -65°F to 900°F (-53°C to 482°C)
- Variety of end connections and materials available
- Union bonnet design, all-stainless steel structure, horizontal installation with bonnet nut on top

CW Series

- Maximum working pressure: 3000 psig (207 bar)
- Working temperature: -10°F to 400°F (-23°C to 204°C)
- Cracking pressure: less than 2 psig (0.14 bar)
- Variety of end connections and materials available
- All-welded design for safety

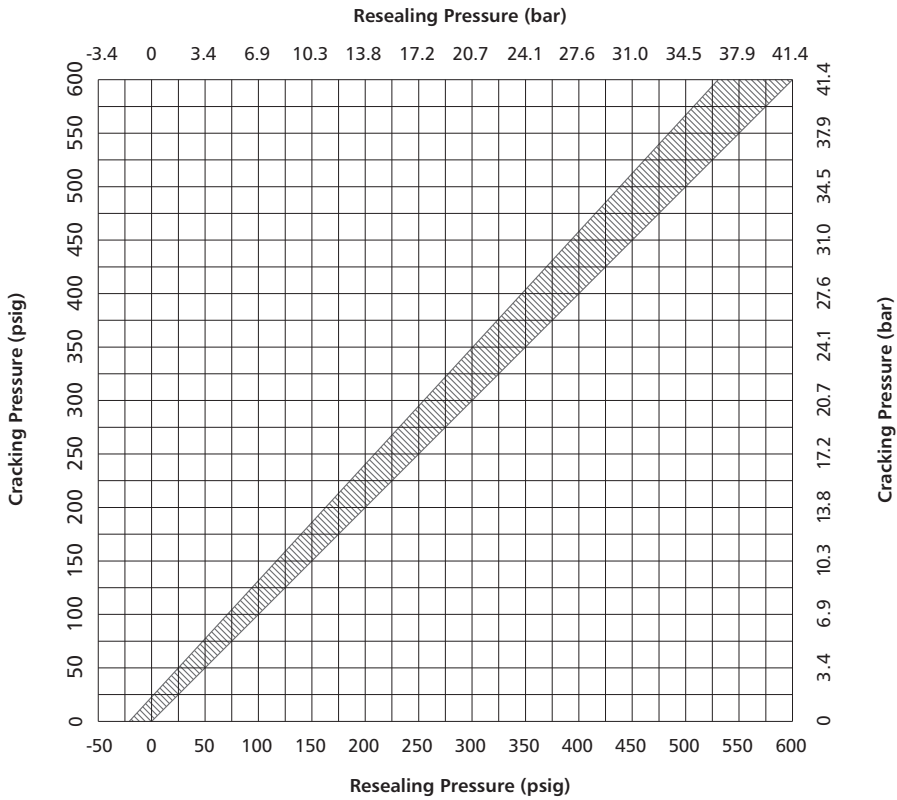
1. All valves use silicone-based and molybdenum disulfide-based lubricant.
2. Contact the authorized representative or FITOK for other materials.
3. Springs with PTFE coating are available for CV, CH, CO, CA and COA series valves.
4. Every valve is tested with nitrogen for leak-tight performance at its maximum working pressure.

Cracking Pressure and Resealing Pressure

Series	Nominal Cracking Pressure psig (bar)	Cracking Pressure Range psig (bar)	Resealing Pressure Range psig (bar)
CV	1/3 (0.02) 1 (0.06) 3 (0.21) 10 (0.68) 25 (1.7)	0 to 3 (0 to 0.21) 0 to 4 (0 to 0.28) 1 to 5 (0.06 to 0.34) 7 to 15 (0.49 to 1.1) 20 to 30 (1.4 to 2.1)	Up to 6 (0.42) downstream pressure Up to 6 (0.42) downstream pressure Up to 6 (0.42) downstream pressure 3 (0.21) or higher upstream pressure 17 (1.2) or higher upstream pressure
CH	1/3 (0.02) 1 (0.06) 3 (0.21) 10 (0.68) 25 (1.7)	0 to 3 (0 to 0.21) 0 to 4 (0 to 0.28) 1 to 5 (0.06 to 0.34) 7 to 15 (0.49 to 1.1) 20 to 30 (1.4 to 2.1)	Up to 6 (0.42) downstream pressure Up to 5 (0.35) downstream pressure Up to 2 (0.14) downstream pressure 3 (0.21) or higher upstream pressure 17 (1.2) or higher upstream pressure
CO	1/3 (0.02) 1 (0.06) 3 (0.21) 10 (0.68) 25 (1.7)	0 to 3 (0 to 0.21) 0 to 4 (0 to 0.28) 1 to 5 (0.06 to 0.34) 7 to 13 (0.49 to 0.9) 20 to 30 (1.4 to 2.1)	6 to 20 (0.42 to 1.4) downstream pressure 5 to 20 (0.35 to 1.4) downstream pressure 3 to 20 (0.21 to 1.4) downstream pressure 3 to 10 (0.21 to 0.68) downstream pressure 5 (0.35) or higher upstream pressure
CA	3 to 50 (0.21 to 3.4) 50 to 150 (3.4 to 10.3)	—————	Refer to the chart below
COA	150 to 350 (10.3 to 24.1) 350 to 600 (24.1 to 41.3)		
CL	—————	0 to 4 (0 to 0.28)	Up to 6 (0.42) downstream pressure
CW	—————	0 to 2 (0 to 0.14)	2 (0.14) or higher upstream pressure

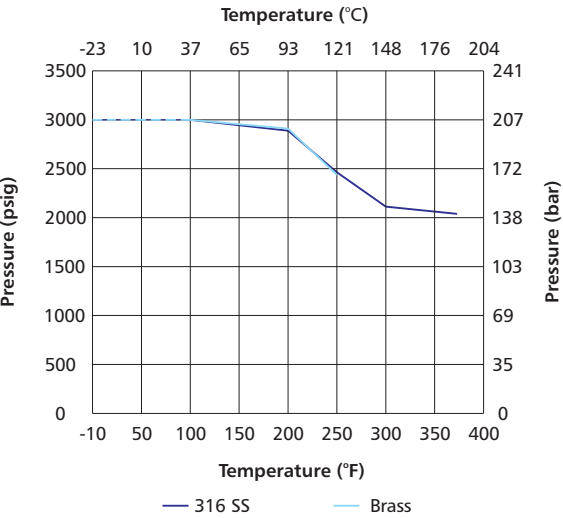
Cracking Pressure and Resealing Pressure

CA and COA Series

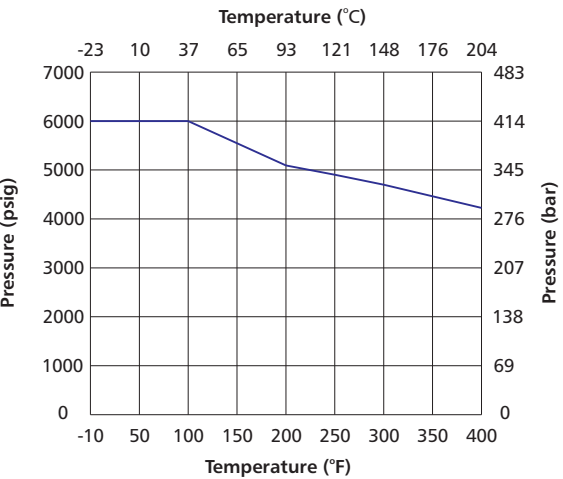


Pressure vs. Temperature

CV, CO, CA and COA Series
FKM Seat in 316 SS Body and Buna N in Brass Body



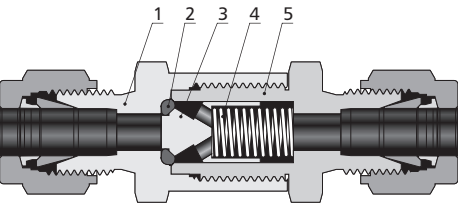
CH Series
FKM Seat in 316 SS Body



Contact the authorized representative or FITOK for curve graph of other materials

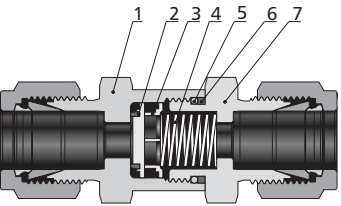
Standard Materials of Construction

CV Series



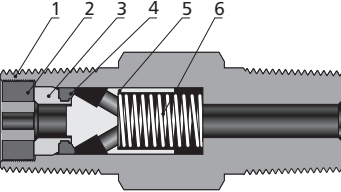
		Valve Material Grade/ASTM Specification	
Component		316 SS	Brass
1	Inlet Body	316 SS/A479	Brass C36000/B16
2	O-ring	Fluorocarbon FKM	Buna N
3	Poppet	316 SS/A479	Brass C36000/B16
4	Spring	302 SS/A313	302 SS/A313
5	Outlet Body	316 SS/A479	Brass C36000/B16

CH Series



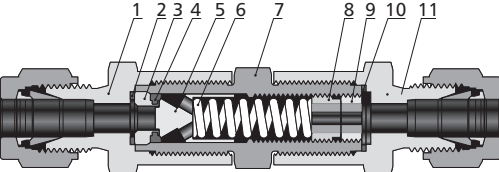
CH Series		
Component		Valve Material Grade/ASTM Specification
1	Inlet Body	316 SS/A479
2	Poppet	Fluorocarbon FKM - bonded 316 SS/A479
3	Poppet Stop	316 SS/A240
4	Spring	302 SS/A313
5	O-ring	Fluorocarbon FKM
6	Backup Ring	PTFE/D1710
7	Outlet Body	316 SS/A479

CO Series



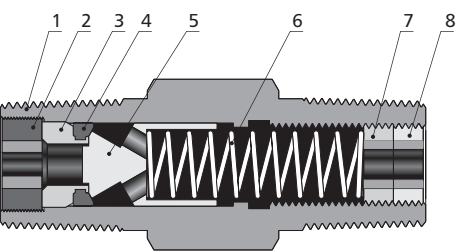
CO Series			
Component		Valve Material Grade/ASTM Specification	
		316 SS	Brass
1	Body	316 SS/A479	Brass C36000/B16
2	Insert Locking Screw	316 SS/A276 or A479	Brass C36000/B16
3	Insert	316 SS/A479	Brass C36000/B16
4	O-ring	Fluorocarbon FKM	Buna N
5	Poppet	316 SS/A479	Brass C36000/B16
6	Spring	302 SS/A313	302 SS/A313

CA Series



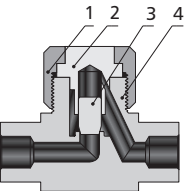
CA Series			
Component		Valve Material Grade/ASTM Specification	
		316 SS	Brass
1	Inlet Body	316 SS/A479	Brass C36000/B16
2	Inlet Gasket	PTFE-coated 316 SS/A240	PTFE-coated 316 SS/A240
3	Insert	316 SS/A479	Brass C36000/B16
4	O-ring	Fluorocarbon FKM	Buna N
5	Poppet	316 SS/A479	Brass C36000/B16
6	Spring	302 SS/A313	302 SS/A313
7	Center Body	316 SS/A479	Brass C36000/B16
8	Adjusting Screw	316 SS/A276	316 SS/A276
9	Locking Screw	316 SS/A276	316 SS/A276
10	Outlet Gasket	PTFE-coated 316 SS/A240	PTFE-coated 316 SS/A240
11	Outlet Body	316 SS/A479	Brass C36000/B16

COA Series



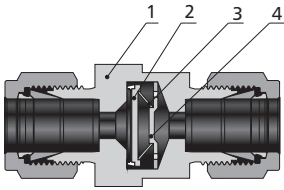
COA Series			
Component		Valve Material Grade/ASTM Specification	
		316 SS	Brass
1	Body	316 SS/A479	Brass C36000/B16
2	Insert Locking Screw	316 SS/A479	Brass C36000/B16
3	Insert	316 SS/A479	Brass C36000/B16
4	O-ring	Fluorocarbon FKM	Buna N
5	Poppet	316 SS/A479	Brass C36000/B16
6	Spring	302 SS/A313	302 SS/A313
7	Adjusting Screw	316 SS/A276	316 SS/A276
8	Locking Screw	316 SS/A276	316 SS/A276

CL Series



CL Series		
Component		Valve Material Grade/ASTM Specification
1	Bonnet Nut	316 SS/A479
2	Bonnet	316 SS/A479
3	Poppet	S17400/A564
4	Body	316 SS/A479

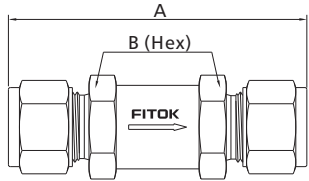
CW Series



CW Series		
Component		Valve Material Grade/ASTM Specification
1	Body	316L SS/A479
2	Poppet	Fluorocarbon FKM - bonded 316 SS/A479
3	Guidance Wafer	Alloy X - 750/B637
4	Poppet Stop	316L SS/A240

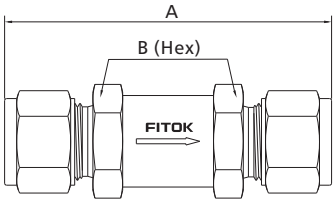
Dimensions

CV Series



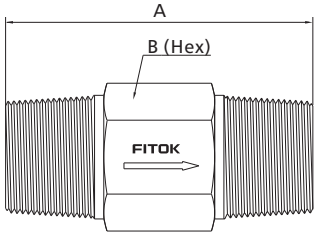
Basic Ordering Number	Connection Type and Size		Cv	Body Size	Dimension, in. (mm)	
	Inlet	Outlet			A	B
CV □□-FL2-	1/8" FITOK	1/8" FITOK	0.10	4	2.14 (54.3)	5/8 (15.88)
CV □□-FL4-	1/4" FITOK	1/4" FITOK	0.47	4	2.35 (59.7)	
CV □□-FL6-	3/8" FITOK	3/8" FITOK	1.47	8	3.17 (80.5)	7/8 (22.23)
CV □□-FL8-	1/2" FITOK	1/2" FITOK	1.68	8	3.42 (86.9)	
CV □□-FL12-	3/4" FITOK	3/4" FITOK	4.48	12	4.32 (110)	1 1/4 (31.75)
CV □□-FL16-	1" FITOK	1" FITOK		12	4.74 (120)	1 3/8 (34.93)
CV □□-ML6-	6 mm FITOK	6 mm FITOK	0.47	4	2.36 (59.9)	5/8 (15.88)
CV □□-ML10-	10 mm FITOK	10 mm FITOK	1.68	8	3.32 (84.3)	7/8 (22.23)
CV □□-ML12-	12 mm FITOK	12 mm FITOK		8	3.42 (86.9)	
CV □□-FNS2-	1/8 Female NPT	1/8 Female NPT	0.10	4	1.89 (48.0)	5/8 (15.88)
CV □□-FNS4-	1/4 Female NPT	1/4 Female NPT	0.47	4	2.15 (54.6)	3/4 (19.05)
CV □□-FNS6-	3/8 Female NPT	3/8 Female NPT	1.47	8	2.98 (75.7)	7/8 (22.23)
CV □□-FNS8-	1/2 Female NPT	1/2 Female NPT	1.68	8	3.58 (90.9)	1 1/16 (26.99)
CV □□-FNS12-	3/4 Female NPT	3/4 Female NPT	4.48	12	4.08 (104)	1 1/4 (31.75)
CV □□-FNS16-	1 Female NPT	1 Female NPT		12	4.84 (123)	1 5/8 (41.28)
CV □□-NS2-	1/8 Male NPT	1/8 Male NPT	0.10	4	1.71 (43.4)	5/8 (15.88)
CV □□-NS4-	1/4 Male NPT	1/4 Male NPT	0.47	4	2.09 (53.1)	
CV □□-NS6-	3/8 Male NPT	3/8 Male NPT	1.47	8	2.78 (70.6)	7/8 (22.23)
CV □□-NS8-	1/2 Male NPT	1/2 Male NPT	1.68	8	3.16 (80.3)	
CV □□-NS12-	3/4 Male NPT	3/4 Male NPT	4.48	12	4.08 (104)	1 1/4 (31.75)
CV □□-NS16-	1 Male NPT	1 Male NPT		12	4.52 (115)	1 5/8 (41.28)
CV □□-MFR4-	1/4" Male FR	1/4" Male FR	0.47	4	2.21 (56.1)	5/8 (15.88)
CV □□-MFR8-	1/2" Male FR	1/2" Male FR	1.68	8	3.56 (90.4)	15/16 (23.81)
CV □□-MFR12-	3/4" Male FR	3/4" Male FR	4.48	12	4.64 (118)	1 5/8 (41.28)
CV □□-MFR16-	1" Male FR	1" Male FR		12	4.76 (121)	

CH Series



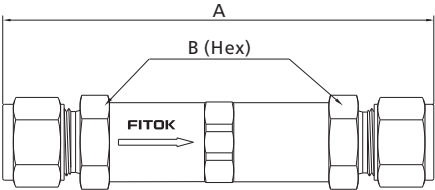
Basic Ordering Number	Connection Type and Size		Pressure Rating at 100° F (37° C) psig (bar)	CV	Body Size	Dimension, in. (mm)	
	Inlet	Outlet				A	B
CH □□-FL2-	1/8" FITOK	1/8" FITOK	414 (6000)	0.67	4	2.27 (57.7)	11/16 (17.46)
CH □□-FL4-	1/4" FITOK	1/4" FITOK			4	2.43 (61.7)	
CH □□-FL6-	3/8" FITOK	3/8" FITOK		1.8	8	2.75 (69.9)	1 (25.4)
CH □□-FL8-	1/2" FITOK	1/2" FITOK			8	2.96 (75.2)	
CH □□-FL12-	3/4" FITOK	3/4" FITOK	344 (5000)	4.7	16	3.52 (89.4)	1 5/8 (41.28)
CH □□-FL16-	1" FITOK	1" FITOK	323 (4700)		16	3.88 (98.6)	
CH □□-ML6-	6 mm FITOK	6 mm FITOK	414 (6000)	0.67	4	2.43 (61.7)	11/16 (17.46)
CH □□-ML8-	8 mm FITOK	8 mm FITOK			8	2.70 (68.6)	
CH □□-ML10-	10 mm FITOK	10 mm FITOK		1.8	8	2.80 (71.1)	1 (25.4)
CH □□-ML12-	12 mm FITOK	12 mm FITOK			8	2.96 (75.2)	
CH □□-ML22-	22 mm FITOK	22 mm FITOK	337(4900)	4.7	16	3.48 (88.4)	1 5/8 (41.28)
CH □□-ML25-	25 mm FITOK	25 mm FITOK	316(4600)		16	3.88 (98.6)	
CH □□-FNS4-	1/4 Female NPT	1/4 Female NPT	414 (6000)	0.67	4	2.13 (54.1)	11/16 (17.46)
CH □□-FNS6-	3/8 Female NPT	3/8 Female NPT	365(5300)	1.8	8	2.55 (64.8)	1(25.4)
CH □□-FNS8-	1/2 Female NPT	1/2 Female NPT	337(4900)		8	3.03 (77.0)	1 1/16 (26.99)
CH □□-FNS12-	3/4 Female NPT	3/4 Female NPT	316(4600)	4.7	16	3.23 (82.0)	1 5/8 (41.28)
CH □□-FNS16-	1 Female NPT	1 Female NPT	303(4400)		16	3.83 (97.3)	
CH □□-NS2-	1/8 Male NPT	1/8 Male NPT	414 (6000)	0.67	4	1.79 (45.4)	11/16 (17.46)
CH □□-NS4-	1/4 Male NPT	1/4 Male NPT			4	2.17 (55.1)	
CH □□-NS6-	3/8 Male NPT	3/8 Male NPT		1.8	8	2.36 (59.9)	1 (25.4)
CH □□-NS8-	1/2 Male NPT	1/2 Male NPT			8	2.73 (69.3)	
CH □□-NS12-	3/4 Male NPT	3/4 Male NPT	344 (5000)	4.7	16	3.29 (83.6)	1 5/8 (41.28)
CH □□-NS16-	1 Male NPT	1 Male NPT			16	3.67 (93.2)	
CH □□-FRT4-	1/4 Female BSPT	1/4 Female BSPT	414 (6000)	0.67	4	2.28 (57.9)	11/16 (17.46)
CH □□-FRT8-	1/2 Female BSPT	1/2 Female BSPT	351(5100)	1.8	8	3.29 (83.6)	1 1/16 (26.99)
CH □□-FRT12-	3/4 Female BSPT	3/4 Female BSPT	330(4800)	4.7	16	3.55 (90.2)	1 5/8 (41.28)
CH □□-FRT16-	1 Female BSPT	1 Female BSPT	303(4400)		16	3.83 (97.3)	
CH □□-RT4-	1/4 Male BSPT	1/4 Male BSPT	414 (6000)	0.67	4	2.17 (55.1)	11/16 (17.46)
CH □□-RT8-	1/2 Male BSPT	1/2 Male BSPT		1.8	8	2.73 (69.3)	1 (25.4)
CH □□-RT12-	3/4 Male BSPT	3/4 Male BSPT	344 (5000)	4.7	16	3.35 (85.1)	1 5/8 (41.28)
CH □□-RT16-	1 Male BSPT	1 Male BSPT			16	3.67 (93.2)	
CH □□-MFR4-	1/4" Male FR	1/4" Male FR	414 (6000)	0.67	4	2.28 (57.9)	11/16 (17.46)
CH □□-MFR8-	1/2" Male FR	1/2" Male FR	296(4300)	1.8	8	2.73 (69.3)	1 (25.4)
CH □□-MFR12-	3/4" Male FR	3/4" Male FR	254(3700)	4.7	16	3.78 (96.0)	1 5/8 (41.28)
CH □□-MFO4-	1/4" Male FO	1/4" Male FO	414 (6000)	0.67	4	1.98 (50.3)	11/16 (17.46)
CH □□-MFO8-	1/2" Male FO	1/2" Male FO		1.8	8	2.35 (59.7)	1 (25.4)
CH □□-MFO12-	3/4" Male FO	3/4" Male FO	344 (5000)	4.7	16	2.90 (73.7)	1 5/8 (41.28)
CH □□-MFO16-	1" Male FO	1" Male FO			16		

CO Series



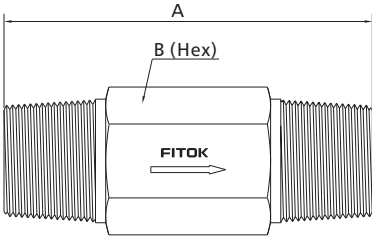
Basic Ordering Number	Connection Type and Size		Cv	Body Size	Dimension, in. (mm)	
	Inlet	Outlet			A	B
CO □□-FNS4-	1/4 Female NPT	1/4 Female NPT	0.35	4	2.41 (61.2)	3/4 (19.05)
CO □□-FNS8-	1/2 Female NPT	1/2 Female NPT	1.20	8	3.71 (94.2)	1 1/16 (26.99)
CO □□-NS4-	1/4 Male NPT	1/4 Male NPT	0.35	4	1.62 (41.1)	9/16 (14.29)
CO □□-NS8-	1/2 Male NPT	1/2 Male NPT	1.20	8	2.28 (57.9)	7/8 (22.23)
CO □□-FRT4-	1/4 Female BSPT	1/4 Female BSPT	0.35	4	2.54 (64.5)	3/4 (19.05)
CO □□-RT4-	1/4 Male BSPT	1/4 Male BSPT			1.62 (41.1)	9/16 (14.29)

CA Series



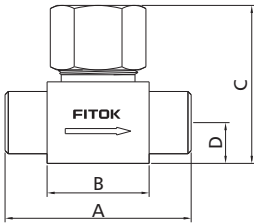
Basic Ordering Number	Connection Type and Size		Cv	Body Size	Dimension, in. (mm)	
	Inlet	Outlet			A	B
CA □□-FL4-	1/4" FITOK	1/4" FITOK	0.37	4	3.23 (82.0)	5/8 (15.88)
CA □□-ML6-	6 mm FITOK	6 mm FITOK			3.32 (84.3)	
CA □□-ML8-	8 mm FITOK	8 mm FITOK			3.09 (78.5)	
CA □□-MFR4-	1/4" Male FR	1/4" Male FR				

COA Series



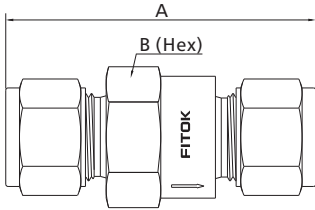
Basic Ordering Number	Connection Type and Size		Cv	Body Size	Dimension, in. (mm)	
	Inlet	Outlet			A	B
COA □□-FNS4-	1/4 Female NPT	1/4 Female NPT	0.35	4	2.98 (75.7)	3/4 (19.05)
COA □□-NS4-	1/4 Male NPT	1/4 Male NPT	0.35	4	1.62 (41.1)	9/16 (14.29)
COA □□-NS8-	1/2 Male NPT	1/2 Male NPT	1.20	8	2.56 (65.0)	7/8 (22.23)
COA □□-RT4-	1/4 Male BSPT	1/4 Male BSPT	0.35	4	1.62 (41.1)	9/16 (14.29)
COA □□-RT8-	1/2 Male BSPT	1/2 Male BSPT	1.20	8	2.56 (65.0)	7/8 (22.23)

CL Series



Basic Ordering Number	Connection Type and Size		Cv	Dimension, in. (mm)			
	Inlet	Outlet		A	B	C	D
CL□□ -FL4	1/4" FITOK	1/4" FITOK	0.30	2.40 (61.0)	1.01 (25.7)	1.47 (37.3)	0.39 (9.9)
CL□□ -FL6	3/8" FITOK	3/8" FITOK	0.64	2.83 (71.9)	1.31 (33.3)	1.85 (47.0)	0.50 (12.7)
CL□□ -FL8	1/2" FITOK	1/2" FITOK	2.20	3.92 (99.6)	2.19 (55.6)	2.44 (62.0)	0.62 (15.7)
CL□□ -FL12	3/4" FITOK	3/4" FITOK					
CL□□ -ML6	6 mm FITOK	6 mm FITOK	0.30	2.40 (61.0)	1.01 (25.7)	1.47 (37.3)	0.39 (9.9)
CL□□ -FNS2	1/8 Female NPT	1/8 Female NPT					
CL□□ -FNS4	1/4 Female NPT	1/4 Female NPT	0.64	2.25 (57.2)	1.25 (31.8)	1.85 (47.0)	0.50 (12.7)
CL□□ -FNS6	3/8 Female NPT	3/8 Female NPT	2.20	3.12 (79.2)	1.86 (47.2)	2.44 (62.0)	0.62 (15.7)
CL□□ -FNS8	1/2 Female NPT	1/2 Female NPT					
CL□□ -TS4	1/4" TS	1/4" TS	0.30	1.81 (46.0)	0.9 (22.9)	1.47 (37.3)	0.39 (9.9)
CL□□ -TS6	3/8" TS	3/8" TS	0.64	2.25 (57.2)	1.25 (31.8)	1.85 (47.0)	0.50 (12.7)
CL□□ -TS8	1/2" TS	1/2" TS	2.20	3.13 (79.5)	1.88 (47.8)	2.44 (47.0)	0.62 (15.7)
CL□□ -PB4	1/4 PB	1/4 PB	0.30	1.81 (46.0)	0.9 (22.9)	1.47 (37.3)	0.39 (9.9)
CL□□ -PB6	3/8 PB	3/8 PB	0.64	2.25 (57.2)	1.25 (31.8)	1.85 (47.0)	0.50 (12.7)
CL□□ -PB8	1/2 PB	1/2 PB	2.20	3.13 (79.5)	1.88 (47.8)	2.44 (62.0)	0.62 (15.7)

CW Series



Basic Ordering Number	Connection Type and Size		Cv	Dimension, in. (mm)	
	Inlet	Outlet		A	B
CW□□ -TB4	1/4" TB	1/4" TB	0.55	1.24 (31.5)	7/8 (22.23)
CW□□ -TB6	3/8" TB	3/8" TB	0.70		
CW□□ -TB8	1/2" TB	1/2" TB			
CW□□ -MTB6	6 mm MTB	6 mm MTB	0.55	1.80 (45.7)	
CW□□ -MFR4	1/4" Male FR	1/4" Male FR	0.70		
CW□□ -MFR8	1/2" Male FR	1/2" Male FR	0.70	2.06 (52.3)	1 (25.4)
CW□□ -FL4	1/4" FITOK	1/4" FITOK	0.55	1.96 (49.8)	7/8 (22.23)
CW□□ -ML6	6 mm FITOK	6 mm FITOK	0.55		

1. FITOK means FITOK double ferrule tube fittings, FO means O-ring seal fittings, FR means metal gasket seal fittings, TB means fractional tube butt weld, MTB means metric tube butt weld, TS means fractional tube socket weld, PB means pipe butt weld.
2. Sizes and types listed are standard. Other sizes and types are available upon request. For special sizes and types, refer to ordering information.
3. Dimensions shown with FITOK nuts finger-tightened. All dimensions are for reference only and are subject to change. For dimensions not shown above, contact the authorized representative or FITOK.

Flow Data at 70°F (20°C)

CV Series

Air Flow (std L/min)	Cracking Pressure (psig)					
	1	10	25	1	10	25
	Cv = 0.10			Cv = 0.47		
5	10	--	--	114	--	--
10	29	--	--	157	36	--
12.5	38	11	--	176	150	--
15	48	23	--	196	170	--
25	72	62	2	253	--	18
30	78	--	17	279	--	146
35	85	--	34	309	--	330
50	103	--	77	402	--	--
80	144	--	136	580	--	--
100	171	--	160	700	--	--

Air Flow (std L/min)	Cracking Pressure (psig)					
	1	10	25	1	10	25
	Cv = 1.47			Cv = 1.68		
5	325	--	--	460	--	--
10	623	--	--	747	--	--
15	832	377	--	916	475	--
25	1146	800	32	1255	939	40
35	1440	1150	509	1594	1347	654
50	1879	1686	1072	2101	1960	1230
80	2761	2756	2087	--	--	2400
100	--	--	2763	--	--	--

Air Flow (std L/min)	Cracking Pressure (psig)		
	1	10	25
	Cv = 4.48		
5	468	--	--
10	975	--	--
15	1208	491	--
20	1435	945	--
25	1658	1232	--
35	2122	1826	1059
50	2800	2678	1905
60	--	--	2454

Water Flow (L/min)	Cracking Pressure (psig)					
	1	10	25	1	10	25
	Cv = 0.10			Cv = 0.47		
5	0.3	--	--	2.1	--	--
10	1.2	--	--	6.1	--	--
12.5	1.4	0.3	--	6.5	6.5	--
15	1.6	0.7	--	6.9	6.9	--
20	1.9	1.2	--	7.8	7.8	--
27.5	2.3	1.7	0.2	--	--	1.2
35	2.6	2.3	0.9	--	--	5.0
40	2.8	2.4	1.3	--	--	7.5
70	3.6	3.5	3.3	--	--	--
80	3.8	3.8	3.8	--	--	--

Water Flow (L/min)	Cracking Pressure (psig)					
	1	10	25	1	10	25
	Cv = 1.47			Cv = 1.68		
2.5	4.6	--	--	7.4	--	--
5	8.3	--	--	13.5	--	--
10	17.5	--	--	22.6	--	--
11	--	3.3	--	--	6.8	--
12.5	--	7.7	--	--	12.9	--
15	--	13.1	--	--	20.0	--
20	--	20.0	--	--	--	--
27.5	--	--	2.2	--	--	7.3
30	--	--	4.4	--	--	12
35	--	--	8.8	--	--	19.5

Water Flow (L/min)	Cracking Pressure (psig)		
	1	10	25
	Cv = 4.48		
2.5	29.5	--	--
5	45.0	--	--
10	59.3	--	--
12.5	65.8	65.8	--
15	72.3	72.3	--
20	85.4	85.4	--
25.5	--	--	22
26	--	--	48
27	--	--	90

CH Series

Air Flow (std L/min) Inlet Pressure (psig)	Cracking Pressure (psig)		
	1	10	25
	Cv = 0.67		
5	8	--	--
10	80	--	--
25	160	200	--
40	180	200	--
60	600	390	180
80	900	880	640
95	1200	1060	830
110	--	1240	1020
128	--	1400	1200
140	--	--	1340

Air Flow (std L/min) Inlet Pressure (psig)	Cracking Pressure (psig)		
	1	10	25
	Cv = 1.8		
2	--	--	--
10	620	--	--
25	1140	520	--
30	1320	720	190
40	1620	1130	590
50	1940	1520	1000
60	2250	1900	1400
78	2800	2520	2080
86	--	2800	2430
97	--	--	2800

Air Flow (std L/min) Inlet Pressure (psig)	Cracking Pressure (psig)		
	1	10	25
	Cv = 4.7		
5	520	--	--
10	940	--	--
15	1240	540	--
20	1560	880	--
25	1620	1100	--
30	1800	1325	420
35	2080	1520	720
40	2800	1760	980
50	2280	2240	1800
60	2560	2650	2280

Water Flow (L/min) Pressure Drop (psig)	Cracking Pressure (psig)		
	1	10	25
	Cv = 0.67		
1	0.2	--	--
6	1.9	--	--
10	5.7	--	--
12	7.5	0.2	--
20	--	1.4	--
26	--	2.9	--
36	--	7.5	0.9
50	--	--	3.4
60	--	--	5.6
68	--	--	7.5

Water Flow (L/min) Pressure Drop (psig)	Cracking Pressure (psig)		
	1	10	25
	Cv = 1.8		
1.5	--	--	--
5.0	14.4	--	--
7.5	20.4	--	--
10.0	22.5	--	--
15	--	2.0	--
20	--	7.0	--
22	--	22.5	--
30	--	--	0.7
40	--	--	2.6
45	--	--	22.5

Water Flow (L/min) Pressure Drop (psig)	Cracking Pressure (psig)		
	1	10	25
	Cv = 4.7		
2.5	32	--	--
5.0	48	--	--
7.5	58	--	--
10.0	68	--	--
11.0	75	10	--
12.0	86	75	--
30.0	--	--	8
32.5	--	--	13
35.0	--	--	21
38.0	--	--	86

CO Series

Air Flow (std L/min) Inlet Pressure (psig)	Cracking Pressure (psig)		
	1	10	25
	Cv = 0.35		
12.5	85	--	--
25	201	121	--
50	400	327	212
75	600	539	431
100	800	750	653
112.5	--	--	750

Air Flow (std L/min) Inlet Pressure (psig)	Cracking Pressure (psig)		
	1	10	25
	Cv = 1.2		
10	366	--	--
20	679	325	--
30	1027	706	237
40	1351	1064	664
50	1692	1433	1122
60	2924	1814	1561

CA Series

Air Flow (std L/min) Inlet Pressure (psig)	Cracking Pressure (psig)			
	3	50	150	350
	Cv = 0.37			
50	459	35	--	--
150	1424	851	40	--
250	2182	1769	440	--
350	--	2800	914	--
400	--	--	1173	303
500	--	--	1785	914
600	--	--	2583	1512
700	--	--	--	2121

CL Series

Air Flow (std L/min) Inlet Pressure (psig)			
	Cv = 0.30	Cv = 0.64	Cv = 2.20
0.2	10	32	96
2	37	91	350
20	146	461	1040
100	525	1404	3523
200	800	2508	5485
400	1495	4246	--
600	2197	5353	--
1000	3842	--	--

Water Flow (L/min) Pressure Drop (psig)	Cracking Pressure (psig)		
	1	10	25
	Cv = 0.35		
7.5	2.6	--	--
15	5.3	0.9	--
22.5	7.7	2.9	--
30	--	5	0.6
60	--	--	3.7
90	--	--	6.7

Water Flow (L/min) Pressure Drop (psig)	Cracking Pressure (psig)		
	1	10	25
	Cv = 1.2		
5	10.3	--	--
7.5	14.1	--	--
10	17.3	--	--
15	--	2.3	--
30	--	13.2	1.0
37.5	--	17.8	2.6
75	--	--	9.8

Water Flow (L/min) Pressure Drop (psig)	Cracking Pressure (psig)			
	3	50	150	350
	Cv = 0.37			
12.5	1.7	--	--	--
25	4.3	--	--	--
37.5	6.6	--	--	--
75	--	1.9	--	--
150	--	6.4	--	--
175	--	7.6	0.8	--
250	--	--	3.8	--
350	--	--	8.0	--
400	--	--	--	1.8
500	--	--	--	5.1
550	--	--	--	6.7

Water Flow (L/min) Pressure Drop (psig)			
	Cv = 0.30	Cv = 0.64	Cv = 2.20
0.2	0.5	1.3	3.8
2	1.6	4.0	13.2
20	5.1	13.3	38.2
100	11.7	28.9	85.3
200	16.8	38.5	--
400	23.0	53.6	--
600	29.1	67.0	--
1000	34.5	81.8	--

COA Series

Air Flow (std L/min) Inlet Pressure (psig)	Cracking Pressure (psig)			
	3	50	150	350
	Cv = 0.35			
50	323	--	--	--
150	1165	841	--	--
250	2039	1769	615	--
300	2425	2800	890	--
400	--	--	1502	246
500	--	--	2098	726
600	--	--	2692	1207
700	--	--	--	1700

Air Flow (std L/min) Inlet Pressure (psig)	Cracking Pressure (psig)			
	3	50	150	350
	Cv = 1.2			
25	498	--	--	--
50	1553	--	--	--
75	2162	615	--	--
125	--	1682	--	--
175	--	2758	763	--
250	--	--	1859	--
300	--	--	2634	--
350	--	--	--	155
400	--	--	--	1665
450	--	--	--	2382

CW Series

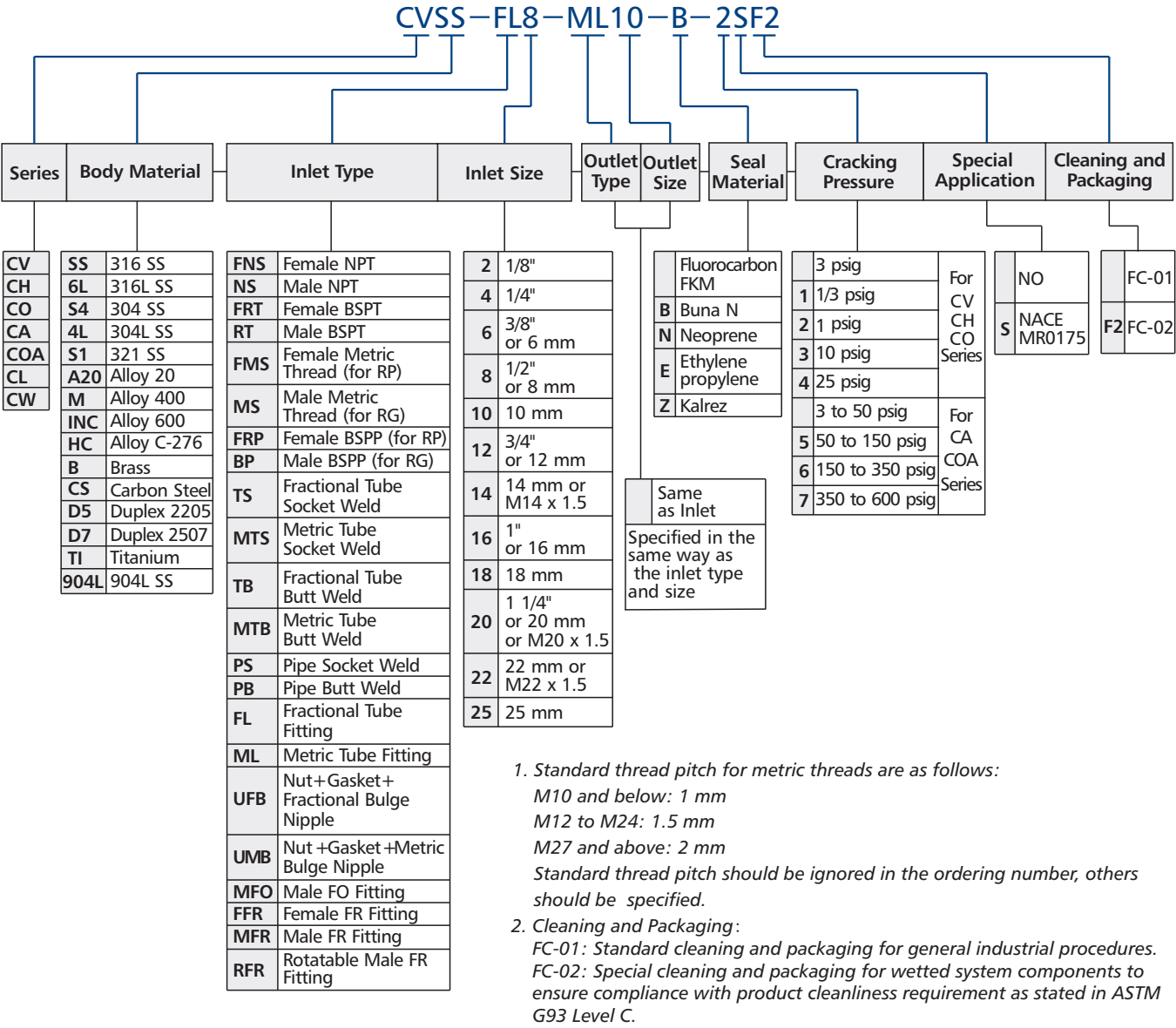
Air Flow (std L/min) Inlet Pressure (psig)	Cv = 0.55	Cv = 0.70
0.1	9.5	27
0.2	14	34
0.4	20	50
0.6	26	64
1.0	35	85
2	56	130
4	86	190
6	140	470
10	170	590
50	450	1040

Water Flow (L/min) Pressure Drop (psig)	Cracking Pressure (psig)			
	3	50	150	350
	Cv = 0.35			
12.5	1.5	--	--	--
25	4.1	--	--	--
37.5	6.4	--	--	--
75	--	1.8	--	--
150	--	6.3	--	--
175	--	7.5	1.1	--
250	--	--	4.5	--
350	--	--	8.6	--
400	--	--	--	1.8
500	--	--	--	5.1
550	--	--	--	6.7

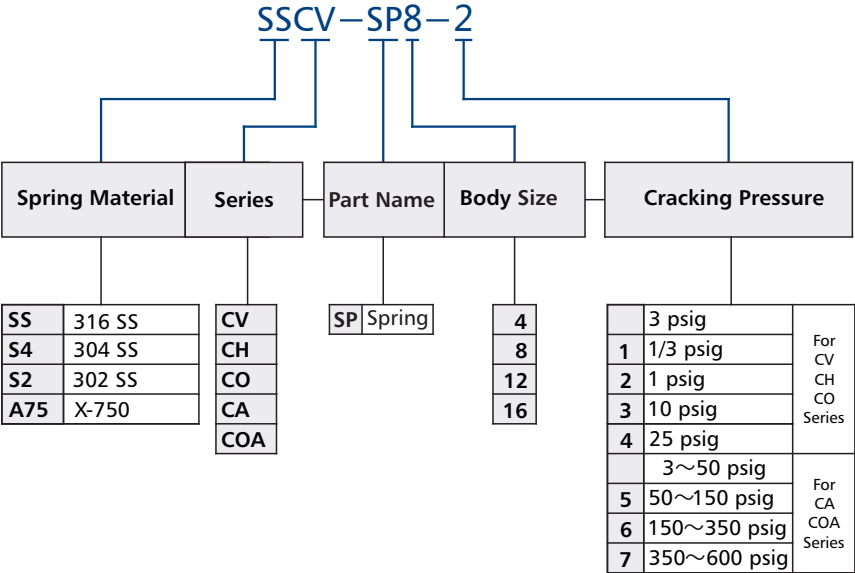
Water Flow (L/min) Pressure Drop (psig)	Cracking Pressure (psig)			
	3	50	150	350
	Cv = 1.2			
12.5	3.0	--	--	--
25	9.3	--	--	--
37.5	15.2	--	--	--
75	--	5.3	--	--
150	--	17.6	--	--
175	--	21.4	2.5	--
250	--	--	10.3	--
350	--	--	20.2	--
400	--	--	--	4.4
500	--	--	--	13.3
550	--	--	--	21.5

Water Flow (L/min) Pressure Drop (psig)	Cv = 0.55	Cv = 0.70
0.1	0.66	1.2
0.2	0.88	1.5
0.4	1.3	2.1
0.6	1.6	2.6
1.0	2	3.4
2	3	4.6
4	4	6.5
6	5.1	7.9
10	6.5	11
50	15	24

Ordering Information



Ordering Information of Spring Kits



Excess Flow Valves

EV Series

Introduction

Applied to industry use. If downstream line ruptures, the excess flow valve can stop uncontrolled release of system media. When system works normally, the working element remains in the open position by spring. If the excess flow occurs downstream, the working element quickly moves to the tripped position to stop bleeding. when system pressure reaches balance through the bleed vent, the spring can reset the working element to the open position automatically. The flow which through bleed vent should be lower than one percent of the flow rate in the trip range.

Features

- Compact design for convenient installation
- Maximum working pressure: 6000 psig (414 bar)
- Working temperature: -10°F to 400°F (-23°C to 204°C)
- Variety of end connections
- Stainless steel construction
- Leak-tight performance testing for every valve with nitrogen at the maximum working pressure



End Connection:
tube fitting, thread or face sealed

- Easy installation
- Improved system reliability

Spring Drive to Brake

- Easy operation
- Enabled to work in any direction and improve the safety of system

All Metal Seat

- Enhanced durability
- No maintenance needed

Working Element

- Improved capability and reliability
- High flow capability
- Nuisance tripping eliminated

Bleed Vent

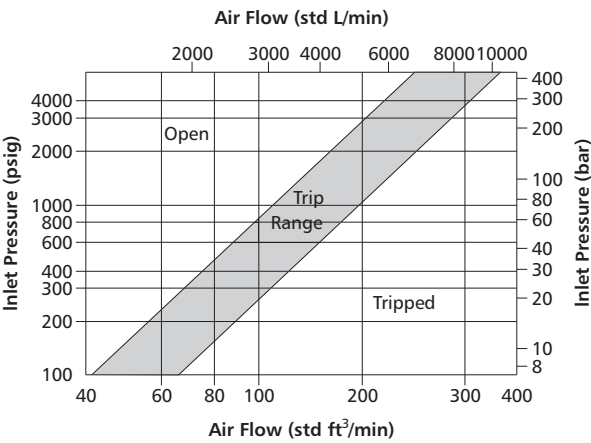
- Eliminate complicated by-pass mechanism
- Spring resets the element automatically

Temperature Ranges for Different Seal Materials

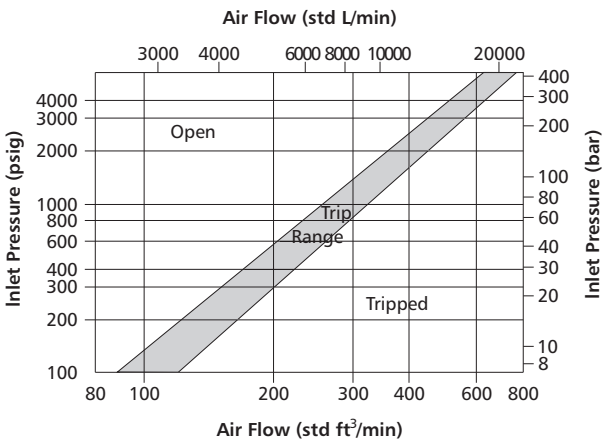
O-ring Material	Temperature Ranges °F (°C)
Buna N	-40 to 250 (-40 to 121)
Ethylene Propylene	-50 to 300 (-45 to 148)
Fluorocarbon FKM	-10 to 400 (-23 to 204)
Kalrez	-10 to 527 (-23 to 275)
Neoprene	-40 to 250 (-40 to 121)

Flow Data at 70°F (20°C)

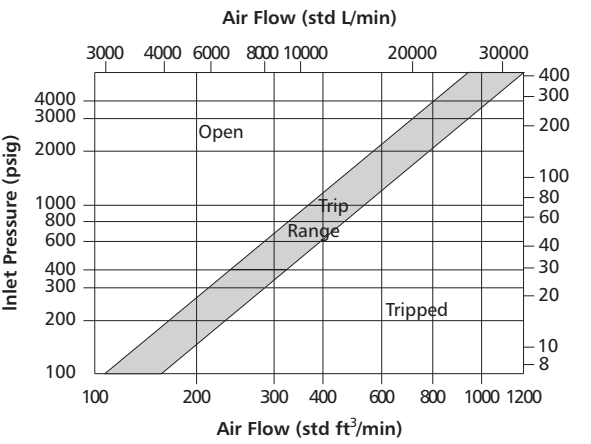
Orifice Size: 0.19 in. (4.8 mm)



Orifice Size: 0.33 in. (8.4mm)



Orifice Size: 0.39 in. (10 mm)

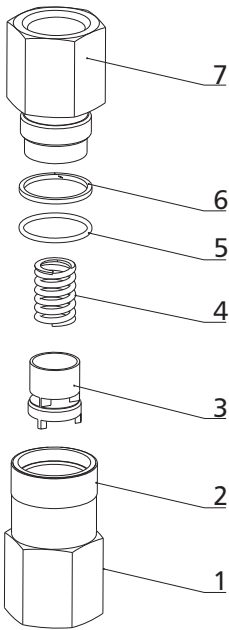


Water Flow

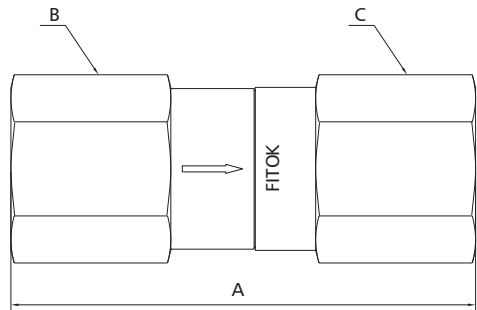
Orifice in. (mm)	Trip Range Std ft³/min (L/min)
0.19 (4.8)	0.52 to 0.77 (14.7 to 21.9)
0.33 (8.4)	1.09 to 1.34 (31.0 to 37.8)
0.39 (10)	1.50 to 2.00 (42.3 to 56.3)

Standard Materials of Construction

Standard Materials of Construction		
Component		Material Grade/ASTM Specification
1	Inlet Body	316 SS/A479
2	Mark Ring	6061 Al/B491
3	Working Element	316 SS/A479
4	Spring	302 SS/A313
5	O-ring	Fluorocarbon FKM
6	Seal Ring	PTFE/D1710
7	Outlet Body	316 SS/A479



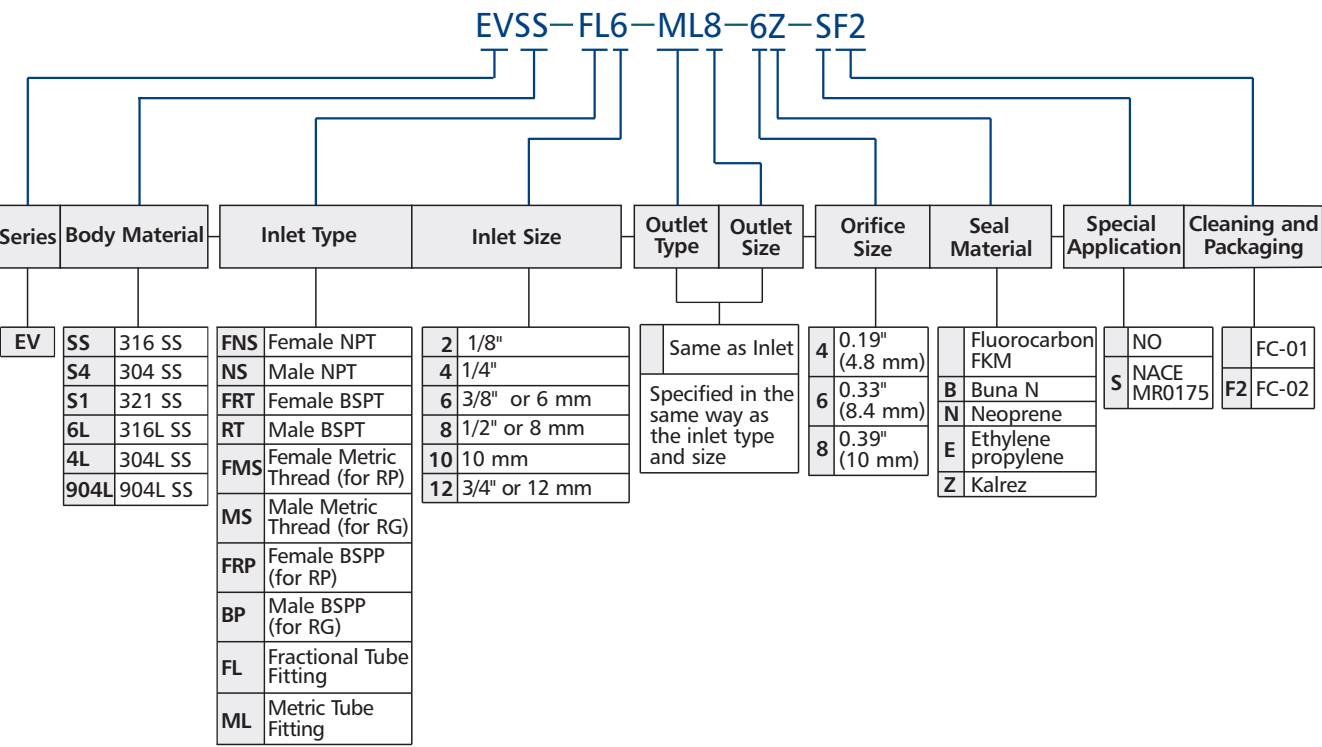
Dimensions



Basic Ordering Number	Connections Type and Size		Orifice in. (mm)	Dimension, in. (mm)		
	Inlet	Outlet		A	B	C
EV □□-FL4-4	1/4" FITOK	1/4" FITOK	0.19 (4.8)	2.43 (61.7)	11/16 (17.46)	11/16 (17.46)
EV □□-FL6-6	3/8" FITOK	3/8" FITOK	0.33 (8.4)	2.75 (69.9)	1 (25.4)	1 (25.4)
EV □□-FL8-8	1/2" FITOK	1/2" FITOK	0.39 (10)	2.64 (75.4)		
EV □□-ML6-4	6 mm FITOK	6 mm FITOK	0.19 (4.8)	2.43 (61.7)	11/16 (17.46)	11/16 (17.46)
EV □□-ML8-6	8 mm FITOK	8 mm FITOK	0.33 (8.4)	2.70 (68.6)	1 (25.4)	1 (25.4)
EV □□-ML10-6	10 mm FITOK	10 mm FITOK		2.80 (71.1)		
EV □□-ML12-8	12 mm FITOK	12 mm FITOK	0.39 (10)	2.96 (75.2)		
EV □□-FNS2-4	1/8 Female NPT	1/8 Female NPT	0.19 (4.8)	1.87 (47.5)	11/16 (17.46)	11/16 (17.46)
EV □□-FNS4-4	1/4 Female NPT	1/4 Female NPT		2.12 (53.8)		
EV □□-FNS6-6	3/8 Female NPT	3/8 Female NPT	0.33 (8.4)	2.55 (64.8)	1 (25.4)	1 (25.4)
EV □□-FNS8-8	1/2 Female NPT	1/2 Female NPT	0.39 (10)	3.03 (77.0)	1 1/16 (26.99)	1 1/16 (26.99)
EV □□-NS2-4	1/8 Male NPT	1/8 Male NPT	0.19 (4.8)	1.79 (45.5)	11/16 (17.46)	11/16 (17.46)
EV □□-NS4-4	1/4 Male NPT	1/4 Male NPT		2.17 (55.1)		
EV □□-NS6-6	3/8 Male NPT	3/8 Male NPT	0.33 (8.4)	2.36 (59.9)	1 (25.4)	1 (25.4)
EV □□-NS8-8	1/2 Male NPT	1/2 Male NPT	0.39 (10)	2.73 (69.3)		
EV □□-NS4-FL4-4	1/4 Male NPT	1/4" FITOK	0.19 (4.8)	2.30 (58.4)	11/16 (17.46)	11/16 (17.46)
EV □□-NS6-FL6-6	3/8 Male NPT	3/8" FITOK	0.33 (8.4)	2.56 (65.0)	1 (25.4)	1 (25.4)
EV □□-NS8-FL8-8	1/2 Male NPT	1/2" FITOK	0.39 (10)	2.85 (72.4)		
EV □□-NS4-FNS4-4	1/4 Male NPT	1/4 Female NPT	0.19 (4.8)	2.13 (54.1)	11/16 (17.46)	11/16 (17.46)
EV □□-NS6-FNS6-6	3/8 Male NPT	3/8 Female NPT	0.33 (8.4)	2.46 (62.5)	1 (25.4)	1 (25.4)
EV □□-NS8-FNS8-8	1/2 Male NPT	1/2 Female NPT	0.39 (10)	2.89 (73.4)		1 1/16 (26.99)

1. FITOK means FITOK double ferrule tube fittings.
2. Sizes and types listed are standard. Other sizes and types are available upon request.
3. Dimensions are shown with FITOK 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 FITOK.

Ordering Information



1. Standard thread pitch for metric threads are as follows:
M10 and below: 1 mm
M12 to M24: 1.5 mm
M27 and above: 2 mm
Standard thread pitch should be ignored in the ordering number, others should be specified.
2. Cleaning and Packaging:
FC-01: Standard cleaning and packaging for general industrial procedures.
FC-02: Special cleaning and packaging for wetted system components to ensure compliance with product cleanliness requirement as stated in ASTM G93 Level C.

Bleed Valves

RB Series

Introduction

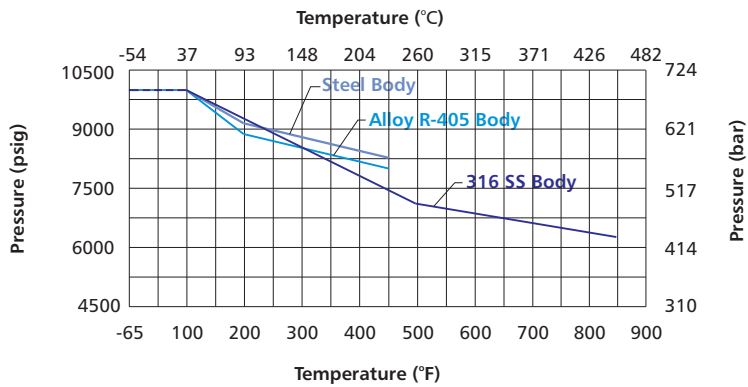
Bleed valves can be used on instrument devices such as multi-valve manifolds or gauge valves to vent signal line pressure to atmosphere before removal of an instrument or to assist in calibration.

Features

- Compact design for easy installation
- Chrome-plated stem and tip to extend cycle life
- Maximum working pressure: 10000 psig (689 bar)
- Working temperature: -65°F to 850°F (-54°C to 454°C)
- Variety of end connections
- Stainless steel, carbon steel and alloy R-405 available
- Leak-tight performance testing for every valve with nitrogen at 6000 psig



Pressure vs. Temperature

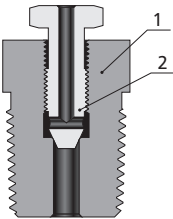


Contact the authorized representative or FITOK for curve graph of other materials.

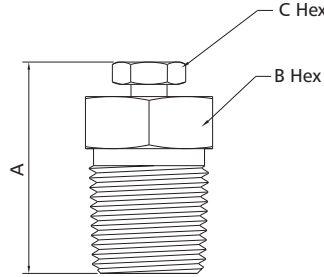
Standard Materials of Construction

Valve Body Material Grade/ASTM Specification				
Component		316 SS	Carbon Steel	Alloy R-405
1	Body	316 SS/A479	1018/A108	R-405/B164 Alloy
2	Stem	Chrome-plated 316 SS/A276	Chrome-plated 316 SS/A276	R-405/B164 Alloy

1. Lubricant is nickel antiseize, hydrocarbon carrier.
2. Contact the authorized representative or FITOK for other materials.



Dimensions



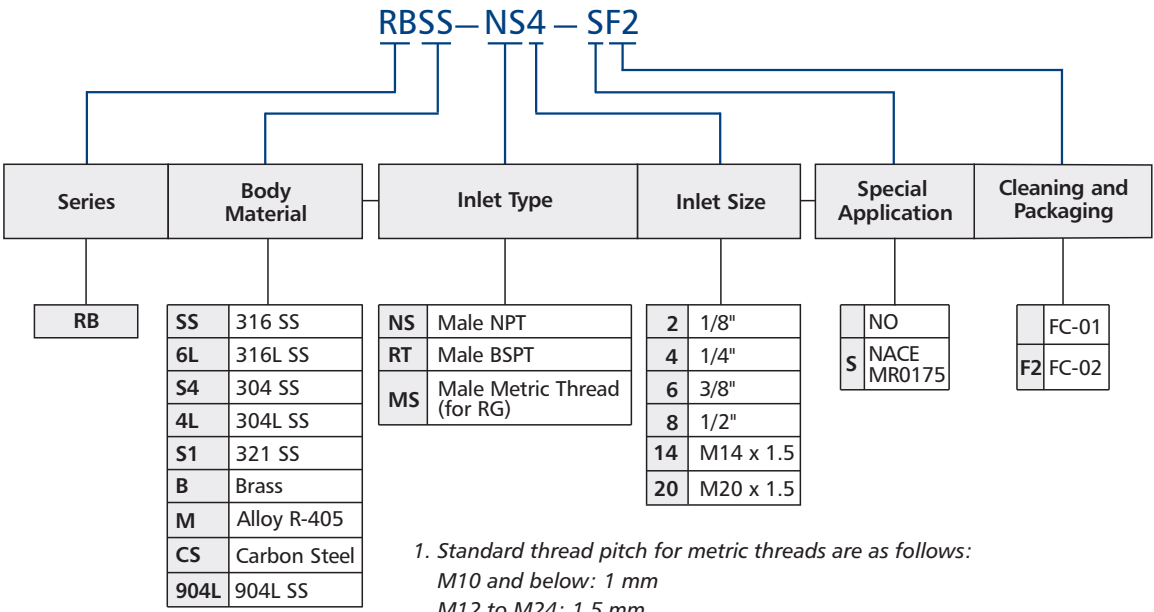
Caution

These bleed valves don't have a cap thread seal, so open the valve slowly and direct the vent hole away from the operator. These valves contain no packing, so some fluid weepage will occur when the valves are opened.

Basic Ordering Number	Inlet Type and Size	Dimension, in. (mm)		
		A (open)	B	C
RB□□-NS2	1/8 Male NPT	1.56 (39.6)	5/8 (15.9)	7/16 (11.1)
RB□□-NS4	1/4 Male NPT			
RB□□-NS6	3/8 Male NPT	1.69 (42.9)	7/8 (22.2)	
RB□□-NS8	1/2 Male NPT			
RB□□-RT4	1/4 Male BSPT	1.56 (39.6)	5/8 (15.9)	
RB□□-RT6	3/8 Male BSPT	1.69 (42.9)	7/8 (22.2)	
RB□□-RT8	1/2 Male BSPT			
RB□□-MS14	M14 x 1.5 Male ISO	1.56 (39.6)		
RB□□-MS20	M20 x 1.5 Male ISO	1.69 (42.9)		

Sizes and types listed are standard. Other sizes and types are available upon request. All dimensions are for reference only and are subject to change. For dimensions not shown above, please contact the authorized representative or FITOK.

Ordering Information



1. Standard thread pitch for metric threads are as follows:
M10 and below: 1 mm
M12 to M24: 1.5 mm
M27 and above: 2 mm
Standard thread pitch should be ignored in the ordering number, others should be specified.
2. Cleaning and Packaging:
FC-01: Standard cleaning and packaging for general industrial procedures.
FC-02: Special cleaning and packaging for wetted system components to ensure compliance with product cleanliness requirement as stated in ASTM G93 Level C.

Purge Valves

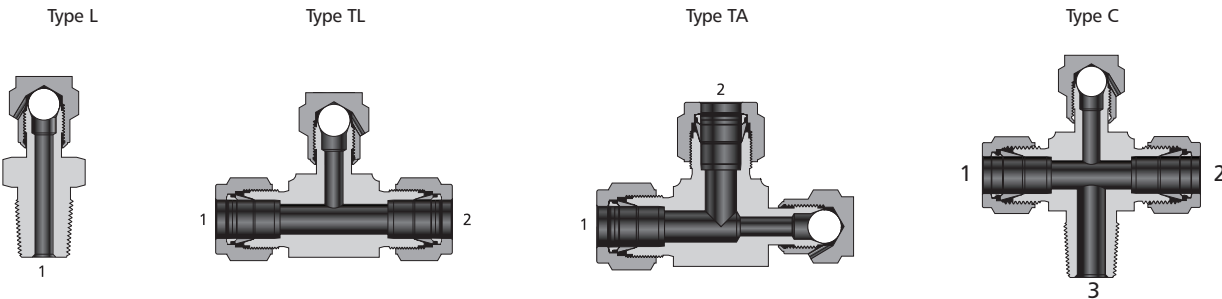
RP Series

Introduction

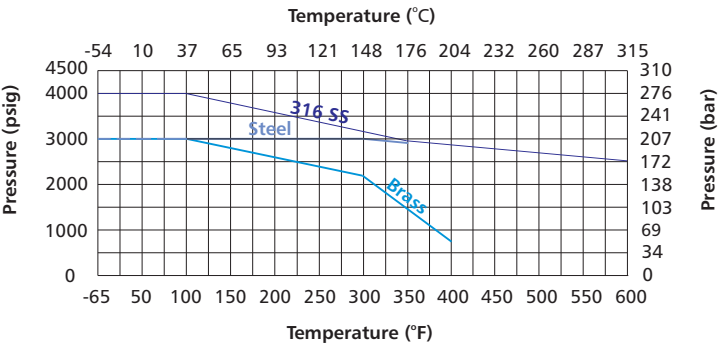
Purge valves are manual bleed, vent or drain valves. The cap is used to release system pressure. One-quarter turn with a wrench from finger-tight obtains leaktight closure on first makeup. Snugging with a wrench ensures closure to the rated pressure with subsequent makeups.

Features

- Compact design for easy installation
- Bonnet crimped to valve body to prevent accidental disassembly
- Maximum working pressure: 4000 psig (276 bar)
- Working temperature: -65°F to 600°F (-54°C to 315°C)
- 316 stainless steel, brass and carbon steel materials available
- Leak-tight performance testing for every valve with nitrogen at the maximum working pressure



Pressure vs. Temperature



Contact the authorized representative or FITOK for curve graph of other materials.

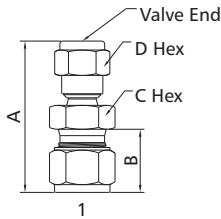
Standard Materials of Construction

Component	Valve Body Material Grade/ASTM Specification		
	316 SS	Brass	Steel
Body	316 SS/A182 316 SS/A479	Brass C36000/B16 Brass C37700/B283	12L4/A108 Chromium-plated
Cap	316 SS/A276	Brass C36000/B16	12L4/A108 Chromium-plated
Poppet (Ball)	316 SS/A276	316 SS/A276	316 SS/A276

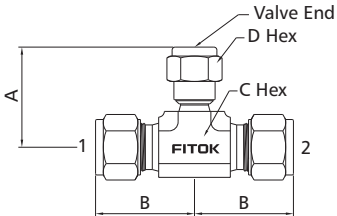
1. Lubricant: molybdenum disulfide-based and silicone-based.
2. Contact the authorized representative or FITOK for other materials.

Models and Dimensions

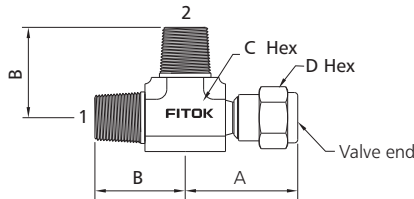
Type L



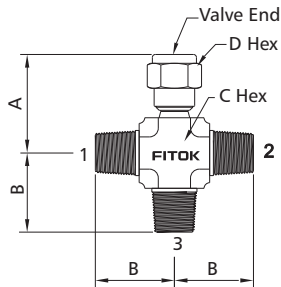
Type TL



Type TA



Type C

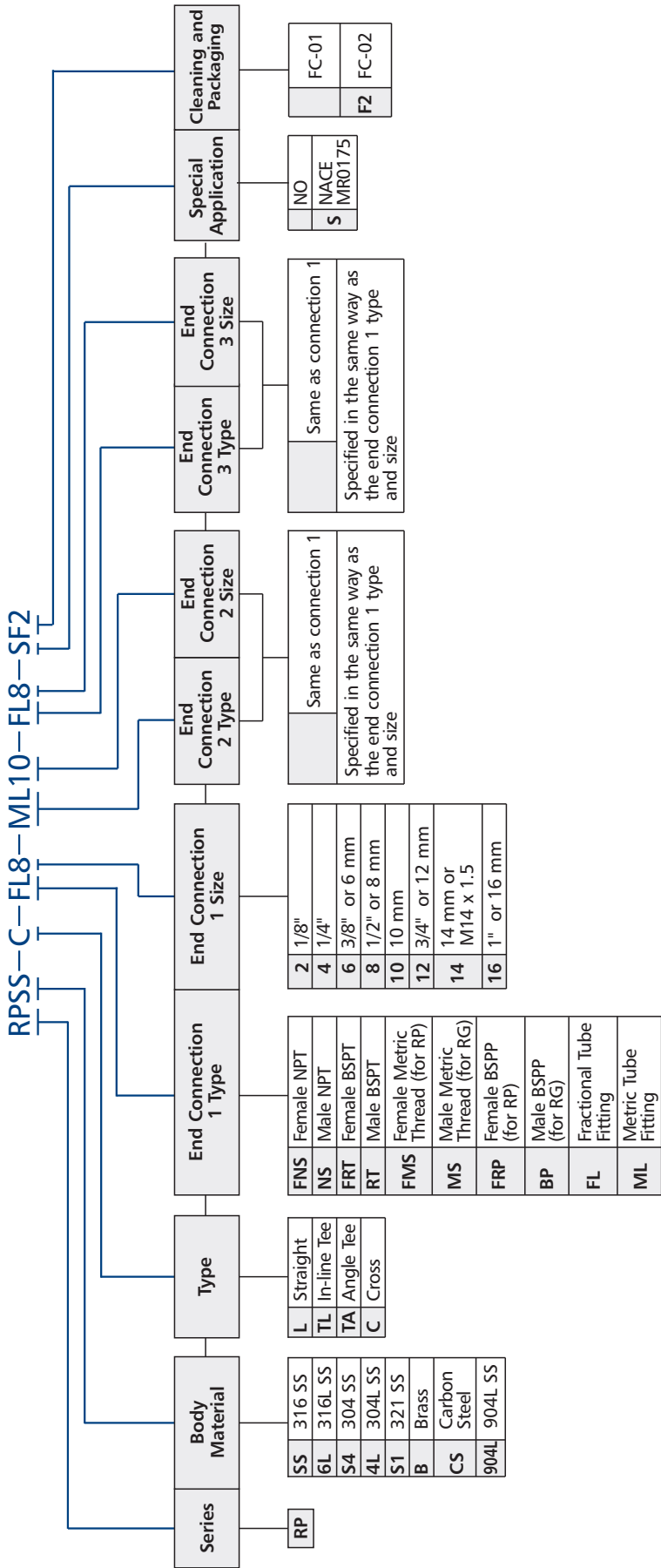


Caution:

These purge valves don't have a cap thread seal, so open the valve slowly and direct the vent hole away from the operator. These valves contain no packing, so some fluid weepage will occur when the valves are opened.

1. FITOK means FITOK double ferrule tube fittings.
2. Dimensions are shown with FITOK nuts finger-tightened. All dimensions are for reference only and are subject to change.
3. Sizes and types listed are standard. Other sizes and types are available upon request, refer to the ordering information.

Basic Ordering Number	Connection Type and Size		Dimension, in. (mm)			
			A max	B	C	D
RP□□-L-	FL2	1/8" FITOK	1.84 (46.7)	0.59 (15.0)	5/8 (15.9)	1/2 (12.7)
	FL4	1/4" FITOK	1.94 (49.3)	0.69 (17.5)	5/8 (15.9)	1/2 (12.7)
	FL6	3/8" FITOK	2.03 (51.6)	0.75 (19.1)	3/4 (19.1)	5/8 (15.9)
	FL8	1/2" FITOK	2.19 (55.6)	0.88 (22.4)	7/8 (22.2)	3/4 (19.1)
	ML6	6 mm FITOK	1.94 (49.3)	0.69 (17.5)	5/8 (15.9)	1/2 (12.7)
	ML8	8 mm FITOK	2.00 (50.8)	0.72 (18.3)	5/8 (15.9)	1/2 (12.7)
	ML10	10 mm FITOK	1.05 (26.7)	0.75 (19.1)	3/4 (19.1)	5/8 (15.9)
	ML12	12 mm FITOK	1.05 (26.7)	0.88 (22.4)	7/8 (22.2)	3/4 (19.1)
	FNS2	1/8 Female NPT	1.56 (39.6)	0.53 (13.5)	5/8 (15.9)	1/2 (12.7)
	FNS4	1/4 Female NPT	1.75 (44.4)	0.72 (18.3)	5/8 (15.9)	5/8 (15.9)
	FNS6	3/8 Female NPT	1.81 (46.0)	0.78 (19.8)	7/8 (22.2)	3/4 (19.1)
	FNS8	1/2 Female NPT	1.98 (50.3)	0.97 (24.6)	1 1/16 (26.9)	7/8 (22.2)
	NS2	1/8 Male NPT	1.62 (41.1)	0.38 (9.7)	5/8 (15.9)	1/2 (12.7)
	NS4	1/4 Male NPT	1.81 (46.0)	0.56 (14.2)	5/8 (15.9)	5/8 (15.9)
	NS6	3/8 Male NPT	1.84 (46.7)	0.56 (14.2)	3/4 (19.1)	3/4 (19.1)
RP□□-TL- RP□□-TA- RP□□-C-	NS8	1/2 Male NPT	2.09 (53.1)	0.75 (19.1)	7/8 (22.2)	7/8 (22.2)
	FL2	1/8" FITOK	0.90 (22.9)	0.88 (22.4)	5/8 (15.9)	1/2 (12.7)
	FL4	1/4" FITOK	1.08 (27.3)	1.06 (26.9)	5/8 (15.9)	1/2 (12.7)
	FL6	3/8" FITOK	1.22 (31.0)	1.20 (30.5)	3/4 (19.1)	5/8 (15.9)
	FL8	1/2" FITOK	1.44 (36.6)	1.42 (36.1)	7/8 (22.2)	3/4 (19.1)
	ML6	6 mm FITOK	1.08 (27.5)	1.06 (27.0)	5/8 (15.9)	1/2 (12.7)
	ML8	8 mm FITOK	1.20 (30.4)	1.18 (29.9)	5/8 (15.9)	1/2 (12.7)
	ML10	10 mm FITOK	1.34 (34.0)	1.32 (33.5)	3/4 (19.1)	5/8 (15.9)
	ML12	12 mm FITOK	1.43 (36.5)	1.41 (36.0)	7/8 (22.2)	3/4 (19.1)
	FNS2	1/8 Female NPT	0.68 (17.3)	0.66 (16.8)	5/8 (15.9)	1/2 (12.7)
	FNS4	1/4 Female NPT	0.90 (22.9)	0.88 (22.4)	5/8 (15.9)	5/8 (15.9)
	FNS6	3/8 Female NPT	1.03 (26.2)	1.01 (25.7)	7/8 (22.2)	3/4 (19.1)
	FNS8	1/2 Female NPT	1.25 (31.7)	1.23 (31.2)	1 1/16 (26.9)	7/8 (22.2)
	NS2	1/8 Male NPT	0.78 (19.8)	0.76 (19.3)	5/8 (15.9)	1/2 (12.7)
	NS4	1/4 Male NPT	1.11 (28.2)	1.09 (27.7)	5/8 (15.9)	5/8 (15.9)
	NS6	3/8 Male NPT	1.24 (31.5)	1.22 (31.0)	3/4 (19.1)	3/4 (19.1)
	NS8	1/2 Male NPT	1.52 (37.8)	1.47 (37.3)	7/8 (22.2)	7/8 (22.2)



1. Standard thread pitch for metric threads are as follows:
M10 and below: 1 mm
M12 to M24: 1.5 mm
M27 and above: 2 mm
Standard thread pitch should be ignored in the ordering number, others should be specified.

2. Cleaning and Packaging:
FC-01: Standard cleaning and packaging for general industrial procedures.
FC-02: Special cleaning and packaging for wetted system components to ensure compliance with product cleanliness requirement as stated in ASTM G93 Level C.

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: 2500 psig (172 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)

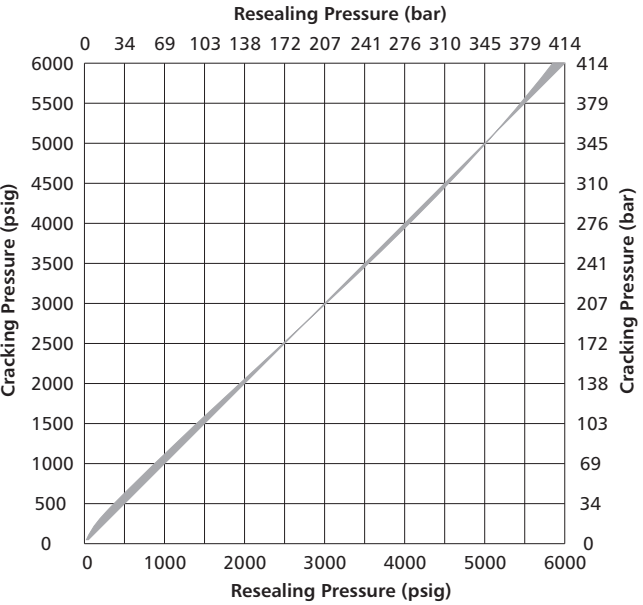
Cracking Pressure and Resealing Pressure

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.

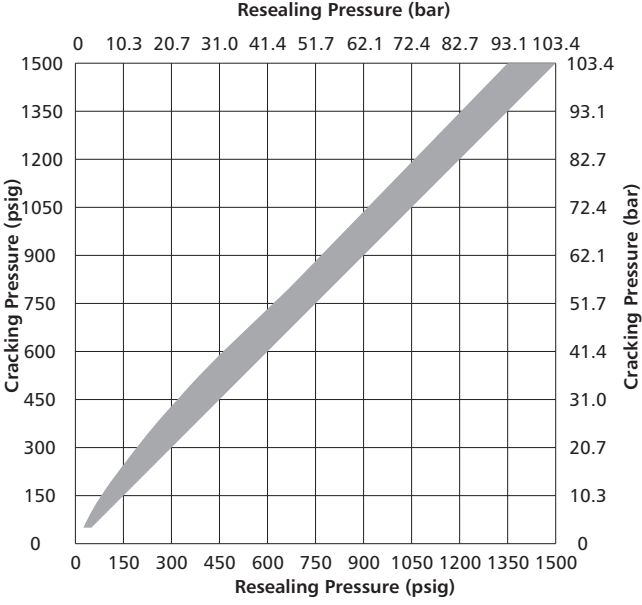
Resealing pressure: The pressure at which there is no indication of flow. Resealing pressure is always lower than the set pressure.

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

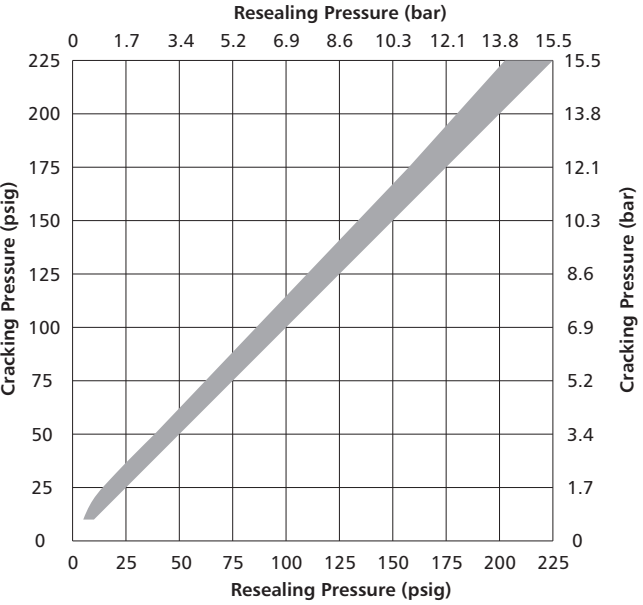
RV Series



RM Series

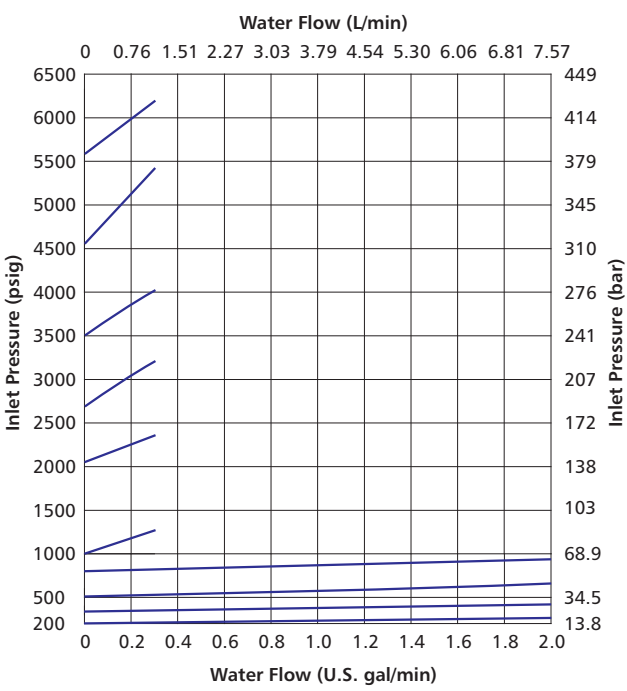
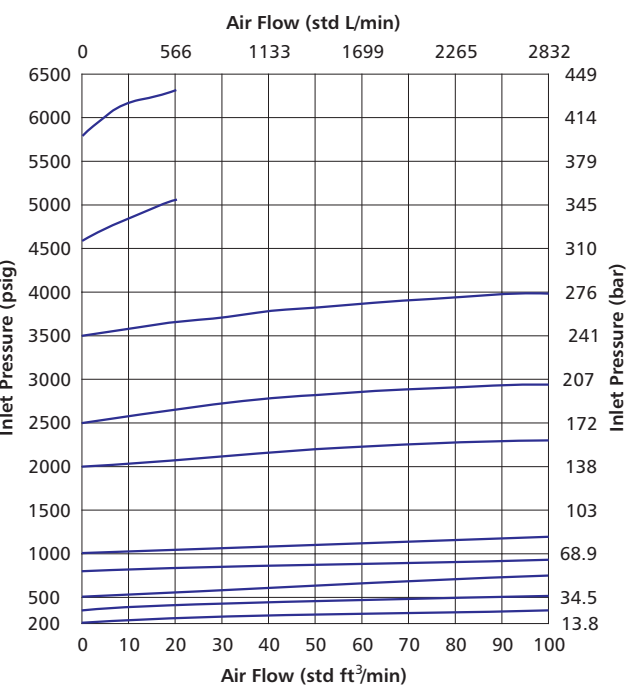


RL Series

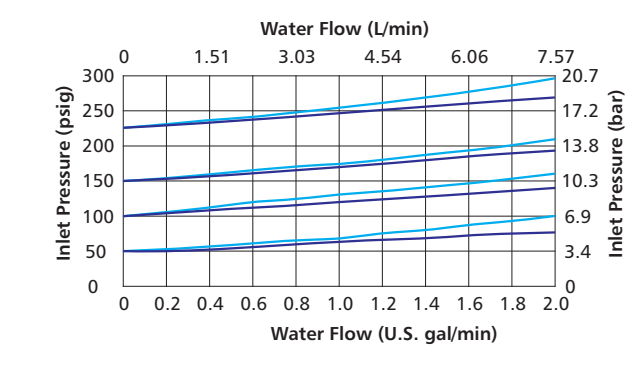
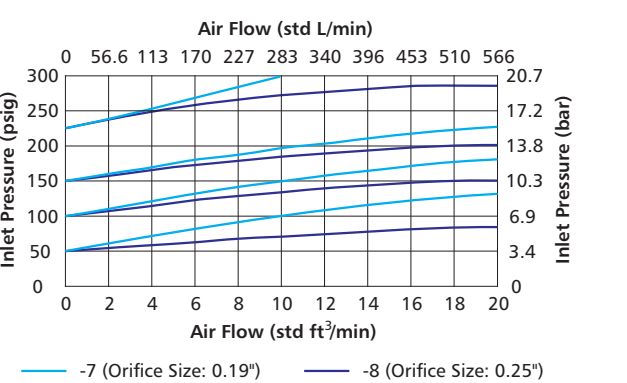


Flow Data at 70°F (20°C)

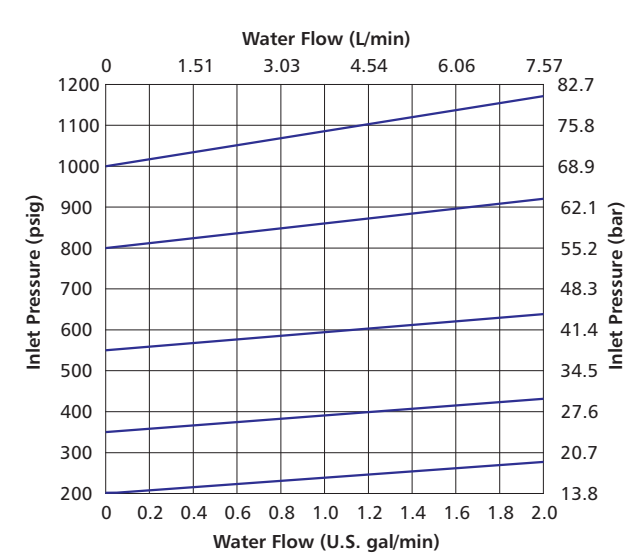
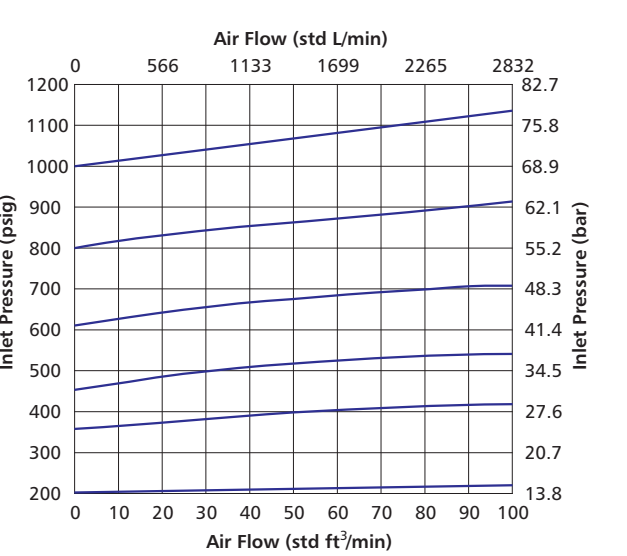
RV Series



RL Series



RM Series

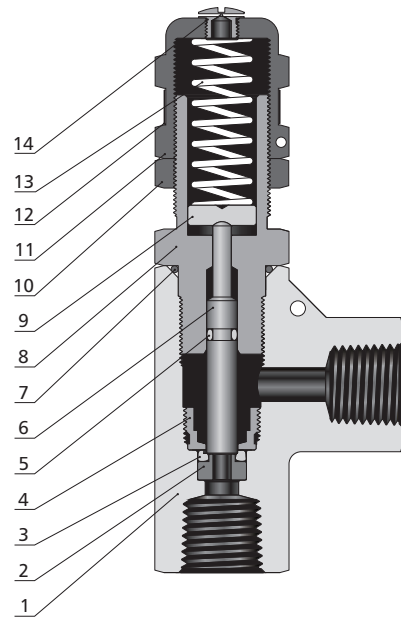


Standard Materials of Construction

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	

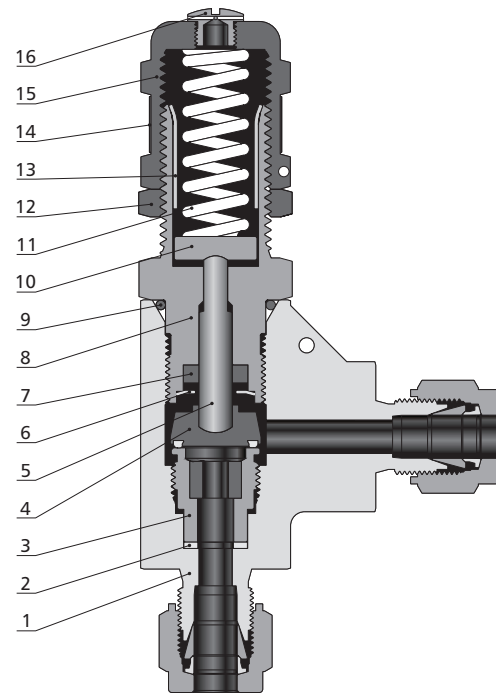
1. Lubricant: molybdenum disulfide-based dry film and paste, silicone-based
2. Contact the authorized representative or FITOK for other materials.



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

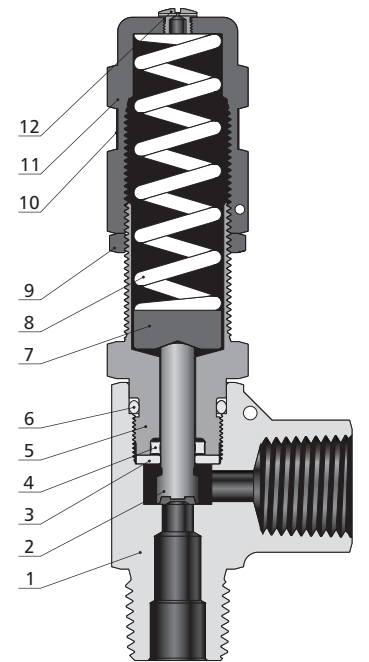
1. Lubricant: molybdenum disulfide-based dry film and paste, silicone-based
2. Contact the authorized representative or FITOK for other materials.



RM Series

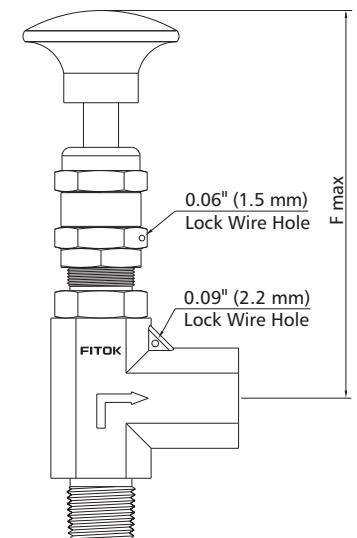
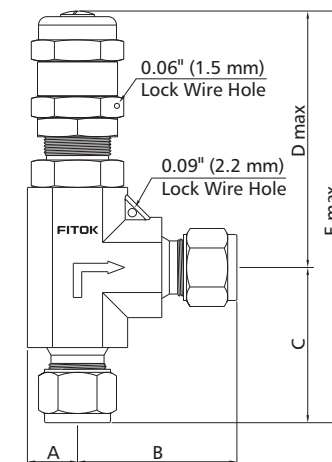
Component			Material Grade/ASTM Specification
1	Body	316 SS/A182	
2	Stem	316 SS/A479+Fluorocarbon FKM	
3	Retainer	316 SS/A479	
4	Seal	Fluorocarbon FKM	
5	Bonnet	316 SS/A479	
6	O-ring	Fluorocarbon FKM	
7	Spring Support	316 SS/A276	
8	Spring	S17700 SS/AMS 5678	
9	Lock Nut	17-4PH powdered metal	
10	Label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

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



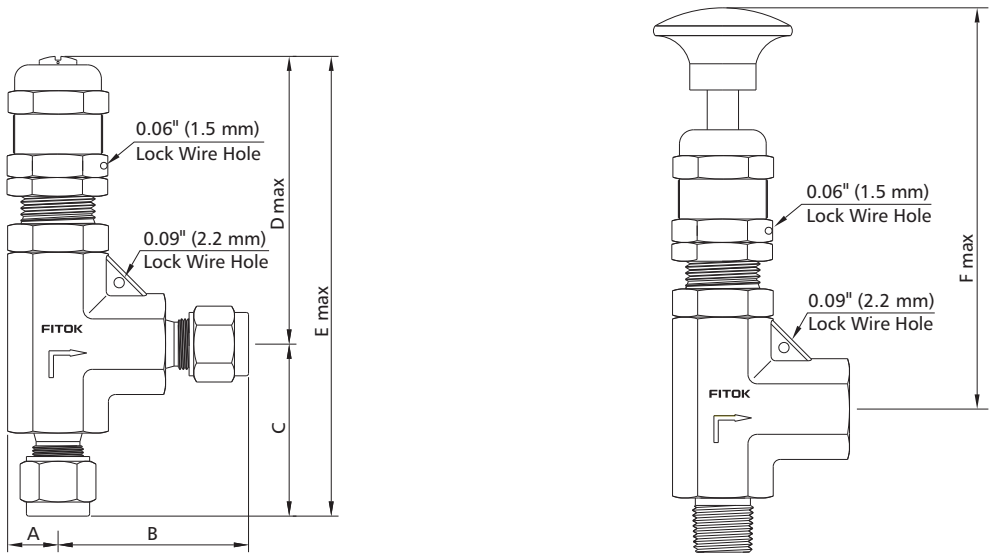
Dimensions

RV Series



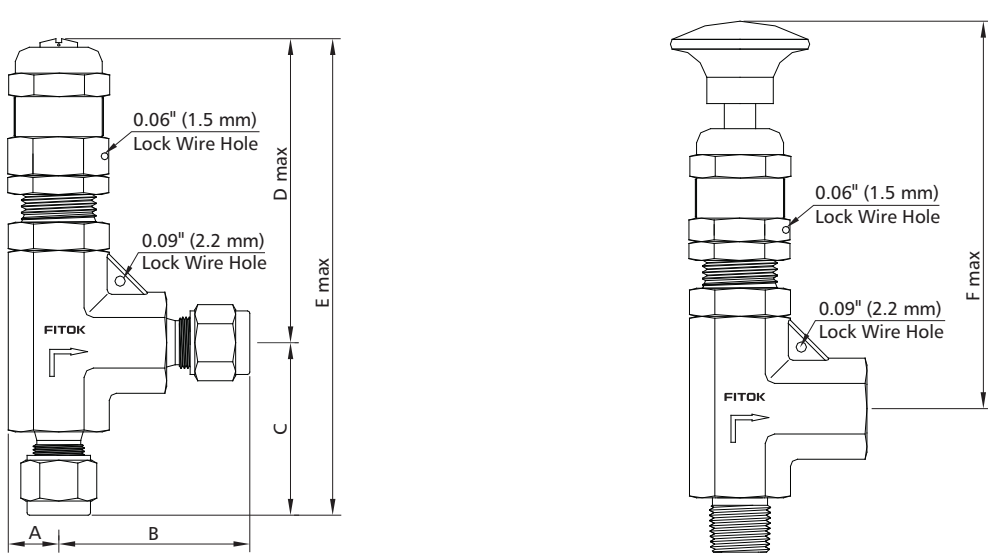
FRT4-6									
Basic Ordering Number	Connection Type and Size		Orifice in. (mm)	Dimension in. (mm)					
	Inlet	Outlet		A	B	C	Dmax	Emax	Fmax
RV□□-FL4-6-	1/4" FITOK	1/4" FITOK	0.14 (3.6)	0.43 (10.9)	1.60 (40.6)	1.44 (36.6)	2.70 (68.6)	4.14 (105.2)	4.09 (103.9)
RV□□-FL6-6-	3/8" FITOK	3/8" FITOK		0.50 (12.7)	1.72 (43.7)	1.72 (43.7)	4.09 (103.9)	5.81 (147.6)	5.37 (136.4)
RV□□-FL8-6-	1/2" FITOK	1/2" FITOK		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□□-ML6-6-	6 mm FITOK	6 mm FITOK		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□□-ML8-6-	8 mm FITOK	8 mm FITOK		0.43 (10.9)	1.38 (34.9)	1.38 (34.9)	2.70 (68.6)	4.08 (103.5)	4.28 (108.7)
RV□□-ML12-6-	12 mm FITOK	12 mm FITOK		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□□-FNS4-6-	1/4 Female NPT	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 (103.9)
RV□□-NS4-6-	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□□-FRT4-6-	1/4 Female BSPT	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 (103.9)

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□□-FL4-7	1/4" FITOK	1/4" FITOK	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□□-ML6-7	6 mmFITOK	6 mmFITOK			1.44 (36.6)	1.19 (30.2)		3.89 (98.8)			
RL□□-NS4-7	1/4 Male NPT	1/4 Male NPT									
RL□□-RT4-7	1/4 Male BSPT	1/4 Male BSPT									
RL□□-FNS4-7	1/4 Female NPT	1/4 Female NPT									
RL□□-FRT4-7	1/4 Female BSPT	1/4 Female BSPT			1.17 (29.7)	1.19 (30.2)		3.89 (98.8)			
RL□□-FL8-8	1/2" FITOK	1/2" FITOK	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□□-ML12-8	12 mmFITOK	12 mmFITOK			1.44 (36.6)	1.44 (36.6)		5.52 (140)			
RL□□-NS8-8	1/2 Male NPT	1/2 Male NPT									
RL□□-RT8-8	1/2 Male BSPT	1/2 Male BSPT									
RL□□-FNS8-8	1/2 Female NPT	1/2 Female NPT									
RL□□-FRT8-8	1/2 Female BSPT	1/2 Female BSPT									

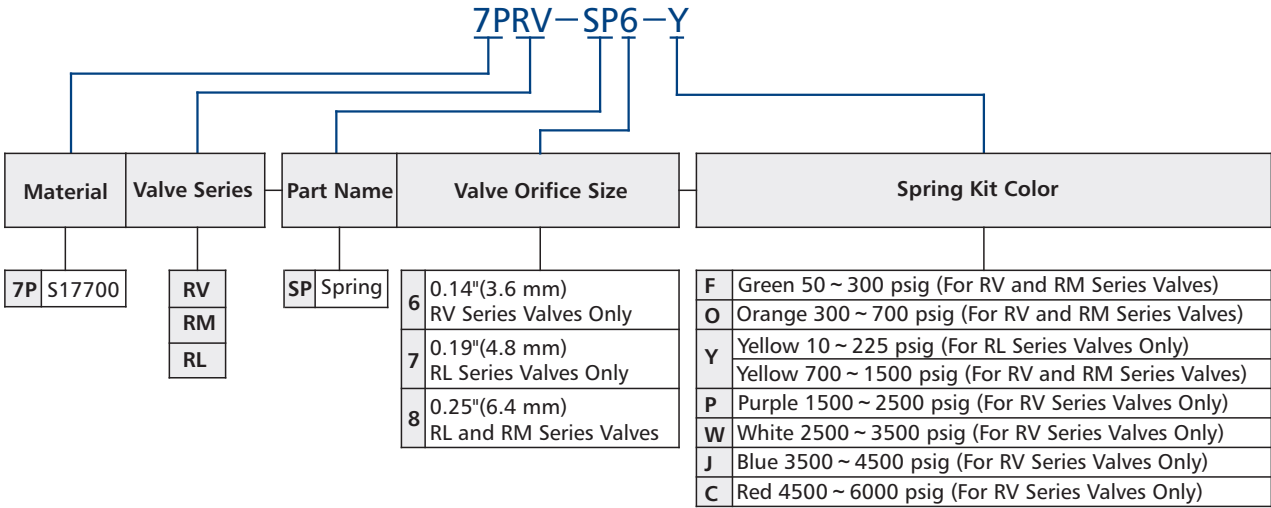
RM Series

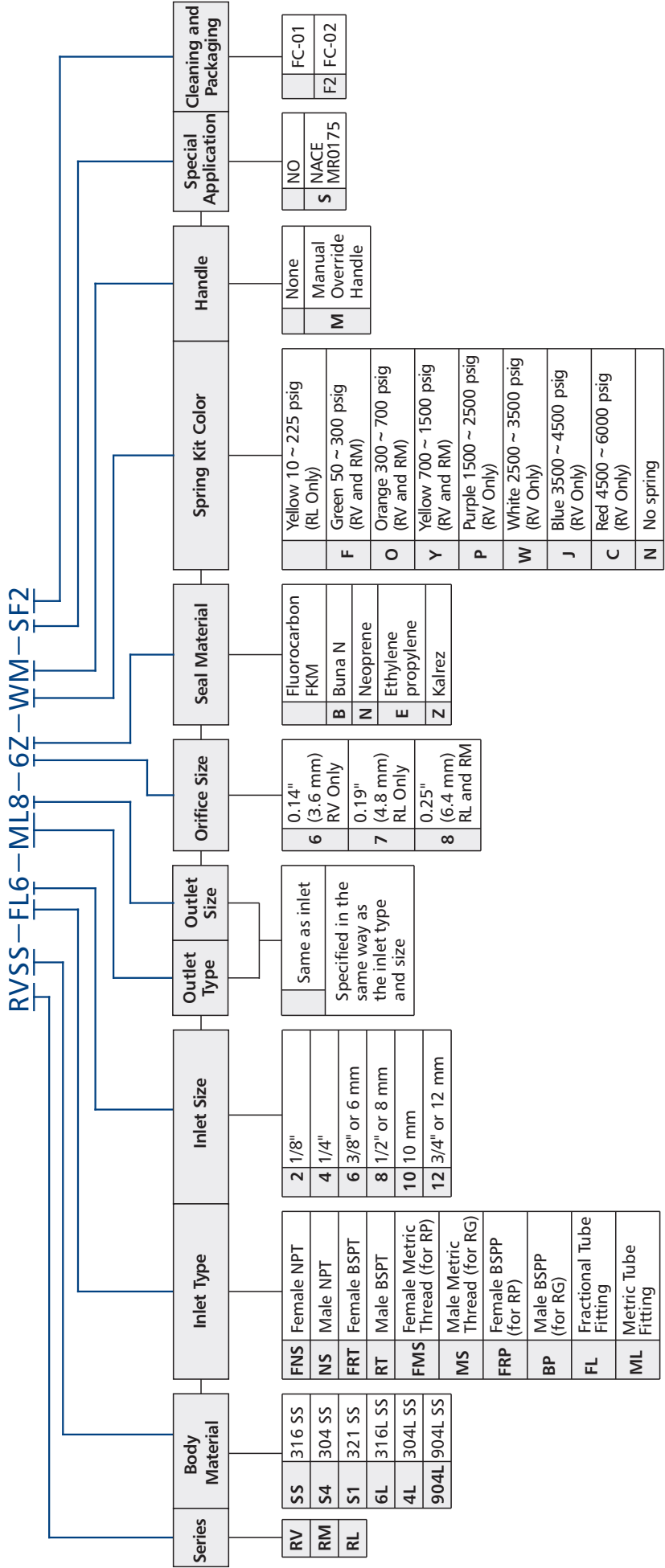


Basic Ordering Number	Connection and Size		Orifice in. (mm)	Dimension in. (mm)							
	Inlet Size	Outlet Size		A	B	C	D	E	F		
RM□□-FL8-8-	1/2" FITOK	1/2" FITOK	0.25 (6.4)	0.5 (12.7)	1.83 (46.5)	1.83 (46.5)	4.09 (104)	5.92 (150)	5.37 (136)		
RM□□-ML12-8-	1/2 mm FITOK	1/2 mm FITOK			1.44 (36.6)	1.44 (36.6)		5.52 (140)			
RM□□-NS8-8-	1/2 Male NPT	1/2 Male NPT									
RM□□-RT8-8-	1/2 Male BSPT	1/2 Male BSPT									
RM□□-FNS8-8-	1/2 Female NPT	1/2 Female NPT									
RM□□-FRT8-8-	1/2 Female BSPT	1/2 Female BSPT									

1. FITOK means FITOK double ferrule tube fittings.
2. Dimensions are shown with FITOK 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 FITOK.
3. Sizes and types listed are standard. Other sizes and types are available upon request. Refer to ordering information.

Ordering Information
Spring For Valves





1. Standard thread pitch for metric threads are as follows:
- M10 and below: 1 mm
 - M12 to M24: 1.5 mm
 - M27 and above: 2 mm
- Standard thread pitch should be ignored in the ordering number, others should be specified.
2. Cleaning and Packaging:
- FC-01: Standard cleaning and packaging for general industrial procedures.
 - FC-02: Special cleaning and packaging for wetted system components to ensure compliance with product cleaning requirement as stated in ASTM G93 Level C.
3. The color of the manual override handle is black. For other colors, please contact the authorized representative or FITOK.