C-LOK

C-LOK Instrument Valve Co.,Ltd.

Proportional Relief Valves

Contents

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 lower than the set pressure.

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

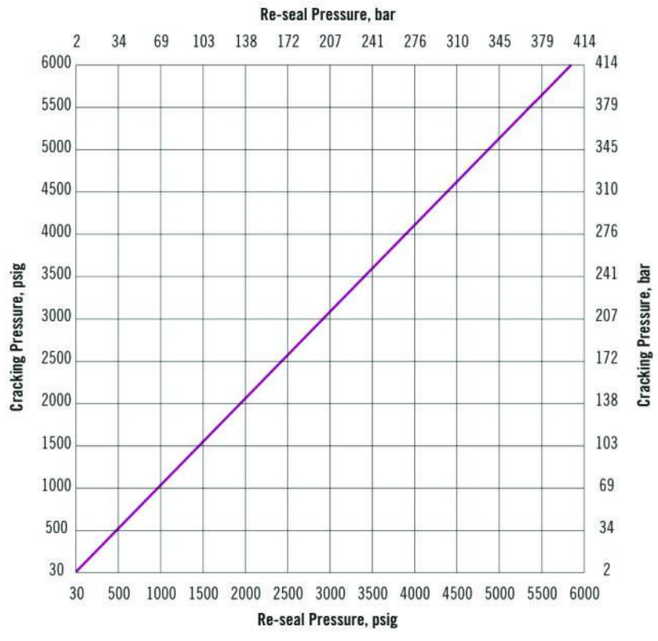
Features

Set pressures:50 to 6000 psig @70℉ (0.34 to 41.4 Mpa @21℃)
Maximum outlet pressures: 1500 psig (103 bar)
Working temperatures:-10℉ to 300℉ (-23℃ to 148℃)
Many options for various end connections
Liquid or gas service
Adjustable bonnet cap, and adjustable set pressure
Balance stem design to eliminate the effect of system back pressure
7 color-coded springs available for a wide range of set pressure
Lock wired secure cap to maintain set pressure
Many options for various seal materials
Label identifies the set pressure range
Manual override handle available to open the valve
without changing the set pressure when lower than 1500 psig

Temperature range of sealing materials

Fluorocarbon Rubber
-15℉~400℉(-26℃~204℃)
Buna-N Rubber
-30℉~275℉(-34℃~135℃)
Neoprene Rubber
-45℉~250℉(-43℃~121℃)
Ethylene Propylene Rubber
-70℉~275℉(-56℃~135℃)

Cracking Pressure and Resealing Pressure

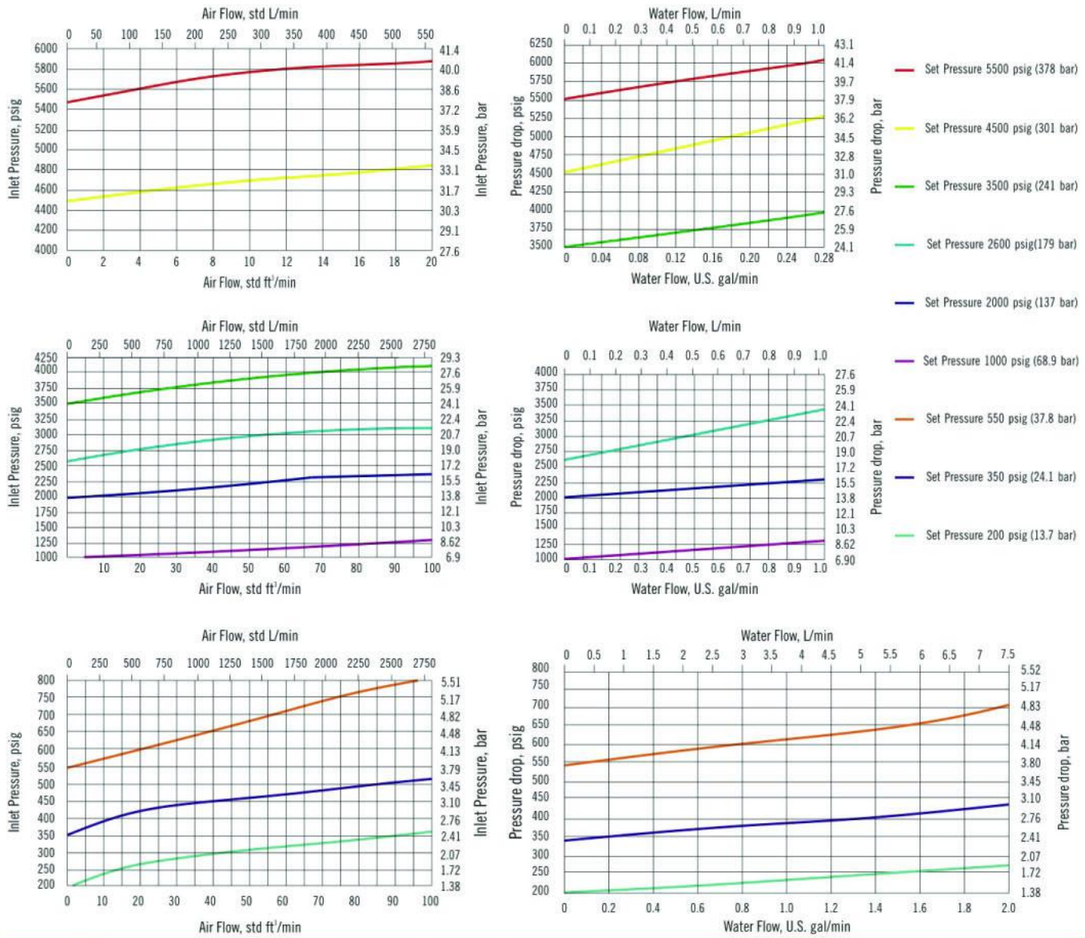


Cracking pressure: The pressure at which the first indication of flow occurs. The repeatability of the cracking pressure of each valve after initial relief is within ±5% at room temperature.

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

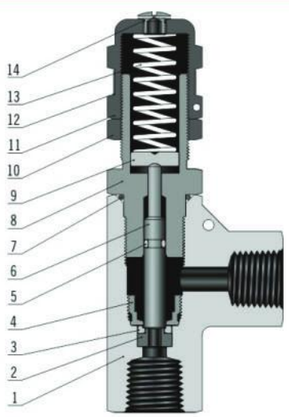
Back pressure: The pressure of the outlet of the valve. It increase the set pressure.

Flow Data @ 70°F (20°C)



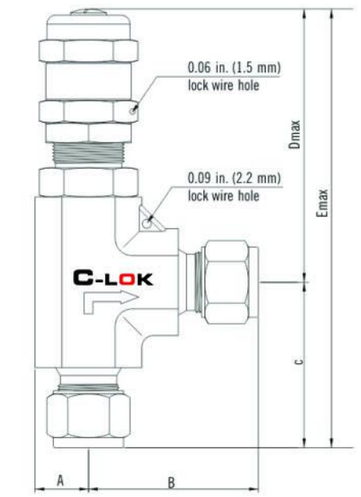
Material of Construction

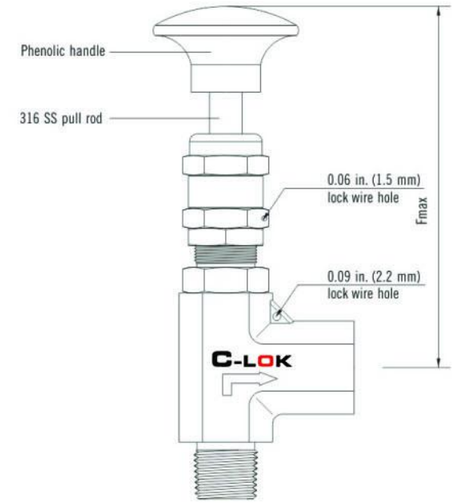
	Component	Material Grade/ASTM Specification
1	Body	316 SS/A182
2	Insert	316 SS/A479
3	O-ring	Fluorocarbon FKM
4	Seat retainer	316 SS/A479
5	o-ring	Fluorocarbon FKM
6	Stem	316 SS/A479
7	o-ring	Fluorocarbon FKM
8	Bonnet	316 SS/A479
9	Spring support	316 SS/A276
10	Lock nut	17-4PH powered metal
11	Bonnet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



*Lubricant: Molybdenum disulfide-based dry film and paste, silicone-based.
*Consult the factory for bill of material for other body materials.

Dimensions



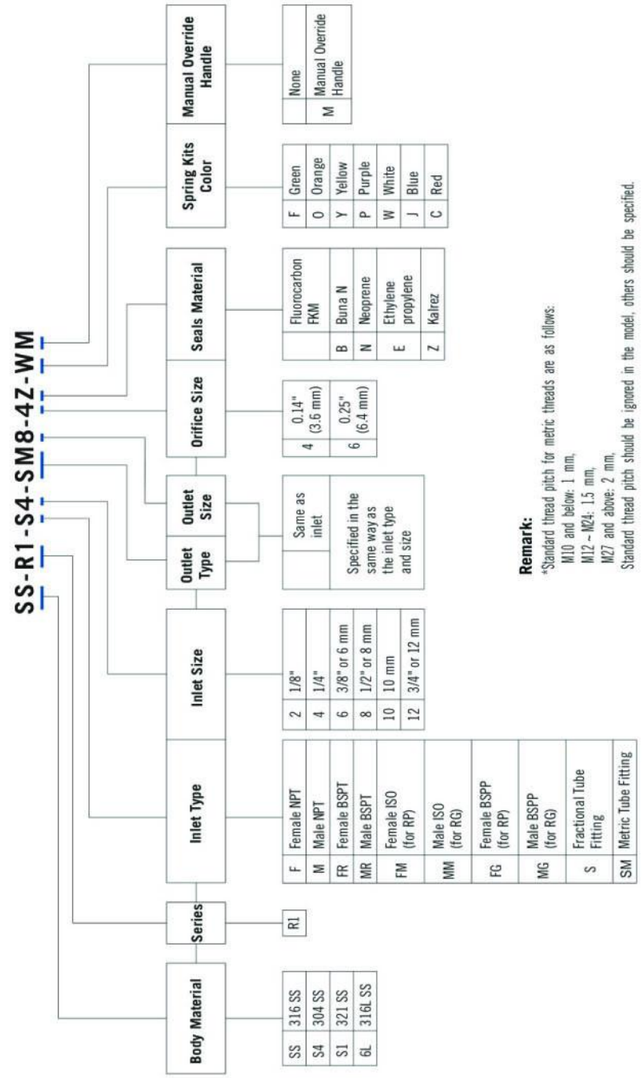


Basic Ordering Number	End Connections		Orifice in. (mm)	Dimensions in. (mm)					
	Inlet Size	Outlet Size		A	B	C	Dmax	Emax	Fmax
-R1-S4-4-	1/4" OD	1/4" OD	0.14 (3.6)	0.43 (10.9)	1.60 (40.6)	1.44 (36.6)	2.70 (68.6)	4.14 (105)	4.09 (104)
-R1-S6-4-	3/8" OD	3/8" OD	0.14 (3.6)	0.43 (10.9)	1.60 (40.6)	1.44 (36.6)	2.70 (68.6)	4.14 (105)	4.09 (104)
-R1-S8-4-	1/2" OD	1/2" OD	0.14 (3.6)	0.50 (12.7)	1.72 (43.7)	1.72 (43.7)	4.09 (104)	5.81 (148)	5.37 (136)
-R1-S8-6-	1/2" OD	1/2" OD	0.25 (6.4)	0.50 (12.7)	1.72 (43.7)	1.72 (43.7)	4.09 (104)	5.81 (148)	5.37 (136)
-R1-SM6-4-	6 mm	6 mm	0.14 (3.6)	0.43 (10.9)	1.60 (40.6)	1.44 (36.6)	2.70 (68.6)	4.14 (105)	4.09 (104)
-R1-SM8-4-	8 mm	8 mm	0.14 (3.6)	0.43 (10.9)	1.60 (40.6)	1.44 (36.6)	2.70 (68.6)	4.14 (105)	4.09 (104)
-R1-SM12-4-	12 mm	12 mm	0.14 (3.6)	0.50 (12.7)	1.83 (46.5)	1.83 (46.5)	4.09 (104)	5.92 (150)	5.37 (136)
-R1-SM12-6-	12 mm	12 mm	0.25 (6.4)	0.50 (12.7)	1.83 (46.5)	1.83 (46.5)	4.09 (104)	5.92 (150)	5.37 (136)
-R1-F4-4-	1/4" Female NPT	1/4" Female NPT	0.14 (3.6)	0.43 (10.9)	1.38 (34.9)	1.38 (34.9)	2.70 (68.6)	4.08 (103.5)	4.28 (108.7)
-R1-F8-4-	1/2" Female NPT	1/2" Female NPT	0.14 (3.6)	0.50 (12.7)	1.43 (36.3)	1.43 (36.3)	4.09 (104)	5.52 (140)	5.37 (136)
-R1-F8-6-	1/2" Female NPT	1/2" Female NPT	0.25 (6.4)	0.50 (12.7)	1.43 (36.3)	1.43 (36.3)	4.09 (104)	5.52 (140)	5.37 (136)
-R1-M4-4-	1/4" Male NPT	1/4" Male NPT	0.14 (3.6)	0.43 (10.9)	1.17 (29.7)	1.19 (30.2)	2.70 (68.6)	3.89 (98.8)	4.09 (104)
-R1-M8-4-	1/2" Male NPT	1/2" Male NPT	0.14 (3.6)	0.50 (12.7)	1.43 (36.3)	1.43 (36.3)	4.09 (104)	5.52 (140)	5.37 (136)
-R1-M8-6-	1/2" Male NPT	1/2" Male NPT	0.25 (6.4)	0.50 (12.7)	1.43 (36.3)	1.43 (36.3)	4.09 (104)	5.52 (140)	5.37 (136)
-R1-FR4-4-	1/4" Female BSPT	1/4" Female BSPT	0.14 (3.6)	0.43 (10.9)	1.17 (29.7)	1.19 (30.2)	2.70 (68.6)	3.89 (98.8)	4.09 (104)
-R1-FR8-4-	3/8" Female BSPT	3/8" Female BSPT	0.14 (3.6)	0.50 (12.7)	1.43 (36.3)	1.43 (36.3)	4.09 (104)	5.52 (140)	5.37 (136)
-R1-FR8-6-	1/2" Female BSPT	1/2" Female BSPT	0.25 (6.4)	0.50 (12.7)	1.43 (36.3)	1.43 (36.3)	4.09 (104)	5.52 (140)	5.37 (136)

Spring kits

Spring Designator	Spring Color	Set Pressure Rang psig (bar)	Remark
F	Green	50~300 (3.4~20.7)	For 0.14 in. and 0.25 in. orifice size
O	Orange	300~700 (20.7~48.3)	
Y	Yellow	700~1500 (48.3~103)	
P	Purple	1500~2500 (103~172)	For 0.14in. orifice size only
W	White	2500~3500 (172~241)	
J	Blue	3500~4500 (241~310)	
C	Red	4500~6000 (310~414)	

Ordering Information



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