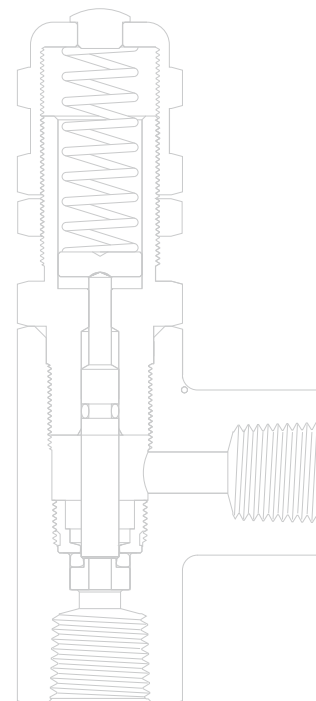
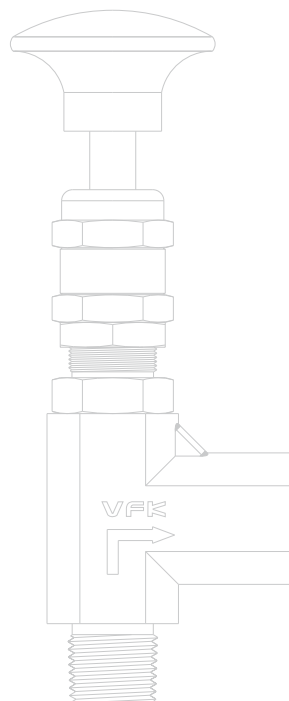


Relief Valves



Climate Control
Electromechanical
Filtration
Fluid & Gas Handling
Hydraulics
Process Control
Sealing & Shielding



VFK
Advanced Fluid Control

Proportional Relief Valves

61 Series

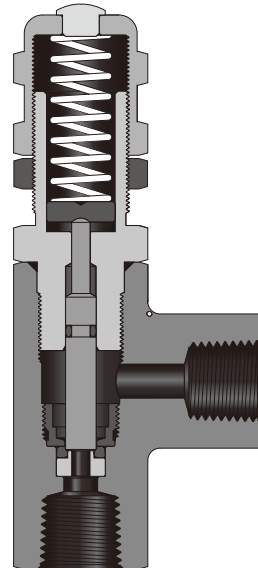
Relief Valve open when system pressure reaches the set pressure, allowing the medium to flow out and relieve the system pressure. The valve closes when the system pressure is down to the resealing pressure.

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



Features

- Set pressure: 50 to 6000 psig at 70°F (3.4 to 414 bar at 21°C)
- Maximum outlet pressure: 1500 psig (103 bar)
- 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
- 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
- Variety of seal materials
- Label as indicator of the set pressure range
- Manual override handle available to open the valve without changing the set pressure which pressure lower than 1500 psig
- Leak-tight performance testing for every valve at the maximum working pressure



Temperature Range of Seal Materials

Fluorocarbon Rubber

25°F to 250°F (-4°C to 121°C)

Buna N Rubber

0°F to 250°F (-17°C to 121°C)

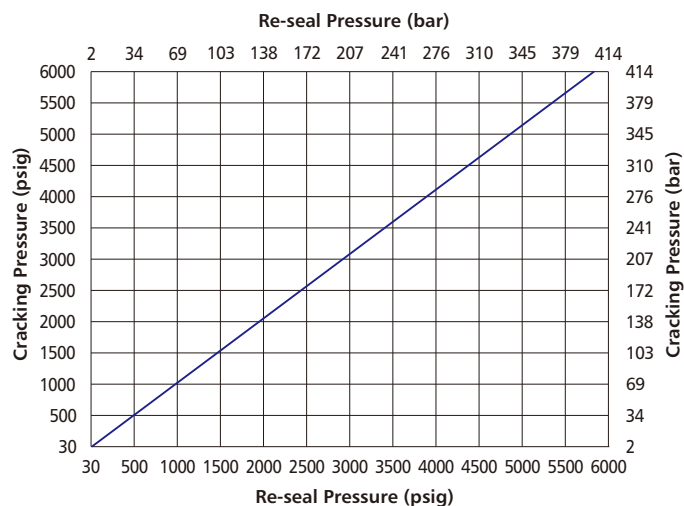
Neoprene Rubber

-10°F to 300°F (-23°C to 148°C)

Ethylene Propylene Rubber

30°F to 250°F (-1°C to 121°C)

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 $\pm 5\%$ at room temperature.

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

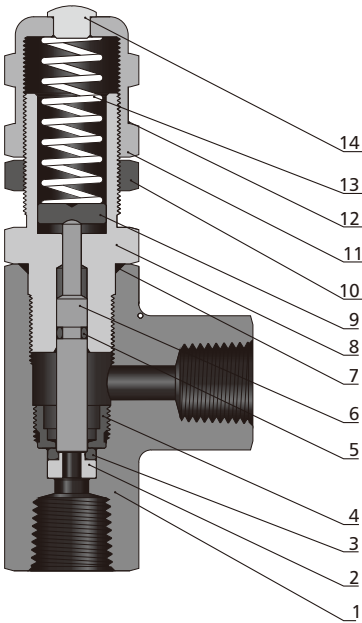
Back Pressure: The pressure of the outlet of the valve. It increases the set pressure.

Flow Coefficients

Cv Orifice Size Set Pressure (psig)	0.14" (3.6 mm)		0.25" (6.4 mm)	
	Air	Water	Air	Water
200	0.490	0.180	0.690	0.180
350	0.370	0.180	0.500	0.180
550	0.230	0.150	0.390	0.180
1000	0.160	0.016	0.180	0.020
2000	0.100	0.015	---	---
2600	0.070	0.010	---	---
3500	0.058	0.010	---	---
4500	0.016	0.010	---	---
5500	0.013	0.010	---	---

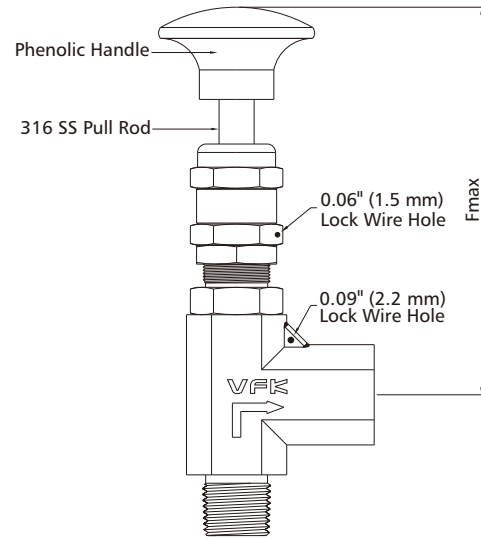
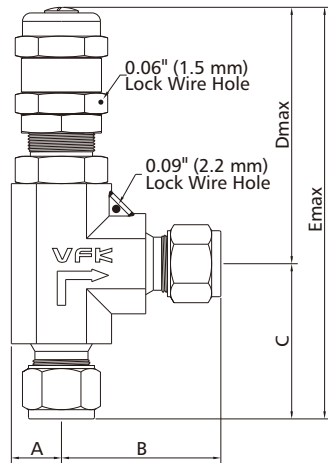
Standard Materials of Construction

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



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

Dimensions



Basic Ordering Number	Connection Type and Size		Orifice in. (mm)						
	Inlet	Outlet		A	B	C	Dmax	Emax	Fmax
□□61-FX4-4	1/4" VFK	1/4" VFK	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)
□□61-FX6-4	3/8" VFK	3/8" VFK							
□□61-FX8-4	1/2" VFK	1/2" VFK							
□□61-FX8-6	1/2" VFK	1/2" VFK	0.25 (6.4)	0.50 (12.7)	1.72 (43.7)	1.72 (43.7)	4.09 (103.9)	5.81 (147.6)	5.37 (136.4)
□□61-MX6-4	6 mm VFK	6 mm VFK	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 (104.9)
□□61-MX8-4	8 mm VFK	8 mm VFK							
□□61-MX12-4	12 mm VFK	12 mm VFK							
□□61-MX12-6	12 mm VFK	12 mm VFK	0.25 (6.4)	0.50 (12.7)	1.83 (46.5)	1.83 (46.5)	4.09 (103.9)	5.92 (150.4)	5.37 (136.4)
□□61-FN4-4	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)
□□61-FN8-4	1/2 Female NPT	1/2 Female NPT							
□□61-FN8-6	1/2 Female NPT	1/2 Female NPT							
□□61-N4-4	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 (103.9)
□□61-N8-4	1/2 Male NPT	1/2 Male NPT							
□□61-N8-6	1/2 Male NPT	1/2 Male NPT							
□□61-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 (103.9)
□□61-FR8-4	1/2 Female BSPT	1/2 Female BSPT							
□□61-FR8-6	1/2 Female BSPT	1/2 Female BSPT							

Spring Kits

Spring Designator	Spring Color	Set Pressure Rang psig (bar)	Remark
F	Green	50 to 300 (3.4 to 20.7)	For 0.14" and 0.25" orifice size
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)	For 0.14" orifice size only
W	White	2500 to 3500 (172 to 241)	
J	Blue	3500 to 4500 (241 to 310)	
C	Red	4500 to 6000 (310 to 414)	

ATTENTION PLEASE !

Applications

61 series relief valves are proportional relief valves that open gradually as the pressure increases. Consequently, they do not have a capacity rating at a given pressure rise (accumulation), and they are not certified to ASME or any other codes.

- ⚠ Some system applications require relief valves to meet specific safety codes. The system designer and user must determine when such codes apply and whether these relief valves conform to them.
- ⚠ VFK proportional relief valves should never be used as ASME Boiler and Pressure Vessel Code safety relief devices
- ⚠ VFK proportional relief valves are not "Safety Accessories" as defined in the Pressure Equipment Directive 97/23/EC.

61 Series How to Order

A	B	C	D	E	F	G
Body Material	Valve Series	Inlet Type	Inlet Size	Outlet Type	Outlet Size	Orifice Size
SS	61	FN	8	MX	10	6

H	I	J
Seal Material	Spring Kit Color	NACE MR0175
N	C	SG

A	Body Material
SS:	316 SS
6L:	316L SS
S4:	304 SS
4L:	304L SS
S1:	321 SS
91:	F91
92:	F92
D5:	Duplex 2205
D7:	Duplex 2507
TI:	Titanium
A20:	Alloy 20
M:	Alloy 400
INC:	Alloy 600
HC:	Alloy C-276

B	Valve Series
61:	61 Series Relief Valves

CE	Inlet/Outlet Type
FN	Female NPT
N	Male NPT
FR	Female BSPT
RT	Male BSPT
FM	Female ISO (for MRP)
MS	Male ISO (for MRG)
FP	Female BSPP (for RP)
BP	Male BSPP (for RG)
FX	Fractional Tube Fitting
MX	Metric Tube Fitting
	Nut+Gasket+

DF	Inlet/Outlet Size
2	1/8"
4	1/4"
6	3/8" or 6 mm
8	1/2" or 8 mm
10	10 mm
12	3/4" or 12 mm

G	Orifice Size
4:	0.14" (3.6 mm)
6:	0.25" (6. mm)

I	Spring Kit Color
F	Green 50 to 300 psig
O	Orange 300 to 700 psig
Y	Yellow 700 to 1500 psig
P	Purple 1500 to 2500 psig
W	White 2500 to 3500 psig
J	Blue 3500 to 4500 psig
C	Red 4500 to 6000 psig

H	Seal Material
Standard with Fluorocarbon FKM	
B	Buna N
N	Neoprene
E	Ethylene propylene
Z	Kalrez

J	NACE MR0175
Standard with no NACE applicable	
SG	With NACE MR0175

Remark:

- 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.



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