

Instrument

Relief Valve VR



Relief Valve VR

CONTENTS

Features	218	How To Order	219
Materials of Construction	218	Ordering Information & Dimensions	220
Cleaning	219	Specification	220
Testing	219	Reseal Pressure	220
Important Notification	219	Cracking Pressure Range	220

Features

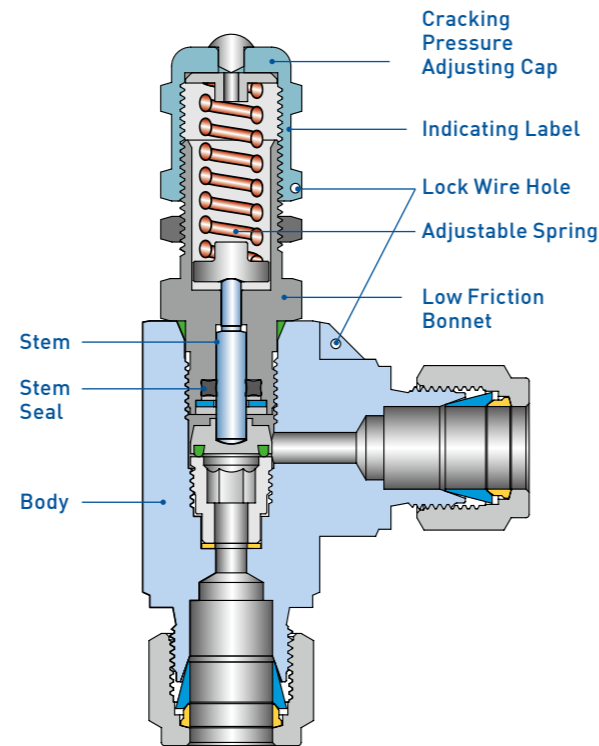
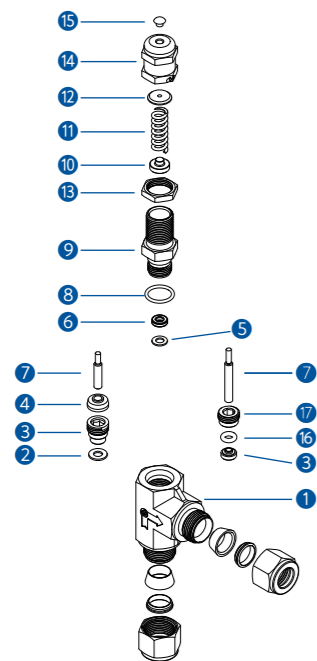
- Compact designed one piece body to reduce space
- Low friction bonnets to increase both accuracy and to improve consistency of cracking and reseal pressure
- Lock wire to secure a given pressure setting
- Identifying color coded springs and labels indicate spring cracking pressure
- Selective and replaceable springs with narrow pressure ranges
- VR3 series - One spring for all set pressure range
- VR6 series - 7 Replaceable springs for a variable pressure range

VR3 series

3000psig (207bar)

VR6 series

6000psig (413bar)



Materials of Construction

No.	Description	Materials	
		VR3	VR6
1	Body	304SS	316SS
2	Gasket	304SS Teflon coat	-
3	Seat	316SS	316SS
4	Bonded Disc	316SS	316SS
5	Washer	316SS	316SS
6	Stem Seal	FKM	FKM
7	Stem	316SS	316SS
8	O-ring	FKM	FKM
9	Bonnet	316SS	316SS
10	Lower Spring Support	316SS	316SS
11	Spring	302SS	302SS
12	Upper Spring Support	316SS	316SS
13	Lock Nut	304SS	304SS
14	Cap	316SS	316SS
15	Plug	316SS	316SS
16	O-ring	-	FKM
17	Insert	-	316SS

Cleaning

UNILOK relief valves are free from machine oils, loose particles and grease throughout the close cleaning process.

Testing

Every relief valve is 100% factory tested with nitrogen for cracking and reseal performance.

Important Notification

Proper installation, materials compatibility, operation and maintenance of these valves are the responsibility of the user. The total system design must be taken into consideration to ensure optimal performance and safety.

UNILOK relief valves that were not actuated for some time may contain pressure higher than the set pressure.

Cracking pressure is not affected by the outlet pressure.

How To Order

UNILOK VR series relief valves are ordered by part number as shown below.

Example: The following part number, **VR3MU-08N08T-SS** is designated for VR3 series low pressure relief valve with 1/2" male NPT x 1/2" UNILOK tube fitting, 316SS.



Valve Type	
R3	Low Pressure, 300psig
R6	High Pressure, 6000psig

Connection Type	
U	UNILOK Tube Fitting
F	Female NPT or ISO7/1(PT)
M	Male NPT or ISO7/1(PT)

Connection Size				
Fractional(Inch) Tube O.D. Designation				
Tube O.D.	inch	1/4	3/8	1/2
	mm	6.35	9.52	12.70
Designator		04T	06T	08T

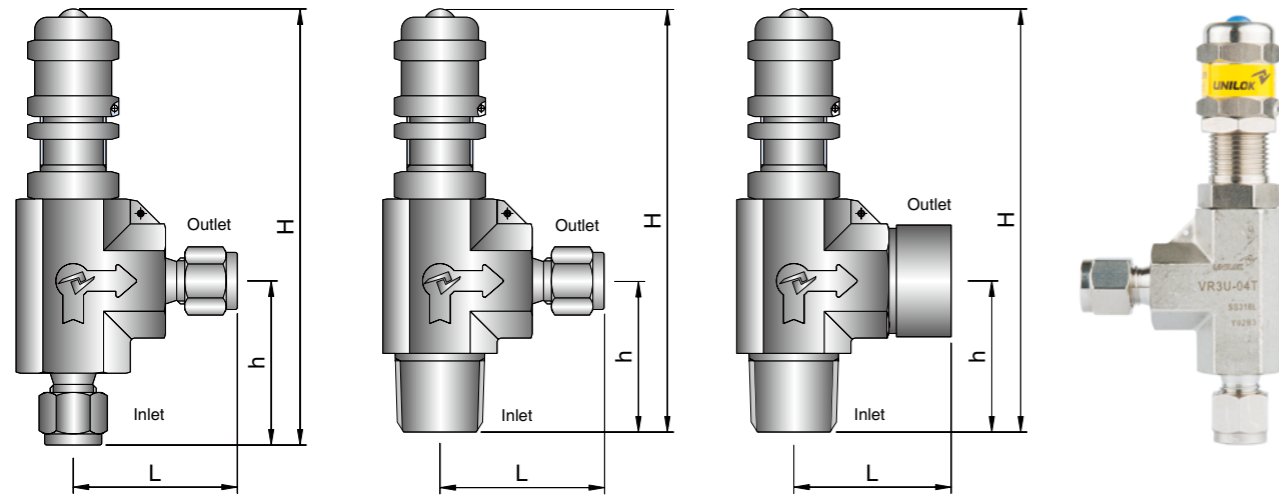
Metric Tube O.D. Designation				
Tube O.D.	mm	6	8	12
	Designator	M06T	M08T	M12T

Pipe Size Designation (NPT or ISO7/1-PT)			
Pipe Size	1/4	3/8	1/2
Designator	04N/R	06N/R	08N/R

Spring Type		
Designator	Color	Cracking Pressure (psig)
Y	Yellow	350 ~ 750
P	Purple	750 ~ 1500
O	Orange	1500 ~ 2250
B	Brown	2250 ~ 3000
W	White	3000 ~ 4000
R	Red	4000 ~ 5000
G	Green	5000 ~ 6000

Options are only for VR6 series. VR3 series spring is yellow color and cracking pressure range with 10~250psig.

VR series



Ordering Information & Dimensions

Part No.	End Connections		Dimensions (mm)			
	Inlet	Outlet	Orifice	L	h	H
VR3 or VR6	U-04T- 1/4" UNILOK		VR3 : 4.8	39.6	39.6	109.5
	U-06T- 3/8" UNILOK			43.8	43.8	113.7
	U-08T- 1/2" UNILOK			46.5	46.5	116.5
	U-M06T- 6mm UNILOK			39.6	39.6	109.5
	U-M08T- 8mm UNILOK			46.6	46.6	116.5
	U-M12T- 12mm UNILOK			46.6	46.6	116.5
	MF-04N- 1/4" Male NPT 1/4" Female NPT		VR6 : 3.5	32.5	32.5	102.4
	MF-06N- 3/8" Male NPT 3/8" Female NPT			34.5	34.5	102.4
	MF-08N- 1/2" Male NPT 1/2" Female NPT			38.0	38.0	102.4
	MU-08N08T- 1/2" Male NPT 1/2" UNILOK		46.5	36.5	36.5	106.4
MU-08NM12T- 1/2" Male NPT 12mm UNILOK						

Specification

Specification	VR3 series	VR6 Series
Maximum Working Pressure	300 psig 20.6 bar	6000 psig 413 bar
Temperature Range	-23 ~ 204°C -10 ~ 400°F	
Cracking Pressure Range	10~250 psig 0.7~18 bar	350~6000 psig 25~413 bar

ISO7/1 Tapered Threads (PT) are available for all fractional sizes of VR series valves. Add "R" as a suffix instead of "N"

Reseal Pressure

0.3pt	Test Set Pressure		Minimum Resealing Pressure (%)
	psig	bar	
VR3	10 ~ 20	0.7 ~ 1.3	50
	175 ~ 225	12.0 ~ 15.5	90
VR6	100 ~ 200	6.8 ~ 13.7	50
	850 ~ 1000	58.5 ~ 68.9	84

Minimum Resealing Pressure - As a percentage of test set pressure

Spring Color Coding and Cracking Pressure Range

Series	Color	Cracking Pressure Range	
		psig	bar
VR3	Yellow	10 ~ 250	0.7 ~ 18
	Yellow	225 ~ 750	15.5 ~ 52
VR6	Purple	750 ~ 1500	52 ~ 103
	Orange	1500 ~ 2250	103 ~ 155
	Brown	2250 ~ 3000	155 ~ 206
	White	3000 ~ 4000	206 ~ 275
	Red	4000 ~ 5000	275 ~ 344
	Green	5000 ~ 6000	344 ~ 413

Dimensions are for reference only and are subject to change without prior notice.