

VRV

SERIES

Description

A compact, highly accurate, direct acting pressure relief valve. Factory preset to desired crack pressure and/or flow specifications. Internal adjustment provides tamper proof safety against inadvertent pressure changes. Available vent to atmosphere or inline configurations in brass, aluminum and 316 stainless steel. Valves feature a Quad ring seal which provides for extreme accuracy and repeatability with a narrow reseal band. Optional deflector cap increases flow capacity and provides for deflection of discharge.

Features

- Accurate and Repeatable Cracking Pressure
- 100% Factory Preset and Tested
- Zero Leakage to 95-98% of Set Pressure
- Tamper Proof Adjustment
- Excellent Reseat Performance
- Compact Size

Technical Data

- Set Pressure Range: 0.5 to 150 Psig (0.03 to 10.34 bar)
- Inline Valves (Series VRVI):
 - Proof Pressure: 400 Psig (28 bar)
 - Burst Pressure: >500 Psig (34 bar)
- Set Pressure Tolerance: Factory preset
 - < 2 Psig (0.14 bar): +/-10%
 - 2 to 150 Psig (0.14 to 10.3 bar): +/- 5% (on increasing pressure)
- Reseat:
 - 50% of Set Pressure for valves specified 0.5 -1.9 Psig (0.03 to 0.13 bar)
 - 80% of Set Pressure for valves specified 2-10 Psig (0.14 to 0.7 bar)
 - 92% of Set Pressure for valves specified 10-150 Psig (0.7 to 10.3 bar)

Temperature Range: -320° to 400° F (-195° C to 205° C)

(based on sealing selection, see ordering information)

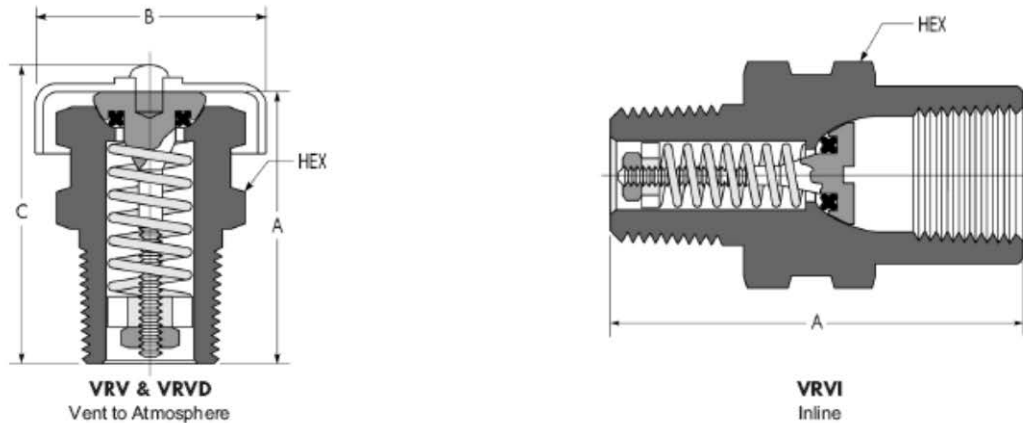


VRV
Vent to Atmosphere



VRVI
Inline

SERIES VRV VENT RELIEF VALVE



Dimensional Data

Pipe Size NPT ¹	VRV & VRVD				VRVI	
	A	B	C	Hex	A	Hex
1/8"	.97	.69	1.10	1/2"	Not Available	
1/4"	1.20	.92	1.32	5/8"	1.62	3/4"
3/8"	1.24	1.17	1.38	3/4"	2.12	7/8"
1/2"	1.75	1.40	1.92	1"	2.20	1"
3/4"	2.25	1.73	2.44	1-1/8"	2.72	1-1/4"
1"	3.12	1.94	3.29	1-1/2"	Not Available	

¹ Available with male straight thread connections. (SAE J1926, MS33656 with cone point removed) Consult factory

Materials of Construction

Component	Valve Body Material		
	Brass	Aluminum ¹	Stainless Steel
Valve Body	Brass, ASTM B16 (Nickel Plated, ASTM B689)	2024 Aluminum ASTM B211 (Clear Anodized, ASTM B580)	316 SS, ASTM A479
Stem			
Spring Retainer ²	Brass, ASTM B16		
Seal ³	As specified, see ordering information		
Spring	302 SS/17-7 PH, ASTM A313		
Locknut	18-8 SS		
Deflector Cap and Rivet	2024 Aluminum ASTM B211 (Clear Anodized, ASTM B580)		

¹ Available in 1/8" and 1/4" valves only

² All 1/8" and 1/4" valves have 316 stainless steel (ASTM A479) retainers

³ Lubricated with Krytox™



Valves & **BI-Lok** Fittings

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SERIES VRV VENT RELIEF VALVE

Flow Data, Series VRV (Vent to Atmosphere)

Nominal Spring		1		5		10		20		50		100		150	
Set Pressure Range		0.5 - 2.5		2.6 - 7.5		7.6 - 15		16 - 35		36-75		76 - 125		126 - 150	
Valve Size	Orifice	Flow (SCFH)	Kd	Flow (SCFH)	Kd	Flow (SCFH)	Kd	Flow (SCFH)	Kd	Flow (SCFH)	Kd	Flow (SCFH)	Kd	Flow (SCFH)	Kd
1/8" NPT (VRV-125)	0.187	7.7	0.03	34	0.06	55	0.07	90	0.08	260	0.12	500	0.13	610	0.11
1/4" NPT (VRV-250)	0.275	8	0.01	37	0.03	69	0.04	123	0.05	515	0.11	2011	0.24	2290	0.19
3/8" NPT (VRV-375)	0.345	12	0.01	58	0.03	108	0.04	150	0.04	550	0.07	1300	0.1	1140	0.06
1/2" NPT (VRV-500)	0.410	50	0.04	110	0.04	150	0.04	220	0.04	1458	0.14	3725	0.2	4000	0.15
3/4" NPT (VRV-750)	0.570	74	0.03	82	0.01	95	0.01	225	0.02	1050	0.05	2080	0.06	3450	0.07
1" NPT (VRV-1000)	0.785	Consult Factory		175	0.02	114	0.01	310	0.02	1360	0.04	4600	0.07	5500	0.06

Flow Data, Series VRVD (Vent to Atmosphere, with Deflector Cap)

Nominal Spring		1		5		10		20		50		100		150	
Set Pressure Range		0.5 - 2.5		2.6 - 7.5		7.6 - 15		16 - 35		36-75		76 - 125		126 - 150	
Valve Size	Orifice	Flow (SCFH)	Kd	Flow (SCFH)	Kd	Flow (SCFH)	Kd	Flow (SCFH)	Kd	Flow (SCFH)	Kd	Flow (SCFH)	Kd	Flow (SCFH)	Kd
1/8" NPT (VRVD-125)	0.187	10.3	0.04	39	0.07	95	0.12	100	0.09	280	0.13	580	0.15	780	0.14
1/4" NPT (VRVD-250)	0.275	11	0.02	40	0.03	100	0.05	172	0.07	2340	0.5	4272	0.5	6650	0.55
3/8" NPT (VRVD-375)	0.345	13	0.01	77	0.04	130	0.05	195	0.05	738	0.1	4353	0.33	6275	0.33
1/2" NPT (VRVD-500)	0.410	60	0.05	246	0.09	420	0.11	658	0.12	2605	0.25	6800	0.37	7600	0.29
3/4" NPT (VRVD-750)	0.570	50	0.02	76	0.01	116	0.02	2500	0.23	6000	0.30	11000	0.30	20000+	0.34+
1" NPT (VRVD-1000)	0.785	Consult Factory		560	0.06	500	0.04	600	0.03	10000	0.27	12000	0.18	20000+	0.20+

Flow Data, Series VRVI (Inline)

Nominal Spring		1		5		10		20		50		100		150	
Set Pressure Range		0.5 - 2.5		2.6 - 7.5		7.6 - 15		16 - 35		36-75		76 - 125		126 - 150	
Valve Size	Orifice	Flow (SCFH)	Kd	Flow (SCFH)	Kd	Flow (SCFH)	Kd	Flow (SCFH)	Kd	Flow (SCFH)	Kd	Flow (SCFH)	Kd	Flow (SCFH)	Kd
1/4" NPT (VRVI-250)	0.187	7.7	0.03	34	0.06	55	0.07	90	0.08	260	0.12	500	0.13	610	0.11
3/8" NPT (VRVI-375)	0.275	8	0.01	37	0.03	69	0.04	123	0.05	515	0.11	2011	0.24	2290	0.19
1/2" NPT (VRVI-500)	0.345	12	0.01	58	0.03	108	0.04	150	0.04	550	0.07	1300	0.1	1140	0.06
3/4" NPT (VRVI-750)	0.410	50	0.04	110	0.04	150	0.04	220	0.04	1458	0.14	3725	0.2	4000	0.15

Notes to Flow Data

- Flow and Kd (discharge coefficient) are stated at 110% accumulation above set point with Nitrogen and Zero Downstream Pressure
- Interpolate charts for set pressures between points given
- Restrictions in the inlet or outlet piping may reduce flow
- Exceeding 115% accumulation may result in valve failure
- Generant offers complete design assistance. Consult factory for correct relief valve sizing
- Individual flow curves available on request
- Orifice sizes are stated in inches



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Ordering Information

VRV - 125 B - V - 15

SERIES

VRV - Vent to Atmosphere
 VRVD - Vent to Atmosphere with Deflector Cap
 VRVI - Inline Relief (Male x Female)

PORT SIZE

125 - 1/8"
 250 - 1/4"
 375 - 3/8"
 500 - 1/2"
 750 - 3/4"
 1000 - 1" (Note: VRVI Not Available)
 NPT threads per ANSI/ASME B1.20.1

Material Code

B - Brass
 A - Aluminum
 SS - 316 SS
 For other materials, consult factory

NOMINAL SET PRESSURE

Specify .5 - 150 Psig
 (Teflon™ Seals not available below 20 Psig)
 Valves that are not actuated for a period of time may exhibit higher initial crack pressure (first bubble) than subsequent cycles

SEAL MATERIAL

V - Viton™, -10°F to 375°F (-23°C to 190°C)
 B - Buna-N, -40°F to 250°F (-40°C to 121°C)
 N - Neoprene, -40°F to 250°F (-40°C to 121°C)
 EP - Ethylene Propylene, -65°F to 300°F (-54°C to 148°C)
 FS - Fluorsilicone, -80°F to 350°F (-62°C to 176°C)
 S - Silicone, -65°F to 400°F (-54°C to 205°C)
 T - Teflon™, -320°F to 400°F (-220°C to 205°C)

OPTIONS

Oxygen cleaning, alternative seals and other thread configurations,
 consult the factory

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PROPER COMPONENT SELECTION – When specifying a component, the total system design must be considered to ensure safe and trouble-free performance. Intended component function, materials compatibility, pressure ratings, installation, environment and maintenance are the responsibility of the system designer.



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