

**LIQUID CYLINDER VALVE**  
**1/4" NPT**  
**22 - 500 Psig (1.5 – 34.5 Bar)**

LCV

SERIES

**Description**

The Series LCV Liquid Cylinder Pressure Control/Relief Valve is designed exclusively for use on DOT 4L Cryogenic Liquid Cylinders. The LCV dramatically reduces the noise associated with traditional cylinder relief device discharge. Under normal operating conditions, the LCV optimizes cylinder performance by venting only what is required to maintain cylinder pressure in a tight band. In the event that circumstances demand, the LCV has adequate flow capacity to ensure safety, meeting all industry and regulatory requirements.

**Features**

- Designed exclusively for use on DOT 4L Liquid Cylinders
- Eliminates disruptive “pop” historically associated with traditional cylinder relief devices
- Incorporates the customer proven “Dirt Guard” poppet
- Accurately maintains and controls cylinder pressure minimizing product loss
- Exceeds industry and regulatory flow capacity requirements
- Complies with OSHA sound level regulations
- Extensively field qualified
- OEM approved and endorsed
- Cleaned and Packaged for Oxygen Service



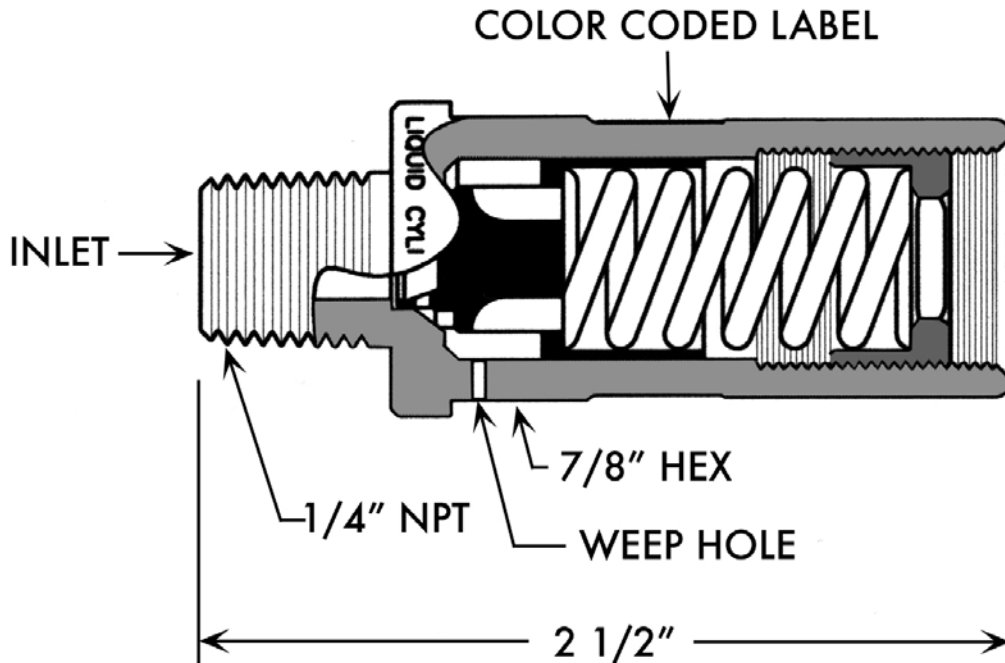
**Technical Data**

Nominal Set Pressure Range: 22 - 500 Psig (1.5 to 34.5 Bar)  
 Factory Set Tolerance\*: Set Pressure ≥ 72.5 PSI, ± 3%  
 Set Pressure < 72.5 PSI, ± 2.175 PSI  
 \*tolerance specifications per EN ISO 4126-1.  
 Zero Leakage to 95% of Set Pressure  
 Reseat: 90% of set pressure  
 Temperature Rating: -320° to 350° F (-196° C to 176° C)  
 based on seal material (see How To Order)  
 Lubricant: Krytox®

**Materials of Construction**

Component	Material	
Valve, Body, Poppet, Spring Retainer, and Screen	Brass, ASTM B16	
Spring	302 (ASTM A313) or 17-4PH (ASTM A564)	
Seal	Flourosilicone 22 to 49 Psig (1.5 to 3.4 Bar)	PCTFE 50 to 500 Psig (3.5 to 34.5 Bar)
Label	.004 Thick Mylar	

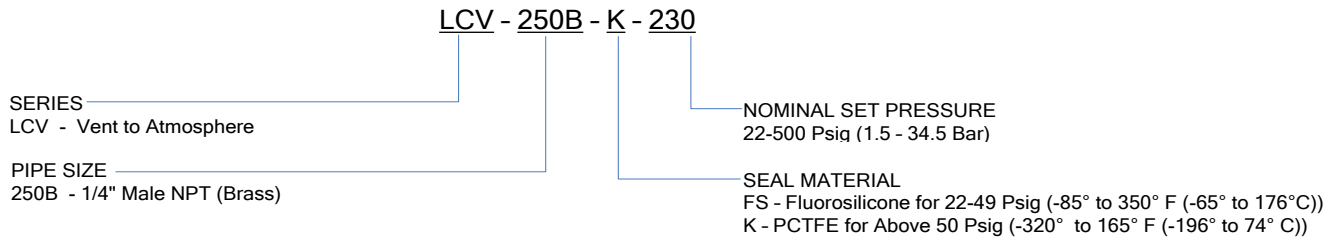
# LIQUID CYLINDER VALVE



## Flow Data

Set Pressure (PSIG)	Flow Rate (SCFM N2)	
	110% Set Pressure	120% Set Pressure
22	11.8	12.4
100	21.8	31.0
230	43.9	64.7
350	61.2	85.3
500	77.1	111.4

## How To Order



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.



[www.generant.com](http://www.generant.com)

1865 Route 23 South PO Box 768 Butler, New Jersey 07405 973.838.6500 Fax 973.838.4888

SA.SL.LCV001.D.2234

**SDC**  
**SERIES**

**Description**

The Series SDC connection system is supplied for installation into the outlet ports of most gas use, vent and fill valves on a cryogenic liquid cylinder. The system is a one-piece assembly consisting of a CGA fitting/clutch mechanism permanently mounted in a stainless steel locking bracket. Once installed, this system cannot be removed without rendering the CGA outlet connection unusable.



**Features and Benefits**

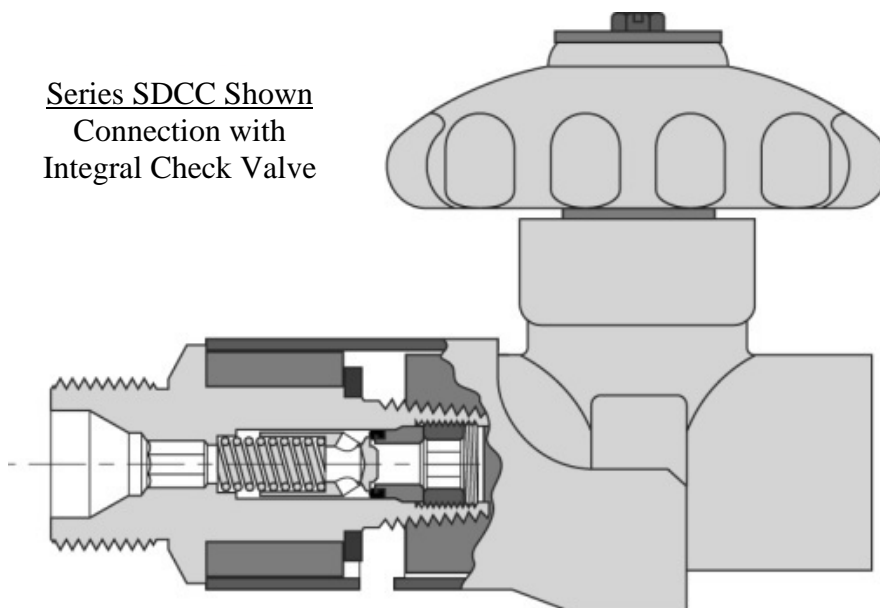
- Easily installs on most existing threaded cylinder valves using standard hex wrench.
- NPT Male connection supplied with factory applied PTFE thread sealant tape
- Suitable for both Industrial and Medical Applications
- CGA connections manufactured to industry standards
- Zero external leakage
- Cleaned and Packaged for Oxygen Service
- Optional Integral Anti-Back-Flow Check Valve
- OEM Endorsed

**Materials of Construction**

Component	Material
Fitting Body, Clutch Housing	Brass, ASTM B16
Spherical Locking Pawls	440 SS, ANSI 440C
Springs, Stop Washer	302 SS, ASTM A313
Locking Sleeve, Retaining Pins	304 SS, ASTM A240
Warning Label	4 Mil Laminated Vinyl

# SERIES SDC Self-Locking Liquid Cylinder Connectors

Series SDCC Shown  
Connection with  
Integral Check Valve



## Ordering Information

SDCC - 3 540 - V

**SERIES**

SDC - Self Locking CGA Connection  
SDCC - Self Locking CGA Connection with  
Integral Check Valve (3320, 3326, 3540, & 3580 only)  
Nominal 1 psi crack pressure.

**INLET**

3 - 3/8" NPT Male  
375 - 3/8" NPT Male Plug (3000 psi) omit outlet designation  
(specify SDC-375)

**OUTLET (MAWP\*)**

540 - CGA-540 (3000 psi)  
320 - CGA-320 (3000 psi)  
326 - CGA-326 (3000 psi)  
580 - CGA-580 (3000 psi)  
440 - CGA-440 (500 psi)  
295 - CGA-295 (500 psi)  
622 - CGA-622 (500 psi)  
624 - CGA-624 (500 psi)

\* as defined in CGA V-1 Standard for Compressed Gas Cylinder Valve Outlet and Inlet Connections

**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 300°F (-40°C to 148°C)  
EP - Ethylene Propylene, -65°F to 300°F (-54°C to 148°C)  
FS - Fluorosilicone, -80°F to 350°F (-62°C to 176°C)

Note: Viton™ is a trademark of DuPont.

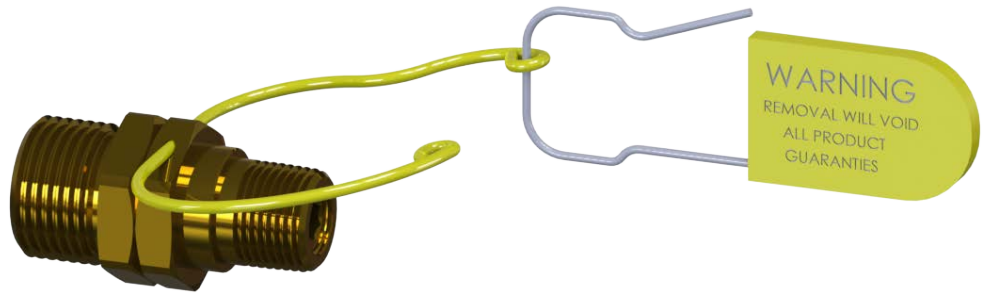
PROPER COMPONENT SELECTION – When specifying a component, the total system design must be considered to ensure safe and trouble-free performance. Intended component function, materials compatibility, pressure ratings, installation, environment and maintenance are the responsibility of the system designer.



[www.generant.com](http://www.generant.com)

1865 Route 23 South PO Box 768 Butler, New Jersey 07405 973.838.6500 Fax 973.838.4888

CYLINDER CHECK



**Description**

The Cylinder Check Valve is used on the gas use outlet of industrial cryogenic liquid cylinders to prevent back flow into the cylinder. The optional "Tamper Evident Restraint" provides a visual indication if removal of the connection has been attempted. Available in CGA 540 & 580 configurations.

**Features**

- Compact and rugged one piece body construction
- Optional "Tamper Evident Restraint" - lock wire and lockout tag
- Provides visual evidence of compliance
- High flow design exceeds maximum cylinder output
- Supplied cleaned and bagged for Oxygen Service
- 100% Factory Tested for leakage
- GLT Low Temperature Viton™ Seal

**Technical Data**

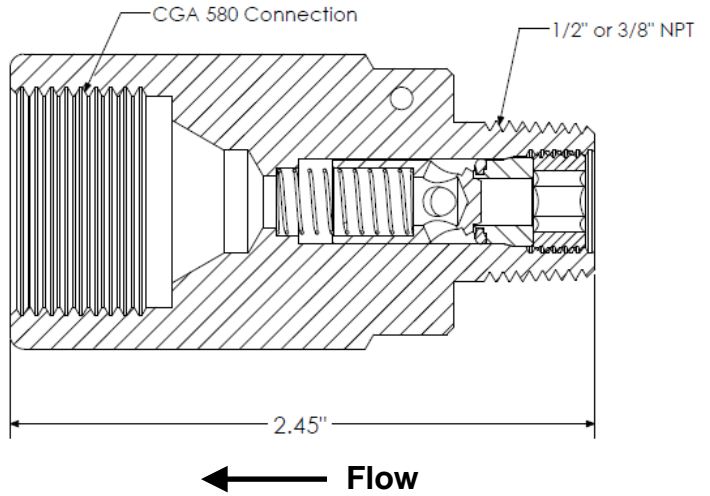
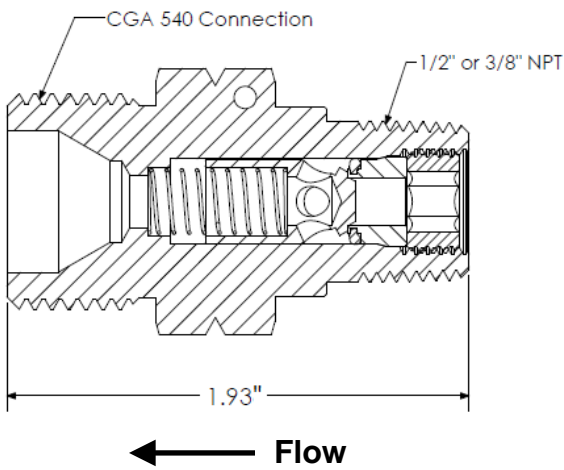
- Nominal Crack Pressure: 1 Psig (0.07 Bar)
- External Leakage: Zero leak
- Internal Leakage: Zero leak at 0.5 PSIG (0.03 bar) Back Pressure
- Cv (flow coefficient): 0.65
- Maximum Pressure: 3000 PSIG @ 150° F (206 bar @ 66° C)
- Proof Pressure: 5,000 PSIG (345 bar)

**Materials of Construction**

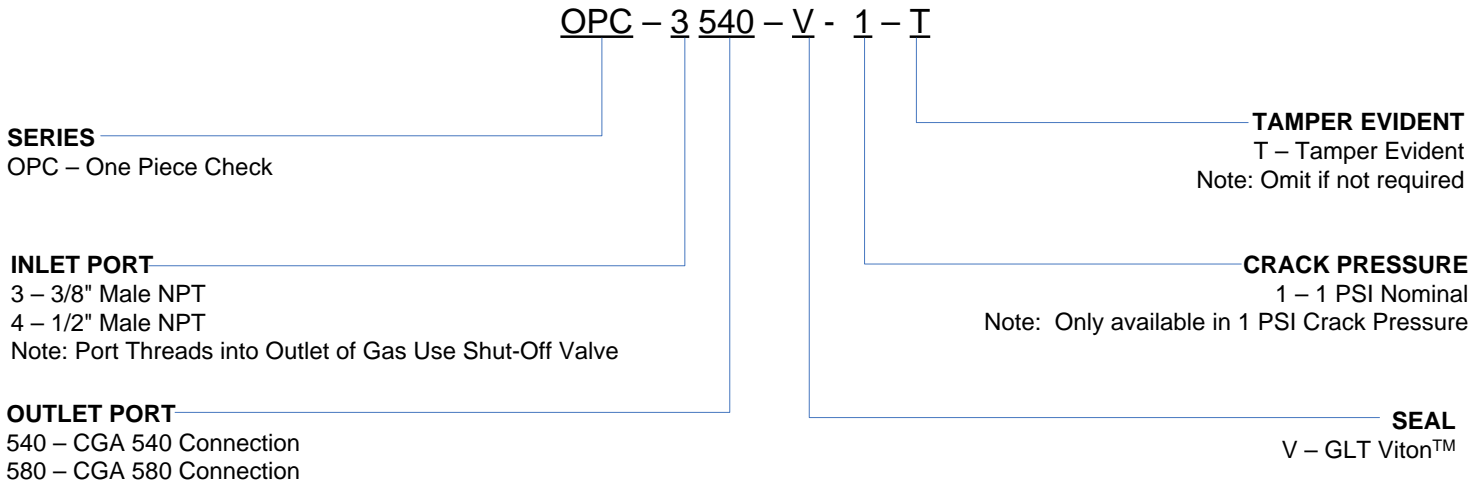
Component	Material
Body, Poppet, Seat Insert, Seat Locking Screw	Brass, ASTM B16
Spring	Phosphor Bronze, ASTM B159
O'Ring Seal*	GLT Viton™

\*Lubricated with Krytox™ GPL-205

# CYLINDER CHECK VALVE



## Ordering Information



Note: Viton™ and Krytox™ are trademarks of DuPont.

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.



[www.generant.com](http://www.generant.com)

1865 Route 23 South PO Box 768 Butler, New Jersey 07405 973.838.6500 Fax 973.838.4888

**VENT RELIEF VALVE**  
**1/8" - 1" NPT**  
**.5 - 150 Psig (0.03 – 10.3 bar)**

**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 Reseal 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)
- Reseal:  
 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° F (-195° C to 205° C)

*(based on sealing selection, see ordering information)*

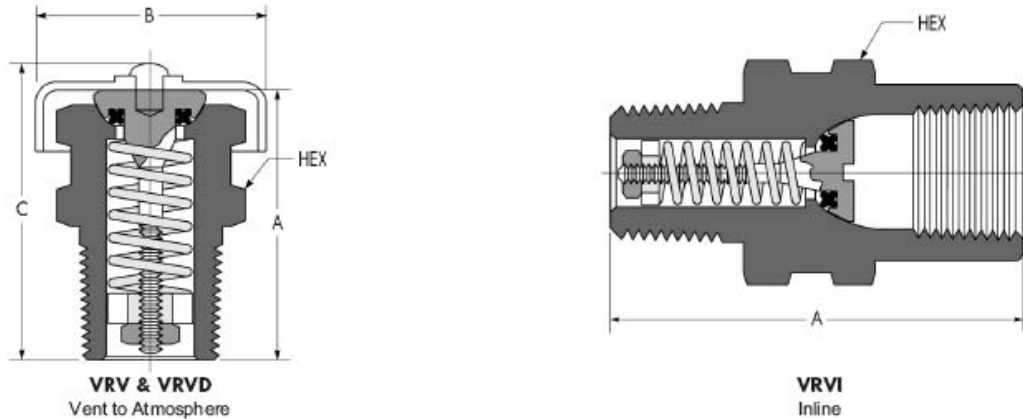


**VRV**  
**Vent to Atmosphere**



**VRVI**  
**Inline**

# SERIES VRV VENT RELIEF VALVE



## Dimensional Data

Pipe Size NPT <sup>1</sup>	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	

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

## Materials of Construction

Component	Valve Body Material		
	Brass	Aluminum <sup>1</sup>	Stainless Steel
Valve Body	Brass, ASTM B16 (Nickel Plated, ASTM B689)	2024 Aluminum ASTM B211 (Clear Anodized, ASTM B580)	316 SS, ASTM A479
Stem	Brass, ASTM B16		
Spring Retainer <sup>2</sup>			
Seal <sup>3</sup>	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)		

<sup>1</sup> Available in 1/8" and 1/4" valves only

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

<sup>3</sup> Lubricated with Krytox™

**GENERANT**

[www.generant.com](http://www.generant.com)

1865 Route 23 South PO Box 768 Butler, New Jersey 07405 973.838.6500 Fax 973.838.4888

# 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	550	0.01	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	660	0.02	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



[www.generant.com](http://www.generant.com)

1865 Route 23 South PO Box 768 Butler, New Jersey 07405 973.838.6500 Fax 973.838.4888

# SERIES VRV VENT RELIEF VALVE

## 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

Viton, Krytox & Teflon are trademarks of DuPont.

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.



www.ipapsa.mx  
55.53.08.01.48 • [contacto@ipapsa.mx](mailto:contacto@ipapsa.mx)