

CRYOGENIC RELIEF VALVE (STAINLESS) 1/4" and 1/2" NPT -4 and -8 Metal To Metal Face Seal 1/4" and 1/2" Bi-Lok Dual Ferrule Tube 10 - 750 Psig (0.69 - 51.7 Bar)

#### Description

The Generant Series Stainless Steel CRV, Cryogenic Relief Valve is a spring reference over pressure protection device. The Stainless CRV is supplied cleaned and packaged for oxygen service making it an ideal choice for most cryogenic relief valve applications. The valve can be ordered with set pressures ranging from 10 to 750 Psig (0.69 to 51.7 Bar) and come factory preset and permanently locked. Relief pressure can not be altered or adjusted in the field. Seat and poppet geometry combined with optimized spring ranges provide high flow rates with minimum pressure accumulation. Compact design and availability of a variety of inlet and outlet configurations reduces size and piping requirements. Relief pressure can be discharged to atmosphere or to a downstream connection. The CRV can be specified with PCTFE (set pressures above 50 Psig (3.54 Bar)), Viton<sup>®</sup>, and Fluorsilicone seals.

#### **Features**

- Available in NPT, Metal to Metal Face Seal and Bi-Lok Dual Ferrule Tube Connections
- High Flow Capacity and Excellent Reseal Performance
- Discharge to Atmosphere or a Wide Varity of Inline Piping Configurations
- Supplied Factory Preset Set and Permanently Locked for Tamper Proof Service
- 100% Factory Tested for Leakage, Crack and Reseal Performance
- Optional Deflector Cap available for diverting exhausted gas
- Cleaned and Packaged for Oxygen Service

# **Technical Data**

**STAINLES** 

Nominal Set Pressure Range: 10 – 750 Psig (0.69 to 51.7 Bar) Factory Set Tolerance: +/- 5% of Specified Pressure Zero Leakage to 95% of Set Pressure Full Rated Flow @ 110% of Set Pressure Reseal: 90% (80% for PCTFE seals set below 100 psig (6.9 Bar)) Unaffected by up to 10% Back Pressure Temperature Rating: -320° to 392° F (-196° C to 200° C) based on seal material (see How To Order) Lubricant: Krytox<sup>®</sup>

# **Materials of Construction**

Component	Material
Body, Poppet, Seat Screw, Spring Retainer, In-Line Adapter <sup>1</sup> , Nuts and Ferrules	316 Stainless Steel (ASTM A479) <sup>2</sup>
Spring	302 or 17-7 PH Stainless Steel (ASTM A313)
Seals	PCTFE (ASTM D1430), Viton <sup>®</sup> or Teflon <sup>®</sup>

<sup>1</sup> Inline Adapters utilize Viton<sup>®</sup> o-ring seals. Metal to Metal Face Seal Inline Adapters are Electro Polished to 10 Ra Max.

<sup>2</sup> Valves supplied with Metal to Metal Face Seal connections have Electro Polished Inlet, Poppet and Seat Screw to 10 Ra Max.

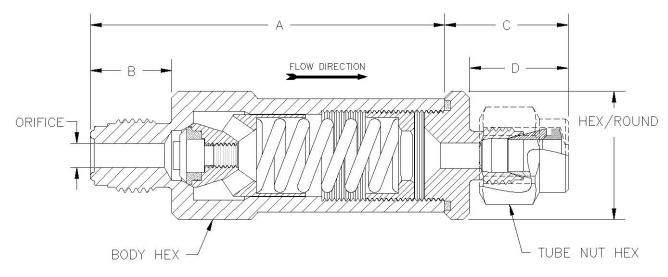








# **CRYOGENIC RELIEF VALVE (STAINLESS)**



Configuration Shown CRV4T-4V

### **Dimensional Data**

Inlet Size	Designation	Orifice	Α	В	Body Hex	Tube Nut Hex
1/4" NPT	4	.312 (7.93)	2 CE (CE 02)	0.59 (14.99)		N/A
1/2" NPT	8	.400 (10.16)	2.65 (65.02)			
-4 Face Seal	4V	.180 (4.57)	2.68 (68.07)	0.62 (15.75)	7/8"	
1/4" Bi-Lok	4T	.180 (4.57)	3.35 (85.09)	0.70 (17.78)		9/16"
1/2" Bi-Lok	8T	.400 (10.16)	3.51 (89.15)	0.86 (21.84)		7/8"
-8 Face Seal	8V	.400 (10.16)	2.82 (71.63)	0.75 (19.05)	1"	N/A

Configuration	Outlet	С	D	Hex/Round	Tube Nut Hex
CRV	Vent to Atmosphere		N	/A	
CRVD	Deflector Cap	0.75 (19.05)		7/8" Hex	N/A
CRV4	1/4" FNPT	0.37 (9.40)	N/A	1" Rd	
CRV6	3/8" FNPT	0.67 (17.02)			
CRV8	1/2" FNPT	0.74 (18.80)			
CRV4V	-4 Face Seal	0.80 (20.32)	0.62 (15.75)		
CRV4T	1/4" Bi-Lok	0.89 (22.61)	0.70 (17.78)	7/8" Hex	9/16"
CRV8T	1/2" Bi-Lok	1.05 (26.67)	0.86 (21.84)		7/8"
CRV8V	-8 Face Seal	0.94 (23.88)	0.75 (19.05)	1" Hex	N/A

Note: Dimensions shown with Bi-Lok nuts finger-tight. Dimensions are in inches (millimeters), for reference only and subject to change. NPT Threads per ASME B1.20.1

#### **Flow Data**

Set Pressure Range (Psig)		Discharge Coefficient, Kd			
From	То	.180 Orifice (4.57mm)	.312 Orifice (7.92mm)	.400 Orifice (10.16mm)	
8	19	0.05	0.44	0.25	
20	28	0.30	0.57	0.30	
29	45	0.30	0.57	0.34	
46	62	0.34	0.57	0.34	
63	89	0.60	0.57	0.34	
90	130	0.60	0.57	0.34	
131	180	0.60	0.55	0.28	
181	275	0.57	0.55	0.28	
275	400	0.37	0.43	0.28	
401	615	0.37	0.28	0.25	
616	750	0.37	0.17	0.12	

How To Order

Configura	
CRV	
CRVD	Deflector Cap
CRV4	1/4" FNPT Inline Adapter
CRV6	3/8" FNPT Inline Adapter
CRV8	1/2" FNPT Inline Adapter
CRV4V	-4 Face Seal Inline Adapter
CRV4T	1/4" Bi-Lok Inline Adapter
CRV8T	1/2" Bi-Lok Inline Adapter
CRV8V	-8 Face Seal Inline Adapter
4 1/4 8 1/2 4V -4 4T 1/4 8T 1/2	P Designation 4" NPT Male Inlet 2" NPT Male Inlet Metal to Metal Face Seal 4" Bi-Lok Dual Ferrule Tube 2" Bi-Lok Dual Ferrule Tube Metal to Metal Face Seal
V - Viton	E above 50 Psig (-320° to 165° F (-196° to 74° C)) <sup>®</sup> (-20° to 375° F (-29° to 190° C)) prsilicone (-85° to 392° F (-65° to 200° C))
Specify S 10-750 F	Set Pressure sig

<u>CRV4</u> - <u>4</u> - <u>K</u> - <u>350</u>

Viton<sup>®</sup> and Krytox<sup>®</sup> are registered 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.



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SA.SL.SSCRV001.B.1779