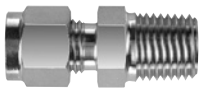
BI-Lok®

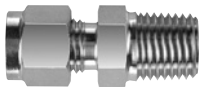
Series D Dual Ferrule Instrument Tube Fittings

GENERANT Fluid Connectors

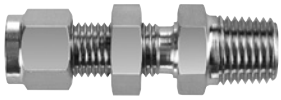
BI-LOK to MALE NPT



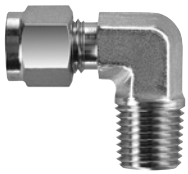
DCT
Male NPT Connector



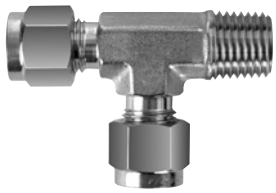
DCTZ
Thermocouple Connector



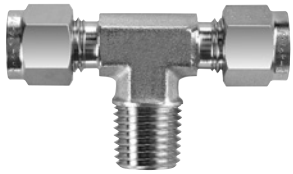
DSC
Bulkhead Male
NPT Connector



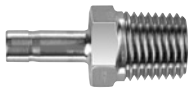
DLN
Male NPT Elbow



DTK
Male NPT Run Tee

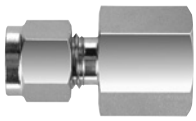


DTN
Male NPT Branch Tee

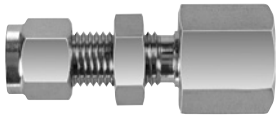


DHA
Tube Stub to
Male NPT Adapter

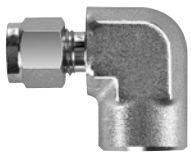
BI-LOK to FEMALE NPT



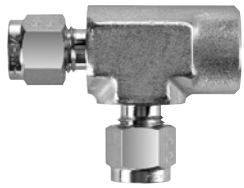
DSA
Female NPT
Connector



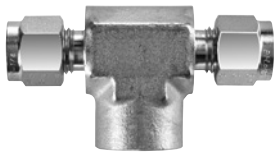
DSS
Bulkhead Female
NPT Connector



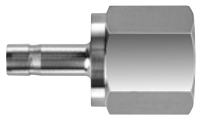
DLF
Female NPT Elbow



DTF
Female NPT Run Tee



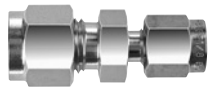
DTH
Female NPT Branch Tee



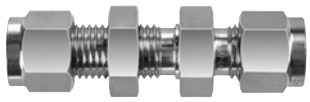
DHC
Tube Stub to
Female NPT Adapter

BI-LOK UNION

DUA
Union

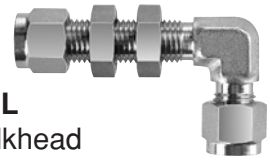


DUR
Reducing Union

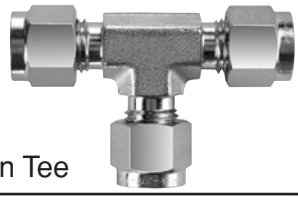


DSU
Bulkhead Union

DLA
Union Elbow

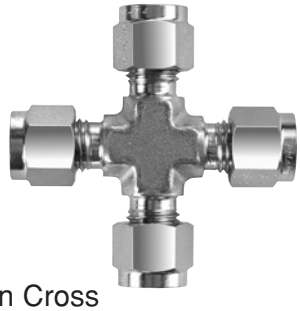


DSL
Bulkhead
Union Elbow



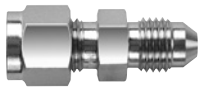
DTA
Union Tee

DTR
Reducing Union Tee

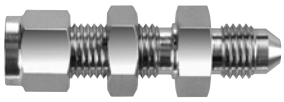


DXA
Union Cross

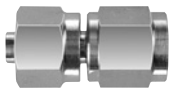
BI-LOK to AN 37° FLARE



DUC
AN 37° Flare Union



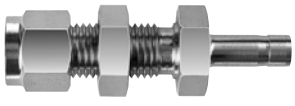
DUE
Bulkhead AN
37° Flare Union



DAN
AN 37°
Flare Adapter

TUBE STUB

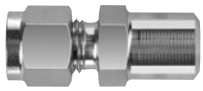
DRE
Reducer



DSE
Bulkhead Adapter

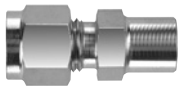
DPC
Port Connector

BI-LOK to WELD

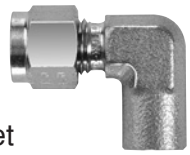


DCB
Male Pipe
Weld Connector

DLB
Male Pipe
Weld Elbow



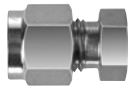
DCW
Tube Socket
Weld Union



DLW
Tube Socket
Weld Elbow

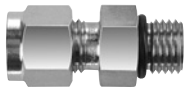
PLUG AND CAP

DBA
Plug



DCA
Cap

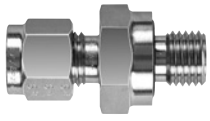
BI-LOK to SAE/MS STRAIGHT THREAD



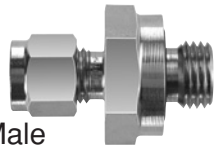
DCU
SAE/MS Male
Straight Thread
Connector

DLO
Positionable
SAE/MS Male
Straight Thread Elbow

BI-LOK to O-SEAL



DCO
O-Seal Male Straight
Thread Connector



DCM
O-Seal Male
NPT Connector

COMPONENTS

DOF
Front Ferrule

DOB
Back Ferrule

DNA
Nut

DOS
Ferrule Set

DTI
Tube Insert

CONSTRUCTION AND OPERATION

BI-Lok Series D Dual Ferrule Tube Fittings are composed of four precision machined component parts: 1) fitting body, 2) front ferrule, 3) back ferrule, 4) nut. BI-Lok Tube Fittings are shipped fully assembled and individually bagged. Once the tubing has been fully inserted into the fitting, a leak tight seal is achieved through the simple action of tightening the nut against the fitting body. The tightening of the nut provides the axial thrust required to engage the captively held ferrules against the outside diameter of the tubing. The staged swaging action of the ferrules, with minimal torque transfer to the tubing during make-up, provides the key to BI-Lok's high integrity sealing capability and exceptional service life.

MATERIALS OF CONSTRUCTION

Component		Fitting Material	
		Brass	316 Stainless Steel
Fitting Body	Forged	ASTM B124, CDA 377	ASTM A182
	Bar Stock	ASTM B16, CDA 360	ASTM A479
Front Ferrule Back Ferrule Nut			

Stainless Steel Fitting Bodies and Nuts are Heat /Lot code traceable. Stainless steel nuts are silver plated to prevent gauling and reduce make-up torque.

QUALITY CONTROL

BI-Lok Tube Fittings are designed, manufactured and inspected to the rigid quality requirements of our ISO certified production facility. All Stainless Steel Fittings are Heat/Lot code traceable. BI-Lok Tube Fittings have been tested and certified to a variety of Global International Industry standards and regulatory agencies.

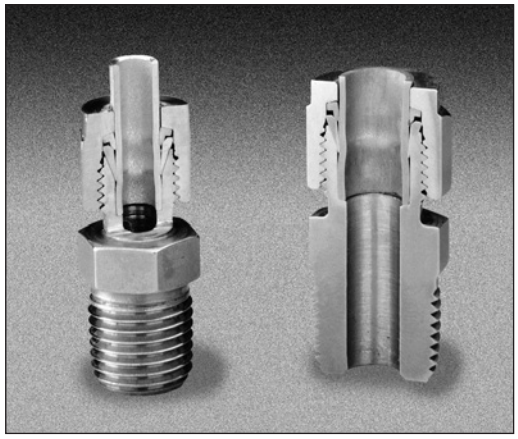
*Swagelok® is a registered trade mark of the Swagelok Company

INTERCHANGEABILITY AND GAGEABILITY

BI-Lok Series D Dual Ferrule Tube Fittings are manufactured to be completely component intermixable with the Swagelok® brand of tube fittings. Independent third party testing concluded that piece by piece intermixing of each manufacturer's component parts, in various combinations, yielded no performance degradation of the fitting connection. BI-Lok Dual Ferrule Tube Fittings are fully compatible for use with the Swagelok® brand Gap Inspection Gauges.

TUBING SELECTION AND PREPARATION

The selection of the proper tubing is essential to both the performance and safety of a tubing system. Careful consideration should be applied to the following variables; system pressure, media, flow, operating temperature and environmental conditions. Tube fittings should always be used with similar tube materials. i.e.; Stainless Steel fittings with Stainless Steel tubing and Brass fittings with copper tubing. In order to achieve proper fitting make-up, the tubing must be softer that the fitting material. For stainless steel tubing, we recommend fully annealed seamless or welded and drawn tubing of ASTM A269, A213 and A249. Tubing hardness should not exceed Rockwell B-90. For copper tubing, seamless or soft annealed ASTM B-75, or seamless soft annealed Type K or Type L water tubing ASTM B-88 is recommended. Care should be taken in tube handling to ensure that tubing is reasonably straight and is cut in a manner to create smooth square ends, free of burrs. Handling practices should consider that surface scratches on the tube OD may be a potential source of leaks.



PRESSURE RATINGS

The BI-Lok Dual Series D Ferrule Tube Fitting consists of four elements – nut, front ferrule, back ferrule and fitting body. However, the actual sealing function is accomplished with the addition of a fifth element, the tubing itself. Therefore, the pressure rating of the fitting assembly is a direct function of the tubing selected. Proper tube selection is critical and the ultimate responsibility of the system designer/user. The tables listed on page 2 provide the allowable pressure ratings of a variety of commonly used tube sizes and materials.

STAINLESS STEEL TUBING

Tube OD	Tube Wall Thickness (Inches)											
	0.010	**0.012**	**0.014**	**0.016**	**0.020**	**0.028**	**0.035**	**0.049**	**0.065**	**0.083**	**0.095**	**0.109**
1/16"	5600	6800	8100	9400	12000							
1/8 "						8500	10900					
3/16"						5400	7000	10200				
1/4"						4000	5100	7500	10200		Working Pressure, PSIG	
5/16"							4000	5800	8000			
3/8"							3300	4800	6500			
1/2"							2600	3700	5100	6700		
5/8"								2900	4000	5200		
3/4"								2400	3300	4200	4900	5800
7/8"								2000	2800	3600	4200	4800
1"									2400	3100	3600	4200

304 and 316 annealed seamless tubing per ASTM A-269 or equivalent working pressure are based on allowable stress of 20,000 psi between -20° F and 100° F (Reference: ANSI B31.3)

COPPER TUBING

Tube OD	Tube Wall Thickness (Inches)							
	0.028	**0.035**	**0.049**	**0.065**	**0.083**	**0.095**	**0.109**	**0.120**
1/8 "	2700	3600	5100					
3/16"	1800	2300	3400					
1/4"	1300	1600	2500	3500				
5/16"		1300	1900	2700		Working Pressure, PSIG		
3/8"		1000	1600	2200				
1/2"		800	1100	1600	2100			
5/8"			900	1200	1600	1900		
3/4"			700	1000	1300	1500	1800	
7/8"			600	800	1100	1300	1500	
1"			500	700	900	1100	1300	1500

Copper tubing per ASTM B-75 or equivalent. Working pressures are based on allowable stress of 6,000 psi between -70°F and 100° F (Reference: ANSI B31.3)

STRESS FACTORS

Stress Factor used to calculate maximum allowable working pressures at elevated temperatures.
NOTE: *To find the maximum allowable working pressures for various tube materials at elevated temperatures, simply multiply the maximum allowable working pressure for the the tube size and wall thickness found in these charts by the correct Stress Factor found in the table below:*

Temperature Stress Factor				
TEMP (°F)	304 Stainless Steel	316 Stainless Steel	Carbon Steel	Copper
200	1.00	1.00	.95	.80
400	.93	.96	.87	.50
600	.82	.85		
800	.76	.79		
1000	.69	.76		

CARBON STEEL TUBING

Tube OD	Tube Wall Thickness, (Inches)							
	0.028	**0.035**	**0.049**	**0.065**	**0.083**	**0.095**	**0.109**	**0.120**
1/8"	8000	10200						
3/16"	5100	6600	9600					
1/4"	3700	4800	7000	9600				
5/16"		3700	5500	7500		Working Pressure, PSIG		
3/8"		3100	4500	6200				
1/2"		2300	3200	4500	5900			
5/8"		1800	2600	3500	4600	5300		
3/4"			2100	2900	3700	4300	5100	
7/8"			1800	2400	3200	3700	4300	
1"			1500	2100	2700	3200	3700	4100

Carbon steel hydraulic tubing per ASTM A-179 or equivalent. Working pressures are based on allowable stress of 15,700 psi between -70°F and 100° F (Reference: ANSI B31.3)

PIPE END PRESSURE RATINGS

NPT Pipe Size	316 Stainless and Carbon Steel		Brass	
	Male	Female	Male	Female
1/8"	10000	6500	5000	3200
1/4"	8000	6600	4000	3300
3/8"	7800	5300	3900	2600
1/2"	7700	4900	3800	2400
3/4"	7300	4600	3600	2300
1"	5300	4400	2600	2200

Fittings with both Tube and NPT threaded pipe end connections have different pressure ratings. When specifying these type fittings, please refer to this chart for maximum allowable pressure ratings. A thread sealant is recommended when using NPT connections.

ASSEMBLY INSTRUCTIONS

Assembly Instructions

The following procedures refer to the proper assembly of the BI-Lok Series D Dual Ferrule Tube Fittings.

1. BI-Lok Tube Fittings are supplied fully assembled and individually bagged, allowing for clean efficient make-up. Should component assembly be required, please note that the order of assembly is the front ferrule into the cone of fitting body, back ferrule and fitting nut as noted in Fig. 1.
2. Insert the tubing into the fitting body until it bottoms out against the tube stop shoulder of the fitting. Please note that tubing should be cut squarely and free of burrs.
3. Hand tighten the nut as much as possible, bringing the fitting to what is called the "finger tight" position.
4. Secure the fitting body with a wrench and tighten the nut with another wrench an additional 3/4 of a turn for tube sizes 1/16" thru 3/16" or for sizes 1/4" and above 1-1/4 turns. (refer to Fig. 2a, 2b, and 2c).

Reassembly Instructions

To reassemble a BI-Lok Series D Dual Ferrule Tube Fitting, simply insert the tube assembly (nut, front and back ferrule preswaged on the tube) into the fitting body and hand tighten the nut. Next, using a wrench, rotate the nut approximately 1/4 of a turn (back to the original make-up position) and then tighten the nut slightly.

Tube Measuring and Fitting

When measuring and bending tubing it is important to be aware of two critical measurements. The first being the tube insertion depth (reference dimension G) into the fitting assembly which must be considered in the determining the over all length of tube required. The other being the minimum length of straight tubing required for a proper tube bend (reference dimension H). Both measurements are dependant on tube OD; please use Fig. 3 for reference purposes.

Fig.1

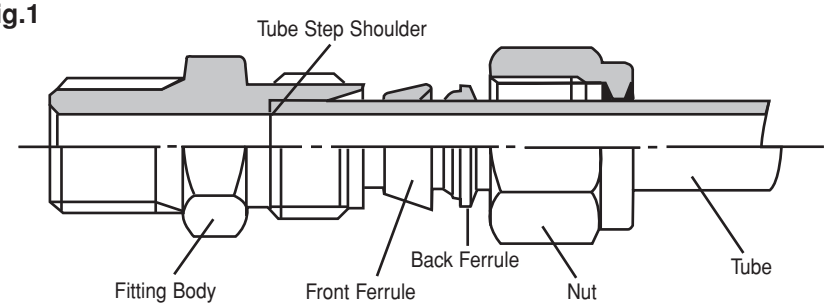


Fig.2a

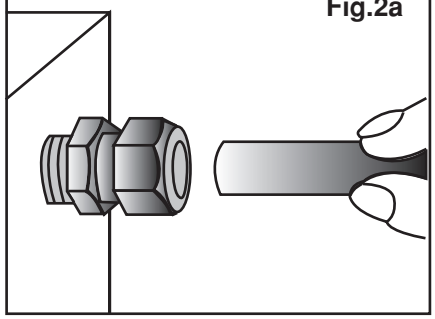


Fig.2c

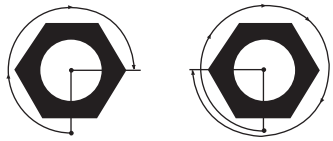


Fig.2b

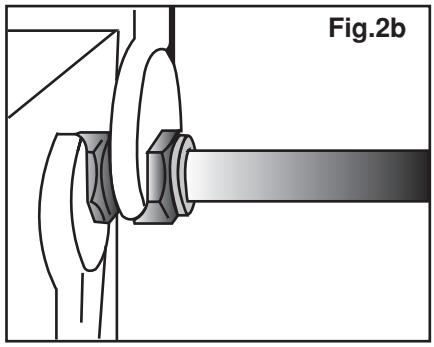
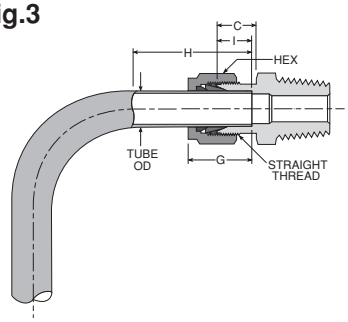


Fig.3



Tube Size	A Tube OD	Straight Thread	Hex Tube Nut	C	G	H	I
1	1/16"	10-32	5/16"	0.27	0.34	1/2"	0.19
2	1/8"	5/16"-20	7/16"	0.34	0.50	23/32"	0.25
3	3/16"	3/8"-20	1/2"	0.37	0.54	3/4"	0.28
4	1/4"	7/16"-20	9/16"	0.40	0.60	13/16"	0.31
5	5/16"	1/2"-20	5/8"	0.44	0.64	7/8"	0.34
6	3/8"	9/16"-20	11/16"	0.47	0.66	15/16"	0.37
8	1/2"	3/4"-20	7/8"	0.47	0.90	1 3/16"	0.50
10	5/8"	7/8"-20	1"	0.47	0.96	1 1/4"	0.56
12	3/4"	1"-20	1 1/8"	0.47	0.96	1 1/4"	0.56
14	7/8"	1 1/8"-20	1 1/4"	0.47	1.02	1 5/16"	0.63
16	1"	1 5/16"-20	1 1/2"	0.56	1.23	1 1/2"	0.75

ORDERING INFORMATION

How To Order

BI-Lok tube fittings are ordered by part number as listed in this catalog. The part numbering system is designed so that you can easily identify the type, configuration, size and material of the fitting. Using the example below, specify the Fitting Type, Size Designator, Material and any additional Options desired.

Type	Description	Page	End Connection 1		End Connection 2
DAN	AN 37° Flare Union	5	Tube OD		AN Flare
DBA	Plug	5		Tube OD	
DCA	Cap	6		Tube OD	
DCB	Male Pipe Weld Connector	6	Tube OD		Male Weld Pipe
DCM	O-Seal Male NPT Connector	7	Tube OD		Male NPT
DCO	O-Seal Male Straight Thread Connector	7	Tube OD		Straight Thread
DCT	Male NPT Connector	8	Tube OD		Male NPT
DCU	SAE/MS Male Straight Thread Connector	9	Tube OD		Straight Thread
DCW	Tube Socket Weld Union	9		Tube OD	
DCTZ	Male NPT Connector	10	Tube OD		Male NPT
DHA	Tube Stub to Male NPT Adapter	11	Tube Stub		Male NPT
DHC	Tube Stub to Female NPT Adapter	12	Tube Stub		Female NPT
DLA	Union Elbow	12		Tube OD	
DLB	Male Pipe Weld Elbow	13	Tube OD		Male Weld Pipe
DLF	Female NPT Elbow	13	Tube OD		Female NPT
DLN	Male NPT Elbow	14	Tube OD		Male NPT
DLO	Positionalbe SAE/MS Male Straight Thread Elbow	15	Tube OD		Straight Thread
DLW	Tube Socket Weld Elbow	15		Tube OD	
DNA	Nut	15		Tube OD	
DOB	Back Ferrule	16		Tube OD	
DOF	Front Ferrule	16		Tube OD	
DOS	Ferrule Set	16		Tube OD	
DPC	Port Connector	17	Tube OD		Tube Stub
DRE	Reducer	17-18	Tube OD		Tube Stub
DSA	Female NPT Connector	18-19	Tube OD		Female NPT
DSC	Bulkhead Male NPT Connector	19	Tube OD		Male NPT
DSE	Bulkhead Reducer	20	Tube OD		Tube Stub
DSL	Bulkhead Union Elbow	20		Tube OD	
DSS	Bulkhead Female NPT Connector	21	Tube OD		Female NPT
DSU	Bulkhead Union	21		Tube OD	
DTA	Union Tee	22		Tube OD	
DTF	Female NPT Run Tee	22	Tube OD		Female NPT
DTH	Female NPT Branch Tee	23	Tube OD		Female NPT
DTI	Tube Insert	23	Tube OD		Tube ID
DTK	Male NPT Run Tee	24	Tube OD		Male NPT
DTN	Male NPT Branch Tee	24	Tube OD		Male NPT
DTR	Reducing Union Tee	25	Tube OD	Tube OD	Tube OD*
DUA	Union	26		Tube OD	
DUC	AN 37° Flare Union	26	Tube OD		AN Flare
DUE	Bulkhead AN 37° Flare Union	27	Tube OD		AN Flare
DUR	Reducing Union	27	Tube OD		Tube OD
DXA	Union Cross	28		Tube OD	

*For DTR specify end connection, 1, 2 and 3

Size Indicator	Tube OD or Threaded Connection
1	1/16"
2	1/8"
3	3/16"
4	1/4"
5	5/16"
6	3/8"
8	1/2"
10	5/8"
12	3/4"
14	7/8"
16	1"

SS - 316 stainless steel, ASTM A479
B - Brass, ASTM B16

N - Nylon Ferrules
T - T eflon Ferrules
X - Cleaned and packaged for oxygen service

GENERANT
Valves & Bi-Lok Fittings

FORGED NEEDLE VALVE
1/8" - 3/8" NPT
1/8" and 1/4" Dual Ferrule Tube
Vacuum - 5000 Psig (345 Bar)

FNV SERIES

Description
Series FNV Needle Valves feature a forged body, integral bonnet design with PTFE and metallic wafer stem packing. This provides leak-tite service from vacuum to the maximum operating pressure. Series FNV are available in Straight and Angle configurations, with NPT and Dual Ferrule Tube connections. The industry standard panel mounting allows the FNV to be a cost effective solution to many applications. Standard metal to metal stem and optional Soft Tip stem provide accurate metering over a wide range of pressures. The Series FNV can be ordered Cleaned for Oxygen Service.

Features
- Metallic and PTFE Wafer Stem Packing provides low operating torque
- Panel Mounting Standard
- Metal to Metal Standard, Optional Soft Stem Tip (PCTFE)
- Straight or Angle Body Configurations
- Male and Female NPT or Dual Ferrule Tube Connections
- Suitable For Cryogenic Service
- 100% Factory Tested

Technical Data
Maximum Operating Pressure @ 100° F
Brass: 3000 Psig (207 Bar)
Stainless: 5000 Psig (345 Bar)

Temperature/Pressure Ratings

Temperature, °F (°C)	Max. Working Pressure, Psig (Bar)	
	Brass	316 SS
- 320 (-195) to 100 (38)	3000 (207)	5000 (345)
100 (38) to 250 (121)	2200 (151)	4085 (282)
250 (121) to 350 (177)	1470 (101)	3715 (256)
350 (177) to 450 (232)	-	3435 (237)

Temperature Range:

Metal to Metal Stem: -320° to 450° F (-195°C to 232°C)
PCTFE Soft Stem Tip: -65° to 200°F (-54° to 93°C)
NOTE: Stem Packing may begin to bind up, making valve adjustment difficult or impossible, at temperatures below -65°F.

Orifice: 0.17" (4.32 mm)

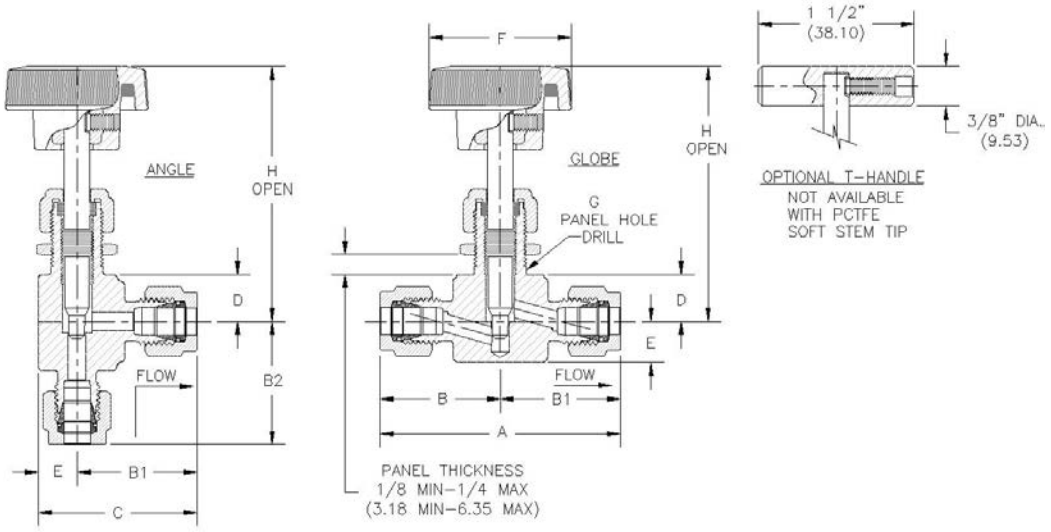
Flow Coefficient (Cv): 0.37

Internal and External Leakage:
0.1 cc/min max at 1000 PSI (69 bar).

Materials of Construction

Component	Brass	Stainless
Valve Body	Brass, ASTM 377	316 SS, ASTM A182
Packing Nut	Brass, ASTM B16	316 SS, ASTM A479
Regulating Stem	316 SS, ASTM A479	
Packing Washers	Brass, ASTM B36	316 SS, ASTM A479
Packing	PTFE, ASTM D1710	
Soft Stem Tip	PCTFE (Neoflon® M400), ASTM D1430	
Panel Nut	Brass, ASTM B16	303 SS, ASTM A582
Round Handle	Nylon 6/6 (Zytel®) with Brass Insert	
"T" Handle	303 SS, ASTM A582	
Handle Set Screw	304 SS, ASTM A182	
Lubricant	Oxygen Compatible Perfluoropolyether (PFPE) Grease	

FORGED NEEDLE VALVE

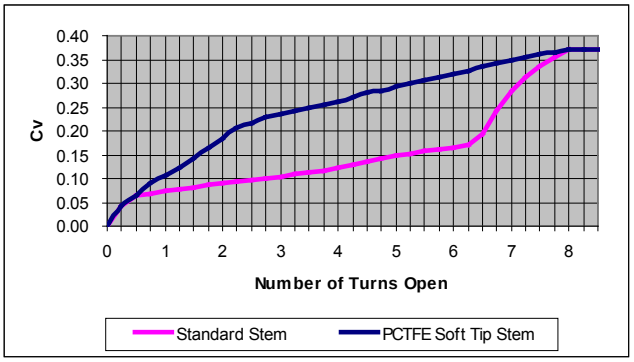


Dimensional Data

MODEL CODE	PORT CONFIGURATION		Dimension in inches (mm)										
	INLET	OULET	A	B	B1	B2	C	D	E	F	G	H (open)	Orifice
FNV-2T	1/8" Tube		2.07 (52.58)	1.04 (26.42)	1.04 (26.42)	1.04 (26.42)	1.42 (36.07)						.08 (2.03)
FNV-2F	1/8" Female NPT		1.62 (41.15)	.81 (20.57)	.81 (20.57)	.81 (20.57)	1.19 (30.23)						
FNV-2M	1/8" Male NPT		1.70 (43.18)	.85 (21.59)	.85 (21.59)	.85 (21.59)	1.24 (31.50)						
FNV-2MF	1/8" Male NPT	1/8" Female NPT	1.67 (42.42)				1.19 (30.23)						
FNV-2MT	1/8" Male NPT	1/8" Tube	1.89 (48.01)		1.02 (25.91)		1.41 (35.81)						
FNV-2M4T	1/8" Male NPT	1/4" Tube	2.01 (51.05)		1.15 (29.21)	1.15 (29.21)	1.54 (39.12)	0.44 (11.18)	0.38 (9.65)	1.34 (34.04)	0.53 (13.46)	2.34 (59.44)	0.17 (4.32)
FNV-4T	1/4" Tube		2.31 (58.67)	1.15 (29.21)									
FNV-4F	1/4" Female NPT		2.12 (53.85)	1.06 (26.92)	1.06 (26.92)	1.11 (28.19)	1.45 (36.83)						
FNV-4M	1/4" Male NPT		2.04 (51.82)	1.02 (25.91)	1.02 (25.91)	1.02 (25.91)	1.40 (35.56)						
FNV-4MF	1/4" Male NPT	1/4" Female NPT	2.08 (52.83)		1.06 (26.92)		1.45 (36.83)						
FNV-4MT	1/4" Male NPT	1/4" Tube	2.17 (55.12)		1.15 (29.21)		1.54 (39.12)						
FNV-6M	3/8" Male NPT		2.25 (57.15)	1.12 (28.45)	1.12 (28.45)	1.12 (28.45)	1.51 (38.35)						

Note: Dimensions are shown with Bi-Lok nuts finger-tight. Dimensions are in inches (millimeters), for reference only and subject to change. All valve bodies are 3/4" (19 mm) wide. NPT Threads per ASME B1.20.1

Flow Coefficient (Cv) @ Turns Open



How To Order

F N V - 4 T A S S - K - X

- Model Code: FNV - Forged Needle Valve. See Dimensional Data Above
- Body Configuration: For Angle Configuration, Add "A" to Model Code
- Material Code: B - Brass; SS - 316 Stainless Steel
- Options: K - PCTFE Soft Tip Stem; SH - Stainless Steel Handle
- Cleaning Option: X- Cleaned and Packaged for Oxygen Service

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Zytel® is a registered trademark of DuPont.

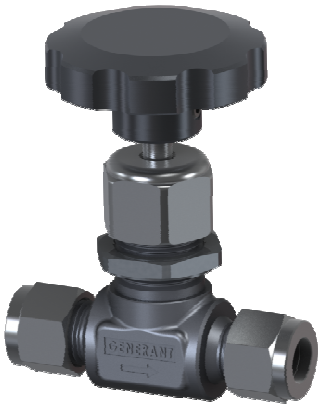
GENERANT

GENERANT
Valves & Bi-Lok Fittings

FORGED NEEDLE VALVE, ML STAINLESS
1/4” to 1/2” NPT
3/8” to 3/4" Dual Ferrule Tube Connection
Vacuum - 6000 Psig (414 Bar)

FNV ML STAINLESS SERIES

Description
Series FNV ML Stainless Forged Needle Valves feature a forged body, integral bonnet design with spring loaded PTFE and stainless steel wafer stem packing. Valves provide long life, leak-tight service from vacuum to the maximum operating pressure. Series FNV ML Stainless Forged Needle Valves are available in Straight and Angle configurations and with NPT and Dual Ferrule Tube connections. Valves come ready to panel mount and with stainless steel stem tip standard for a metal to metal internal seal but user can specify Soft Tip (PCTFE) stem. Both provide accurate metering over a wide range of pressures. All valves can be ordered Cleaned for Oxygen Service.



Features
- Spring Loaded Stainless Steel / PTFE Wafer Stem Packing provides low operating torque and long lasting stem seal.
- Panel Mounting Standard
- Metal to Metal Standard, Optional Soft Stem Tip (PCTFE)
- Straight or Angle Body Configurations
- Male NPT, Female NPT, or Dual Ferrule Tube Connections
- Suitable For Cryogenic Service
- 100% Factory Tested

Technical Data
Max Working Pressure (Temperature Dependent):

Temperature	Max. Working Pressure, Psig (Bar)
- 320°F to 300°F (-196°C to 149°C)	6000 (413.7)
300°F to 400°F (149°C to 204°C)	5640 (388.9)
400°F to 450°F (204°C to 232°C)	5480 (377.9)

Usable Temperature per Stem Type:
Metal Stem Tip: -320° to 450° F (-195°C to 232°C)
PCTFE Soft Stem Tip: -65° to 200°F (-54° to 93°C)
NOTE: Stem Packing may begin to bind up, making valve adjustment difficult or impossible, at temperatures below -65°F.

Maximum Flow Coefficient:
Dependent on Orifice Size, see Dimensional Data.

Orifice Size	Cv
0.250”	0.65
0.375”	1.60

Additional Flow Information provided in chart on next page.

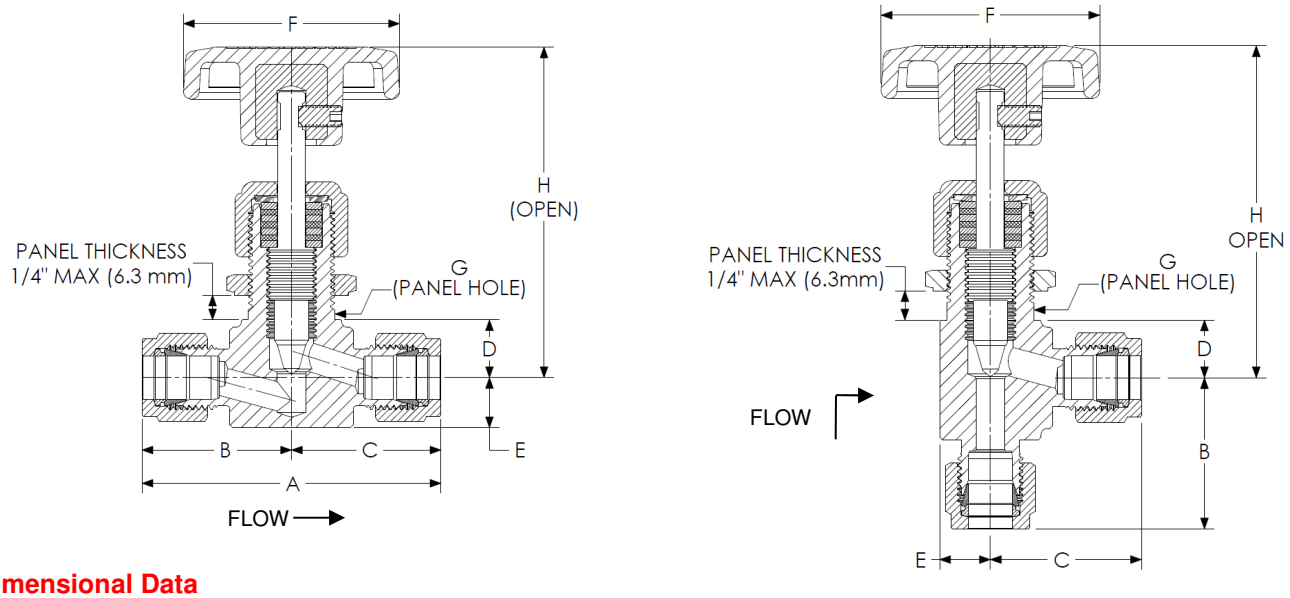
Internal and External Leakage:
0.1 cc/min max at 1000 PSI (69 Bar).

Materials of Construction

Component	Material
Valve Body	316 SS, ASTM A182
Packing Nut	316 SS, ASTM A479
Regulating Stem	
Packing Washers	
Packing	PTFE, ASTM D1710
Spring Washer	302 Stainless Steel
Soft Stem Tip	PCTFE, ASTM D1430
Panel Nut	303 SS, ASTM A582
Round Handle*	Anodized Aluminum
T-Handle*	303 SS, ASTM A582
Handle Set Screw	304 SS, ASTM A182
Lubricant	Oxygen Compatible Perfluoropolyether (PFPE) Grease

*0.250” orifice valves supplied with round handle standard, T-Handle option is available. 0.375” orifice valves supplied with T-Handle standard.

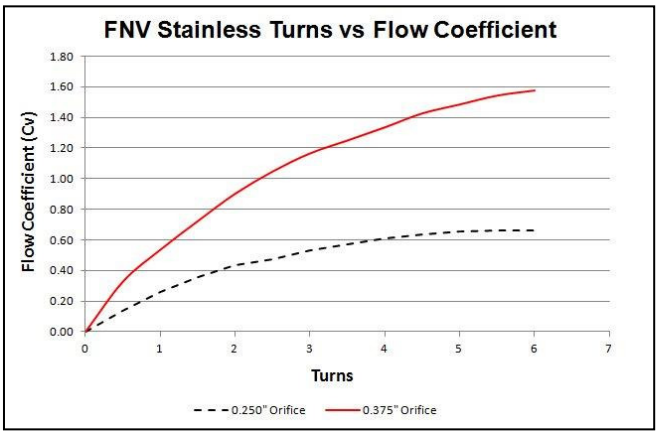
FORGED NEEDLE VALVE



Dimensional Data

MODEL CODE	PORT CONFIGURATION		Dimension in inches (mm)									
	INLET	OULET	A	B	C	D	E	F	G	H	Orifice	Handle
FNV-6TSSM	3/8" Dual Ferrule Tube		2.58 (65.5)	1.29 (32.8)		0.50 (12.7)	0.44 (11.2)	1.87 (47.5) OR 2.20 (55.9) (SH Option)	0.78 (19.8)	2.86 (72.6)	0.25 (6.4)	Round Knob OR Optional T-Handle (SH Option)
FNV-8TSSM	1/2" Dual Ferrule Tube		2.76 (70.1)	1.38 (35.1)								
FNV-4FSSM	1/4" NPT Female		2.12 (53.8)	1.06 (26.9)								
FNV-6MSSM	3/8" NPT Male		2.26 (57.4)	1.13 (28.7)								
FNV-4M6TSSM	1/4" NPT Male	3/8" Tube	2.42 (61.5)	1.13 (28.7)	1.29 (32.8)							
FNV-6MTSSM	3/8" NPT Male	3/8" Tube	2.19 (55.6)	1.13 (28.7)	1.06 (26.9)							
FNV-6M8TSSM	3/8" NPT Male	1/2" Tube	2.51 (63.8)	1.13 (28.7)	1.38 (35.1)							
FNV-4MFSSM	1/4" NPT Male	1/4" NPT Female	2.19 (55.6)	1.13 (28.7)	1.06 (26.9)							
FNV-8TSSL	1/2" Dual Ferrule Tube		3.80 (96.5)	1.90 (48.3)		0.75 (19.0)	0.60 (15.2)	3.00 (76.2)	1.03 (26.2)	3.82 (97.0)	0.38 (9.5)	T-Handle
FNV-12TSSL	3/4" Dual Ferrule Tube											
FNV-6FSSL	3/8" NPT Female		3.00 (76.2)	1.50 (38.1)								
FNV-8FSSL	1/2" NPT Female											
FNV-8MSSL	1/2" NPT Male											
FNV-8MFSSL	1/2" NPT Male	1/2" NPT Female										

Note: Dimensions are 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



How To Order

FNV-6TSSM - K - X

MODEL CODE

FNV-____ - Forged Needle Valve
See Dimensional Data Above.
For Angle Configuration, Insert "A" before "SS" material code.
E.G. "FNV-6TASSM"

OXYGEN CLEAN

X - Cleaned and Packaged for Oxygen Service

OPTIONS

K - PCTFE Soft Tip Stem
SH - T-Handle

PROPER COMPONENT SELECTION: When specifying a component, 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.

GENERANT
Valves & Bi-Lok Fittings

GENERANT

SCREWED BONNET NEEDLE VALVE
1/8" - 1/2" NPT
Globe and Block Configuration
Brass, 303 and 316 Stainless Steel

3000 SERIES

Description

Series 3000 bar stock, screwed bonnet type needle valves are available in brass, 303 and 316 stainless steel with working pressures to 5000 Psig in 1/8" to 1/2" sizes. The unique, externally adjustable, wear compensating, virgin PTFE stem packing offers long trouble free service life in most liquid or gas applications. A wide variety of options including panel mounting, metal to metal seat, soft stem tip and taper proof cap, the Series 3000 provides economical, quality solutions for the most demanding applications. Valves can be ordered cleaned and packaged for oxygen service.

Globe

(Panel Mount Option Shown)

Features

- Adjustable PTFE Stem Packing
- Excellent Gauge Isolation Valve
- Wide variety of options to suit many diverse applications
- Available in 303 SS as an economical alternative to 316 SS (where applicable)
- 100% factory tested

Technical Data

Maximum Operating Pressure @ 100º F (38 º C)
Brass: 3000 Psig (207 Bar)
Stainless: 5000 Psig (345 Bar)
Flow Coefficient
Globe (.187" Orifice): 0.40 Cv
Block (.312" Orifice): 0.90 Cv

Temperature Ratings

Metal to Metal Stem: -320° F to 400°F (-195° C to 204°C)
Kel-F Tip Stem: -65° F to 200°F (-54° C to 93°C)

Leakage

External leakage – zero.
Maximum allowable seat leakage – 0.1 cc/min @ 3000 psig (207 Bar) Nitrogen

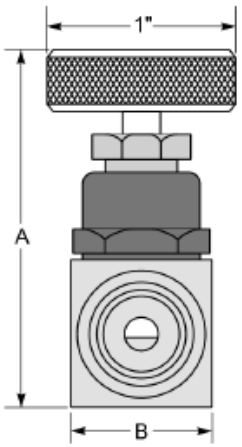
Block

Materials of Construction

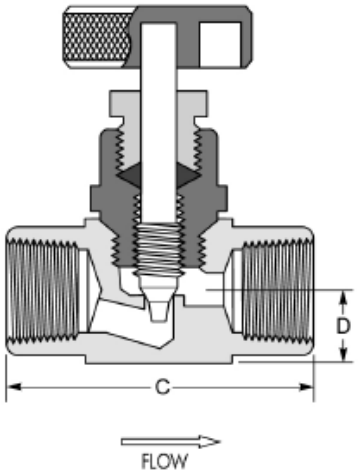
Component	Valve Body Material		
	Brass	303 Stainless	316 Stainless
Valve Body, Bonnet Packing Nut	Brass, ASTM B16	303 SS, ASTM A582	316 SS, ASTM A479
Stem[1]		303 SS, ASTM A582/Kel-F (CTFE)	316 SS, ASTM A479/Kel-F (CTFE)
Handle[2]		Brass, ASTM B16, (Nickel Plated, ASTM 689)	
Set Screw	ANSI B18.3 (Alloy Steel)		
Packing	Virgin TFE		
Panel Nut	Brass, ASTM B16	Brass, ASTM B16, (Nickel Plated, ASTM 689)	
Tamper Proof Cap		N/A	

1. Stainless valves supplied with Kel-F stem, optional metal to metal stem, option code "Q", see ordering information. Block valves not available with soft stem tip option.
2. Optional black phenolic knob, option code "M"

SCREWED BONNET NEEDLE VALVE



Square



Dimensional Data

Valve Number	Pipe Size (NPT)	PORT CONFIGURATION		Orifice	Cv	A (Open)	B (Square)	C	D
		INLET	OULET						
1	1/8"	Female		.187"	0.40	2-1/4"	3/4"	1-5/8"	3/8"
2		Male							
3		Male	Female						
4	1/4"	Female						1-13/16"	
5		Male							
6		Male	Female						
7	3/8"	Male							1/2"
8		Female		.312"	0.90	2-7/16"	1"	2-3/16"	
9		Male	Female						
10	1/2"	Female							
11		Male							
12		Male	Female						

Ordering Information

3000 - 4SS - X

Part Number

Valve Number	Port Configuration	Part Number
1	1/8" Female x 1/8" Female	3000-1
2	1/8" Male x 1/8" Male	3000-2
3	1/8" Male x 1/8" Female	3000-3
4	1/4" Female x 1/4" Female	3000-4
5	1/4" Male x 1/4" Male	3000-5
6	1/4" Male x 1/4" Female	3000-6
7	3/8" Male x 3/8" Male	3000-7
8	3/8" Female x 3/8" Female	3000-8
9	3/8" Male x 3/8" Female	3000-9
10	1/2" Female x 1/2" Female	3000-10
11	1/2" Male x 1/2" Male	3000-11
12	1/2" Male x 1/2" Female	3000-12

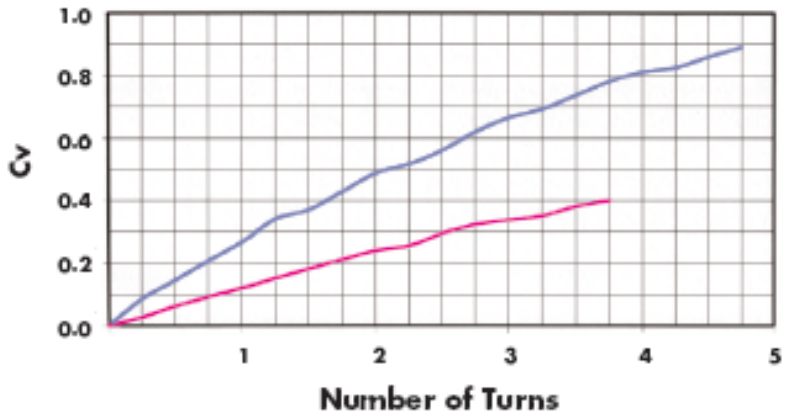
NPT threads per ANSO/ASME B1.20.1. For other thread configurations, consult factory.

Material Code
B - Brass
SS - 303 Stainless Steel
SSS - 316 Stainless Steel

Options
P - Panel Mount (9/16" Hole, 3/16" Max. Panel Thickness)
M - Plastic Knob (1-3/8" Diameter)
N - Kel-F Soft Stem Tip (Standard with SS valves)
T - PTFE Soft Stem Tip
Q - Stainless Steel Stem
QN - Stainless Steel Stem with Kel-F Soft Stem Tip
C - Screw Driver Slotted Stem
QC - Stainless Steel Screw Driver Slotted Stem
X - Cleaned and Packaged for Oxygen Service

Shaded Options are available for Globe Valves Only (1-7)

Flow Coefficient (Cv) @ Turns Open



3/16" Orifice, Valves 1-7 5/16" Orifice, Valves 8-12

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.

GENERANT

GENERANT

PRECISION METERING VALVE
1/8" and 1/4" NPT
1/8" and 1/4" Dual Ferrule Tube
Vacuum - 1000 Psig (68.9 Bar)

PMV SERIES

Description

Series PMV Precision Metering Valves are designed for accurate and repeatable flow control of fluids and gases. Valves feature a one-piece forged body and a screwed bonnet design. Stainless steel 3 degree tapered stem seals bubble tight into an Acetal soft seat. With panel mounting and lockable adjustment standard, these valves offer cost effective solutions for precise metering.

Features

- Straight or Angle Flow Patterns
- Forged Body Brass or Stainless Steel Construction
- NPT or Dual Ferrule Tube Connections
- Unique Soft Seat Provides Positive Shut Off
- Wear Compensating Knob Adjustment
- Locking Screw Prevents Inadvertent Flow Changes
- Stem Threads are isolated from System Fluid
- 100% Factory Tested for Leakage

Technical Data

Maximum Operating Pressure @ 100º F
Brass and Stainless: 1000 Psig (68.9 Bar)
Stem Taper: 3 Degree (included angle)
Stem Pitch: 40 Threads per inch
Orifice: 0.055" (1.4 mm)
Flow Coefficient (Cv): 0.04
Panel Mounting
Panel Mount Hole: 9/16" (14.3 mm)
Max Panel Mount Thickness: 1/8" (3.3 mm)
Factory Preset for zero flow at positive stop with 150 Psig (10.34 Bar)

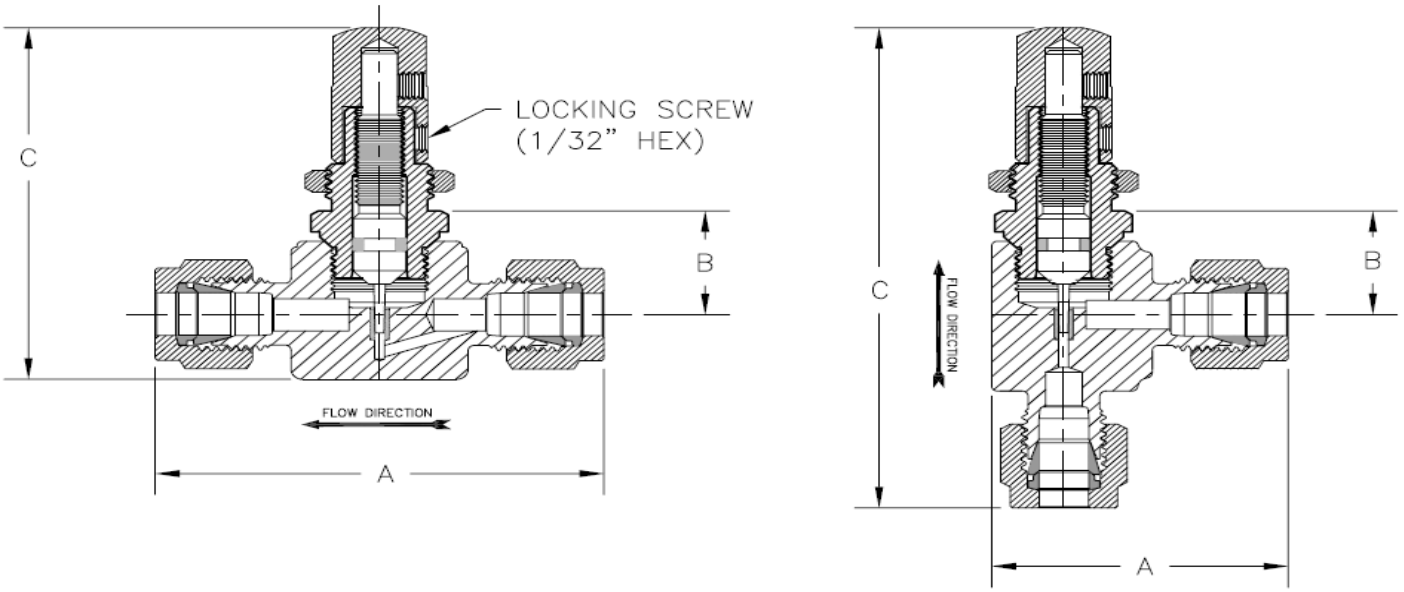
Temperature Range:
Seal Dependent (See How To Order)

Materials of Construction

Component	Valve Body Material	
	Brass	Stainless Steel
Body	Forged Brass, ASTM 377	Forged 316 SS, ASTM A182
Bonnet	Brass, ASTM B16, Nickel Plated	316 SS, ASTM A479
Stem	316 SS, ASTM A479	
Knob and Panel Nut	Brass, ASTM B16, Nickel Plated	
Seat Insert	Acetal CoPolymer, ASTM D4181	
O-Ring	Buna-N, Neoprene, Ethylene Propylene or Viton®	
Set Screw (2)	18-8 SS, ASTM A182	

Nickel Plating per ASTM B689
Stem Threads and O-Rings are lubricated with Krytox®

PRECISION METERING VALVE

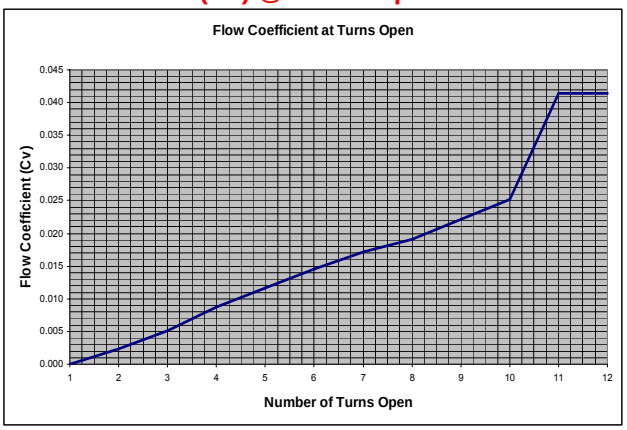


Dimensional Data

Model Code	Port Configuration			Dimensions in inches (mm)				
	Inlet	Outlet	Configuration	Orifice	OAL "A"	Panel To C/L "B"	Height "C"	Knob Diameter
PMV-2T	1/8" Tube		Straight	0.055 (1.4)	2.07 (52.58)	.62 (15.75)	2.10 (53.34)	0.50 (12.7)
PMV-4T	1/4" Tube		Straight		2.31 (58.70)		2.10 (53.34)	
PMV-2TA	1/8" Tube		Angle		1.43 (36.20)		2.75 (69.72)	
PMV-4TA	1/4" Tube		Angle		1.53 (38.74)		2.89 (73.30)	
PMV-2F	1/8" Female NPT		Straight		1.63 (41.28)		2.10 (53.34)	
PMV-2FA			Angle		1.19 (30.15)		2.50 (63.50)	
PMV-2PTA	1/8" Male NPT	1/8" Tube	Angle		1.43 (36.20)		2.53 (64.14)	
PMV-2P	1/8" Male NPT		Straight		1.63 (41.28)		2.10 (53.34)	
PMV-2PA			Angle		1.19 (30.15)		2.53 (64.14)	
PMV-4P	1/4" Male NPT		Straight		1.96 (49.78)		2.10 (53.34)	
PMV-4PA			Angle		1.35 (34.37)		2.71 (68.83)	

Note: Dimensions shown with Bi-Lok nuts finger-tight. Dimensions are in inches (millimeters), for reference only and subject to change. All valve bodies are 3/4" (19 mm) wide. NPT Threads per ASME B1.20.1

Flow Coefficient (Cv) @ Turns Open



Note: Valves may require up to one full turn before flow is evident.

How To Order

PMV - 4T SS - V - X

Model Code
PMV - Percision Metering Valve
See Dimensional Data Above

Material Code
B - Brass
SS - 316 Stainless Steel

Seal Material
B - Buna-N, -40° F to 180° F (-40° C to 82° C)
V - Viton, -10° F to 180° F (-23° C to 82° C)
N - Neoprene, -40° F to 180° F (-40° C to 82° C)
EP - Ethylene Propylene, -50° F to 180° F (-46° C to 82° C)

Cleaning Option
X - Cleaned and Packaged for Oxygen Service

Viton® and Krytox® are registered trade marks 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.

GENERANT

GENERANT Valves & Bi-Lok Fittings

ADJUSTABLE CHECK VALVE
1/4" & 1/2" NPT
3 – 600 Psig

ACV SERIES

Description

Compact one piece body, adjustable check/relief valves are available in Brass or 316 Stainless Steel. Available in 1/4" and 1/2" NPT with a wide selection of seal materials. Series ACV valves can be ordered factory "preset and locked" in crack pressures up to 600 Psig. All valves are 100% factory tested and available cleaned & packaged for Oxygen service.

Features

- Compact One Piece Body Construction
- Working Pressures to 3000 Psig (206 bar)
- Adjustable Cracking Pressures from 3 to 600 Psig (0.2 bar to 41.3 bar)
- Fully retained O-Ring Seal
- Full Back Pressure Rating
- Factory Presetting Available
- 100% Factory Tested for Leakage, Crack and Reseal Performance

Technical Data

Cracking Pressure Ranges:
- 3 to 20 Psig (0.2 to 1.4 bar)
- 20 to 65 Psig (1.4 to 4.5 bar)
- 65 to 175 Psig (4.5 to 12.1 bar)
- 175 to 350 Psig (12.1 to 24.1 bar)
- 350 to 600 Psig (24.1 to 41.3 bar)

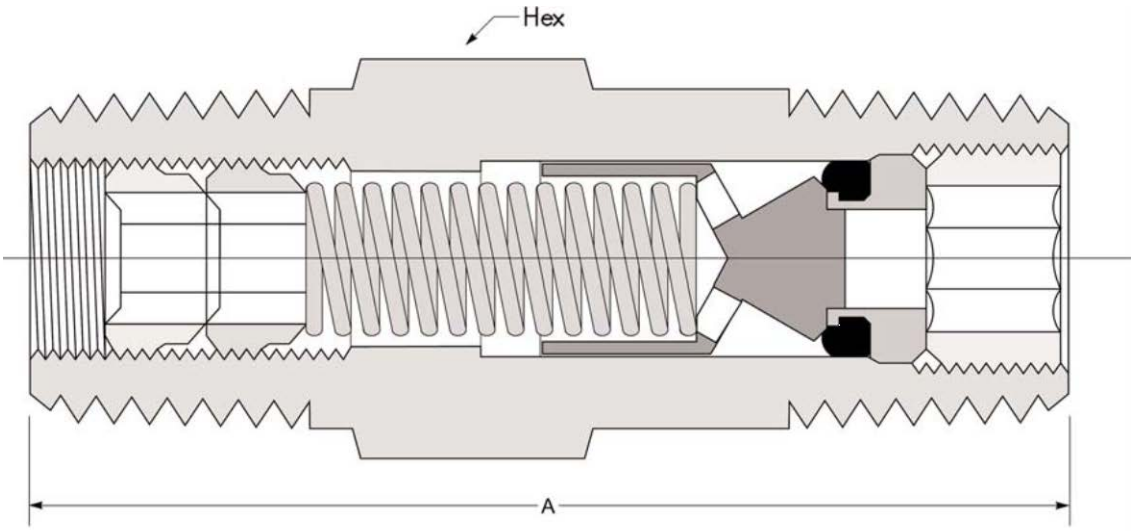
Maximum Pressure: 3000 Psig @ 100°F (206 bar @ 40°C)
Temperature Rating: -80°F to 450°F (-65°C to 232°C)
(based on seal selection, see ordering information)

Materials of Construction

Component	Valve Body Material	
	Brass	Stainless Steel
Body, Poppet, Seat Locking Screw, Adjustment Screw, Pressure Locking Screw	Brass, ASTM B16	316 SS, ASTM A479
Spring	302 SS, ASTM A313	
O-Ring Seal[1]	Buna-N	Viton™

1 Lubricated with Krytox™

SERIES ACV
ADJUSTABLE CHECK VALVE



Dimensions

Model Code	Connection Inlet & Outlet	Dimensions		
		A	Hex	Cv
ACV-4P	1/4" Male NPT	1.62”	9/16”	0.35
ACV-4FF	1/4" Female NPT	2.98”	3/4"	
ACV-8P	1/2” Male NPT	2.56”	7/8”	1.20

Flow tested in accordance with ISA S75.21 with air. Restrictions in the inlet or outlet piping may reduce flow. NPT Threads per ASME B1.20.1.

Ordering Information

ACV - 4P B V - 125

SERIES
ACV - Adjustable Check Valve

PORT CONFIGURATION
4P - 1/4" Male NPT x 1/4" Male NPT
4FF - 1/4" Female NPT x 1/4" Female NPT
8P - 1/2" Male NPT x 1/2" Male NPT

MATERIAL CODE
B - Brass
SS - 316 SS

CRACK PRESSURE
(standard pressure ranges)
3 to 20 Psig (0.2 bar to 1.4 bar)
20 to 65 Psig (1.4 bar to 4.5 bar)
65 to 175 Psig (4.5 bar to 12.1 bar)
175 to 350 Psig (12.1 bar to 24.1 bar)
350 to 600 Psig (24.1 bar to 41.3 bar)
May be ordered factory preset to your specifications
Specify Cracking Pressure, Example ACV-4PB-V-125

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)
S - Silicone, -70°F to 450°F (-56°C to 232°C)
* - EP has a max set pressure of 400 Psig (27.6 bar)

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

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.

GENERANT
Valves & Bi-Lok Fittings

GENERANT
Valves & Bi-Lok Fittings

ONE PIECE CHECK VALVE
1/4" & 1/2" NPT
0 – 3000 Psig

OPC SERIES

Description
Compact one piece body, fully retained O-ring seal, poppet type check valve. Available in 1/4" and 1/2" NPT in brass or 316 stainless steel. Suitable for working pressures to 3000 Psig. A wide selection of seal materials and crack pressures make the Series OPC a quality and cost effective solution. All valves are 100% factory tested and available cleaned and packaged for oxygen service.

Features and Benefits
- Compact One Piece Body Construction
- Working Pressures to 3000 Psig (206 bar)
- Full Back Pressure Rating
- Fully Retained O-Ring Seal
- Cracking Pressures from .3 to 25 Psig (0.02 – 1.7 bar)
- 100% Factory Tested for Leakage

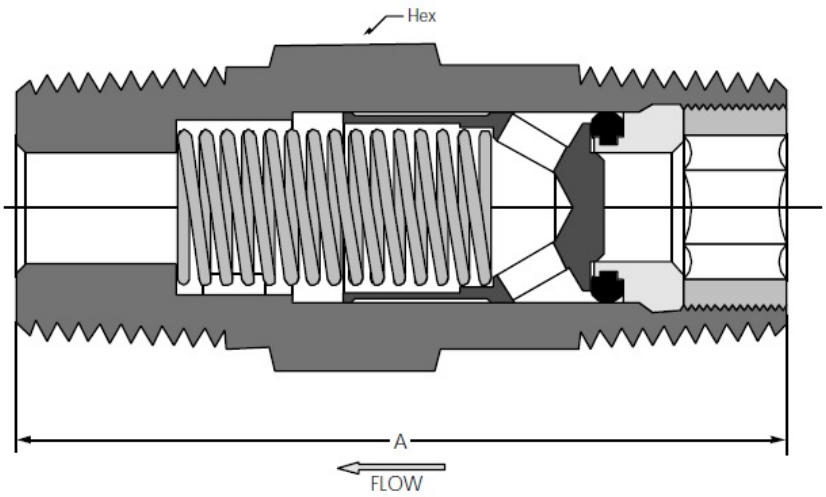
Technical Data
- Nominal Crack Pressures: .3, 1, 10, & 25 Psig (0.02, 0,07, 0.7, & 1.7 bar)
- Maximum Pressure: 3000 Psig @ 70°F (206 bar @ 21° C)
- Temperature Rating: -80°F to 450°F (-62°C to 232°C)
  (based on seal selection, see ordering information)

Materials of Construction

Component	Valve Body Material	
	Brass	Stainless Steel
Body, Poppet, Seat Insert, Locking Screw[1]	Brass, ASTM B16	316 SS, ASTM A479
Spring	302 SS, ASTM A313	
O-Ring Seal[2]	Buna-N	Viton™

1 1/4" Brass valves have 316 SS locking screw
2 Lubricated with Krytox™

SERIES OPC
ONE PIECE CHECK VALVE



Dimensional/Flow Data

Model Code	Port Configuration		A (inches)	Hex	Cv
	Inlet	Outlet			
OPC-4P	1/4" Male NPT	1/4" Male NPT	1.62	9/16"	0.35
OPC-4MF	1/4" Male NPT	1/4" Female NPT	1.75	3/4"	
OPC-4FF	1/4" Female NPT	1/4" Female NPT	2.41		
OPC-8P	1/2" Male NPT	1/2" Male NPT	2.28	7/8"	1.20
OPC-8MF	1/2" Male NPT	1/2" Female NPT	2.83	1 – 1/16"	

Flow tested in accordance with ISA S75.21 with air. Restrictions in the inlet or outlet piping may reduce flow.

Ordering Information

OPC - 4P SS - V - 1

SERIES
OPC - One Piece Check Valve

PORT CONFIGURATION
4P - 1/4" Male x 1/4" Male
4MF - 1/4" Male x 1/4" Female
4FF - 1/4" Female x 1/4" Female
8P - 1/2" Male x 1/2" Male
8MF - 1/2" Male x 1/2" Female
NPT Threads per ANSI/ASME B1.20.1

MATERIAL CODE
B - Brass
SS - 316 SS

CRACK PRESSURE
.3 - (.1 - .4 Psig) (0.02 bar)
1 - (.5 - 1 Psig) (0.07 bar)
10 - (8 - 12 Psig) (0.7 bar)
25 - (22 - 27 Psig) (1.7 bar)

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)
S - Silicone, -70°F to 450°F (-56°C to 232°C)
T - PTFE, -50°F to 350°F (-46°C to 176°C)
PTFE Seal may require back pressure to seal leak tight

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

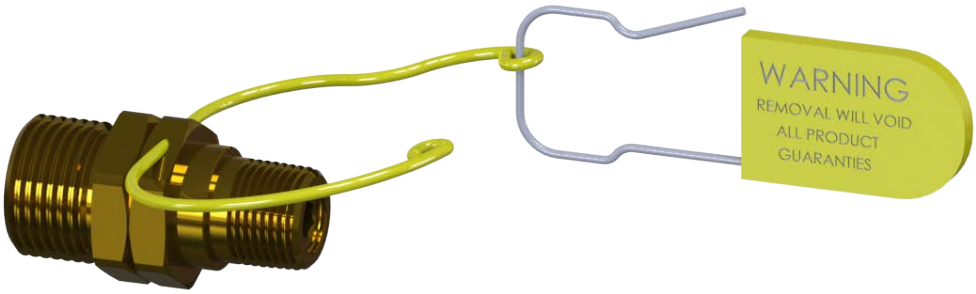
Note: Viton™ and Krytox™ are trademarks of DuPont.

GENERANT
Valves & Bi-Lok Fittings

GENERANT

CYLINDER CHECK VALVE
3/8" - 1/2" NPT x CGA 540 or 580
0-3000 PSIG

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

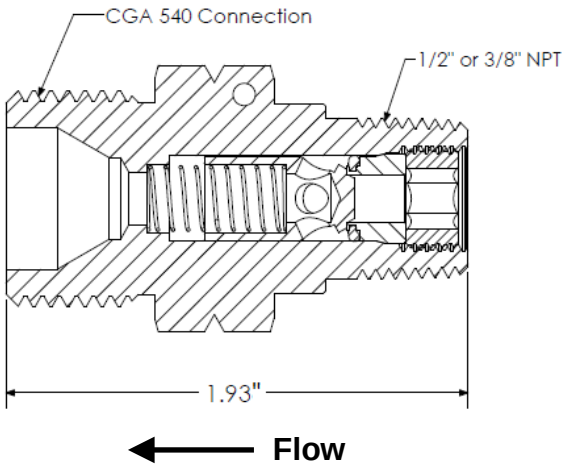
Technical Data
- Nominal Crack Pressure: 1 Psig (0.07 Bar)
- External Leakage: Zero leak
- Internal Leakage: Zero leak at 0.5 PSIG (0.03 bar) Back Pressure
- Cv (flow coefficient): 0.65
- Maximum Pressure: 3000 PSIG @ 150° F (206 bar @ 66° C)
- Proof Pressure: 5,000 PSIG (345 bar)

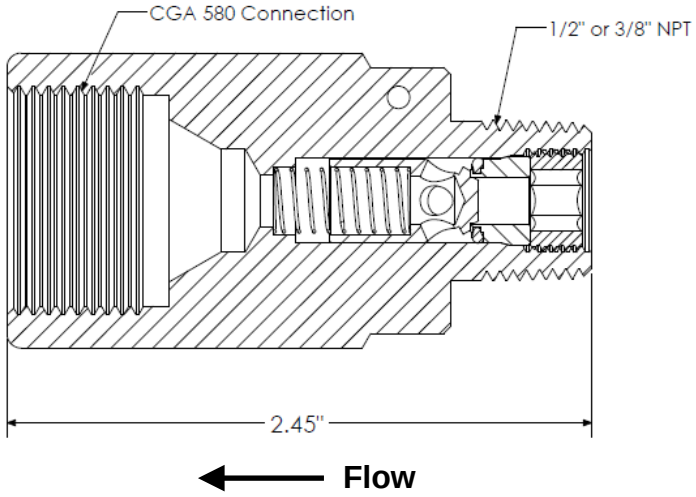
Materials of Construction

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

OPC – 3 540 – V - 1 – T

SERIES
OPC – One Piece Check

INLET PORT
3 – 3/8" Male NPT
4 – 1/2" Male NPT
Note: Port Threads into Outlet of Gas Use Shut-Off Valve

OUTLET PORT
540 – CGA 540 Connection
580 – CGA 580 Connection

TAMPER EVIDENT
T – Tamper Evident
Note: Omit if not required

CRACK PRESSURE
1 – 1 PSI Nominal
Note: Only available in 1 PSI Crack Pressure

SEAL
V – GLT Viton™

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

GENERANT

POPPET CHECK VALVE
1/8" - 1/2" Dual Ferrule Tube, Female & Male NPT, 1/4" Face Seal
0-3000 PSIG

PCV SERIES

Description

Poppet type, zero leak, inline check valve for liquid and gas applications to 3000 Psig. Fully retained O-ring seal design permits full rated pressure in the checked direction. Offered with fully interchangeable dual ferrule tube or metal to metal face seal connections. A variety of crack pressures and seal materials, combined with a metal to metal positive stop provides long trouble free service life in the most demanding applications.

Features

- Working Pressures to 3000 Psig (206 bar)
- Full Pressure Rating in Check Direction
- Fully Retained O-ring Seal
- Dual Ferrule Tube, Female NPT, Male NPT and Face Seal Connections Available
- Cracking Pressures from 0.3 to 25 Psig (0.02-1.7 bar)
- 100% Factory tested for crack, leakage and reseal performance

Technical Data

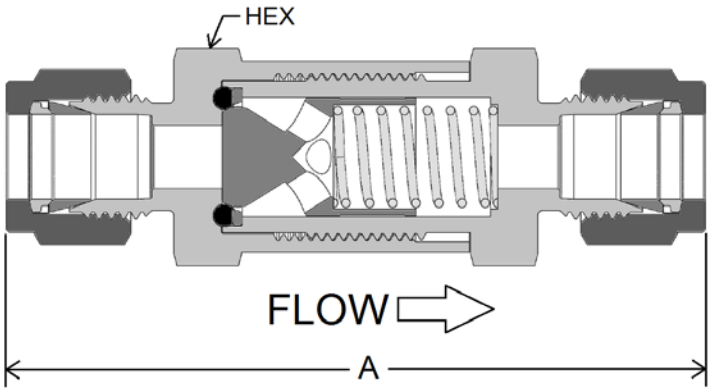
- Nominal Crack Pressures: 0.3, 1, 10, & 25 Psig (0.02, 0,07, 0.7, & 1.7 bar)
- Maximum Pressure: 3000 Psig @ 70°F (206 bar @ 21° C)
- Temperature Rating:
  -80°F to 375°F (-62°C to 190°C)
  (based on seal selection, see ordering information)

Materials of Construction

Component	Valve Body Material	
	Brass	Stainless Steel
Inlet Cap, Outlet Body, Poppet	Brass, ASTM B16	316 SS, ASTM A479
O-ring Retainer	316 SS, ASTM A479	
Spring	302 SS, ASTM A313	
O'Ring Seal	Buna-N	Viton™

- Lubricated with Krytox™

SERIES PCV POPPET CHECK VALVE



Dimensional/Flow Data

Model Code	Port Configuration		Dimensions/Flow		
	Inlet	Outlet	A[1] (inches)	Hex	Cv
PCV-2T	1/8" Tube	1/8" Tube	2.19	5/8"	0.10
PCV-2P	1/8" Male NPT	1/8" Male NPT	1.71		
PCV-2F	1/8" Female NPT	1/8" Female NPT	1.89		
PCV-4VS[2]	1/4" Face Seal	1/4" Face Seal	2.21		0.47
PCV-4T	1/4" Tube	1/4" Tube	2.35		
PCV-4P	1/4" Male NPT	1/4" Male NPT	2.09		
PCV-4PT	1/4" Male NPT	1/4" Tube	2.22		
PCV-4F	1/4" Female NPT	1/4" Female NPT	2.15	3/4"	
PCV-6T	3/8" Tube	3/8" Tube	3.17	7/8"	1.47
PCV-6P	3/8" Male NPT	3/8" Male NPT	2.78		
PCV-6F	3/8" Female NPT	3/8" Female NPT	2.98		
PCV-8T	1/2" Tube	1/2" Tube	3.42		1.68
PCV-8P	1/2" Male NPT	1/2" Male NPT	3.16		
PCV-8F	1/2" Female NPT	1/2" Female NPT	3.58	1-1/16"	

1 Dimensions are shown with nuts finger-tight.
2 316 SS only
Flow tested in accordance with ISA S75.21 with air. Restrictions in the inlet or outlet piping may reduce flow.
Other Inlet and Outlet combinations available. Consult Factory.

Ordering Information

PCV - 4T SS - V - 1

SERIES
PCV - Poppet Check Valve

PORT CONFIGURATION
2T - 1/8" Tube x 1/8" Tube
2P - 1/8" Male NPT x 1/8" Male NPT
2F - 1/8" Female NPT x 1/8" Female NPT
4VS - 1/4" Face Seal x 1/4" Face Seal
4T - 1/4" Tube x 1/4" Tube
4P - 1/4" Male NPT x 1/4" Male NPT
4PT - 1/4" Male NPT x 1/4" Tube
4F - 1/4" Female NPT x 1/4" Female NPT
6T - 3/8" Tube x 3/8" Tube
6P - 3/8" Male NPT x 3/8" Male NPT
6F - 3/8" Female NPT x 3/8" Female NPT
8T - 1/2" Tube x 1/2" Tube
8P - 1/2" Male NPT x 1/2" Male NPT
8F - 1/2" Female NPT x 1/2" Female NPT

MATERIAL CODE
B - Brass
SS - 316 SS

CRACK PRESSURE
.3 - (.1 - .4 Psig) (0.02 bar)
1 - (.5 - 1 Psig) (0.07 bar)
10 - (8 - 12 Psig) (0.7 bar)
25 - (22 - 27 Psig) (1.7 bar)

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)
S - Silicone, -70°F to 450°F (-56°C to 232°C)
T - PTFE, -50°F to 350°F (-46°C to 176°C)
PTFE Seal may require back pressure to seal leak tight.

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

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.

GENERANT

GENERANT
Valves & Bi-Lok Fittings

INLINE CHECK VALVE
1/8” – 3/4" NPT
Vacuum – 800 Psig

ICV SERIES

Description

A compact, inline, direct acting poppet check valve suitable for pressure and vacuum applications. Bubble tight sealing is achieved by a line of contact between a precision machined seat and a standard elastomer O-ring with minimum differential pressure, regardless of mounting attitude. Floating poppet and fluted retainer design provides laminar flow. Metal to metal positive stop ensures long service life.

Technical Data

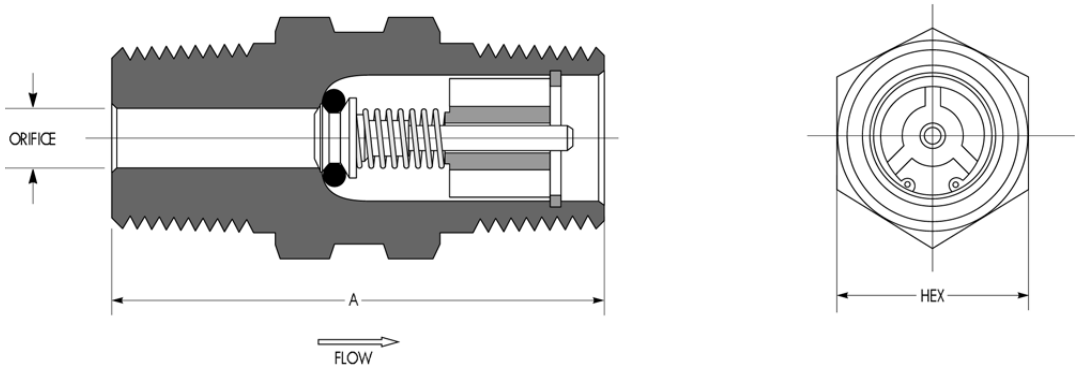
- Nominal Crack Pressures: .15, 1 & 3 Psig (0.01, 0.07 & 0.21 bar)
- Proof Pressure: 1200 Psig (83 bar)
- Operating Pressure Range: Vacuum - 800 Psig (55 bar)
- Leakage: Zero @ > 0.5 Psig Back Pressure (0.03 bar)
- Temperature Rating: -80°F to 375°F (-62°C to 190°C)
  based on seal material

Materials of Construction

Component	Valve Body Material	
	Brass	Stainless Steel[1]
Body, Poppet	Brass, ASTM B16	316 SS, ASTM A479
Spring Retainer	Brass, ASTM B16[2]	316 SS, ASTM A479
Spring	302 SS, ASTM A313	
O’Ring[3]	Buna-N	Viton™
Retaining Ring	Zinc Plated Carbon Steel	Stainless Steel

1 Stainless Steel available in 1/8”, 1/4", 3/8” & 1/2" Male x Male only
2 1/8” & 1/4" Brass valves have 316SS retainer
3 Lubricated with Krytox™

SERIES ICV
INLINE CHECK VALVE



Dimensional/Flow Data

Pipe Size (NPT)	Port Configuration		A (inches)	HEX	Orifice (inches)	Cv	Flow at Max Psid[1] (SCFM)
	Inlet	Outlet					
1/8”	Male	Male	1.312	1/2"	.140	0.4	7.2
	Female	Female	1.687				
	Female	Male	1.437				
1/4"	Male	Male	1.592	5/8”	.193	0.8	14.3
	Female	Female	1.937	3/4"			
	Female	Male	1.500				
3/8”	Male	Male	1.610	3/4"	.270	1.2	21.5
1/2"	Male	Male	2.140	7/8”	.327	2.0	35.5
3/4"	Male	Male	2.160	1 – 1/8”	.467	5.0	90.0

1. *Maximum allowable pressure drop 15 Psid.*

Flow tested in accordance with ISA S75.02 with air. Restrictions in the inlet or outlet piping may reduce flow.

Ordering Information

ICV - FF - 250 B - V - 1

SERIES
ICV - Inline Check Valve

PORT CONFIGURATION
MM - Male x Male (Standard/Omit)
FF - Female x Female (1/8" & 1/4” brass only)
FM - Female x Male (1/8" & 1/4” brass only)

PIPE SIZE (NPT)
125 - 1/8”
250 - 1/4"
375 - 3/8”
500 - 1/2"
750 - 3/4" (brass only)
NPT threads per ANSI/ASME B1.20.1

CRACK PRESSURE
.15 - (.1-.4 Psig) (0.01 bar)
1 - (.5 - 1 Psig) (0.07 bar)
3 - (2-4 Psig) (0.21 bar)

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 - Fluorosilicone, -80°F to 350°F (-62°C to 176°C)
S - Silicone, -65° F to 400° F (-54° C to 205° C)

MATERIAL CODE
B - Brass
SS - 316 SS

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

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

GENERANT Valves & Bi-Lok Fittings

GENERANT
Valves & Bi-Lok Fittings

DISC CHECK VALVE
1/8", 1/4" & 3/8" Female NPT
0 – 500 Psig

DCV SERIES

Description

The DCV Series' unique Floating Acetal Copolymer Disc design allows for a positive bubble tight seal with as low as one inch of water crack pressure. Rated for service up to 500 Psig, the DCV Series is available with many standard elastomer seal options, making it a versatile choice for many low pressure applications. DCV Series valves can be ordered cleaned for Oxygen service.

Features

- Ideal for High Cycling Applications
- Quick Acting: less than 10 milliseconds to seal from reversing flow
- No Spring: valve is operated solely by the flow of the media
- Bubble tight closure from zero to 500 Psig

Technical Data

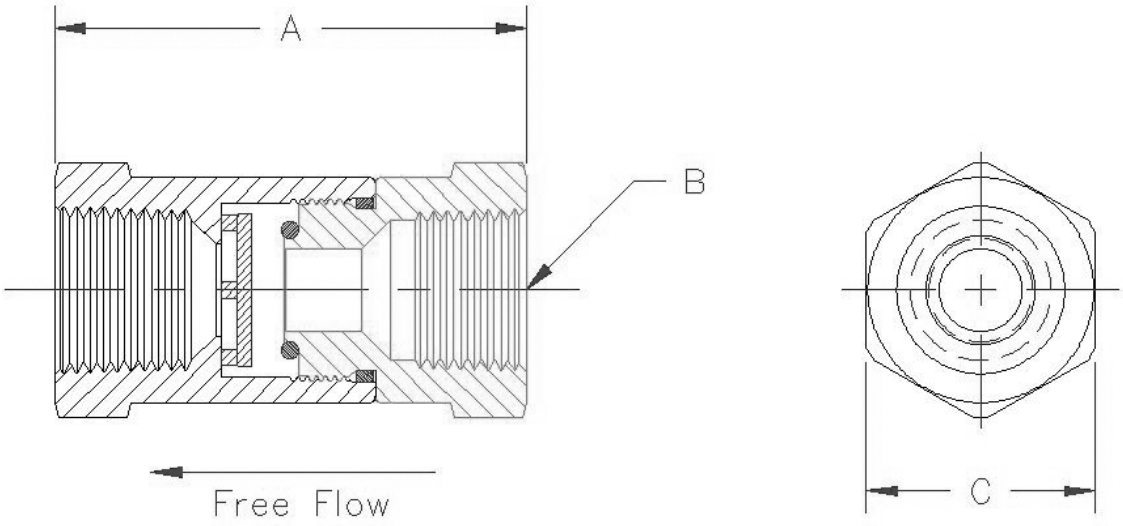
Maximum Pressure: 500 Psig
Cracking Pressure: <1" H_20
Flow Coefficient (Cv):
1/8" & 1/4" – 0.80
3/8" – 1.35
Temperature Rating: -40°F to 210°F (-40° to 100°C)
(based on seal selection, see ordering information)

Materials of Construction

Component	Valve Body Material
Body, End Cap	Brass, ASTM B16
Poppet Disc	Acetal Copolymer
O-Ring[1]	Viton™(standard)

1 Lubricated with Krytox™

SERIES DCV
DISC CHECK VALVE



Dimensions

Model Code	A	B	C
DCV-125B	1 – 5/8”	1/8" NPT	11/16"
DCV-250B	1 – 15/16”	1/4" NPT	3/4"
DCV-375B	1 – 15/16”	3/8” NPT	15/16”

Ordering Information

DCV - 250 B - V

SERIES
DCV - Disc Check Valve

PIPE SIZE (NPT)
125 - 1/8" Female x Female
250 - 1/4" Female x Female
375 - 3/8” Female x Female

MATERIAL CODE
B - Brass
SS - 316 SS

SEAL MATERIAL
V - Viton™, -10°F to 210°F (-23°C to 100°C)
B - Buna-N, -40°F to 210°F (-40°C to 100°C)
EP - Ethylene Propylene, -40°F to 210°F (-40°C to 100°C)
S - Silicone, -40°F to 210°F (-40°C to 100°C)

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

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

GENERANT
Valves & Bl-Lok Fittings

GENERANT
Valves & Bi-Lok Fittings

CHECK VALVE
1/8" – 2" NPT
0 – 4500 Psig

CV SERIES

Description

High flow, zero leak, low pressure drop check valve suitable for most fluid and gas applications. Fully guided poppet with free floating O-ring design is extremely tolerant of particulate contamination. A metal to metal positive stop in both the open and checked position protects O-ring and spring from over-stress fatigue. Zero external leakage is achieved by the utilization of a static O-ring seal with PTFE backup ring. When specified with the proper seal material, these valves are ideally suited to cryogenic system applications.

Technical Data

- Nominal Crack Pressures: .15, 1, 3 & 8 Psig (0.01, 0.07, 0.21 & 0.55 bar)
- Leakage: Zero to maximum operating pressure. PTFE seals may require back pressure to seal leak-tight
- Temperature Rating: -320°F to 450°F (-195°C to 232°C) based on seal material
- Maximum Operating Pressures to 300°F (149°C)

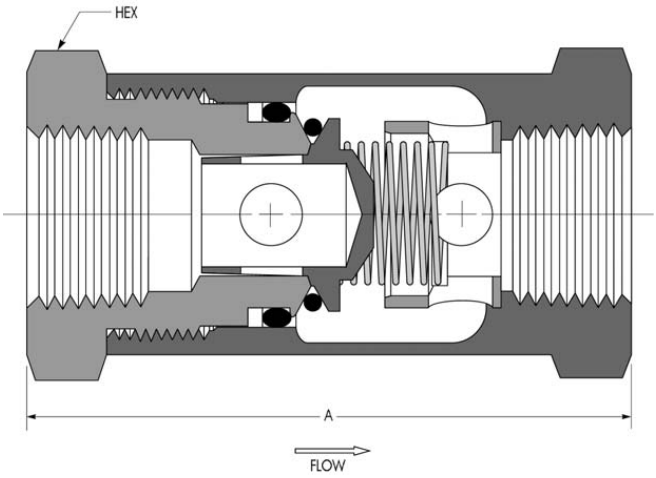
Pipe Size	Brass Psig (bar)	Carbon Steel Psig (bar)	303 Stainless Steel Psig (bar)	316 Stainless Steel Psig (bar)
1/8" – 1"	3000 (206)	3000 (206)	4500 (310)	
1-1/4" & 1-1/2"		Non standard, consult factory		
2"	1500 (103)			

Materials of Construction

Component	Valve Body Material			
	Brass	Carbon	303 SS	316 SS
Inlet Cap, Outlet Body, Poppet, Spring Retainer	Brass ASTM B16	Carbon Steel ASTM A108 Zinc & Black Plated per ASTM B633	303 SS ASTM A582	316 SS ASTM A479
Dynamic O-Ring[1]	Buna-N		Viton™	
Static O-Ring				
Backup Ring	Virgin PTFE			
Spring	302 SS, ASTM A313			

1 Lubricated with Krytox™

SERIES CV
CHECK VALVE



Dimensional/Flow Data

Pipe Size (NPT)	A (inches)	Hex	Cv	Flow at 5.0 Psid (SCFM)
1/8”	1.70	13/16”	1.7	35
1/4"	2.25	1”	3.0	60
3/8”	2.43	1 – 1/8”	3.9	80
1/2"	2.93	1 – 1/2"	7.4	150
3/4"	3.37	1 – 3/4"	11.4	280
1”	3.99	2”	14.2	380
1 – 1/4"	4.50	2 – 3/4"	26.8	700
1 – 1/2"	5.35			
2”	6.10	3 – 1/2” Round[1]	51.0	1200

1. Machined from 3-1/2” round stock with 2-3/4” wrench flats.
Flow tested in accordance with ISA S75.02 with air. Restrictions in the inlet or outlet piping may reduce flow

Ordering Information

CV - 500 B - V - 3

SERIES
CV - Check Valve

PIPE SIZE (NPT)
125 - 1/8”
250 - 1/4"
375 - 3/8”
500 - 1/2"
750 - 3/4"
1000 - 1"
1250 - 1-1/4" (brass only)
1500 - 1-1/2" (brass only)
2000 - 2" (brass only)
NPT threads per ANSI/ASME B1.20.1

MATERIAL CODE
B - Brass (1/8" - 2")
S - 303 SS (1/4" - 1")
SS - 316 SS (1/8" - 1)
C - Carbon Steel (1/4" - 1")

CRACK PRESSURE
.15 - (.1-.4 Psig) (0.01 bar)
1 - (.5 - 1 Psig) (0.07 bar)
3 - (2-4 Psig) (0.21 bar)
8 - (6-10 Psig) (0.55 bar)

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)
S - Silicone, -70°F to 450°F (-56°C to 232°C)
T - PTFE, -320°F to 350°F (-195°C to 176°C)
PTFE Seal may require back pressure to seal leak tight

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

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.

GENERANT
Valves & Bi-Lok Fittings

GENERANT

HIGH PRESSURE CHECK VALVE
1/4" and 1/2" NPT
10,000 Psig (690 Bar)

HPCV SERIES

Description

Series HPCV is a High Pressure, One-Piece Body, Zero Leak, Check Valve for High Pressure and Severe Service applications. The unique design features a fully retained encapsulated O-ring seal with metal to metal backup for long service life. Available in Brass, 316 and 17-4 PH Stainless Steel to 10,000 psig.

Features

- One-Piece Body Design
- Encapsulated Seal with Metal Backup
- Self Purging Design prevents leakage
- Increasing Pressure Increases Sealing Efficiency

Technical Data

Maximum Operating Pressure @ 100° F

Body Material	Operating Pressure Psig (Bar)	Proof Pressure Psig (Bar)
Brass	5000 (345)	7500 (517)
316 Stainless	6000 (413)	10000 (690)
17-4 PH Stainless	10000 (690)	15000 (1034)

Minimum Burst Pressure: Greater than 3 times Operating Pressure

Leakage:
Elastomeric Seals: Zero @ 1.0 Psig (0.07 Bar) to Proof
Teflon Seals: Zero @ 75 Psig (5.2 Bar) to Proof

Nominal Crack Pressure: 2 - 5 Psig (0.14 - 0.34 Bar)

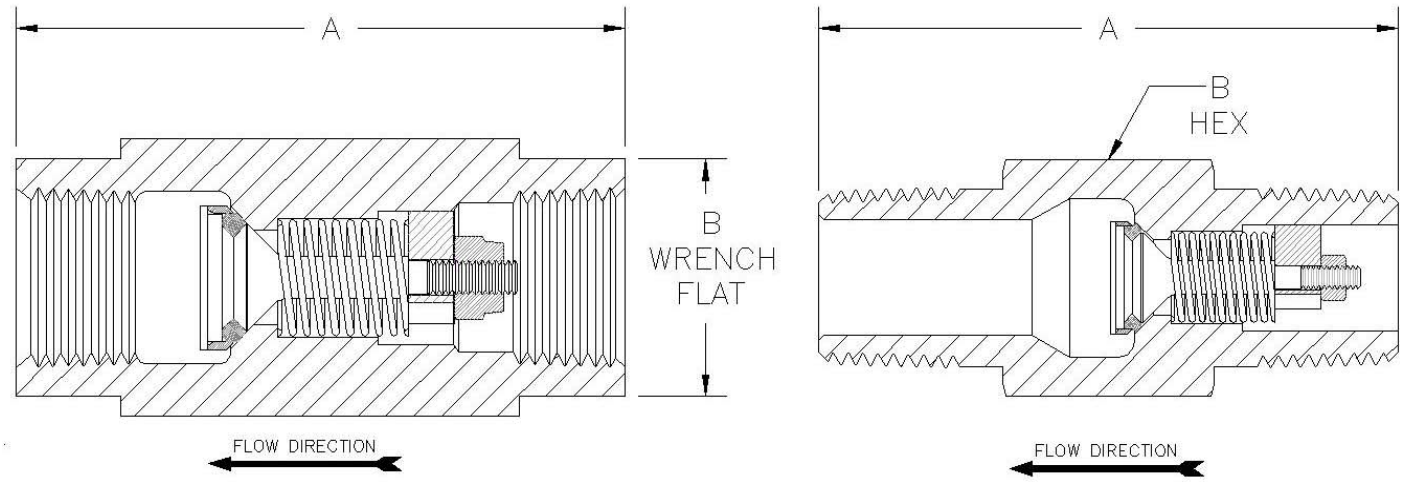
Temperature Range:
Seal Dependent (see How to Order)

Materials of Construction

Component	Valve Body Materials		
	Brass	316 Stainless Steel	17-4 PH Stainless Steel
Valve Body	Brass, ASTM B16	316SS, ASTM A479	17-4 PH SS, ASTM A564, Heat Treated to H1150D
Stem			17-4 PH SS, ASTM A564
Spring Retainer			303 SS, ASTM A582
O-Ring Shroud	303 SS, ASTM A582		
Spring	302 SS, ASTM A313		
Locknut	Corrosion Resistant Austenitic Steel (CRES)		
O-Ring	Buna-N, Teflon® or Viton®		

O-rings are lubricated with Krytox®

HIGH PRESSURE CHECK VALVE



Dimensional Data

Model Code	Port Configuration		Flow Coefficient, Cv	Dimensions in inches (mm)	
	Inlet	Outlet		OAL	Hex Size[1]
HPCV-4F	1/4" Female NPT		0.69	2.00 (50.8)	3/4 (19.05)
HPCV-8F	1/2" Female NPT		2.63	2.89 (73.4)	1-1/8 (28.58)
HPCV-4P	1/4" Male NPT		0.32	1.82 (46.23)	5/8 (15.88)
HPCV-8P	1/2" Male NPT		1.83	2.75 (69.85)	1 (25.4)

Note: Dimensions are in inches (millimeters), for reference only and subject to change.
Flow Coefficient stated with Nitrogen and 2 - 5 Psig Nominal Spring.
[1] Female x Female Configuration made from Round Stock with Wrench Flats.
NPT Threads per ASME B1.20.1

How To Order

HPCV-8F PH - T - X

Model Code
HPCV – High Pressure Check Valve

Material Code
B – Brass
SS – 316 Stainless Steel
PH - 17-4 PH Stainless Steel
(PH is available for 4F and 8F only)

Cleaning Option
X- Cleaned and Packaged for Oxygen Service

Seal Material
T - Teflon® -100°F to 400°F (-73°C to 204°C)
V - Viton® -10°F to 375°F (-23°C to 190°C)
B – Buna-N -40°F to 250°F (-40°C to 171°C)

For additional configurations consult factory.

Krytox®, Teflon®and Viton® are registered trade marks of DuPont.

GENERANT
Valves & Bl-Lok Fittings

HIGH PRESSURE RELIEF VALVE
1/8" - 3/4" NPT
10-2400 Psig

HPRV SERIES

Description

The HPRV Series High Pressure Relief Valve provides accurate crack pressure with zero leakage up to 98% of set pressure. When properly specified, this factory preset, tamper proof design is ideally suited for most liquid and gas applications. Encapsulating the o-ring seal within the poppet prevents seal extrusion and cold flow. A precise line of contact seal is maintained by guiding the poppet in the body. At high crack pressure settings, the o-ring is protected by a metal-to-metal stop between the poppet and the body. The valve's high flow design, combined with narrow band interchangeable springs, minimizes system pressure rise as flow demand increases. Series HPRV valves are available in brass or stainless steel and inline or discharge to atmosphere configurations. They can also be supplied with a manual pull ring override and cleaned for oxygen service.

Features

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

Technical Data

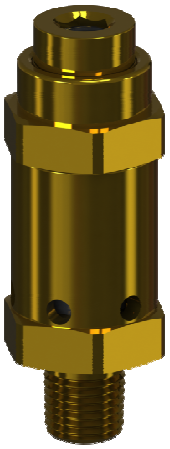
- Set Pressure Range: 10 to 2400 Psig (0.7 to 166 Bar)
- Set Pressure Tolerance: Factory Preset +/-5% on increasing pressure
- Reseat: Elastomer Seals 90%-95% of Actual Crack Pressure. PTFE may be slightly lower
- Inline Valves (Series HPRV):
  Proof Pressure: 3700 Psig (225 Bar)
  Burst Pressure: >5000 Psig (345 Bar)
- Temperature Range: -320º F to 400º F (-220º C to 205º C)
  Based on seal selection, see ordering information

Materials of Construction

Component	Valve Body Material		
	Brass	303 Stainless Steel	316 Stainless Steel
Inlet Body, Outlet Cap, Spring Chamber, Spring Retainer,O'Ring Spreader	Brass, ASTM B16	303 SS, ASTM A582*	316 SS, ASTM A479*
Poppet	303 SS, ASTM A582		
Spring	302 SS / 17-7 PH ASTM A313		
Locking Screw	18-8 SS		
Seals*	As Specified, See Ordering Information		
Pull Stud	Brass, ASTM B16	303 SS, ASTM A582	316 SS, ASTM A479
Pull Ring	Plated Steel		

*Lubricated with Krytox ™

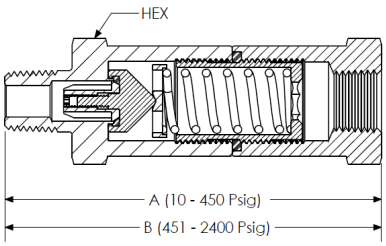
HPRV
Inline



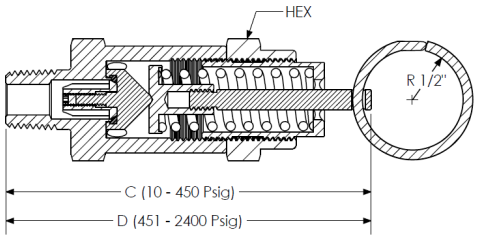
HPRVA
Vent to Atmosphere

HPRVM
Vent to Atmosphere
(Manual Override)

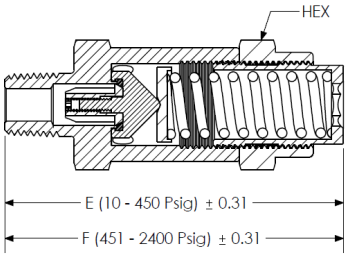
HIGH PRESSURE RELIEF VALVE



HPRV
Inline



HPRVM
Discharge to Atmosphere
(Manual Override)



HPRVA
Discharge to Atmosphere

Dimensional Data

Inlet (NPT)	HPRV		HPRM		HPRVA		Hex
	A	B	C	D	E	F	
1/8"	3.34	4.24	3.30	4.20	2.87	3.77	1"
1/4"							
3/8"							
1/2"	4.16	5.06	4.27	5.18	3.56	4.46	1-1/4"
3/4"	5.90	7.14	5.44	6.70	4.82	6.13	1-3/4"

Dimensional data is stated in inches.

Flow Data

Set Pressure Range	HPRV				HPRVA and HPRVM			
	10-1250		1251-2400		10-1250		1251-2400	
Inlet (NPT)	Orifice	Kd	Orifice	Kd	Orifice	Kd	Orifice	Kd
1/8"	.215	0.14	.215	0.16	.215	0.57	.215	0.65
1/4"	.275	0.27			.275	0.65		
3/8"								
1/2"	.515	0.20	.275	0.27	.515	0.35	.275	0.65
3/4"	See "HPRV-750 Flow Datasheet"							

Kd is stated at 110% of Nominal Set Pressure.
Orifice sizes are stated in inches.
Consult factory for proper sizing or flow requirements, flow curves available on request.

Ordering Information

HPRV – 250 SS – V – 450

SERIES
HPRV - Male x Female, Inline
HPRVA - Male Inlet, Discharge to Atmosphere
HPRVM - Male Inlet, Vent to Atmosphere with Manual Override

STANDARD PORTING CONNECTION

125 – 1/8" NPT	ANSI/ASME B1.20.1 (Inlet & Outlet)
250 – 1/4" NPT	
375 – 3/8" NPT	
500 – 1/2" NPT	
750 – 3/4" NPT	

OPTIONAL PORTING CONNECTION
Consult factory

-6SAE	Inlet -	MS33656 with Cone Point Removed (adapts to SAE J1926)
-8SAE		
-10SAE		
-12SAE	Outlet -	SAE J1926
-16SAE		
-6JIC	Inlet -	SAE J514, 37 Degree Flare
-8JIC		
-10JIC	Outlet -	Corresponding SAE J1926 Size Female
-12JIC		
-16JIC		

NOMINAL SET PRESSURE
Specify 10 - 2400 Psig

SEAL MATERIAL
V - Viton™, -20°F to 400°F (-29°C to 204°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)
S - Silicone, -70°F to 450°F (-56°C to 232°C)
T - Teflon™, -320°F to 400°F (-220°C to 204°C)

MATERIAL CODE
B - Brass
S - 303 Stainless Steel
SS - 316 Stainless Steel

OPTIONS
Oxygen cleaning, tamper proof lock wire, alternative seals and Other thread configurations, consult factory

Viton, Krytox, and 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.

GENERANT

GENERANT

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.

VRV
Vent to Atmosphere

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

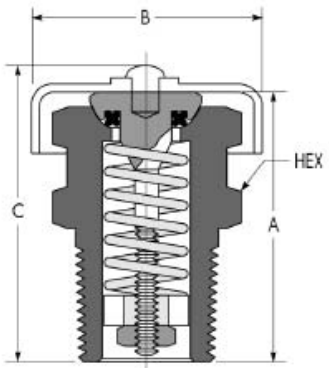
- Set Pressure Range: 0.5 to 150 Psig (0.03 to 10.34 bar)
- Inline Valves (Series VRVI):
  Proof Pressure: 400 Psig (28 bar)
  Burst Pressure: >500 Psig (34 bar)
- Set Pressure Tolerance: Factory preset
  < 2 Psig (0.14 bar): +/-10%
  2 to 150 Psig (0.14 to 10.3 bar): +/- 5%
  (on increasing pressure)
- 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: -320º to 400º F (-195º C to 205º C)

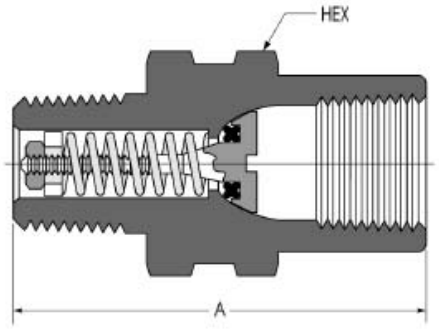
(based on sealing selection, see ordering information)

VRVI
Inline

SERIES VRV
VENT RELIEF VALVE



VRV & VRVD
Vent to Atmosphere



VRVI
Inline

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	Brass, ASTM B16		
Spring Retainer[2]			
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™

GENERANT

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

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.

GENERANT

GENERANT Valves & BI-Lok Fittings

VENT RELIEF VALVE
1/8” – 1/4” NPT
150 – 600 Psig

VRVH 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 in vent to atmosphere or inline configurations. Valves feature an encapsulated O-ring seal to prevent extrusion at higher differential pressures.

VRVH
Vent to Atmosphere

Features and Benefits
- 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

VRVHI
Inline

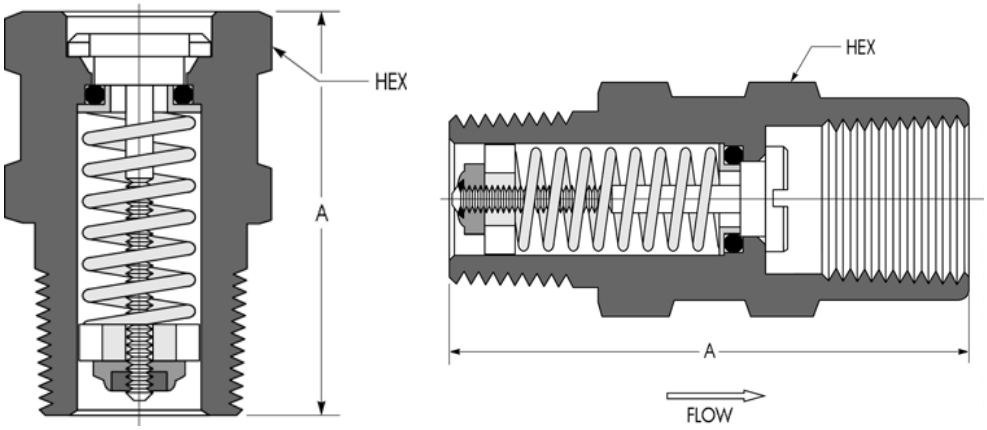
Technical Data
- Set Pressure Range: 150 to 600 Psig (10.3 to 42 bar)
- Inline Valves *(Series VRVHI):*
  Proof Pressure: 750 Psig (52 bar)
  Burst Pressure: >1000 Psig (69 bar)
- Set Pressure Tolerance: Factory preset +/- 5% on increasing pressure:
- Reseal: 90% of Set Pressure for Elastomers Seals
  80% of Set Pressure for PTFE Seals
- Temperature Range:
  -320°F to 350°F (-195°C to 177°C)
  based on seal selection, see ordering information

Materials of Construction

Component	Material
Valve Body, Stem, O-Ring Cup	Brass, ASTM B16
Spring Retainer	316 SS, ASTM A479
Seal[1]	As specified, see ordering information
Spring	302 SS/17-7 PH, ASTM A313
Locknut	18-8 SS

1 Lubricated with Krytox™

SERIES VRVH
VENT RELIEF VALVE



Dimensional Data

Pipe Size	VRVH		VRVHI	
NPT	A	Hex	A	Hex
1/8"	.94	1/2"	1.44	1/2"
1/4"	1.29	5/8"	1.75	3/4"

Dimensional data is stated in inches

Flow Data, Series VRVH (Vent to Atmosphere)

Nominal Spring		150		250		500	
Set Pressure Range (Psig)		125-175		175-350		350-600	
Valve Size	Orifice	Flow (SCFM)	Kd	Flow (SCFM)	Kd	Flow (SCFM)	Kd
1/8" NPT (VRVH-125)	0.156	7.5	0.12	12.5	0.12	33	0.16
1/4" NPT (VRVH-250)	0.293	50	0.22	90	0.24	150	0.21

Flow Data, Series VRVHI (Inline)

Nominal Spring		150		250		500	
Set Pressure Range (Psig)		125-175		175-350		350-600	
Valve Size	Orifice	Flow (SCFM)	Kd	Flow (SCFM)	Kd	Flow (SCFM)	Kd
1/8" NPT (VRVHI-125)	0.156	12	0.18	13.5	0.13	35	0.17
1/4" NPT (VRVHi-250)	0.250	45	0.27	80	0.30	175	0.33

Ordering Information

VRVHI - 250 B - V - 450

SERIES
VRVH - Vent to Atmosphere
VRVHI - Inline Relief (Male x Female)

PIPE SIZE (NPT)
125 - 1/8" Male
250 - 1/4" Male
NPT threads per ANSI/ASME B1.20.1

MATERIAL CODE
B - Brass
For other materials, consult factory

NOMINAL SET PRESSURE
Specify 150-600 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 300°F (-40°C to 148°C)
EP - Ethylene Propylene, -65°F to 300°F (-54°C to 148°C)
S - Silicone, -70°F to 450°F (-56°C to 232°C)
T - PTFE, -320°F to 350°F (-195°C to 176°C)
PTFE Seals may not reseal bubble tight.

OPTIONS
Oxygen cleaning, alternative seals and other thread configurations, consult factory.

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.

GENERANT Valves & Bi-Lok Fittings

GENERANT
Valves & Bi-Lok Fittings

INDUSTRIAL RELIEF VALVE (BRASS)
1/4" - 1/2" NPT
10 - 750 Psig (0.69 - 51.7 Bar)

SERIES IRV BRASS

Description

The Generant Series Brass IRV, Industrial Relief Valve is a spring reference over pressure protection device. The valve can be ordered with set pressures ranging from 10 to 750 Psig (0.69 to 51.7 Bar) and comes factory preset and permanently locked. Relief pressure cannot be altered or adjusted in the field. Seat and poppet geometry combined with optimized spring ranges provide high flow rates with minimum pressure accumulation. Relief pressure can be discharged to atmosphere or to a downstream connection. For severe service applications and set pressures above 50 Psig (3.45 Bar), specify optional PTFE seals.

Series IRV

Features

- Supplied Factory Preset Set and Permanently Locked for Tamper Proof Service
- 100% Factory Tested for Leakage, Crack and Reseal Performance
- High Flow Capacity and Excellent Reseal Performance
- Discharge to Atmosphere or Inline Piping Configurations
- Optional Deflector Cap available for Diverting Exhausted Gas to Atmosphere
- Available Cleaned and Packaged for Oxygen Service

Technical Data

Set Pressure Range:
FKM and Fluorosilicone: 10 - 750 Psig (0.69 to 51.7 Bar)
PTFE and PCTFE: 50 - 750 Psig (3.45 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, unaffected by up to 10% Back Pressure
Reseal: 90% of Set Pressure
PTFE seals 80% of Set Pressure
Temperature Rating: -320º F to 375º F (-196º C to 190º C)
based on seal material (see how to order)
Lubricant: Krytox®

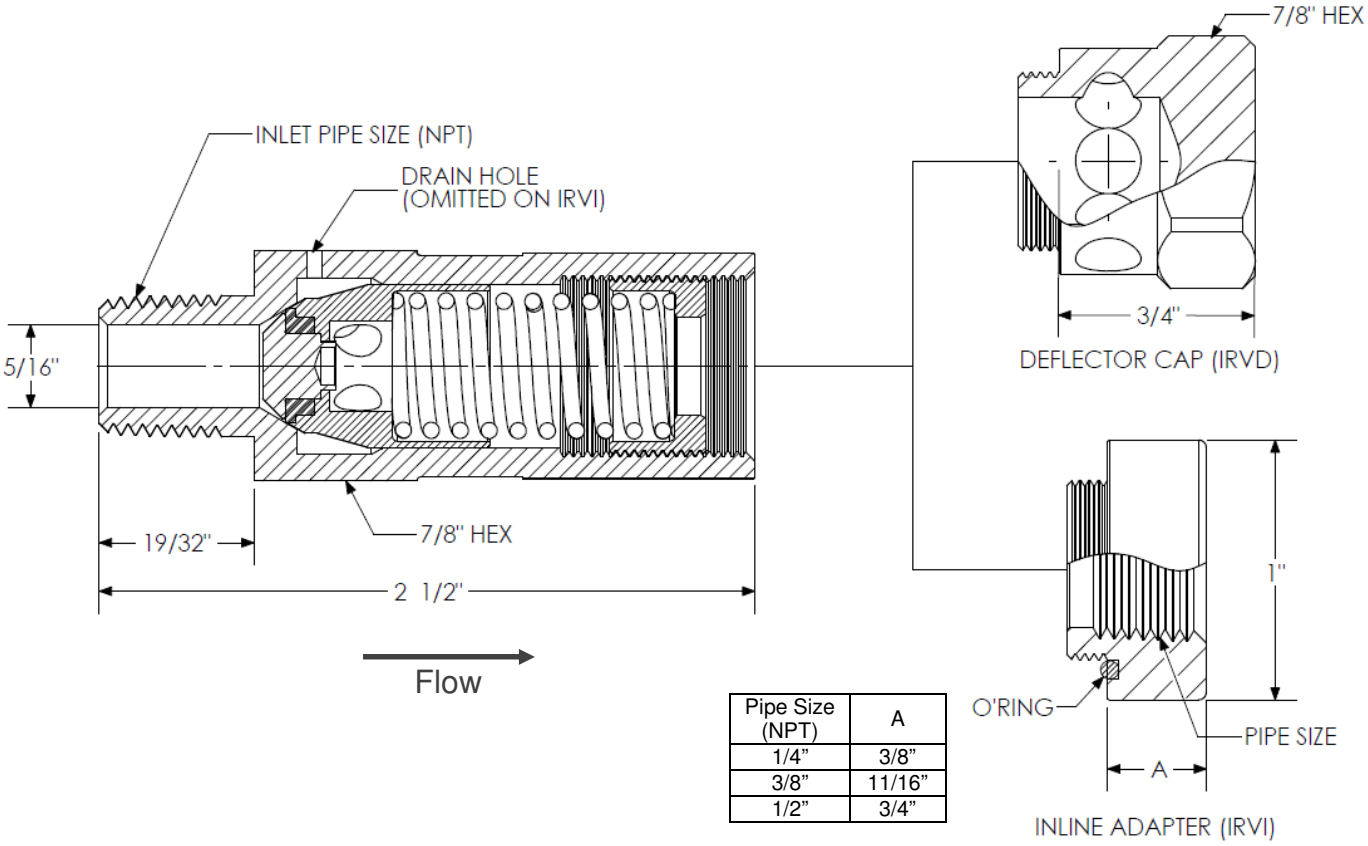
Series IRVI

Materials of Construction

Component	Material
Body, Poppet, Seat Rivet, Spring Retainer, In-Line Adapter*	CDA 360 Brass, ASTM B16
Adjustment Spring	302 or 17-7 PH Stainless Steel, ASTM A313
Seals	FKM, PTFE, PCTFE, Fluorosilicone

*In-line Adapters Utilize FKM O'Ring Seals

INDUSTRIAL RELIEF VALVE (BRASS)



Pipe Size (NPT)	A
1/4"	3/8"
3/8"	11/16"
1/2"	3/4"

Flow Data*

Set Pressure Range (Psig)		Discharge Coefficient
From	To	Kd
10	28	0.59
29	45	0.59
46	62	0.59
63	89	0.54
90	130	0.42
131	180	0.35
181	275	0.25
275	400	0.12
401	615	0.18
616	750	0.14

*Orifice Diameter 0.312

How To Order

IRV - 250B - V - 300 - X

SERIES
IRV Vent to Atmosphere
IRVI2 1/4" Female NPT In-Line Adapter
IRVI3 3/8" Female NPT In-Line Adapter
IRVI4 1/2" Female NPT In-Line Adapter
IRVD Deflector Cap

INLET PIPE SIZE (NPT)
250B - 1/4" Male
375B - 3/8" Male
500B - 1/2" Male

SEAL MATERIAL
V - FKM, -20° F to 375° F (-29° C to 190° C)
T - PTFE, -60° F to 375° F (-51° C to 190° C)
K - PCTFE, -320° F to 200° F (-220° C to 93° C)
FS - Fluorosilicone, -80° F to 350° F (-62° C to 176° C)

Specify Set Pressure
10-750 Psig (0.69 to 51.7 Bar) for Seal Material V or FS
50-750 Psig (3.45 to 51.7 Bar) for Seal Material T or K

Cleaning Option
X - Clean and Packaged for Oxygen Service

GENERANT

INDUSTRIAL 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)

SERIES IRV STAINLESS

Description

The Generant Series Stainless Steel IRV, Industrial Relief Valve is a spring reference over pressure protection device. 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 IRV is supplied with FKM seals. For severe service applications and set pressures above 50 Psig (3.45 Bar), specify optional PTFE seals.

Features

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

Technical Data

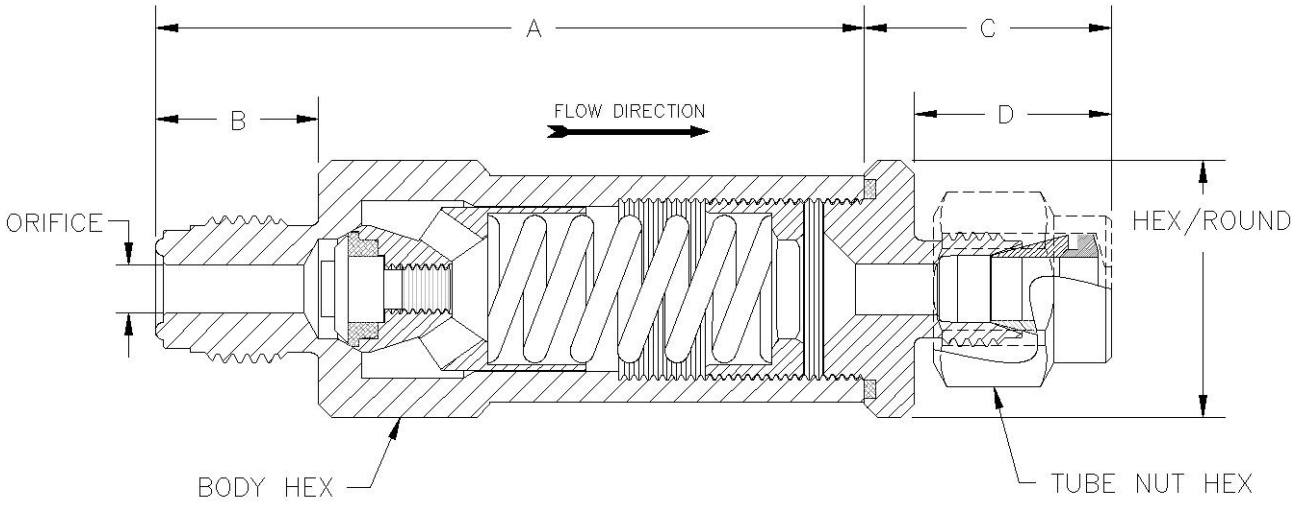
Set Pressure Range:
FKM: 10 - 750 Psig (0.69 to 51.7 Bar)
PTFE: 50 - 750 Psig (3.45 to 51.7 Bar)
Factory Set Tolerance: +/- 5% of Specified Pressure
Zero Leakage to 95% of Set Pressure
Full Rated Flow @ 110% of Set Pressure, unaffected by up to 10% Back Pressure
Reseal: FKM seals 90% of Set Pressure
PTFE seals 80% of Set Pressure
Temperature Rating: -60º F to 375º F (-51º C to 190º C) based on seal material (see how to order)
Lubricant: Krytox®

Materials of Construction

Component	Material
Body, Poppet, Seat Screw, Spring Retainer, In-Line Adapter[1], Nuts and Ferrules	316 Stainless Steel, ASTM A479[2]
Adjustment Spring	302 or 17-7 PH Stainless Steel, ASTM A313
Seals	FKM or PTFE

[1] Inline Adapters utilize FKM o'ring seals. Metal to Metal Face Seal Inline Adapters are Electro Polished to 10 Ra Max.
[2] Valves supplied with Metal to Metal Face Seal connections have Electro Polished Inlet, Poppet and Seat Screw to 10 Ra Max.

INDUSTRIAL RELIEF VALVE (STAINLESS)



Configuration Shown IRV4T-4V

Dimensional Data

Inlet Size	Designation	Orifice	A	B	Body Hex	Tube Nut Hex
1/4" NPT	4	.312 (7.93)	2.65 (65.02)	0.59 (14.99)	7/8"	N/A
1/2" NPT	8	.400 (10.16)				
-4 Face Seal	4V	.180 (4.57)	2.68 (68.07)	0.62 (15.75)		
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	C	D	Hex/Round	Tube Nut Hex
IRV	Vent to Atmosphere	N/A			
IRVD	Deflector Cap	0.75 (19.05)	N/A	7/8" Hex	N/A
IRV4	1/4" FNPT	0.37 (9.40)		1" Rd	
IRV6	3/8" FNPT	0.67 (17.02)			
IRV8	1/2" FNPT	0.74 (18.80)			
IRV4V	-4 Face Seal	0.80 (20.32)	0.62 (15.75)	7/8" Hex	
IRV4T	1/4" Bi-Lok	0.89 (22.61)	0.70 (17.78)		9/16"
IRV8T	1/2" Bi-Lok	1.05 (26.67)	0.86 (21.84)		7/8"
IRV8V	-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	To	.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

Krytox® is a registered trademark of DuPont.

How To Order

IRV4 - 4V - V - 300 - X

Series
IRV Vent to Atmosphere
IRVD Deflector Cap
IRV4 1/4" Female NPT In-Line Adapter
IRV6 3/8" Female NPT In-Line Adapter
IRV8 1/2" Female NPT In-Line Adapter
IRV4V -4 Face Seal In-Line Adapter
IRV4T 1/4" Bi-Lok In-Line Adapter
IRV8T 1/2" Bi-Lok In-Line Adapter
IRV8V -8 Face Seal In-Line Adapter

Inlet Size Designation
4 1/4" NPT Male Inlet
8 1/2" NPT Male Inlet
4V -4 Metal to Metal Face Seal
4T 1/4" Bi-Lok Dual Ferrule Tube
8T 1/2" Bi-Lok Dual Ferrule Tube
8V -8 Metal to Metal Face Seal

Seals
V - FKM, -10° to 375° F (-23° to 190° C)
T - PTFE, -60° to 375° F (-51° to 190° C)

Specify Set Pressure
10-750 Psig (0.69 to 51.7 Bar) for Seal Material V
50-750 Psig (3.45 to 51.7 Bar) for Seal Material T

Cleaning Option
X - Clean and Packaged for Oxygen Service

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.

GENERANT

GENERANT
Valves & Bi-Lok Fittings

CRYOGENIC RELIEF VALVE (BRASS)
1/4", 3/8" and 1/2" NPT
10 - 750 Psig (0.7 - 51.7 Bar)

SERIES CRV BRASS

Description

The Generant Series Brass CRV, Cryogenic Relief Valve is a spring reference over pressure protection device. The CRV incorporates Generant's exclusive "Dirt Guard" feature which increases the valves ability to tolerate particulate contamination. This device is ideally suited for use as a "Blocked Line Safety" in cryogenic systems. The CRV is supplied cleaned and packaged for oxygen service. The valve can be ordered with set pressures ranging from 10 to 750 Psig (0.7 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 is supplied with Flourosilicone seals for set pressures from 10 – 49 Psig (0.7 – 3.4 Bar) and PCTFE seals for set pressures 50 – 750 Psig (3.5 – 51.7 Bar).

Features

- Available **CE** marked in accordance to the requirements of the PED
- Exclusive "Dirt Guard" poppet incorporates screen to extend valve life and ensure reliability
- High Flow Capacity and Excellent Reseal Performance
- Supplied Factory Preset and Permanently Locked for Tamper Proof Service
- Discharge to Atmosphere or a Wide Variety of Inline Piping Configurations
- Optional Deflector Cap available for diverting exhausted gas
- 100% Factory Tested for Leakage, Crack and Reseal
- Cleaned and Packaged for Oxygen Service

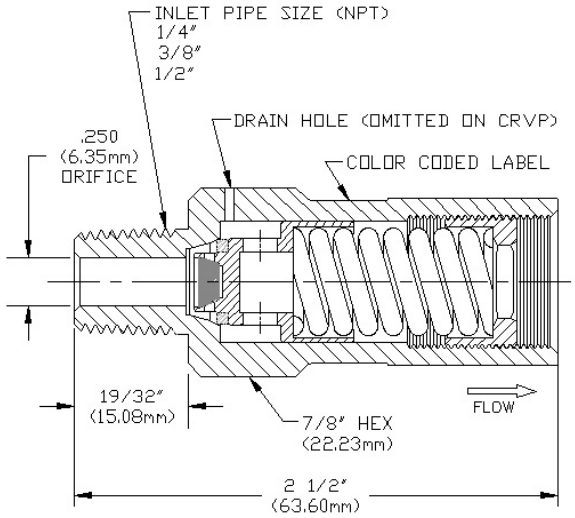
Technical Data

Nominal Set Pressure Range: 10 – 750 Psig (0.7 to 51.7 Bar)
Factory Set Tolerance*: Set Pressure ≤ 28.90 PSI, ± 5%
Set Pressure 29.00 – 48.30 PSI, ± 1.45 PSI
Set Pressure ≥ 48.40 PSI, ± 3%
*tolerance specifications per *EN ISO 4126-1*.
Zero Leakage to 95% of Set Pressure
Full Rated Flow @ 110% of Set Pressure
Unaffected by up to 10% Back Pressure
Reseat: 90% of set pressure
85% for PCTFE seals set below 100 Psig (6.9 Bar)
Temperature Rating: -320° to 350° F (-196° C to 176° C)
based on seal material (see How To Order)
Lubricant: Krytox®

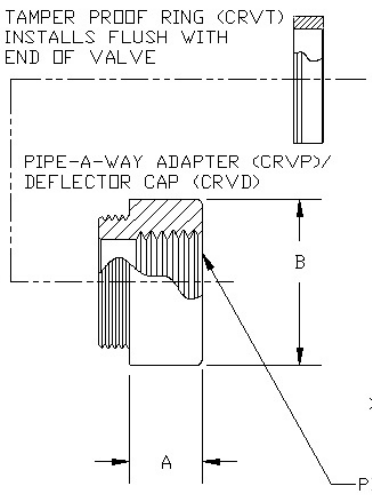
Materials of Construction

Component	Material
Body, Poppet, Adjusting Spring Retainer, Pipe-Away Adapters, Deflector Cap, Tamper Proof Ring	Brass, ASTM B16
Spring	302 (ASTM A313) or 17-4PH (ASTM A564)
Seal	PCTFE (ASTM D1430), or Fluorosilicone
Color Coded Identification Label	Mylar

CRYOGENIC RELIEF VALVE (BRASS)



CRV SHOWN WITH "DIRT GUARD" POPPET



PIPE SIZE	A	B
1/4" NPT	11/32" (8.73mm)	7/8" (22.23mm)
3/8" NPT	11/16" (17.46mm)	7/8" (22.23mm)
1/2" NPT	3/4" (19.05mm)	1" (25.40mm)
1/2" BSPT	3/4" (19.05mm)	1" (25.40mm)
DEFLECTOR CAP ✳	3/4" (19.05mm)	7/8" HEX (22.23mm)

✳ DEFLECTOR CAP DIVERTS FLOW TO SIDES THROUGH SIX (6) 1/4"(6.35mm) HOLES. (NOT SHOWN)

OPTIONAL CONFIGURATIONS (SEE HOW TO ORDER)

Flow Data

Set Pressure Range (Psig)		Discharge Coefficient Kd*
From	To	
10.0	17.0	0.62
17.1	29.0	0.62
29.1	40.0	0.53
40.1	60.0	0.53
60.1	90.0	0.61
90.1	125.0	0.76
125.1	190.0	0.76
190.1	275.0	0.67
275.1	375.0	0.61
375.1	600.0	0.48
600.1	750.0	0.40

Valve Orifice .250" (6.35mm) Diameter (same for 1/4", 3/8" and 1/2" NPT)

*Flow Coefficient Kd is stated at 110% accumulation

Relief Valve Flow Capacity can be calculated using **Generant's Online Flow Calculator** at www.generant.com or contact Customer Service at 973-838-6500.

How To Order

CRV - 250B - K - 350

SERIES
CRV -Cryogenic Relief Valve
CRVP2 -Cryogenic Relief Valve with 1/4" Female Pipe-A-Way Adapter Installed
CRVP3 -Cryogenic Relief Valve with 3/8" Female Pipe-A-Way Adapter Installed
CRVP4 -Cryogenic Relief Valve with 1/2" Female Pipe-A-Way Adapter Installed
CRVT -Cryogenic Relief Valve with Tamper Proof Ring Installed
CRVD -Cryogenic Relief Valve with Deflector Adapter Installed
CRVB4 -Cryogenic Relief Valve with 1/2" BSPT Female Pipe-A-Way Adapter Installed

INLET PIPE SIZE (NPT)
250B - 1/4" Male
375B - 3/8" Male
500B - 1/2" Male

SEAL MATERIAL
FS - Fluorosilicone for 10-49 Psig (-85° to 350° F (-65° to 176°C))
K - PCTFE for Above 50 Psig (-320° to 165° F (-196° to 74° C))

NOMINAL SET PRESSURE
10-750 Psig (0.7 - 51.7 Bar)

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.

GENERANT

GENERANT
Valves & Bi-Lok Fittings

CRYOGENIC RELIEF VALVE WITH INTEGRAL BLEED VALVE
1/4", 3/8" and 1/2" NPT
10 - 750 Psig (0.7 - 51.7 Bar)

CRB SERIES

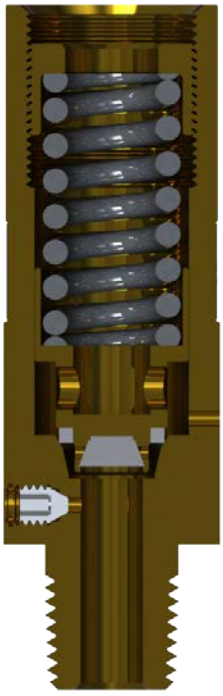
Description

The Generant Series CRB, Cryogenic Relief Valve with Integral Bleed Valve, is a spring reference over pressure protection device with a built-in bleed valve function for venting system pressure during line maintenance operations. This device is ideally suited for use as a "Blocked Line Safety" in cryogenic systems. The bleed adjustment screw is fully retained to prevent removal and can be opened and closed using a 5/64" allen wrench. The bleed valve's unique porting configuration vents system pressure away from the operator. The CRB offers all the same functions and features as Generant's Series CRV, including the exclusive "Dirt Guard" feature for minimizing valve contamination. The CRB is supplied cleaned and packaged for oxygen service.

The valve can be ordered with set pressures ranging from 10 to 750 Psig (0.7 to 51.7 Bar) and comes factory preset and permanently locked. Relief pressure cannot be altered or adjusted in the field. The CRB is supplied with Flourosilicone (FS) seals for set pressures 10 – 49 Psig (0.7 – 3.4 Bar) and PCTFE (K) seals for set pressures 50 – 750 Psig (3.5 – 51.7 Bar).

Features

- Integral Bleed Valve for Quick and Easy System Depressurization during Maintenance Operations.
- Fully Retained Bleed Valve Adjustment Screw to Prevent Removal
- Exclusive "Dirt Guard" Poppet incorporates Screen to Extend Valve Life and Ensure Reliability
- High Flow Capacity and Excellent Reseal Performance
- Supplied Factory Preset and Permanently Locked for Tamper Proof Service
- Discharge to Atmosphere or a Wide Variety of Inline Piping Configurations
- Optional Deflector Cap available for Diverting Exhaust Gas
- 100% Factory Tested for Leakage, Crack and Reseal
- Cleaned and Packaged for Oxygen Service



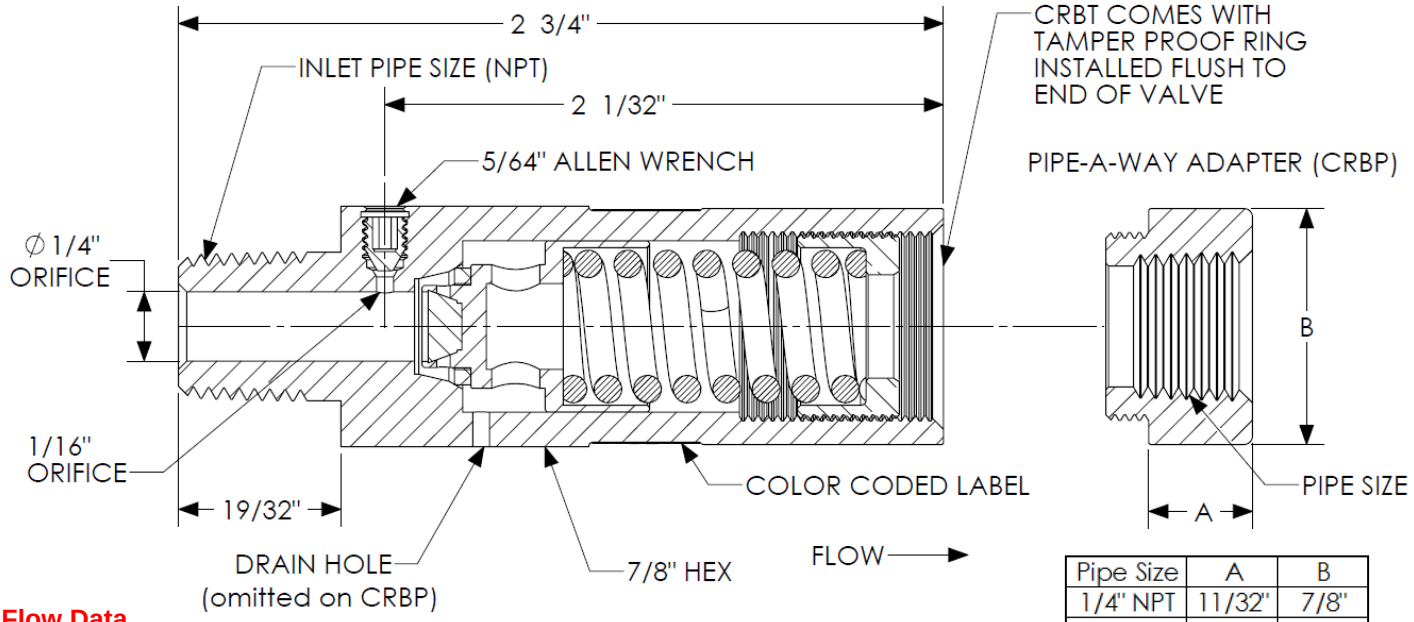
Technical Data

Nominal Set Pressure Range: 10 – 750 Psig (0.7 to 51.7 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
Full Rated Flow @ 110% of Set Pressure
Unaffected by up to 10% Back Pressure
Reseat: 90% of set pressure
85% for PCTFE seals set below 100 Psig (6.9 Bar)
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
Body, Poppet, Adjusting Spring Retainer, Pipe-Away Adapters, Deflector Cap, Tamper Proof Ring	Brass, ASTM B16
Bleed Valve Set Screw	316 SS (ASTM A313)
Spring	302 SS (ASTM A313) or 17-4PH SS (ASTM A564)
Seal	PCTFE (ASTM D1430), or Fluorosilicone
Color Coded Identification Label	Mylar

CRYOGENIC RELIEF VALVE (BRASS)



Pipe Size	A	B
1/4" NPT	11/32"	7/8"
3/8" NPT	11/16"	1"
1/2" NPT	3/4"	1"

* Deflector Cap (CRBD) diverts flow radially through six 1/4" holes.

Flow Data

Set Pressure Range (Psig)		Discharge Coefficient (Kd*)
From	To	
10.0	17.0	0.62
17.1	29.0	0.62
29.1	40.0	0.53
40.1	60.0	0.53
60.1	90.0	0.61
90.1	125.0	0.76
125.1	190.0	0.76
190.1	275.0	0.67
275.1	375.0	0.61
375.1	600.0	0.48
600.1	750.0	0.40

Valve Orifice .250" (6.35mm) Diameter (same for 1/4", 3/8" and 1/2" NPT)

*Flow Coefficient Kd is stated at 110% accumulation

Relief Valve Flow Capacity can be calculated using **Generant's Online Flow Calculator** at www.generant.com or contact Customer Service at 973-838-6500.

How To Order

CRB - 250B - K - 350

SERIES
CRB -Cryogenic Relief Valve with Bleed
CRBP2 -Cryogenic Relief Valve with Bleed - 1/4" Female Pipe-A-Way Adapter Installed
CRBP3 -Cryogenic Relief Valve with Bleed - 3/8" Female Pipe-A-Way Adapter Installed
CRBP4 -Cryogenic Relief Valve with Bleed - 1/2" Female Pipe-A-Way Adapter Installed
CRBT -Cryogenic Relief Valve with Bleed - Tamper Proof Ring Installed
CRBD -Cryogenic Relief Valve with Bleed - Deflector Adapter Installed
CRBB4 -Cryogenic Relief Valve with Bleed - 1/2" BSPT Female Pipe-A-Way Adapter Installed

INLET PIPE SIZE (NPT)
250B - 1/4" Male
500B - 1/2" Male

SEAL MATERIAL
FS - Fluorosilicone for 10-49 Psig (-85° to 350° F (-65° to 176°C))
K - PCTFE for Above 50 Psig (-320° to 165° F (-196° to 74° C))

NOMINAL SET PRESSURE
10-750 Psig (0.7 - 51.7 Bar)

GENERANT
Valves & Bi-Lok Fittings

CRYOGENIC RELIEF VALVE (STAINLESS)
1/4" and 1/2" NPT
-4 and -8 Metal To Metal Face Seal
1/4", 3/8", and 1/2" Bi-Lok Dual Ferrule Tube
10 - 750 Psig (0.69 - 51.7 Bar)

CRV SERIES STAINLESS

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 cannot 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 or PTFE for set pressures above 50 PSIG (3.45 Bar), Fluorosilicone for set pressures below 50 PSIG, and FKM (Viton™) throughout the available set pressure range.

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

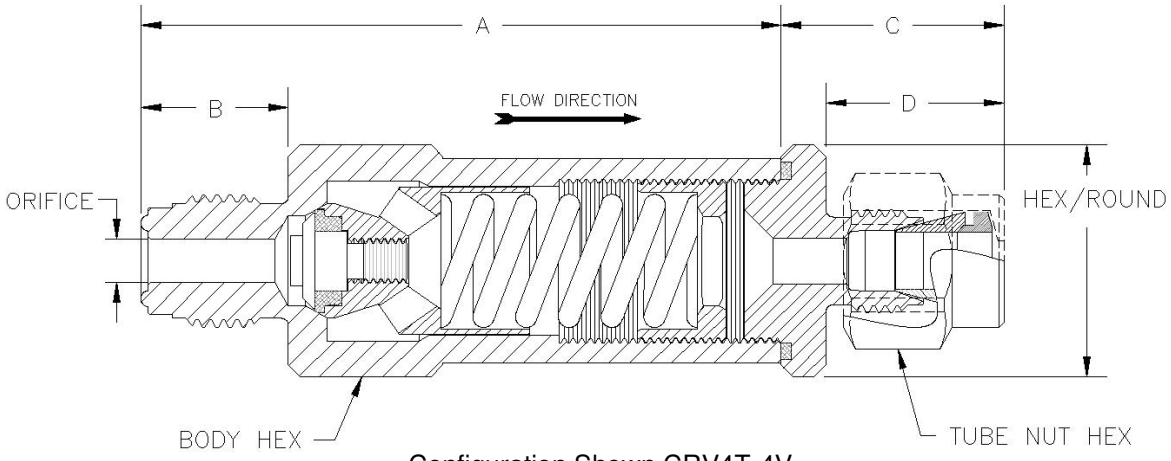
Nominal Set Pressure Range: 10 – 750 PSIG (0.69 to 51.7 Bar)
Factory Set Tolerance: +/- 5% of Specified Pressure
Zero Leakage to 95% of Set Pressure
Full Rated Flow @ 110% of Set Pressure
Reseat: 90% of set pressure OR
80% for PCTFE seals set below 100 PSIG (6.9 Bar)
80% for PTFE seals, any set pressure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

Materials of Construction

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

[1] Inline Adapters utilize Viton® o-ring seals. Metal to Metal Face Seal Inline Adapters are Electro Polished to 10 Ra Max.
[2] 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	A	B	Body Hex	Tube Nut Hex
1/4" NPT	4	.312 (7.9)	2.65 (65.0)	0.59 (15.0)	7/8"	N/A
1/2" NPT	8	.400 (10.2)				
-4 Face Seal	4V	.180 (4.6)	2.68 (68.1)	0.62 (15.8)		
1/4" Bi-Lok	4T	.180 (4.6)	2.94 (74.7)	0.70 (17.8)		9/16"
3/8" Bi-Lok	6T	.281 (7.1)	2.94 (74.7)	0.76 (19.3)		11/16"
1/2" Bi-Lok	8T	.400 (10.2)	3.51 (89.2)	0.86 (21.8)		7/8"
-8 Face Seal	8V	.400 (10.2)	2.82 (71.6)	0.75 (19.1)	1"	N/A

Outlet Configuration	Configuration	C	D	Hex/Round	Tube Nut Hex
Vent to Atmosphere	CRV	N/A			
Deflector Cap	CRVD	0.75 (19.1)	N/A	7/8" Hex	N/A
1/4" FNPT	CRV4	0.37 (9.4)		1" Rd	
3/8" FNPT	CRV6	0.67 (17.0)			
1/2" FNPT	CRV8	0.74 (18.8)			
-4 Face Seal	CRV4V	0.80 (20.3)	0.62 (15.8)	7/8" Hex	
1/4" Bi-Lok	CRV4T	0.89 (22.6)	0.70 (17.8)		9/16"
3/8" Bi-Lok	CRV6T	0.65 (16.6)	0.76 (19.3)		11/16"
1/2" Bi-Lok	CRV8T	1.05 (26.7)	0.86 (21.8)		7/8"
-8 Face Seal	CRV8V	0.94 (23.9)	0.75 (19.1)	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	To	.180 Orifice (4.6mm)	.312 Orifice (7.9mm)	.400 Orifice (10.2mm)
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

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How To Order

CRV4 - 4 - K - 350

CONFIGURATION

CRV	Vent To Atmosphere
CRVD	Deflector Cap
CRV4	1/4" NPT Female Inline Adapter
CRV6	3/8" NPT Female Inline Adapter
CRV8	1/2" NPT Female Inline Adapter
CRV4V	-4 Face Seal Inline Adapter
CRV4T	1/4" Bi-Lok Inline Adapter
CRV6T	3/8" Bi-Lok Inline Adapter
CRV8T	1/2" Bi-Lok Inline Adapter
CRV8V	-8 Face Seal Inline Adapter

Inlet Size Designation

4	1/4" Male NPT
8	1/2" Male NPT
4V	-4 Metal to Metal Face Seal
4T	1/4" Bi-Lok Dual Ferrule Tube
6T	3/8" Bi-Lok Dual Ferrule Tube
8T	1/2" Bi-Lok Dual Ferrule Tube
8V	-8 Metal to Metal Face Seal

Seal Material

K	PCTFE, above 50 PSIG Only (-320° to 165°F (-196° to 74°C))
V	FKM (Viton TM) (-20° to 375°F (-29° to 190°C))
FS	Fluorosilicone (-85° to 392°F (-65° to 200°C))
T	PTFE (-60° to 375°F (-51° to 190°C)

Specify Set Pressure

10 - 750 PSIG

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.

GENERANT

GENERANT Valves & BI-LOK Fittings

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

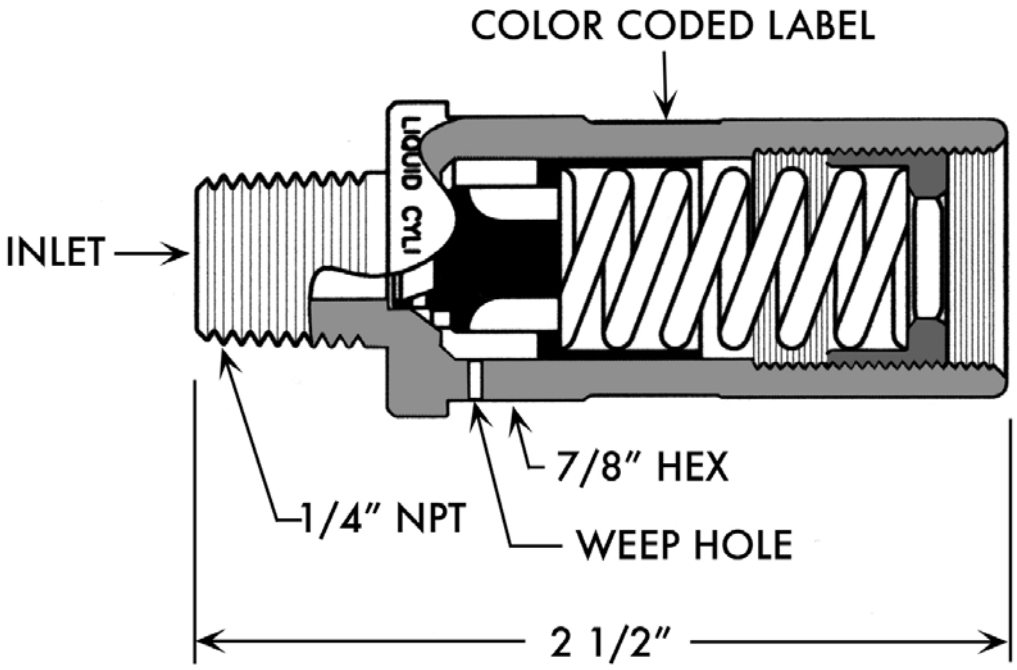
Technical Data

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: -320º to 350º F (-196º C to 176º 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

	Flow Rate (SCFM N2)	
Set Pressure (PSIG)	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

LCV - 250B - K - 230

SERIES
LCV - Vent to Atmosphere

PIPE SIZE
250B - 1/4" Male NPT (Brass)

NOMINAL SET PRESSURE
22-500 Psig (1.5 - 34.5 Bar)

SEAL MATERIAL
FS - Fluorosilicone for 22-49 Psig (-85° to 350° F (-65° to 176°C))
K - PCTFE for Above 50 Psig (-320° to 165° F (-196° to 74° C))

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.

GENERANT

GENERANT
Valves & BI-Lok Fittings

ABSOLUTE PRESSURE RELIEF VALVE
1/4" NPT, Dual Ferrule Tube
15.0 – 24.0 PSIA (1.02-1.65 Bar)

APRV SERIES

Description

The Generant Series APRV, Absolute Pressure Relief Valve, is a spring reference over pressure protection device for applications requiring constant set pressure independent of changes in ambient pressure (altitude). The valve was developed primarily for use with liquid helium dewars and the valve has been extensively tested to verify that the valve can withstand the extreme cold environment (FS Seals). Valves are constructed primarily of brass, with the seal and stainless steel spring being the only non-brass components. Valves come factory preset with set pressures ranging from 15.0 to 24.0 PSIA (1.02 to 1.65 Bar). Relief pressure can be discharged to atmosphere or to a downstream connection.

Features

- Supplied Factory Preset
- 100% Factory Tested for Leakage, Crack and Reseat Performance
- Minimal Set Pressure Drift due to change in ambient pressure
- Qualified for Extreme Low Temperature applications
- High Flow Capacity and Excellent Reseat Performance
- Discharge to Atmosphere or Inline Piping Configurations

Technical Data

Set Pressure Range: 15.0 to 24.0 PSIA (1.02 to 1.65 Bar)
Factory Set Tolerance: ± 0.5 PSI
Reseat: 92% of Set Pressure in PSIA
Temperature Rating: -80º F to 350º F (-62º C to 176º C)

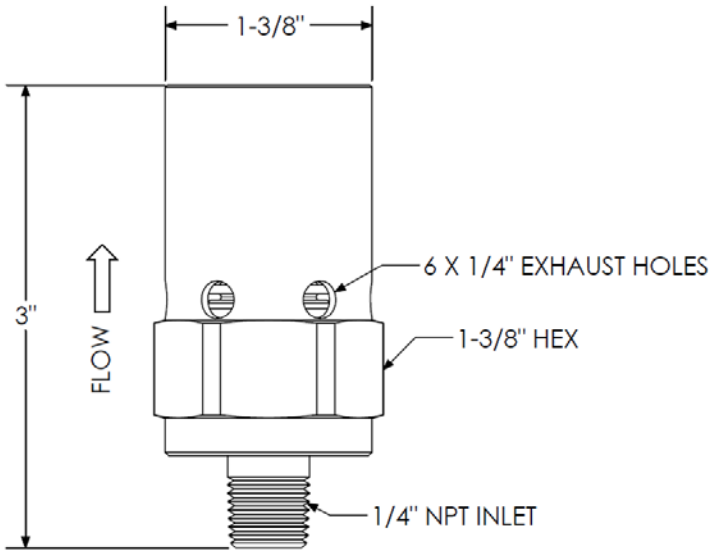
Materials of Construction

Component	Material
Body, End Cap*	Nickel Plated CDA 360 Brass, ASTM B16
Poppet, Adjustment Screw, Nuts, Ferrules	CDA 360 Brass, ASTM B16
Bellows	Brass and 300 Series Stainless Steel
Seals	Fluorosilicone

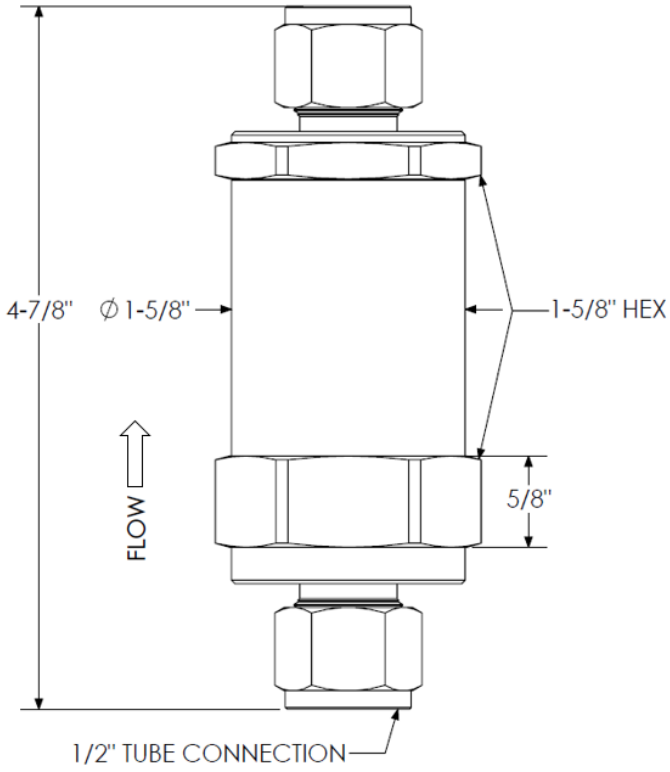
NOTE: Seals lubricated with Krytox ®
*applicable only for inline versions (APRV)

ABSOLUTE PRESSURE RELIEF VALVE

APRVA-250



APRV-8T



Flow Data

Set Pressure (PSIA)	Flow at 110% of Set Pressure in PSIA (SCFM N2)
16.0	1.52
18.0	1.90

For other set pressures, consult factory.

NOTE: to convert flow from SCFM N2 to SCFM He, multiply by 2.64

How To Order

APRVA-250 - FS - 15.2

SERIES AND CONFIGURATION

APRVA-250 - Absolute Pressure Relief Valve, Vent to Atmosphere, 1/4" NPT Inlet Port

APRV-8T - Absolute Pressure Relief Valve, Inline, 1/2" Bi-Lok Dual Ferrule Tube Inlet and Outlet Ports

SET PRESSURE

Specify set pressure in PSIA (15.0 - 24.0 PSIA)

SEAL MATERIAL

FS - Fluorosilicone, -80°F to 350°F (-62°C to 176°C)

NOTE: For other port configurations and seal materials, consult factory.

Krytox® is a registered trademark of DuPont.

GENERANT

GENERANT

HIGH PRESSURE GAS CONTROL VALVE
NPT Female x Female, NPSM Male RH & LH, O-Ring Seal Union
Vacuum (29 inHg) – 5500 Psig (380 Bar)

MV SERIES

Description

The Series MV High Pressure Gas Control Valve is optimized for the demanding requirements of Gas Cylinder Fill Plants, Manifold, and Piping System applications. The High Pressure Oxygen Service Valve Configuration (Material Code "C") was third party tested per ISO 7291 (O2 Surge) and ASTM G175 (Promoted Ignition). The valve is also available with a PCTFE seal (Material Code "K") for positive sealing in non-oxygen applications. The Series MV is available in a variety of porting and mounting configurations. The panel mount configuration is supplied with two panel nuts for easy retro-fitting to existing panel mount installations.

Model MV

Features

- **OXYGEN SAFE**: Copper Valve (Material Code "C") Configuration Third Party Tested per ISO 7291 (O2 Surge) and ASTM G175 (Promoted Ignition)
- **LOW TORQUE**: Needle Thrust Bearing Maintains Low Operating Torque (< 10 in-lbs) Throughout Full Pressure Range
- **FLOW CONTROL**: Unique Valve Geometry Allows User to Meter Flow on Initial Opening and Minimizes Initial Pressure Surges
- **LONG SERVICE LIFE**: Optimized Material and Component Selection for Long Service Life; Non-Rotating Poppet and Non-Rising Stem Maintain Seat and Seal Integrity, Needle Thrust Bearing Efficiently Minimizes Wear Effects of Mechanical Load
- **FAST OPENING**: 2.5 turns from Closed to Full-Open
- **HIGH FLOW**: Large Orifices and Internal Flow Paths for Maximum Flow Efficiency
- **FIELD RE-BUILDABLE**: All Valves are Fully Field Re-Buildable
- **ADAPTABLE TO EXISTING INSTALLATIONS**: Panel mount version supplied with two panel nuts for easy retro-fitting to existing installations

Series MV Copper Seal Valves now feature 45% more poppet thread engagement to resist wear and provide a longer service life.

Technical Data

- Operating Pressure Range: Vacuum to 5500 Psig (380 Bar) @ 70°F (MAWP Rating per ASME BPVC Section VIII Division 1)
  Note: Valves with NPSM Connections (1" - 11.5 NPSM) are de-rated to 3500 Psig (242 bar) due to the connection's maximum pressure rating.
- Operating Temperature Range: -40° to 165°F (-40° to 74°C)
- Flow Coefficient: C_v is 2.5 for all valve configurations
- Valves are 100% Factory Tested for Internal and External Leakage
  No bubbles visible for 10 seconds with N2 gas at 2500 PSI.

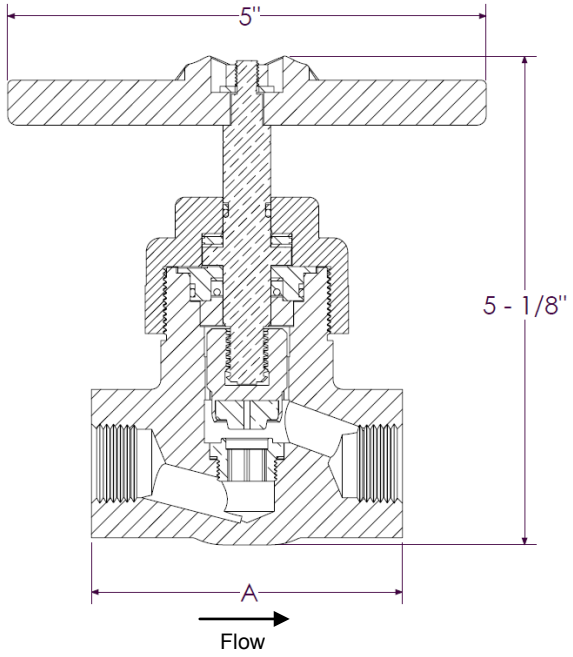
Model MVP

Materials of Construction

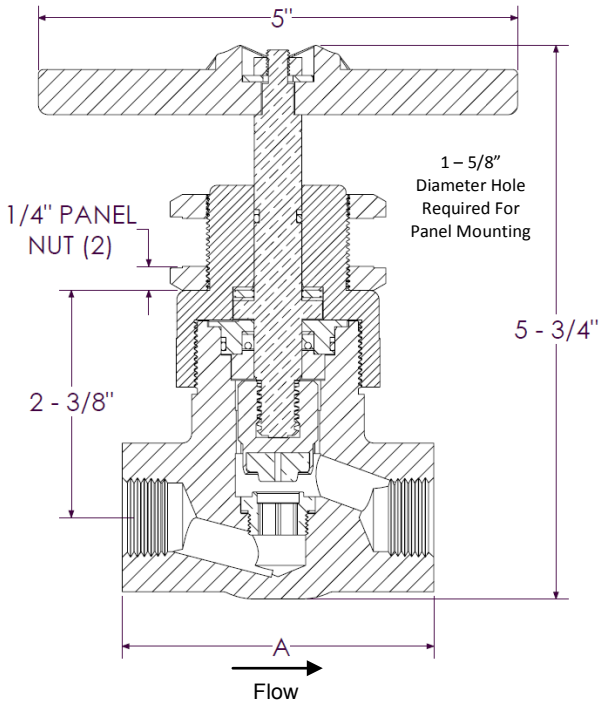
Component	Material Code	
	"C" (Copper)	"K" (PCTFE)
Body	CW617N Forged Brass, EN 12420	
Handle, Bonnet, Poppet, Panel Nut, Inner Bonnet, Washer	Brass, ASTM B16	
Needle Bearing, Bearing Washer (Both Non-Wetted)	ANSI 52100 Bearing Steel 58-62 HRc	
Stem Seal	FKM	Molythane
Poppet Insert (Seal)	Copper, ASTM B152	PCTFE, ASTM D1430
Replaceable Seat and Stem	Monel® 400	303 SS
O-Rings (2)	FKM	
Replaceable Seat Crush Washer	Copper, ASTM B152	
Seal Washer, Backup Rings (2)	PTFE, ASTM D1710	
Handle Nut and Washer	Zinc Plated Steel	

Valve is lubricated with Dupont Krytox®.
Monel® is a registered trademark of Special Metals Corporation.

HIGH PRESSURE GAS CONTROL VALVE



Model MV



Model MVP*

*Model MVP Valves are supplied with two panel nuts to allow for variable depth panel mounting (back of panel to port centerline: 2-3/8" to 3").

Dimensional Data

PORT SIZE	PORT CONFIGURATION	Dimensions: inches (millimeters)	
		Valve Orifice	Dimension A
4F	1/2" NPT Female	0.406 (10.3)	3.25 (82.5)
6F	3/4" NPT Female		
8NR	1" 11.5 NPSM Right Hand		3.80 (96.5)
8NL	1" 11.5 NPSM Left Hand		
2FS	1-3/8"-12 O-Ring Seal Union		

Notes: Dimensions are in inches (millimeters), for reference only and subject to change. Restrictions in inlet or outlet piping may reduce flow. NPT Threads per ASME B1.20.1.

How To Order

MV - 8NR - C

SERIES
MV - High Pressure Gas Control Valve
MVP - Panel Mount High Pressure Gas Control Valve

PORT SIZE AND CONFIGURATION
4F - ½" NPT Female Ports
6F - ¾" NPT Female Ports
8NR - 1" - 11.5 NPSM Right Hand Ports
8NL - 1" - 11.5 NPSM Left Hand Ports
2FS - 1-3/8"-12 O-Ring Seal Union*
*-Compatible with Soft-Seal™, O-Seal™, Tech-O-Seal™

MATERIAL CODE
C - Copper (Cleaned for O_2 Service, Standard)
K - PCTFE

Generant does not recommend the use of PCTFE Material Code in Oxygen Service.

Repair Kits

Kits can be ordered as assembled cartridges that simply plug into the valve body or as loose replacement parts. Repair Kit MV2-C may require a replacement stem. Our "Series MV Repair Kit Selection Guide" provides detailed information on how to specify and order repair kits.

Part Number	Description
MV2-C	Copper Seal Repair Kit
MV-K	PCTFE Seal Repair Kit
MVP2-CART-C	Copper Panel Mount Repair Cartridge
MV2-CART-C	Copper Non-Panel Mount Repair Cartridge
MVP-CART-K	PCTFE Panel Mount Repair Cartridge
MV-CART-K	PCTFE Non-Panel Mount Repair Cartridge

Repair Kits come with Replacement Seat, Poppet, and all seals. Repair Cartridges come already assembled with all repair parts.

GENERANT

GENERANT Valves & Bi-Lok Fittings

INSTRUMENT BALL VALVE
1/4" - 3/4" NPT
1/4" - 3/4" Dual Ferrule Tube
0 – 6000 Psig (413 Bar)

IBV SERIES

Description

Series IBV Instrument Ball Valves offer reliable 1/4-turn ON/OFF flow control for pressures up to 6,000 Psig (413 bar). These valves feature a Micro-Finished Floating Ball design to provide a positive seal in both directions. Series IBV Instrument Ball Valves also feature a "straight-through" flow path to ensure high flows with minimum pressure drop. The valves are designed to operate with a low operation torque while providing a long service life. All valve configurations can be panel mounted.

IBV-8T

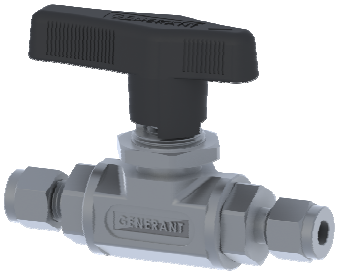
Features

- Bi-Directional
- Straight-Through Flow Path
- Micro-Finished Floating Ball
- Large Orifices for High Flow Efficiency
- Handle Orientation Indicates Flow
- NPT, O'ring Face Seal, or Dual Ferrule Tube Connections
- Adjustable Stem Packing for in-line maintenance
- 100% Factory Tested

- **3D CAD MODELS AVAILABLE ONLINE**

Technical Data

Pressure Rating: 6,000 PSI (413 Bar) at 100°F (3:1 SF)[1]
Per NFPA 52 (2013): 4,750 PSI (328 Bar)
Per ASME B31.3 (2012): 4,400 PSI (303 Bar)
Temperature Rating: -65° to 200°F (-54° to 93°C)
Leakage: < 0.1 SCCM @ 2,100 PSIG (145 Bar)
- 100% Factory Tested for Leakage
Note: For a leak-free stem seal at pressures higher than 2,100 PSI or after prolonged use, additional tightening of the stem packing may be required.
Flow Coefficients: per size, see Dimensional Data Table



IBV-4T

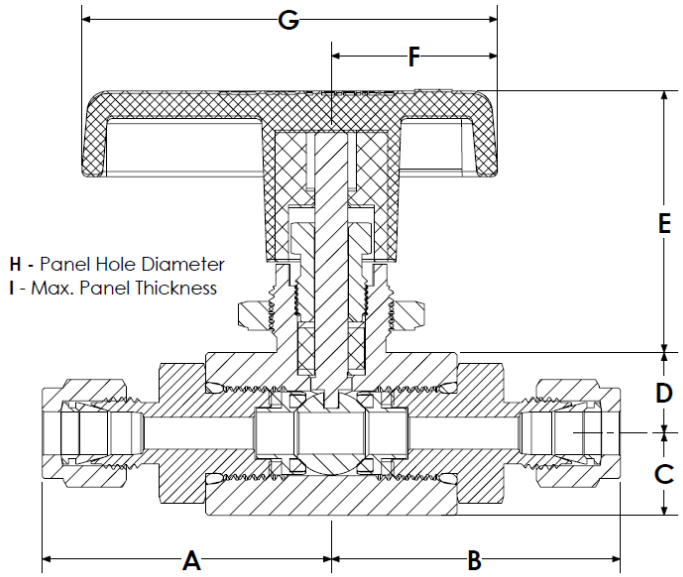
Materials of Construction

Component	Material
Body	316 Stainless Steel, ASTM A182
Valve Stem, Valve Ball, Tube Ends, Nuts, Washers, Ferrules	316 Stainless Steel, ASTM A479
Ball Seat Assembly	316 Stainless Steel, ASTM A479 and PCTFE ASTM D1430
Seat Spacer, Stem Packing, O'Rings	PTFE, ASTM D1710
Handle with Insert	ABS with Stainless Steel Insert
Set Screw	18-8 Stainless Steel
Face Seal O'Rings[2]	Standard – FKM
	Option "H" - HNBR

[1] for sustained use at temperatures higher than 100°F, pressure rating may be affected, consult factory.
[2]other O'Ring materials available, consult factory.

Note: All valves lubricated with perfluorinated polyether (PFPE)

INSTRUMENT BALL VALVE



Dimensional Data

MODEL CODE	PORT CONFIGURATION (INLET AND OULET)	FLOW COEFF. (Cv)	VALVE ORIFICE (in)	Dimensions in inches (mm)							
				A, B	C	D	E	F	G	H	I
IBV-4T	1/4" Bi-Lok	1.05	0.187	1.50 (38.1)	0.49 (12.4)	0.48 (12.2)	1.56 (39.6)	1.00 (25.4)	2.50 (63.5)	0.77 (19.6)	0.20 (5.1)
IBV-4F	1/4" NPT Female	2.35	0.250	1.50 (38.1)							
IBV-6T	3/8" Bi-Lok	2.35	0.250	1.80 (45.7)							
IBV-6FS	3/8" Face Seal	2.35	0.250	1.50 (38.1)							
IBV-6F	3/8" NPT Female	6.40	0.406	2.25 (57.1)	0.72 (18.3)	0.71 (18.0)	1.73 (43.9)	1.25 (31.8)	3.50 (88.9)	0.90 (22.9)	0.35 (8.9)
IBV-8T	1/2" Bi-Lok	6.40	0.406	2.65 (67.3)							
IBV-8F	1/2" NPT Female	6.40	0.406	2.45 (62.2)							
IBV-8FS	1/2" Face Seal	5.60	0.375	2.25 (57.1)							
IBV-12T	3/4" Bi-Lok	6.40	0.406	2.65 (67.3)							
IBV-12F	3/4" NPT Female	6.40	0.406	2.65 (67.3)							

Notes: Dimensions shown with Bi-Lok nuts finger-tight. Dimensions are in inches (millimeters), for reference only and subject to change. Restrictions in inlet or outlet piping may reduce flow. NPT Threads per ASME B1.20.1. Face Seal Connections per SAE J1453.

How to Order

IBV - 8T

SERIES
IBV - Instrument Ball Valve

PORT CONFIGURATION
4T - 1/4" Bi-Lok
4F - 1/4" NPT Female
6T - 3/8" Bi-Lok
6FS - 3/8" Face Seal*
6F - 3/8" NPT Female
8T - 1/2" Bi-Lok
8F - 1/2" NPT Female
8FS - 1/2" Face Seal*
12T - 3/4" Bi-Lok
12F - 3/4" NPT Female

* - Face Seal Connections come standard with FKM O-Rings.

Natural Gas Service
HNBR O-Rings are recommended for Face Seal Connections in Natural Gas Service. Specify "-H" suffix to indicate HNBR Face Seal O-Rings.

GENERANT

GENERANT Valves & Bi-Lok Fittings

SHUT OFF VALVE
1/8" - 1/2" NPT
1/8" - 1/2" Dual Ferrule Tube
0 – 3000 Psig (207 Bar)

SOV SERIES

Description
Series SOV Shut Off Valves offers low torque, quarter turn, positive shut off of forward flow up to 3000 Psig (207 Bar). These valves feature a one piece body construction with a machined metallic replaceable plug Stem. Sealing is accomplished with a standard elastomeric O-Ring seal. Larger size valves utilize Teflon Backup Rings to reduce operating torque and provide long service life. The Series SOV can be ordered Cleaned for Oxygen Service.

Features
- Straight-Through Flow Path
- Large Orifices Provide Higher Flows
- Handle Orientation Indicates Flow
- Optional Downstream Vent
- Unique Soft Open Plug Stem
- NPT or Dual Ferrule Tube Connections
- 100% Factory Tested for Leakage

Technical Data
Maximum Operating Pressure @ 100° F

Brass and Stainless: 3000 Psig (207 Bar)

Notes: 1-1/8" (28.6 mm) Square Brass Body Valves downgraded to 2000 Psig (137 Bar) Max. If reverse flow occurs, differential pressure is limited to 150 Psid (10.3 Bar) Max. Attempting to meter flow in the reverse flow direction may damage O-Ring.

Leakage: Zero both Internal and External

100% Factory tested for leakage at 150 Psig (10.3 Bar)

Downstream Vent Option - Downstream pressure is relieved to atmosphere when valve is in the closed position. Maximum operating pressure is downgraded to 150 Psig (10.3 Bar).

Downstream Vent Orifice:

5/8" (15.9 mm) and 3/4" (19.1 mm) Square Body Valves: 0.04" (1.0 mm)

1-1/8" (28.6 mm) Square Body Valves: 0.09" (2.3 mm)

Temperature Range:

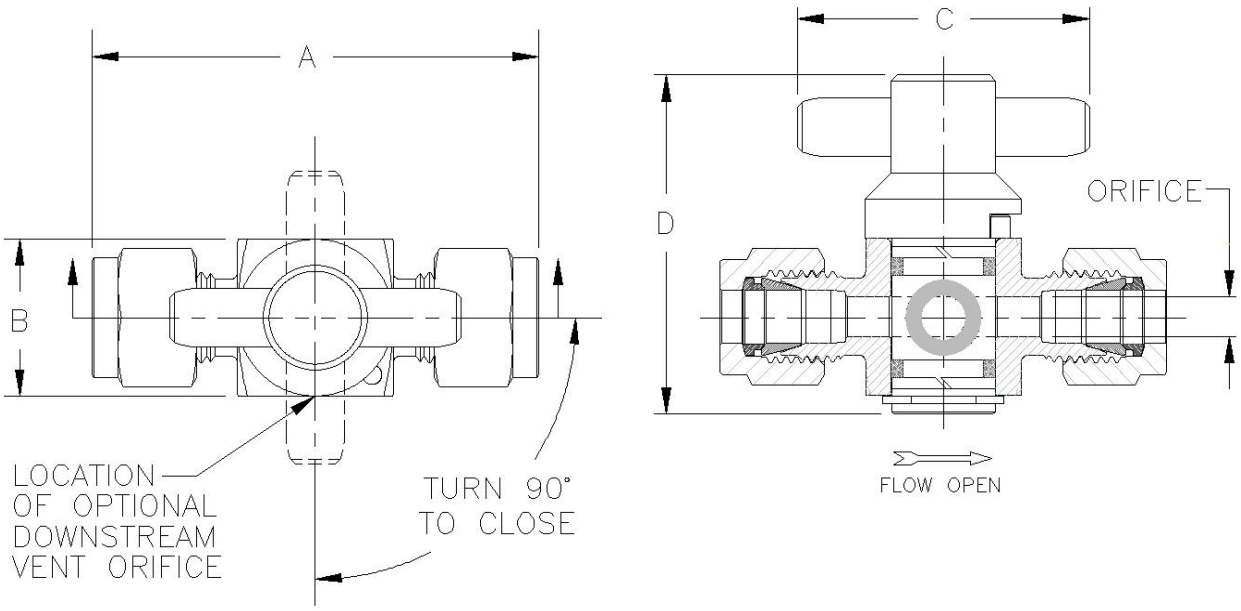
Seal Dependent (See How To Order)

Materials of Construction

Component	Brass	Stainless Steel
Body, Plug Stem, Nuts and Ferrules	Brass, ASTM B16	316SS, ASTM A479
Handle	6061 Aluminum, ASTM B211, Anodized per Mil-A-8625	
Orifice/Body Seals	Buna-N, Neoprene, Ethylene Propylene, or Viton®	
Backup Ring[1]	PTFE	
Retaining Ring	PH 15-7 Mo SS, AISI 632	
Stop Pin	18-8 SS	

[1] 5/8" Square Body Valves are not supplied with PTFE Backup Rings
Plug Stem and O-Rings are lubricated with Krytox®.

SHUT OFF VALVE



Dimensional Data

MODEL CODE	PORT CONFIGURATION		FLOW COEFFICIENT Cv	Dimensions in inches (mm)				
	INLET	OUTLET		VALVE ORIFICE	A OVERALL LENGTH	B BODY (SQ)	C HANDLE	D HEIGHT
SOV-2T	1/8" Tube		0.05	0.093 (2.4)	1.89 (48.0)	0.625 (15.9)	1.19 (30.2)	1.41 (35.8)
SOV-4T	1/4" Tube		0.72	0.187 (4.7)	2.15 (54.6)	0.75 (19.1)	1.40 (35.6)	1.63 (41.3)
SOV-6T	3/8" Tube		1.45	0.281 (7.2)	2.68 (68.1)	1.125 * (28.6)	2.50 (63.5)	2.14 (54.4)
SOV-8T	1/2" Tube		2.34	0.343 (8.71)	2.88 (73.2)	1.125 * (28.6)	2.50 (63.5)	2.14 (54.4)
SOV-2F	1/8" Female NPT		0.30	0.125 (3.2)	1.69 (42.9)	0.625 (15.9)	1.19 (30.2)	1.41 (35.8)
SOV-4F	1/4" Female NPT		0.72	0.187 (4.7)	1.87 (47.5)	0.75 (19.1)	1.40 (35.6)	1.63 (41.3)
SOV-6F	3/8" Female NPT		2.34	0.343 (8.71)	2.75 (69.9)	1.125 * (28.6)	2.50 (63.5)	2.14 (54.4)
SOV-8F	1/2" Female NPT		2.34	0.343 (8.71)	2.88 (73.2)	1.125 (28.6)	2.50 (63.5)	2.14 (54.4)
SOV-2P	1/8" Male NPT		0.30	0.125 (3.2)	1.5 (38.1)	0.625 (15.9)	1.19 (30.2)	1.41 (35.8)
SOV-4P	1/4" Male NPT		0.30	0.125 (3.2)	1.69 (42.9)	0.625 (15.9)	1.19 (30.2)	1.41 (35.8)
SOV-8P	1/2" Male NPT		2.34	0.343 (8.71)	2.64 (67.1)	1.125 * (28.6)	2.50 (63.5)	2.14 (54.4)
SOV-4PT	1/4" Male NPT	1/4" Tube	0.72	0.187 (4.7)	2.00 (50.8)	0.75 (19.1)	1.40 (35.6)	1.63 (41.3)
SOV-4PF	1/4" Male NPT	1/4" Female NPT	0.72	0.187 (4.7)	1.84 (46.7)	0.75 (19.1)	1.40 (35.6)	1.63 (41.3)
SOV-4FP	1/4" Female NPT	1/4" Male NPT	0.72	0.187 (4.7)	1.84 (46.7)	0.75 (19.1)	1.40 (35.6)	1.63 (41.3)

Notes: Dimensions shown with Bi-Lok nuts finger-tight. Dimensions are in inches (millimeters), for reference only and subject to change. Restrictions in inlet or outlet piping may reduce flow.
NPT Threads per ASME B1.20.1
* 1–1/8" Brass body valves have a maximum operating pressure of 2000 psig (137 Bar).

How to Order

S O V - 4 T S S - V - X

Model Code
SOV - Shut Off Valve

Material Code
B - Brass
SS - 316 Stainless Steel

Options
X- Cleaned and Packaged for Oxygen Service
E - Downstream Vent - Downstream pressure is relieved to atmosphere when valve is in the closed position

Seal Material
B - Buna-N, -40° F to 250° F (-40° C to 121° C)
V - Viton®, -10° F to 375° F (-23° C to 190° 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)

Krytox® and Viton® 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.

GENERANT
Valves & Bi-Lok Fittings

GENERANT

QUICK OPENING VALVE
1/8” & 1/4” NPT
125 Psig (8.6 Bar)

SERIES 4000

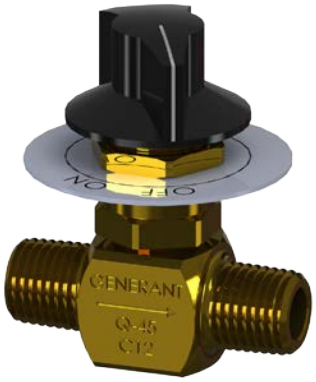
Description

The Series 4000 Quick Opening Valve functions as in-line on-off switch particularly suited to applications in Instrumentation and Control Panels to open and close circuits or isolate gauges. The unique design of these valves permits full-closed to full-open operation quickly with a 60° turn of the knob. Standard units will detent in the selected position or, if desired, can be spring loaded (Option R) to return to the off position when released. The Series 4000 is offered in 2-way and 3-way designs. The 2-way design is a snap action on-off control, while the 3-way design offers the same snap on-off action while venting the downstream pressure to atmosphere when in the off position. These valves are compact in size and can be utilized for in-line and panel mount applications. Valves can be ordered Cleaned and Packaged for Oxygen service.

Model Q-44

Technical Data

- Max Operating Pressure: 125 Psig (8.6 Bar)
- Temperature Range: -20°F to 300°F (-29°C to 149°C)
- Flow Coefficient (C_v): 0.5
- 2-Way or 3-Way (vents downstream to atmosphere thru 3/32” orifice) Configurations
- 100% Factory Tested for Bubble Tight Shut Off
- Optional Spring Return to Close
- Standard Panel Mount:
  - Supplied with “Off – On” Aluminum Indicator Plate (1/16” thick, 1-5/8” diameter) and Panel Nut
  - 5/8” Panel Hole
  - 5/32” Maximum Panel Thickness



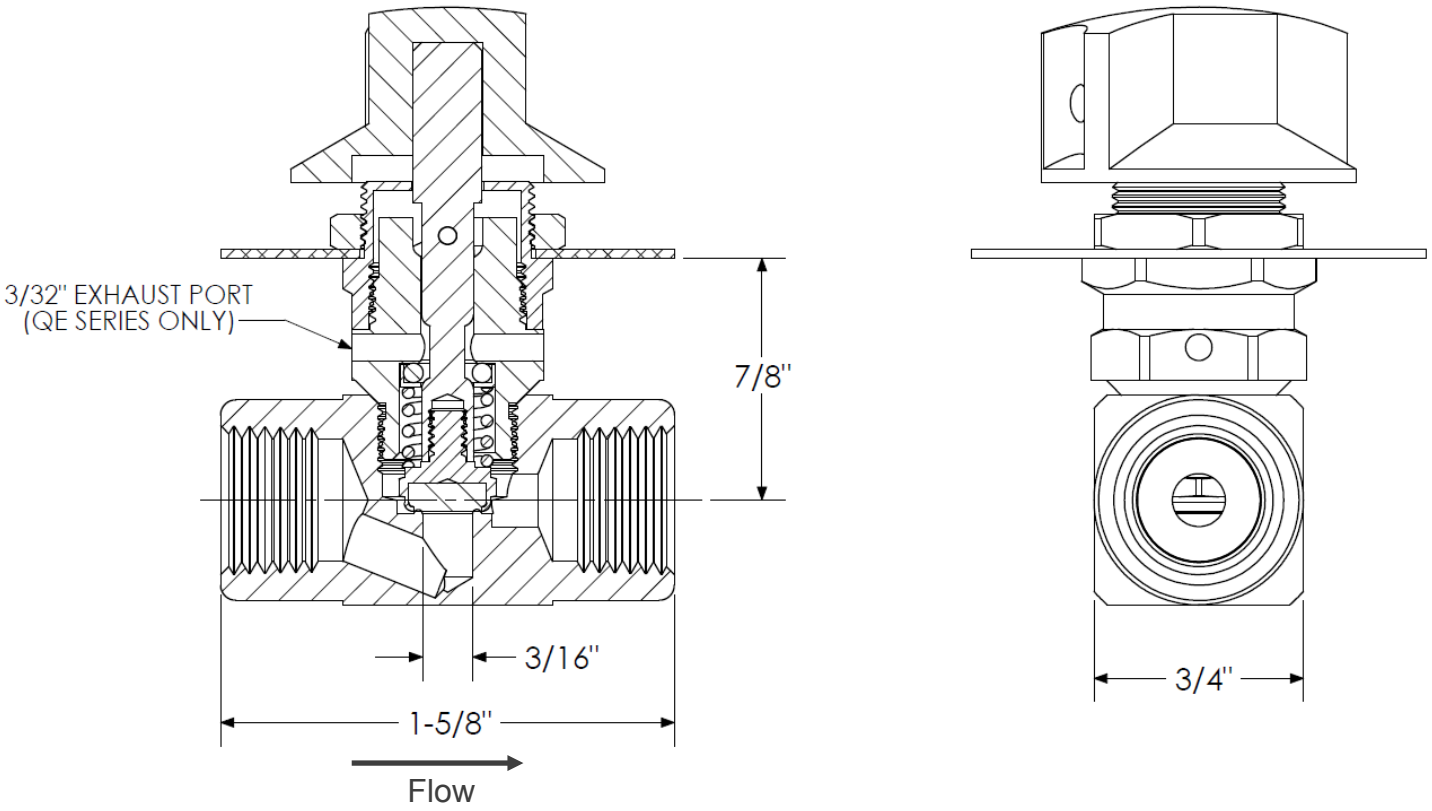
Model Q-45

Materials of Construction

Component	Material
Body, Stem, Housing, Bonnet, Valve Seat, Valve Cup, Rollers, Locknut	Brass, ASTM B16
Knob	Thermosetting Phenolic
Indicator Plate	Aluminum
Spring	17-7 SS, ASTM A313
Roller Pin	Hardened Steel
Set Screw	Steel (Black Oxide)
Valve Seal, O-Ring	FKM

Model QE-44

QUICK OPENING VALVE



How To Order

QE - 41 - R

SERIES

Q - 2 Way Quick Opening Valve
QE - 3 Way Quick Opening Valve
(Exhausts downstream pressure to atmosphere)

PIPE SIZE (NPT)

41 - 1/8" Female x Female
42 - 1/8" Male x Male
43 - 1/8" Male x Female
44 - 1/4" Female x Female
45 - 1/4" Male x Male
46 - 1/4" Male x Female

OPTIONS

R - Snap Return to Off
X - Cleaned and Packaged for Oxygen Service

GENERANT Valves & BI-Lok Fittings

GAS DELIVERY REGULATOR
1/4" - 1" NPT, BSPT
Spring Reference & Pilot Operated

GDR SERIES

Description

The GDR Series Regulator provides reliable and precise pressure control in the most demanding applications. Optimized spring design with unique venturi design assures high flow with extremely low droop characteristics. Solid, non-tied diaphragm and all brass construction will provide leak-free and long-lasting performance. Regulator is fully balanced to virtually eliminate outlet pressure fluctuations due to inlet pressure variations. All GDR Series regulators are 100% factory tested.

Features

- **FULLY BALANCED DESIGN**: Maintains a constant delivery pressure regardless of inlet pressure fluctuations.
- **OPTIMIZED FOR HIGH FLOW**: Unique Venturi Tube and Optimized Spring Design allows for high flow rates.
- **WIDE PRESSURE RANGE**: Inlet Pressures up to 550 PSI, Outlet Pressures up to 450 PSI.
- **SOLID, NON-TIED, DIAPHRAGM**: Solid diaphragm eliminates potential leak path and increases sensitivity.
- **CONFIGURABLE**: Order Regulators with Various Porting Options, Panel-Mounted, with Chamber Pipe-A-Way, or Pilot Operated.
- **OXYGEN SERVICE COMPATIBLE**: Designed for use in Oxygen Service and Cleaned for use in O2 Service standard.

Technical Data

GDR-500

Max Inlet Pressure: 550 PSIG (37.9 bar)

Outlet Pressure Ranges:

Spring	Outlet Pressure Range
A	0-55 PSIG (0-3.8 bar)
B	50-135 PSIG (3.5-9.3 bar)
C	125-225 PSIG (8.6-15.5 bar)
D	225-450* PSIG (15.5-31 bar)

*rated at 450 PSIG @ 100°F
A, B, and C Range Springs are interchangeable.
D Range Spring requires dedicated Chamber.

Fail Open Flow Coefficients:

Port Configuration	Fail Open Cv
1/4" NPT and BSPT	1.6
3/8" NPT	2.4
1/2" NPT and BSPT	2.9

GDR-1000

Max Inlet Pressure: 400 PSIG (27.6 bar)

Outlet Pressure Ranges:

Spring	Outlet Pressure Range
A	0-55 PSIG (0-3.8 bar)
B	50-135 PSIG (3.5-9.3 bar)
C	125-225 PSIG (8.6-15.5 bar)

A, B, and C Range Springs are interchangeable.

Fail Open Flow Coefficients:

Port Configuration	Fail Open Cv
3/4" and 1" NPT	5.8
3/4" and 1" BSPT	5.8

GDR-500 Pilot Operated

Max. Pilot: 450 PSIG (31.0 bar) @ 100°F
Max. Usable Cv: 1.5
Pilot Pressure to Outlet Pressure: 1/.95
(100 PSI Pilot = 95 PSI Outlet)

GDR-1000 Pilot Operated

Max. Pilot: 250 PSIG (17.2 bar) @ 140°F
Max. Usable Cv: 2.7
Pilot Pressure to Outlet Pressure: 1/.90
(100 PSI Pilot = 90 PSI Outlet)

Effect of Inlet Pressure Variation on Set (Regulator Balance): < 0.25 PSI per 100 PSI

Materials of Construction

Component	Material
Body	CW617N Forged Brass, EN 12420
Adjustment Screw, Valve, Valve Stem, Spring Button, Spring Retainer, Venturi Tube	CDA 360 Brass, ASTM B16
Chamber Insert	303 SS, ASTM A276
Adjustment Springs	GDR-500: Music Wire, ASTM A228 GDR-1000: Chrome Silicon, ASTM A401
Valve Spring	302 SS, ASTM A313
Diaphragm	FKM, EPDM, or Nitrile on Nylon Backing
Soft Seals (Valve and O'Rings)	FKM, EPDM, or Nitrile
Trim (Flange Screws and Locknut)	18-8 Stainless Steel

NOTES: Regulators are assembled with Dupont Krytox® lubricant.

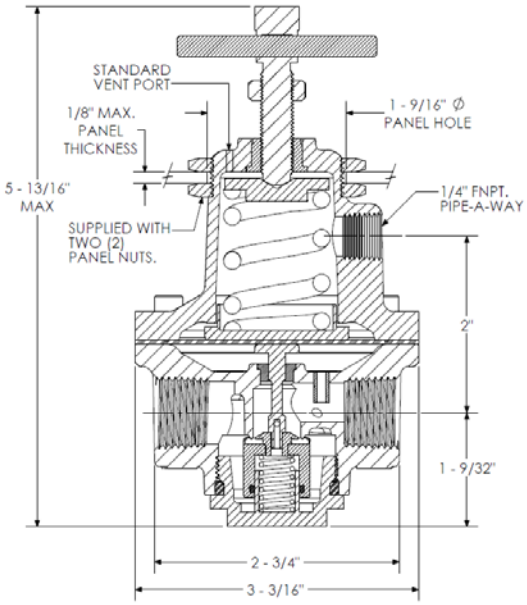
STANDARD

PILOT OPERATED

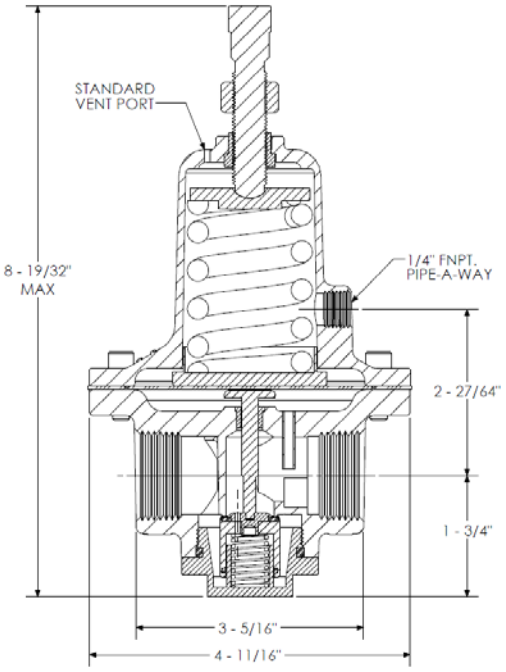
PANEL MOUNT

PIPE-A-WAY OPTION

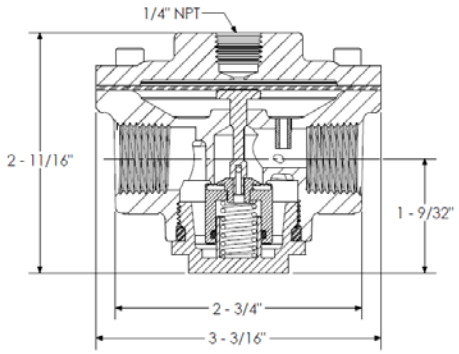
Dimensional Data



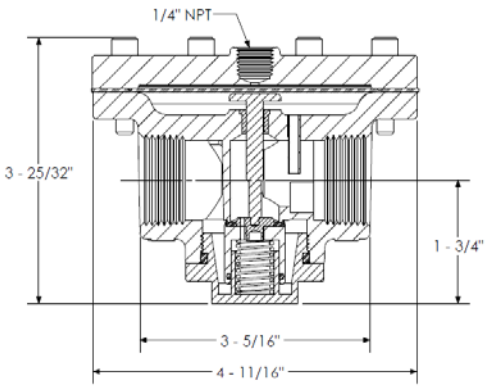
GDR-500
(shown with Panel Mount and Pipe-A-Way Options)



GDR-1000
(shown with Pipe-A-Way Option)



GDR-500 Pilot Operated

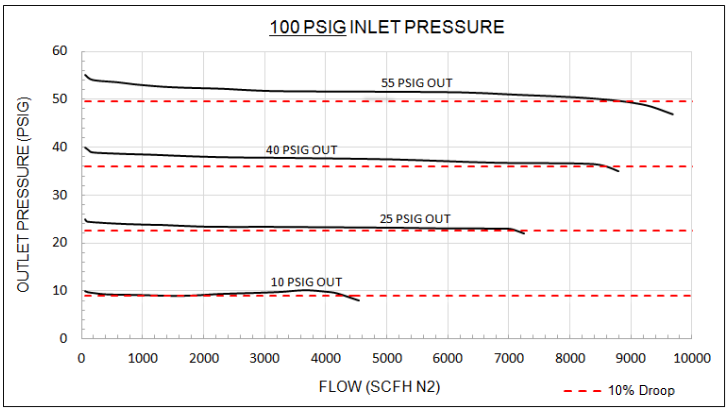


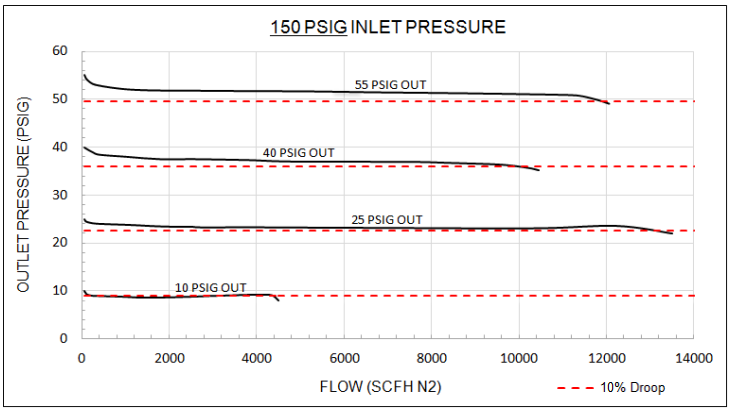
GDR-1000 Pilot Operated

Flow Performance

Each chart provides a variety of regulator setpoints and its respective flow performance with a constant inlet pressure condition. Flow Testing was performed using Nitrogen gas at ambient conditions. Use gas conversion factors listed on the next page to convert flow rates to a different gas service. Regulators were set in a dynamic condition at 60 SCFH N2 flow.

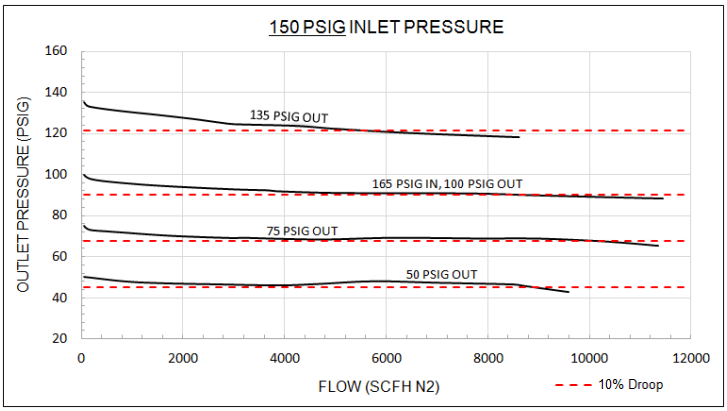
GDR-500: A Spring

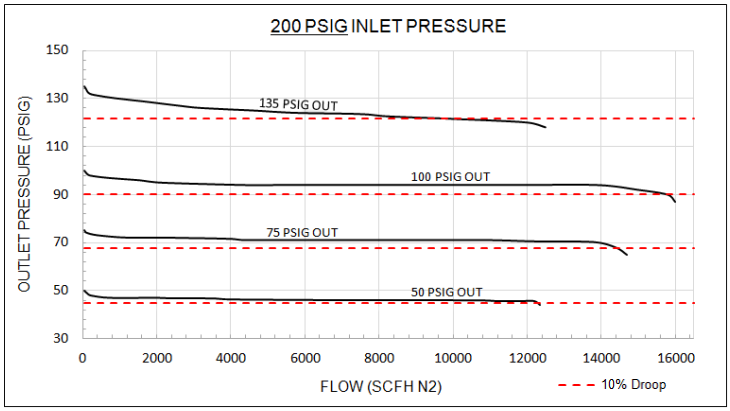




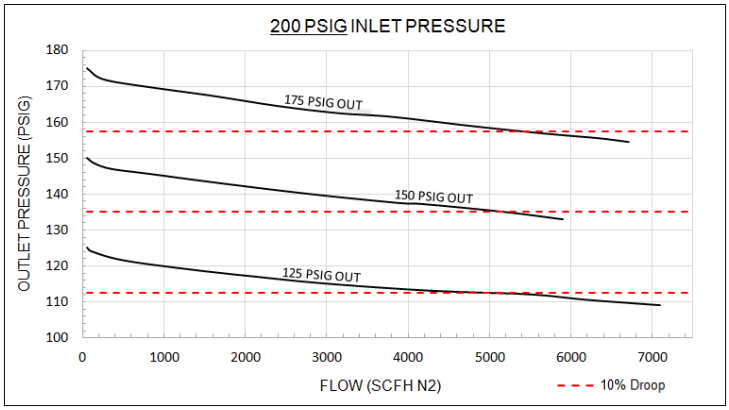
Flow Performance (continued)

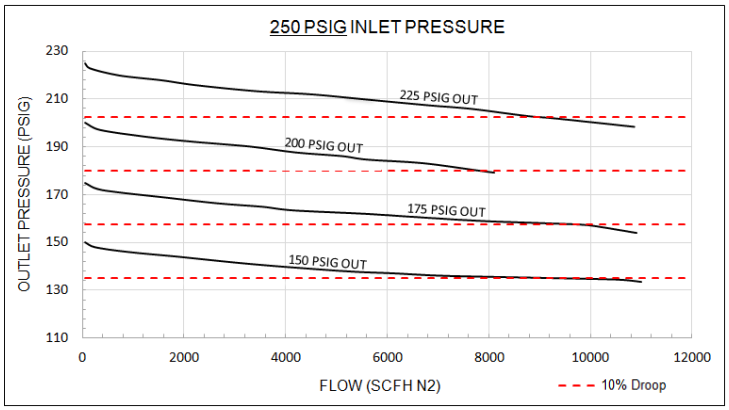
GDR-500: B Spring



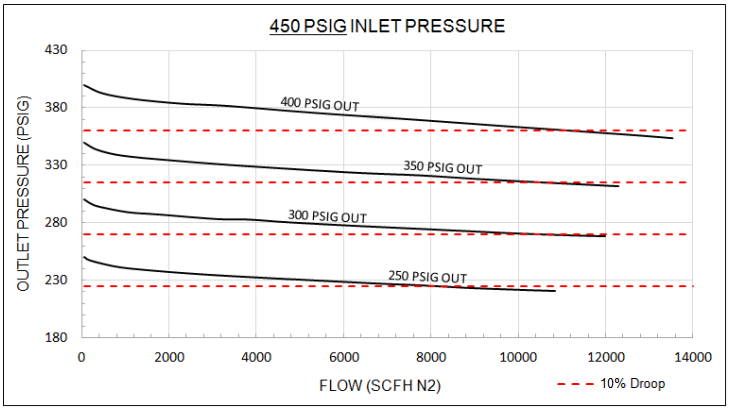


GDR-500: C Spring





GDR-500: D Spring

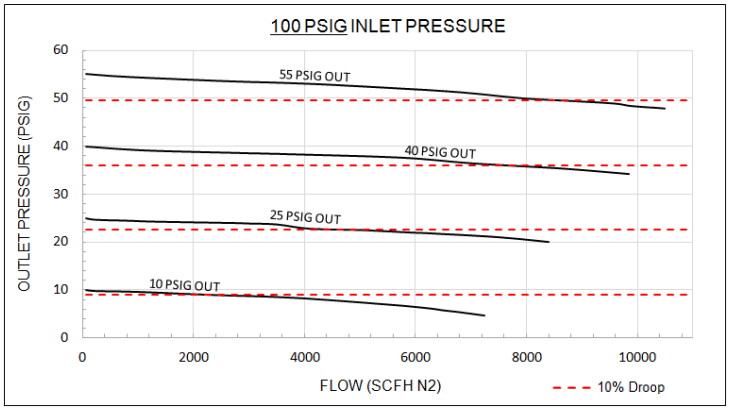


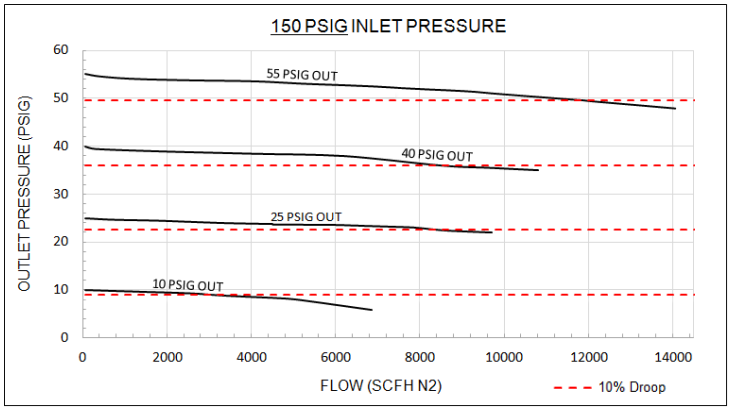
GAS CONVERSION FACTORS

Multiply Nitrogen Flow Rate by Conversion Factor to find equivalent gas flow rate.

Gas	Conversion Factor
Air	0.985
Argon	0.837
Carbon Dioxide	0.795
Helium	2.645
Hydrogen	3.603
Nitrogen	1.0
Nitrous Oxide	0.799
Natural Gas	1.285
Oxygen	0.935
Methane	1.320

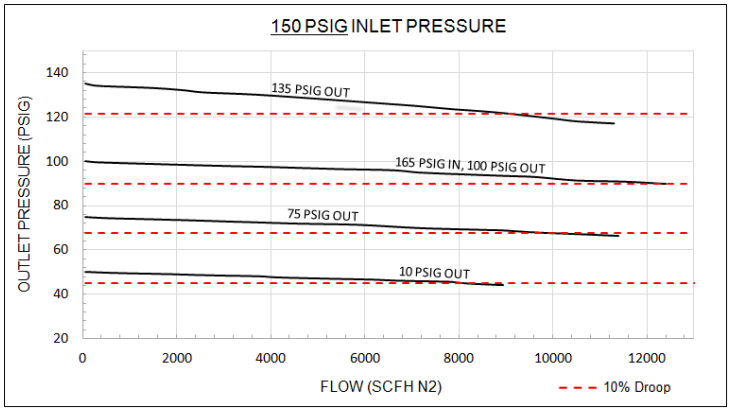
GDR-1000: A Spring

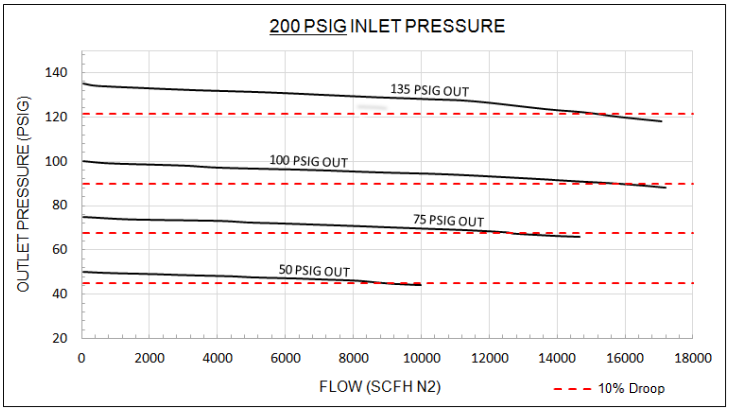




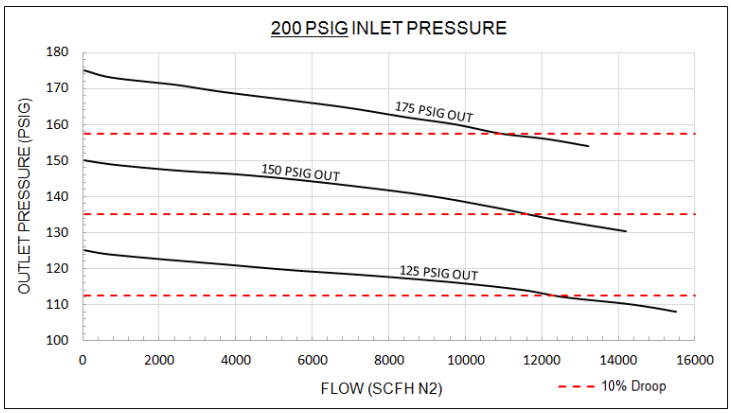
Flow Performance (continued)

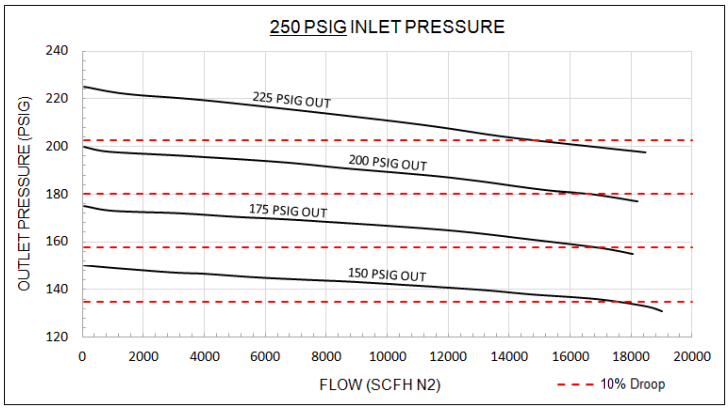
GDR-1000: B Spring





GDR-1000: C Spring





How To Order

4GDR - 750B - V - A - S

SERIES
4GDR - 4 Port Gas Delivery Regulator
5GDR - 4 Port Gas Delivery Regulator with Pipe-A-Way Chamber (1/4" NPT)

PORT SIZE
250B - 1/4" NPT
375B - 3/8" NPT
500B - 1/2" NPT
2BSPT - 1/4" BSPT
4BSPT - 1/2" BSPT
750B - 3/4" NPT
1000B - 1" NPT
6BSPT - 3/4" BSPT
8BSPT - 1" BSPT

GDR-500 ONLY

OPTION
S - Side Vent
W - Hex Adjustment Screw
P - Panel Mount

OUTLET PRESSURE RANGE
A - 0 to 55 PSIG
B - 50 to 135 PSIG
C - 125-225 PSIG
D - 225 to 450 PSIG
PO - Pilot Operated

SEALS / DIAPHRAGM MATERIAL
V - GLT Fluoroelastomer (-20°F to 225°F)
EP - EPDM - CO2 Service (-60°F to 225°F)
B - Nitrile - NG Service (-40°F to 225°F)

Seals/Diaphragm Material Compatibility Notes:
EP – EPDM: Recommended for CO2 Service
B – Nitrile: Recommended for NG Service, NOT recommended for O2 Service

Note: All Regulators are supplied with 2 (two) ¼" NPT Pipe Plugs. Pipe plugs are supplied finger tight. Final installation is the responsibility of the end user.

Repair Kits

Includes: Valve Stem, Diaphragm, Valve Assembly, Valve Spring and Bottom Plug O-Ring

Model Size	Seal Material	Specify
1/4", 3/8" & 1/2"	FKM	GDR-RK-1V
	EPDM	GDR-RK-1EP
	Nitrile	GDR-RK-1B
3/4" & 1"	FKM	GDR-RK-2V
	EPDM	GDR-RK-2EP
	Nitrile	GDR-RK-2B

NOTE: FKM and EDPM Kits are cleaned for Oxygen Service.

Replacement Spring Kits

Includes: Spring (3/4" & 1" kit includes corresponding spring retainer)

Model Size	Specify
1/4", 3/8" & 1/2"	GDR-SK-1-*
3/4" & 1"	GDR-SK-2-*

***Specify Spring Model Code: A, B, C, or D**

GENERANT

GENERANT

PILOT PRESSURE REGULATOR
1/4" NPT
Inlet 400 Psig (27.6 Bar)

PR SERIES

Description

Generant Series PR, Pilot Pressure Regulators are balanced, relieving regulators ideally suited for providing a reliable, constant pilot pressure to a Pilot Operated / Dome Loaded regulator. The balanced design allows for a consistent, regulated downstream pressure regardless of fluctuations in inlet pressure. The relieving function allows the regulator to vent when adjustments are made without the need for bleeding pressure from the pilot circuit. Materials of construction allow for compatibility with most gases. The Series PR can be ordered Cleaned & Packaged for Oxygen Service.

Features

- Balanced Design to Minimize Outlet Pressure Fluctuations upon Changing Inlet Pressure
- Relieving Design Suitable for Pilot Pressure Applications
- Optimized spring performance and patented Venturi tube provides high flow rates with low droop
- Easily cleanable by removing bottom plug
- Optional Plastic knob and Panel Mounting Configurations

Technical Data

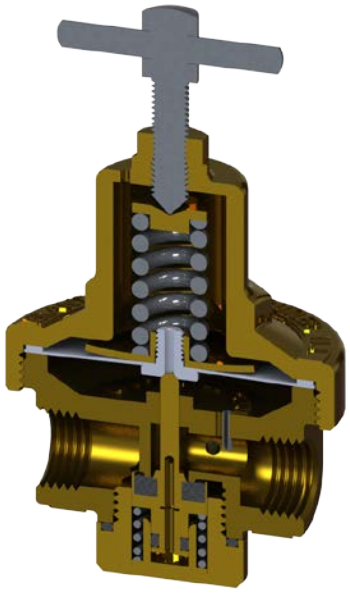
Maximum Inlet Pressure: 400 Psig (27.6 Bar)
Effect of Inlet Pressure Variation: < 1.0 PSI / 100 PSI
Temperature Range: -20 to 200 °F (-30 to 95 °C)

Pressure Ranges

Spring Code	Outlet Pressure Range PSI (bar)
A	0 - 50 (0-3.4)
B	5 - 125 (0.3-8.5)
C	10 - 200 (0.7-13.6)

Flow Coefficient Cv

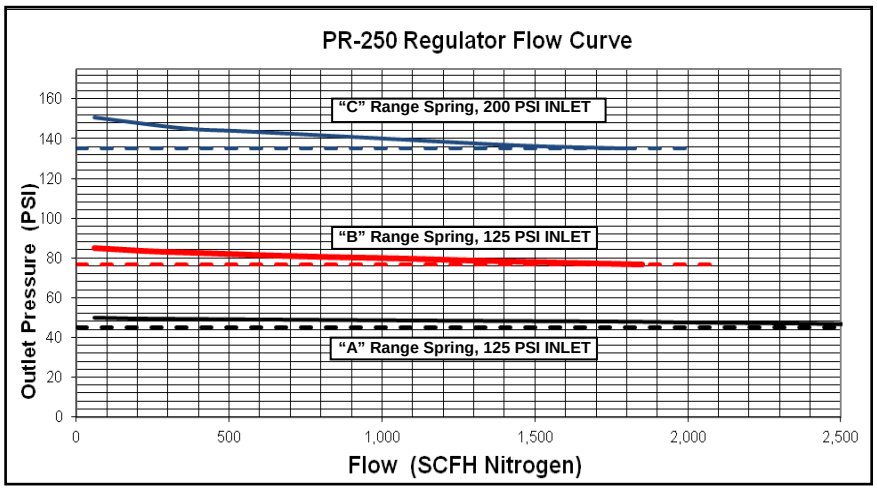
Size	Fail-Open
1/4" NPT	1.6

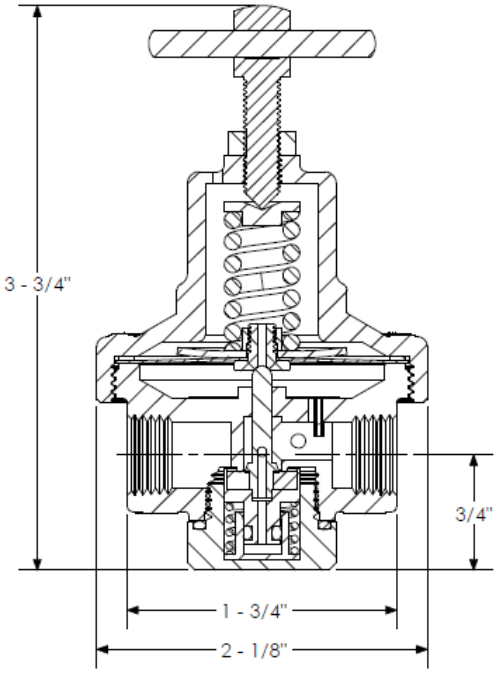


Materials of Construction

Component	Material
Body, Spring Chamber	Forged Brass, ASTM 377
Spring Button, Adjustment Screw Lock Nut, Bottom Plug, Panel Nut, Diaphragm Nut, Turbulence Pin	Brass, ASTM B16
Diaphragm Plate	Brass, ASTM A36
Adjustment Screw	303 Stainless Steel, ASTM A582
Valve and Stem Assembly	Brass, ASTM B16 and EPDM / FKM
Valve O-ring	EPDM / FKM
Adjustment Spring	Plated Music Wire, ASTM A228
Valve Spring	Phosphorous Bronze, ASTM B103
Bottom Plug O-ring	EPDM / FKM
Diaphragm Gasket	Red Fiber
Diaphragm	EPDM / FKM on Nylon
Diaphragm Screw	Nylon 101 (Type 66)

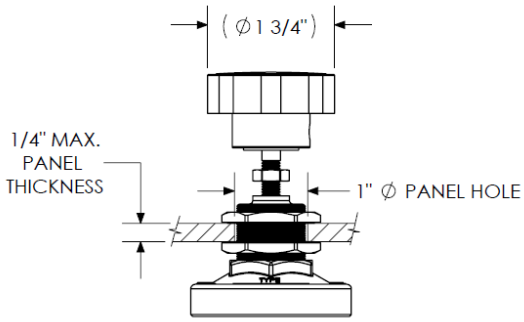
PILOT PRESSURE REGULATOR





*Initial Set Pressure at 1 SCFM Flow: A - 50 PSIG, B – 85 PSIG, C – 150 PSIG
** Dotted line represents 10% decrease in outlet pressure from set point (droop)

Panel Mount Dimensions:



How To Order

4PR - 250 - V - A - X

SERIES
4PR - 4 Port, Pilot Pressure Regulator
4PRP - 4 Port, Pilot Pressure Regulator, Panel Mount*
Note: Regulators have 1/4" NPT Female Outlet Pressure Gauge Ports.

PORT SIZE
250 - 1/4" NPT Ports
Note: For other porting configurations, consult factory.

OPTIONS*
M - Plastic Knob
X - Oxygen Clean
* - May specify more than one option

SPRING RANGE
A - 0-50 Psig (0-3.5 bar)
B - 5-125 Psig (0.4-8.6 bar)
C - 10-200 Psig (0.7-13.8 bar)

SEAL MATERIAL
E - EPDM
V - FKM

Repair Kits

Seal Material	Specify	Kit Includes
FKM	PR-100V-*	FKM Valve Assembly, Diaphragm Assembly, Fiber Diaphragm Gasket, Adjusting Spring (Specify Range), Adjusting Spring Button, Valve Spring, Bottom Plug O-Ring
EPDM	PR-100EP-*	EPDM Valve Assembly, Diaphragm Assembly, Fiber Diaphragm Gasket, Adjusting Spring (Specify Range), Adjusting Spring Button, Valve Spring, Bottom Plug O-Ring

*Specify Spring Range: A, B, or C

GENERANT
www.generant.com
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GENERANT
Valves & Bi-Lok Fittings

CRYOGENIC/PRESSURE BUILD REGULATOR
3/8" and 1/2" NPT, BSPT
Inlet 600 PSIG (42 Bar)

CR SERIES

Description

The Generant Series CR Cryogenic Regulator provides high flow during Cryogenic Vessel Pressure Build function and increased sensitivity to downstream pressure changes as a function of our pre-formed all metallic diaphragm and optimized spring design. The unique diaphragm is unlike anything on the market today and results in less decrease in Cryogenic vessel pressure and faster recovery during periods of higher demand, thus decreasing the potential for flooding the pressure build coil. The unit features a 304 SS Inlet Strainer/Filter to aid in reducing contaminant related failures. Optional Cleaned and Packaged for Oxygen Service Series CR Regulators utilize Monel Inlet Strainer/Filters. All Series CR Cryogenic Regulators are 100% Factory Tested and are supplied factory pre-set.

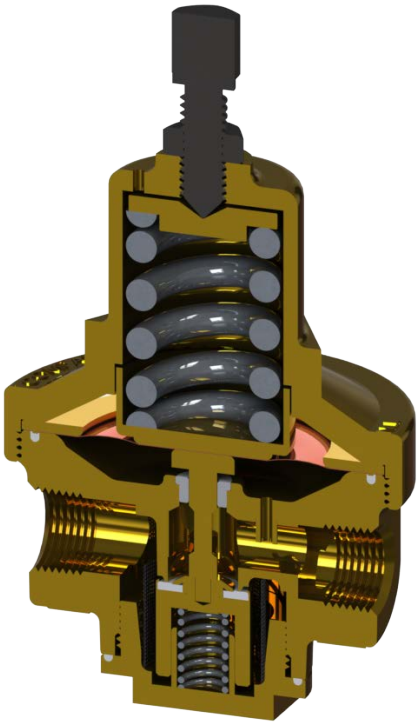
Features

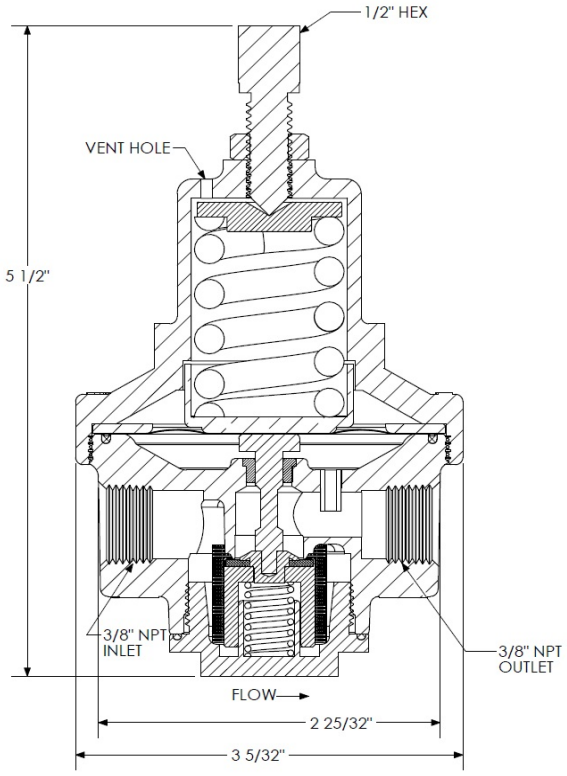
- Designed for High Flow Liquid Service
- Can be installed Upstream or Downstream of the Vaporizer
- Unique Pre-Formed Multiple Stacked Phosphorous Bronze Diaphragms
- Can be Supplied Factory Preset
- Hex Head Adjustment Screw with Locknut
- 304 SS Inlet Strainer/Filter
- Optional Cleaned and Packaged for Oxygen Service **(includes Monel Inlet Strainer/Filter**)

Materials of Construction

- Forged Brass Body and Chamber, ASTM 377
- Brass Bar Stock Components, ASTM B16
- Phosphorous Bronze Diaphragms, ASTM B103
- PTFE Valve, Diaphragm and Bottom Plug Seal, ASTM D1710
- PCTFE Valve Stem Bearing, ASTM D1430
- 17-7PH Stainless Steel Adjustment and Valve Spring, ASTM A313
- Stainless Steel Adjustment Screw and Locknut, ASTM A276
- 304 SS Inlet Strainer/Filter **(Monel Inlet Strainer/Filter when specified for Oxygen Service)**

CRYOGENIC/PRESSURE BUILD REGULATOR





Technical Data

Maximum Inlet Pressure: 600 PSIG (42 Bar)
Outlet Pressure Range: 0 to 235 PSIG (0 to 16 Bar)
Temperature Range: -320° to 225° F (78° to 380° K)
Fail Open C_V: 3/8" NPT Ports – 2.4
1/2" NPT and BSPT Ports – 2.9

Flow Capacity

Flow Capacity is system dependent. For accurate flow capacity data, consult Generant with your specific system characteristics for more information.

How To Order

2CR - 375 - C - X

SERIES
2CR - 2 Port Cryogenic/ Pressure Build Regulator

PORT SIZE
375 - 3/8" FNPT
500 - 1/2" FNPT
4BSPT - 1/2" BSPT

CLEANING OPTION
X- Cleaned and Packaged for Oxygen Service (includes Monel Inlet Strainer/Filter)

OUTLET PRESSURE CODE

CODE	RANGE (PSIG)	FACTORY SETTING (PSIG)	PSIG/TURN (APPROX)
A	0 - 35	20	8
B	25 - 135	75	25
C	100 - 235	150	55

Note: Regulators are supplied pre-set to factory setting shown above. When adjusting regulator set pressure up (CW) or down (CCW), approximate PSIG/TURN can be used as a reference.

For additional configurations consult factory.

Repair Kits

Includes: Valve Assembly, Bottom Plug O-Ring, Valve Spring, 304 SS Inlet Strainer/Filter (Monel Inlet Strainer/Filter for Oxygen Service Kits), Valve Stem, Preformed Phosphorous Bronze Diaphragms (2) and Diaphragm O-Ring.

Specify: CR-RK-500 (304 SS Inlet Strainer/Filter for Standard Service)
CR-RK-500-X (Monel Inlet Strainer/Filter for Oxygen Service)

Note: Repair Kits fit all port sizes.

Replacement Spring Kits

Includes: Adjustment Screw and Spring

Specify: CR-SK-500-A, 0-35 PSIG Range
CR-SK-500-B, 25-135 PSIG Range
CR-SK-500-C, 100-235 PSIG Range

Note: Adjustment Screws are sized according to Springs. Spring Code is engraved on the Adjustment Screw (A, B, C).

GENERANT
Valves & BI-Lok Fittings

GENERANT
Valves & Bi-Lok Fittings

CRYOGENIC REGULATOR, MINI
1/4" NPT
Inlet 600 PSI (41.4 bar)

CRM SERIES

Description

CRM Series pressure regulators provide high flow and quick, positive shut off at the desired set pressure. The regulator design is a non-balanced, spring reference, pressure reducing type regulator. They were designed especially for use as pressure build regulators for cryogenic liquid cylinders but can be used in many other applications. Solid, non-tied diaphragm provides leak-free and long-lasting performance. Optimized diaphragm and adjustment spring designs provide high flow performance. All CRM Series regulators are supplied factory pre-set and cleaned for oxygen service.

Features

- **OPTIMIZED FOR HIGH FLOW**: Optimized Spring and Diaphragm Design allows for high flow rates and low pressure drop.
- **QUICK SHUT-OFF**: Regulators transition from the flowing condition to shut in a tight pressure band.
- **SOLID, NON-TIED, DIAPHRAGM**: Solid diaphragm eliminates potential leak path and increases sensitivity.
- **DESIGNED FOR CRYOGENICS**: All materials were selected specifically for use in cryogenic environments.
- **CLEANED FOR OXYGEN SERVICE**: Regulators are cleaned for use in Oxygen service standard.

Technical Data

Max Inlet Pressure: 600 PSIG (41.4 bar)

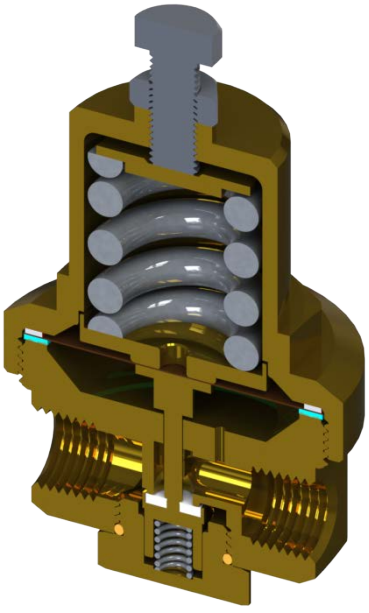
Outlet Pressure Ranges:

Spring	Outlet Pressure Range
A	15 to 65 PSIG (1.0 to 4.5 bar)
B	50 to 175 PSIG (3.4 to 12.1 bar)
C	150 to 350 PSIG (10.3 to 24.1 bar)
D	300 to 525 PSIG (20.7 to 36.2 bar)

A, B, and C Range Springs are interchangeable.
D Range Spring requires Chamber Ring.

Temperature Range: -320° to 200°F (-196° to 93°C)

Full Open Flow Coefficient: 0.51



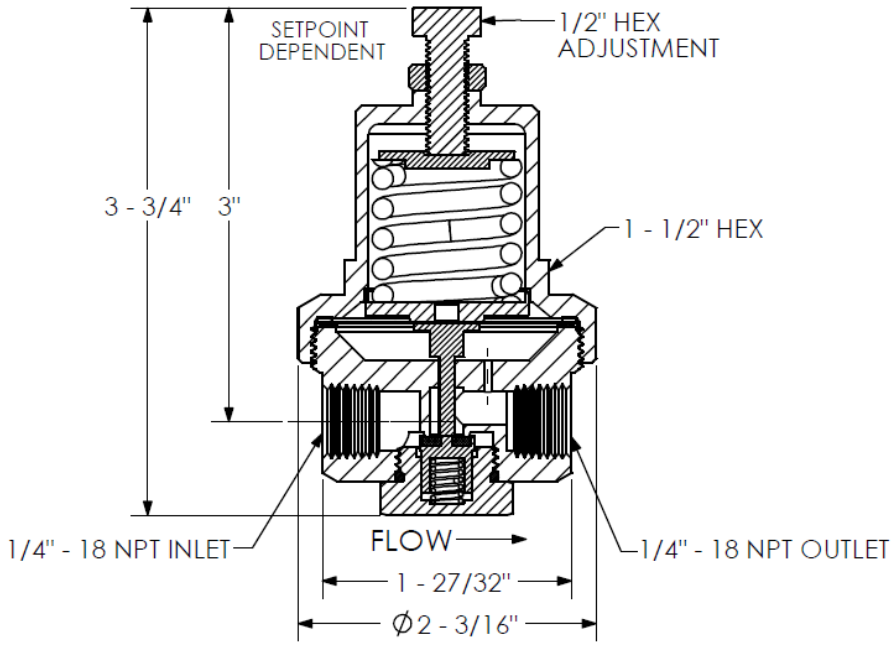
Materials of Construction

Component	Material
Body, Chamber, Valve Body, Stem, Spring Button, Spring Retainer, Bottom Plug	CDA 360 Brass, ASTM B16
Adjustment Springs	Chrome Silicon, ASTM A401
Adjustment Screw and Locknut	18-8 Stainless Steel
Valve Spring	302 SS, ASTM A313
Diaphragms	Phosphor Bronze
Diaphragm Gasket	Vulcanex ®
Valve Seal	PTFE
Chamber Seal	Gylon ®
Bottom Plug Seal	Silicone

NOTE: Regulators are assembled with Dupont Krytox® lubricant.

CRYOGENIC REGULATOR, MINI

Dimensional Data



How To Order

CRM-250 - B - 125

SERIES

CRM-250 - Cryogenic Regulator Mini, 1/4" NPT, Side IN, Side OUT

SPRING RANGE

A - 15 to 65 PSI (1.0 to 4.5 bar)
B - 50 to 175 PSI (3.4 to 12.1 bar)
C - 150 to 350 PSI (10.3 to 24.1 bar)
D - 300 to 525 PSI (20.7 to 36.2 bar)

SET PRESSURE

Specify set pressure in PSI

Replacement Spring Kits / Repair Kit

Part Number	Spring
CRM-SK-A	A (15 to 65 PSI)
CRM-SK-B	B (50 to 175 PSI)
CRM-SK-C	C (150 to 350 PSI)
CRM-SK-D	D (300 to 525 PSI)

All Replacement Spring Kits come with a Replacement Spring, Adjustment Screw, Chamber Seal, and either Diaphragm Gasket (A, B, and C springs) or Chamber Ring (D Spring).

GENERANT
Valves & Bi-Lok Fittings

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Valves & Bi-Lok Fittings

BACK PRESSURE REGULATOR
1/4" NPT
15 - 525 PSI

BPR SERIES

Description

BPR Series back pressure regulators are designed for use as both economizers or diaphragm type pressure limiting devices on cryogenic liquid cylinders and systems. Optimized diaphragm and adjustment spring designs provide high flow above the desired setpoint. Robust metal-metal seal and seat design ensures low leakage rates below setpoint. The BPR Series is constructed of primarily brass and stainless steel for long-lasting performance. All BPR Series regulators are supplied factory pre-set and cleaned for oxygen service.

BPR-250

Features

- **OPTIMIZED FOR HIGH FLOW**: Optimized Diaphragm and Spring Design allows for high flow rates at pressures beyond setpoint.
- **QUICK SHUT-OFF**: Regulators transition from the flowing condition to shut in a tight pressure band.
- **INLET FILTER SCREEN:** Protects against system debris and particulate.
- **DESIGNED FOR CRYOGENICS**: All materials were selected specifically for use in cryogenic environments.
- **FIELD ADJUSTABLE**: Regulators can be adjusted to any desired setpoint within the spring's pressure range.
- **CLEANED FOR OXYGEN SERVICE**: Regulators are cleaned for use in Oxygen service standard.

Technical Data

Max Inlet Pressure: 600 PSIG (41.4 bar)

Pressure Ranges:

Spring	Pressure Range
A	15 to 65 PSIG (1.0 to 4.5 bar)
B	50 to 175 PSIG (3.4 to 12.1 bar)
C	150 to 350 PSIG (10.3 to 24.1 bar)
D	300 to 525 PSIG (20.7 to 36.2 bar)

A, B, and C Range Springs are interchangeable.
D Range Spring requires Chamber Ring.

Temperature Range: -320° to 200°F (-196° to 93°C)

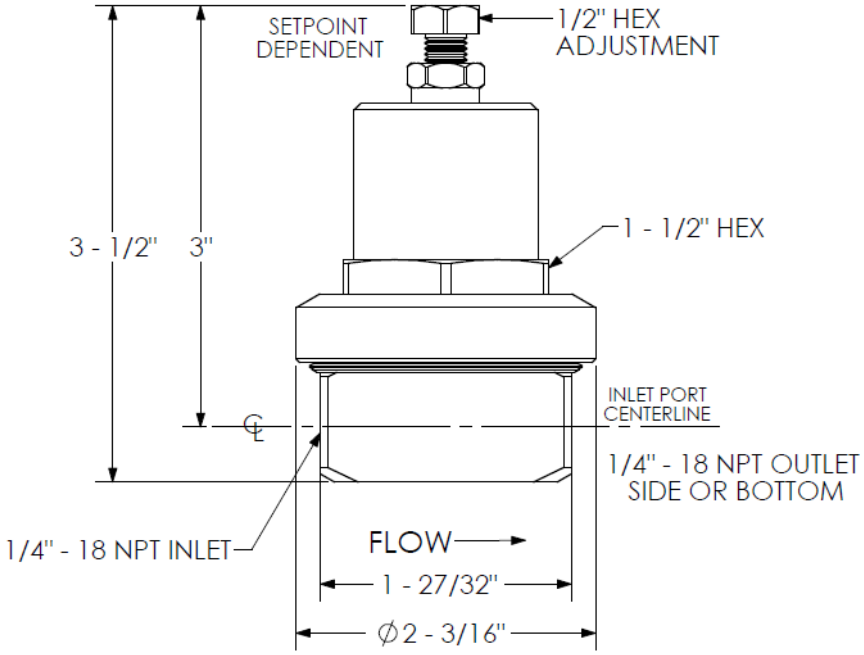
BPR-250I

Materials of Construction

Component	Material
Body, Chamber, Spring Button, Spring Retainer, Chamber Ring	CDA 360 Brass, ASTM B16
Adjustment Springs	Chrome Silicon, ASTM A401
Adjustment Screw, Locknut, Diaphragm Assembly Screw, Lock Washer	18-8 Stainless Steel
Poppet, Seat	303 SS, ASTM A313
Diaphragms	Phosphor Bronze
Inlet Filter Screen	Brass Wire Mesh, ASTM E437
Diaphragm Gasket	Vulcanex ®
Chamber and Diaphragm Assembly Seal	Gylon ®

NOTE: Regulators are assembled with Dupont Krytox® lubricant.

Dimensional Data



How To Order

BPR - 250 - B - 140

SERIES
BPR - Back Pressure Regulator

PORT CONFIGURATION
250 - 1/4" NPT, Side IN - Bottom OUT
250I - 1/4" NPT, Side IN - Side OUT

SET PRESSURE
Specify set pressure in PSI

SPRING RANGE
A - 15 to 65 PSI (1.0 to 4.5 bar)
B - 50 to 175 PSI (3.4 to 12.1 bar)
C - 150 to 350 PSI (10.3 to 24.1 bar)
D - 300 to 525 PSI (20.7 to 36.2 bar)

Replacement Spring Kits / Repair Kit

Part Number	Spring
CRM-SK-A	A (15 to 65 PSI)
CRM-SK-B	B (50 to 175 PSI)
CRM-SK-C	C (150 to 350 PSI)
CRM-SK-D	D (300 to 525 PSI)

All Replacement Spring Kits come with a Replacement Spring, Adjustment Screw, Chamber Seal, and either Diaphragm Gasket (A, B, and C springs) or Chamber Ring (D Spring).

GENERANT
Valves & Bi-Lok Fittings

GENERANT

HIGH CAPACITY PRESSURE REGULATOR
1/4", 3/8" and 1/2" NPT
Inlet 400 Psig (27.6 Bar)

HC SERIES

Description

The Generant Series HC, High Capacity Regulators are ideally suited for industrial applications requiring a rugged high flow pressure regulator. The Series HC features Heavy Duty all metallic body and spring chambers and are easily rebuilt in the field. The Series HC is available in Relieving and Non-Relieving configurations ideally suited for both liquid and gas service.

Features

- 3/8" and 1/2" Regulators are fully balanced to maintain constant delivery pressure regardless of inlet pressure fluctuations. 1/4" Regulators are currently available non-balanced only.
- Available Relieving or Non-Relieving
- Optimized spring performance and patented Venturi tube provides high flow rates with low droop
- Easily cleanable by removing bottom plug
- Optional Plastic knob
- Panel Mounting Configurations available on HC-250 Series Only

Technical Data

Maximum Inlet Pressure: 400 Psig (27.6 Bar)
Temperature Range: -20 to 200 °F (-30 to 95 °C)

Pressure Ranges

Spring Code	Outlet Pressure Range PSI (bar)
A	0 - 50 (0-3.4)
B	5 - 125 (0.3-8.5)
C	10 - 200 (0.7-13.6)

Flow Coefficient Cv

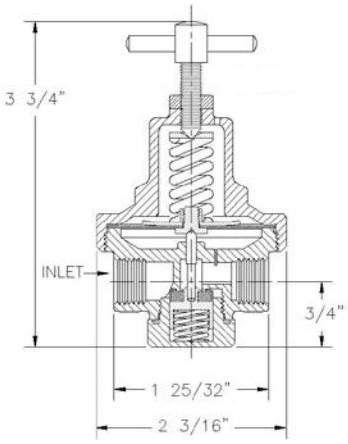
Size	Fail Open
1/4" NPT	1.6
3/8" NPT	2.4
1/2" NPT	2.9

Materials of Construction

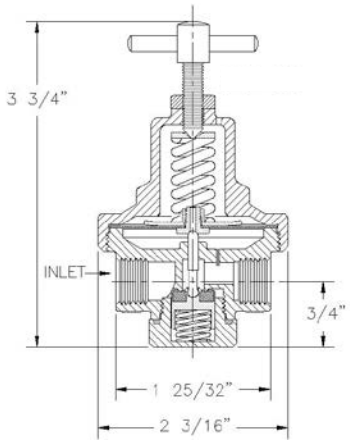
Component	HC-250	HCR-250	HC-375/500	HCR-375/500
Body	Forged Brass, ASTM 377			
Spring Chamber	Forged Brass, ASTM 377		Die Cast Zinc (Zamak)	
Spring Retainer	N/A		Die Cast Zinc (Zamak)	
Spring Button	Brass, ASTM B16			
Diaphragm Screw	Brass, ASTM B16	Nylon 6-6, ASTM AD589	Brass, ASTM B16	Nylon 6-6, ASTM AD589
Diaphragm Plate / Nut	Brass, ASTM A36		N/A	
Adjustment Screw	303 Stainless Steel, ASTM A582			
Adjustment Screw Lock Nut	Brass, ASTM B16		Plated Steel	
Chamber Insert	N/A		Brass, ASTM B16	
Valve Stem	Brass, ASTM B16			
Valve Assembly	Brass, ASTM B16 and FKM, ASTM D1418			
Valve O-ring	N/A		Buna-N	
Adjustment Spring	Plated Music Wire, ASTM A228			
Valve Spring	302 Stainless Steel, ASTM A313		17-7 Stainless Steel, ASTM A564	
Turbulence Pin	18-8 SS, ASTM A276		Brass, ASTM B16	
Bottom Plug	Brass, ASTM B16			
Bottom Plug O-ring	Buna-N			
Sieve	N/A		304 SS, ASTM A276	
Diaphragm Gasket	Red Fiber		N/A	
Diaphragm	Buna-N and Nylon			
Panel Nut	Brass, ASTM B16 (HC-250 Only)			

HIGH CAPACITY PRESSURE REGULATOR

HC-250 (1/4" NPT Ports)

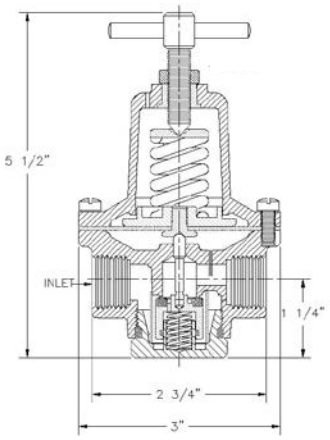


HC, Non-Relieving

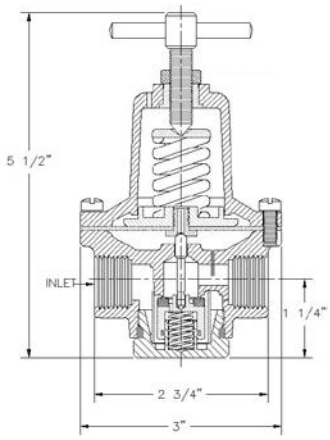


HCR, Relieving

HC-375 / HC-500 (3/8" and 1/2" NPT Ports)

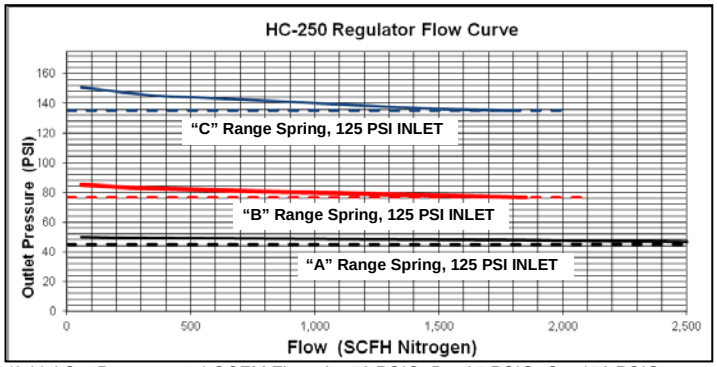


HC, Non-Relieving



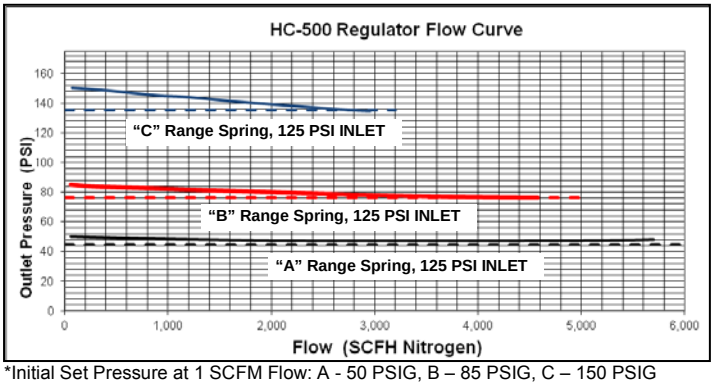
HCR, Relieving

Flow Curve



*Initial Set Pressure at 1 SCFM Flow: A - 50 PSIG, B – 85 PSIG, C – 150 PSIG
** Dotted line represents 10% decrease in outlet pressure from setpoint (droop)

Flow Curve



*Initial Set Pressure at 1 SCFM Flow: A - 50 PSIG, B – 85 PSIG, C – 150 PSIG
** Dotted line represents 10% decrease in outlet pressure from setpoint (droop)

How To Order

4HCR P - 375 - A - M

SERIES
4HC - 4 Port, High Capacity, Non-Relieving Pressure Regulator
4HCR - 4 Port, High Capacity, Relieving Pressure Regulator
Note: Regulators have 1/4" NPTF Outlet Pressure Gauge Ports

PANEL MOUNT OPTION (HC-250 Only)
Add "P" to Series Code for Panel Mount Option
e.g. 4HCP - 4 Port, Non-Relieving Panel Mount
Note: All Panel Mount Options come with Plastic Knob

OPTIONS
M - Plastic Knob

SPRING RANGE
A - (0-50) Psig
B - (5-125) Psig (standard/Omit)
C - (10-200) Psig

PORT SIZE (NPT)
250 - 1/4"
375 - 3/8"
500 - 1/2"

*Panel Mount Option available on HC-250 Series Only. 1/4" Regulator fits in 1" diameter panel hole for panel up to 7/16" thick.

Repair Kits

Model Size	Specify	Kit Includes
4HC, 1/4"	HC-100-*	Valve Assembly, Valve Stem, Diaphragm Assembly, Fibre Diaphragm Gasket, Adjusting Spring (Specify Range), Adjusting Spring Button, Valve Spring, Bottom Plug O-Ring
4HCR, 1/4"	HCR-100-*	Relieving Valve & Stem Assembly, Relieving Diaphragm Assembly, Fibre Gasket, Adjusting Spring (Specify Range), Adjusting Spring Button, Bottom Plug O-Ring
4HC, 3/8" & 1/2"	HC-200-*	Valve Assembly with O-Ring, Valve Stem, Sieve, Diaphragm Assembly, Adjusting Spring (Specify Range), Adjusting Spring Button, Valve Spring, Bottom Plug O-Ring
4HCR, 3/8" & 1/2"	HCR-200-*	Relieving Valve & Stem Assembly with O-Ring, Sieve, Relieving Diaphragm Assembly, Adjusting Spring (Specify Range), Adjusting Spring Button, Valve Springs, Bottom Plug O-Ring

*Specify Spring Range A, B, or C

Note: All Regulators are supplied with 2 (two) ¼" NPT Pipe Plugs. Pipe plugs are supplied finger tight. Final installation is the responsibility of the end user.

GENERANT

SERIES SDC
Self-Locking Liquid Cylinder Connectors

SERIES SDC

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.

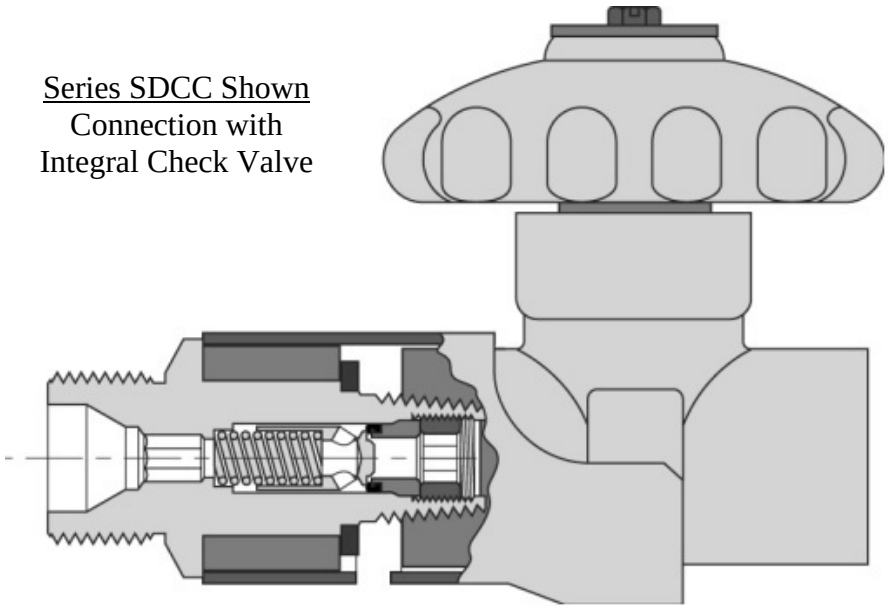
Features and Benefits
- Easily installs on most existing threaded cylinder valves using standard hex wrench.
- NPT Male connection supplied with factory applied PTFE thread sealant tape
- Suitable for both Industrial and Medical Applications
- CGA connections manufactured to industry standards
- Zero 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.

GENERANT
Valves & Bl-Lok Fittings