GENERANT

BACK PRESSURE REGULATOR
3/8” and 1/2" NPT
15 - 600 PSI (1.0 – 41.4 bar)

BPRX SERIES

DESCRIPTION:

BPRX Series back pressure regulators are designed especially for use as high efficiency economizer regulators on large cryogenic tanks, trailers, and systems. Optimized diaphragm and adjustment spring designs provide high flow at pressures above the desired setpoint. It is designed for cryogenic service with a lapped poppet and seat to minimize leakage below setpoint. The BPRX Series is offered in brass or stainless steel material configurations and has been extensively qualified for long-lasting performance. All BPRX Series regulators are supplied factory pre-set and cleaned for oxygen service.

BRASS

316SS

FEATURES:

- **OPTIMIZED FOR HIGH FLOW**: Designed for high flow rates in economizer and vent-to-atmosphere applications.
- **QUICK SHUT-OFF**: Regulators transition from the flowing condition to shut in a tight pressure band.
- **INLET FILTER SCREEN:** Monel ® 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:

Maximum Inlet Pressure: 750 PSIG (51.7 bar)

Pressure Ranges:

Spring	Pressure Range	PSI/Turn*
A	15 to 75 PSIG (1.0 to 5.2 bar)	10
B	50 to 200 PSIG (3.4 to 13.8 bar)	25
C	100 to 350 PSIG (6.9 to 24.1 bar)	45
D	300 to 600 PSIG (20.7 to 41.4 bar)	75

*PSI/Turn Value is approximate change in setpoint per full turn of the adjustment screw (CW to increase, CCW to decrease), for reference only.

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

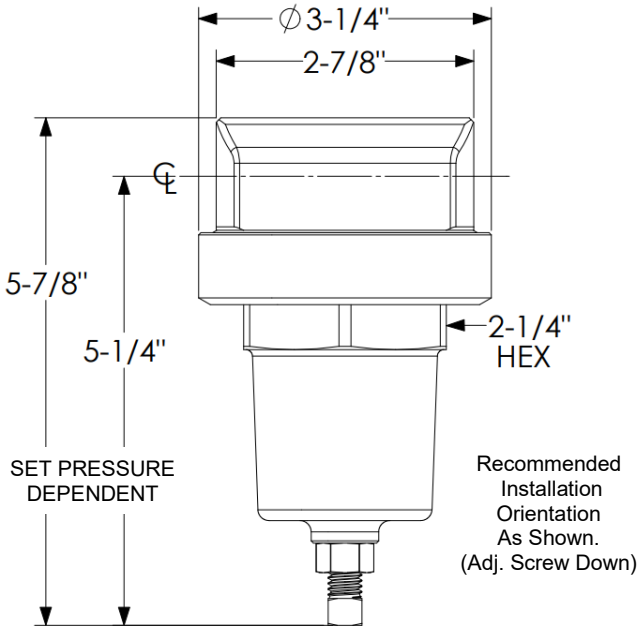
MATERIALS OF CONSTRUCTION:

Component	Material Grade	
	Brass Body	316 Stainless Body
Body, Chamber,	CDA 360 Brass, ASTM B16	316SS, ASTM A479
Adjustment Springs	17-7PH SS	
Adjustment Screw, Locknuts (2), Lock Washer, Ball Bearing, Spring Button	Stainless Steel (Non-Wetted)	
Spring Retainer, Chamber Ring	CDA 360 Brass, ASTM B16	Stainless Steel (Non-Wetted)
Seat and Poppet Set	316 SS (A479) or Monel ®	316SS, ASTM A479
Diaphragms, Damper	Phosphor Bronze	300 Series Stainless Steel
Inlet Filter Screen	Monel ®, ASTM E437	
Seat Seal	PTFE	
Chamber and Diaphragm Assm. Seal	Gylon ®	

NOTE: Regulators are assembled with Krytox ® lubricant.

BACK PRESSURE REGULATOR

DIMENSIONAL DATA



FLOW INFORMATION (500 Size - 1/2" NPT)

	Economizer Cv Value		
Set Pressure (PSIG)	110%	120%	130%
50	0.314	0.554	0.688
150	0.603	0.795	0.935
325	0.612	0.838	0.902
475	0.591	0.658	0.658

	Flow to Atm. (SCFH N2)		
Set Pressure (PSIG)	110%	120%	130%
50	990	1280	1400
150	1550	3975	5750
325	4950	9900	13725
475	5150	10450	13125

HOW TO ORDER

BPRX - 500B - B - 140 - M

SERIES
BPRX - Back Pressure Regulator
Large Body

PORT CONFIGURATION
375B - 3/8" NPT, Brass
500B - 1/2" NPT, Brass
500SS - 1/2" NPT, 316 Stainless Steel

M OPTION
Monel® Option for Poppet
Omit for 316SS Poppet and Seat

SET PRESSURE
Specify Set Pressure in PSI
Omit for Standard Set (By Spring, See Table)

SPRING RANGE
A - 15 to 75 PSI (1.0 to 5.2 bar)
B - 50 to 200 PSI (3.4 to 13.8 bar)
C - 100 to 350 PSI (6.9 to 24.1 bar)
D - 300 to 600 PSI (20.7 to 41.4 bar)

Spring	Std. Set
A	50
B	150
C	325
D	475

Standard Sets do not come engraved with "Factory Set Pressure."

SPRING KITS

Part Number	Description
BPRX-SK-*	Brass Spring Kit, A, B, C Range * Specify Model Spring Code: A, B, C
BPRX-SK-*-SS	316 SS Spring Kit, A, B, C Range * Specify Model Spring Code: A, B, C
BPRX-SK-D	Brass Spring Kit, D Range
BPRX-SK-D-SS	316 SS Spring Kit, D Range

REPAIR KITS

Part Number	Description	Seat / Poppet Mat'l
BPRX-RK-*	Seat & Poppet Set, Diaphragms, Gaskets, Seat Seal, Inlet Filter	316 SS
BPRX-RK-M-*		Monel ®
* Specify "B" for Phos. Bronze Diaphragms Specify "SS" for Stainless Steel Diaphragms		

All Spring Kits are supplied with a Replacement Spring, Chamber Seal, Diaphragm Seal and Spring Retainer. D Spring is also supplied with Chamber Ring.

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
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