

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.

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, Spring Retainer, Chamber Ring | 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) | |
| 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.



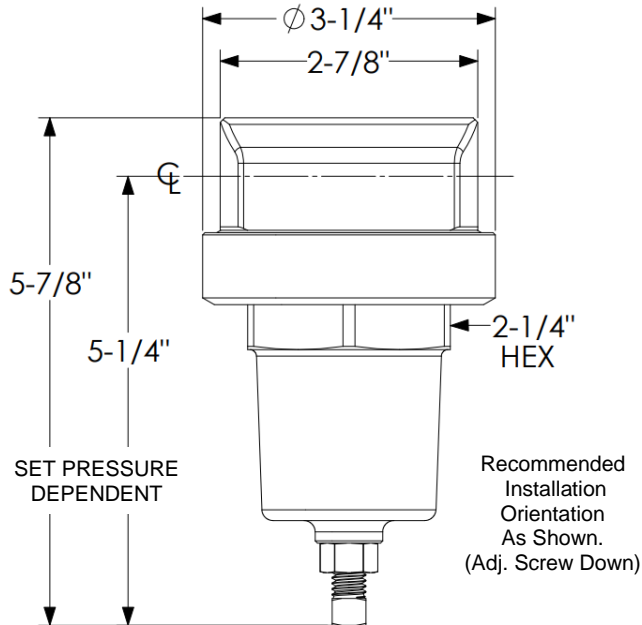
BRASS



316SS

BACK PRESSURE REGULATOR

DIMENSIONAL DATA



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

| Set Pressure (PSIG) | Economizer Cv Value | | |
|---------------------|---------------------|-------|-------|
| | 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 |

| Set Pressure (PSIG) | Flow to Atm. (SCFH N2) | | |
|---------------------|------------------------|-------|-------|
| | 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
 375SS - 3/8" NPT, 316 Stainless Steel
 500SS - 1/2" NPT, 316 Stainless Steel

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

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

M OPTION

Monel® Option for Poppet and Seat
 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 KITS

| Part Number | Description |
|-------------|---|
| BLD-SK-* | Spring Kit, A, B, C Range * Specify Model Spring Code: A, B, C |
| BPRX-SK-D | Spring Kit, D Range |

Note: BLD & BPRX Spring kits are identical for Spring Ranges A, B, C. All Spring kits come with a Replacement Spring & Chamber Seal. D Spring kit also contains Diaph. Seal, Chamber Ring, & Retainer.

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

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



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