



BPR21 Series

25 to 6,000 psig

High Flow Dome Loaded Back Pressure Regulator

Features

- Extremely Reliable
- High Flow Capacity
- Remote Control Capability
- Large Diaphragm Provides Accuracy & Sensitivity
- Compatible with Most Liquids & Gases

Applications

- System Bypass Valve
- Pressure Vessel Protection
- Chemical / Petroleum Plants
- Industrial Controls
- Pumps or Compressors
- Heat Exchangers

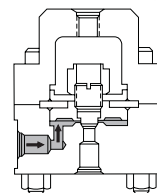
Technical Data

Body Construction Materials:	• Brass or 316 Stainless Steel
Seat Materials:	• Hastelloy CRES, Kel-F, Kynar, Nylatron, Polyimide, Stainless Steel, or Vespel SP-21
Port Sizes:	• 1/4", 3/8" 18 NPT, AND10050-4 or AND10050-6
Pressure Ratings:	• Brass – 25 to 3,500 psig (14 to 241 BAR) • Stainless Steel – 25 to 6,000 psig (14 to 414 BAR)
Temperature Range:	• -65° F to +400° F (-54° C to +204° C)
Flow Capacity	• C_v Max. = 0.90 • ESEOD = 0.23

How It Works

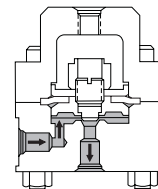
CLOSED

With a pressure regulator connected to the dome port and the dome pressure adjusted slightly above the desired regulated "set" pressure, a bubble tight seal is effected against the applied upstream pressure.



REGULATING

When the upstream process pressure (applied to the inlet side of the diaphragm) increases, an opposing force is generated which acts on the diaphragm and attached poppet against the "set" pressure load in the dome.



As the increasing upstream pressure level reaches the "set" pressure, the poppet is gradually lifted off its seat. A consequent decrease in upstream pressure is experienced when the flowing fluid is relieved to the downstream side of the poppet at a faster rate than the upstream pressure can supply.

With decreasing upstream pressure, the pressure loaded dome starts moving the poppet toward its closed position, thus maintaining the desired "set" pressure level within a narrow band.

When the upstream pressure has decreased to a level just below "crack" the generated forces from the pressure loaded dome again create a tight seal between the poppet and the sharp edge of the valve seat

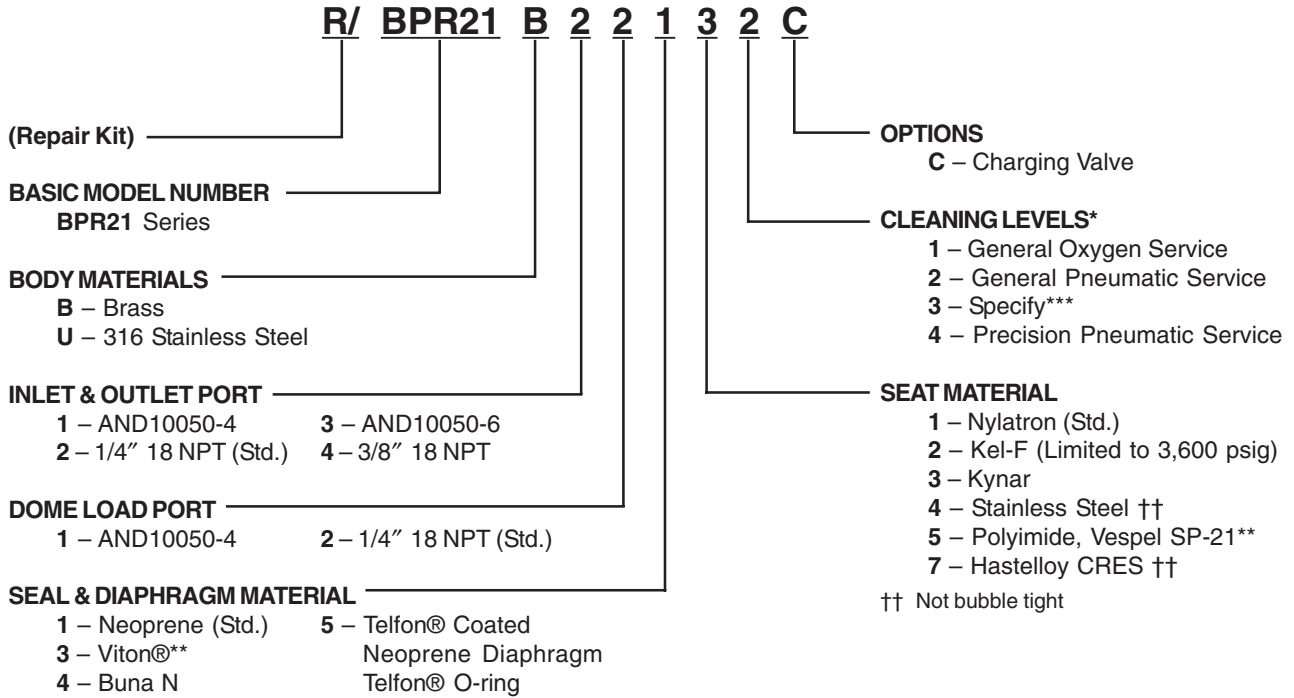
NOTE: Proper filtration is recommended to prevent damage to sealing surfaces.

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How to Order



NOTES

* If this regulator is to be used in oxygen service, specify "OXYGEN SERVICE" when ordering or furnish the factory a copy of the special requirements.

** Standard for oxygen service

*** List requirements or furnish the factory a copy of the requirements or specifications.

Performance Characteristics – Repeatability of cracking (set) pressure: ±2%. Crack pressure to full flow: 110% of set pressure.

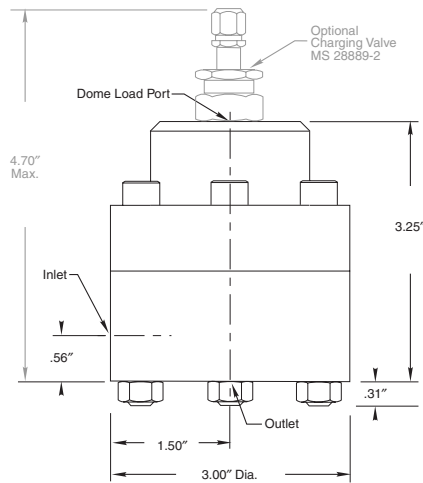
Reseat pressure: within 2% of set pressure above 400 psig.

CAUTION: These units are not intended for applications where the exhaust connection will see a buildup of downstream pressure.

Please consult your Circle Seal Controls Distributor, Representative or the factory for information on special connections, operating pressures and temperature ranges.

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Dimensions



For Your Safety

It is the sole responsibility of the system designer and user to select products suitable for their specific application requirements and to ensure proper installation, operation and maintenance of these products. Material compatibility product ratings and application details should be considered in the selection. Improper selection or use of products described herein can cause personal injury or property damage.