

# BLR50 Series

*Dynadome Pressure Regulator*

*Inlet: 600–6,000 psig ; Outlet: 100–5,800 psig*



## Features

- Quarter-turn control
- Accurate
- Self-venting
- High flow ( $C_v = 0.50$ )
- Highly reliable (no springs, diaphragms, or pistons)
- Excellent sensitivity
- 100% tested

## Applications

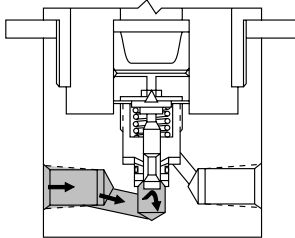
- Manufacturing process
- High pressure test systems
- Compressors
- Bulk gas delivery

## Technical Data

<b>Body Construction Material</b>	Brass
<b>Seat Materials</b>	Nylatron®, Kel-F® or Polyimide
<b>Seal Materials</b>	Ethylene propylene, neoprene, Viton® or Buna
<b>Port Sizes</b>	¼", ½" pipe or ½" AND10050 ¼" gauge and vent port
<b>Pressure Ratings</b>	• Inlet = 600–6,000 psig (41.4–414 BAR) • Outlet = 100–5,800 psig (7–400 BAR)
<b>Temperature Range</b>	–65° F to +160° F (–54° C to +71° C)
<b>Flow Capacity</b>	$C_v = 0.50$

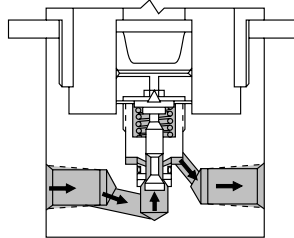
*Note: Proper filtration is recommended to prevent damage to sealing surfaces.*

## How it Works



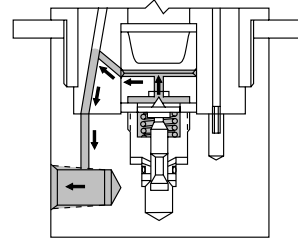
### Closed

The balanced poppet is spring-loaded against the valve seat. When full upstream pressure is applied, a slight unbalanced force is developed which further enhances sealing.



### Regulating

As the downstream process demands flow, the decreasing pressure (acting on the outlet side of the piston) allows the dome pressure force to push the piston down. This in turn unseats the poppet, which permits flow to start and pressure under the piston to gradually increase until a balance is achieved between the dome pressure forces. The modulation of the poppet position continues in this manner until the process flow demand ceases.



### Venting

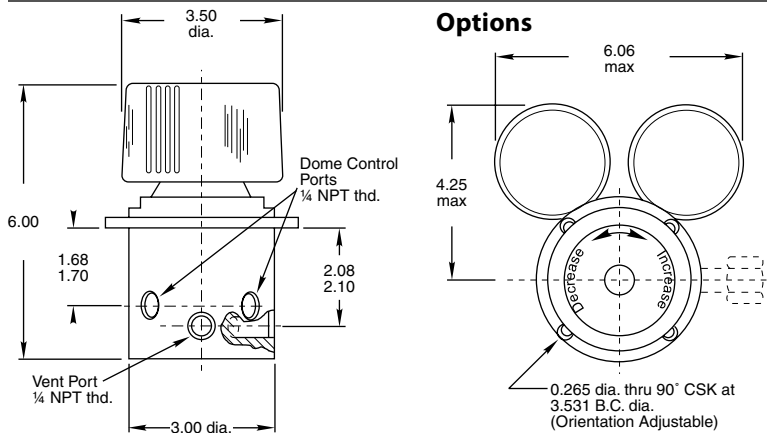
When the handle is turned to decrease the regulated pressure level, the dome pressure will vent through the dome vent and the downstream pressure will vent through the piston to the vent port.

## Circle Seal Controls

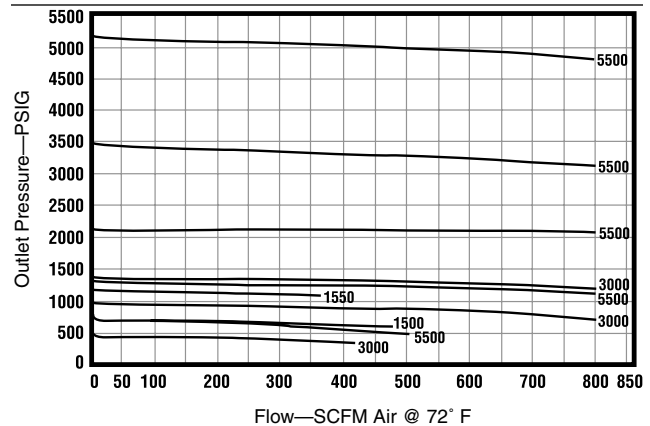
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# BLR50 Series

## Dimensions



## Air Flow Curve



## How to Order

**K/ BLR50 B 1 1 1 2 G**

**REPAIR KIT**

**BODY MATERIAL**

**B** Brass

**BODY PART NUMBER INLET & OUTLET PORTS**

- 1** 1/4" NPT female
- 2** 1/2" NPT female
- 3** AND10050-8

**SEAT MATERIAL**

- 0** Ethylene propylene
- 1** Neoprene (standard)
- 3** Viton®
- 4** Buna N

**OPTIONS**

**G** Gauges (0-7,500 psig)

**CLEANING LEVELS**

- 1** General oxygen\* (CSC/CCD 29.20)
- 2** General pneumatic (GEN CL'G)
- 3** Specify (define on sales order)

**SEAT MATERIALS**

- 1** Nylatron® GS (standard)
- 2** Kel-F® (limited to 3,600 psig max. inlet, 3,400 psig max. outlet)
- 9** Polyimide (Vespel® SP-21)

\* For oxygen service: 3,600 psig max. inlet pressure and temperature range of -20° F to +250° F.

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

## For Your Safety

It is solely the 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.

Nylatron® is a registered trademark of DSM Engineering Plastic Products.  
 Kel-F® is a registered trademark of 3M Company.  
 Viton® is a registered trademark of DuPont Dow Elastomers.  
 Vespel® is a registered trademark of E.I. du Pont de Nemours and Company.