



# PR50 SERIES

INLET & OUTLET to 10,000 PSIG

## HIGH PRESSURE SELF-VENTING PRESSURE REGULATOR

Fred C. Gilbert Co.  
106 Norris Road  
Bakersfield, Ca. 93308  
661-399-9569  
fax 661-393-9654

### Features

- Balanced Poppet Design
- Self-Relieving Captured Vent
- Low Operating Torque

### Applications

- High Pressure Testing
- Purging & Charging
- Research Laboratories
- Chemical/Petroleum Plants
- Manufacturing Processes

### Technical Data

#### Materials of Construction

Body — Brass, 303 or 316 Stainless Steel  
Seats — Kel F or Vespel®  
Seals — Buna N, Ethylene Propylene,  
Neoprene or Viton®

#### Port Sizes & Connections

1/4", 1/2" NPT; 1/2" Male Tube; or  
1/2" British Parallel Pipe

#### Pressure Ratings

Inlet — CRES to 10,000 PSIG (690 BAR)  
Brass to 6,000 PSIG (414 BAR)  
Outlet — 40 to 10,000 PSIG (2.7 to 690 BAR)

#### Leakage

Bubble Tight (Air)

#### Weight

8 lbs.

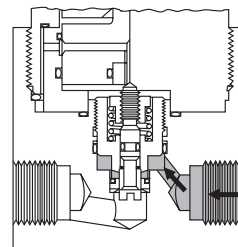
#### Temperature Range

-40°F to +165°F;  
-40°C to +68°C

#### Flow Capacity

$C_v = 0.30$   
ESOD = 0.13"

### How It Works

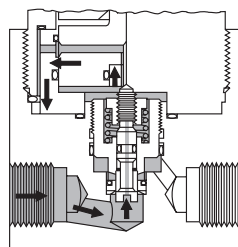
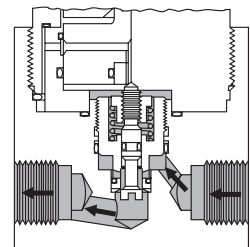


#### CLOSED

Balanced Poppet is spring loaded against the seat. When full upstream pressure is applied, a slightly unbalanced force is developed which enhances sealing.

#### REGULATING

As downstream process demands flow, the pressure acting on the piston decays, allowing the adjusting spring force to push the piston down. This unseats the poppet, allowing flow to begin and pressure under the piston to increase until balance is achieved between adjusting spring force and downstream pressure. This condition continues until process demand ceases. At this point, increasing pressure overcomes spring force, moving the piston up, allowing the poppet to close.



#### VENTING

If the downstream pressure should increase beyond regulation set point, or handle is backed off to decrease regulated pressure level, downstream pressure will vent through the piston and guide to the vent port. The pressure load from the piston overcomes the "set" spring load

and moves the piston upward. The poppet is thereby unseated to allow venting flow. As pressure decreases under the piston the reverse action occurs and the vent seat is closed off.



**CIRCLE SEAL CONTROLS, INC.**

A division of CIRCOR International, Inc.

Certified to ISO 9001

# PR50 SERIES

INLET & OUTLET to 10,000 PSIG

## How To Order

**BASIC MODEL NUMBER** PR52 U 1 1 2 G

**PR50 Series**

**MAX. OUTLET PRESSURE\***

- 52 - 40 to 400 PSIG (248 BAR)
- 53 - 80 to 800 PSIG (138 BAR)
- 54 - 150 to 1,500 PSIG (50 BAR)
- 55 - 300 to 3,000 PSIG (14 BAR)
- 56 - 450 to 4,500 PSIG (414 BAR)
- 57 - 600 to 6,000 PSIG (414 BAR)
- 58 - 1,000 to 10,000 PSIG (414 BAR)

**BODY MATERIAL**

- B - Brass
- U - 316 Stainless Steel
- T - 303 Stainless Steel

**INLET & OUTLET PORTS**

- 1 - 1/4" NPT
- 2 - 1/2" NPT
- 3 - 1/2" Tube (MS55649-8)
- 4 - 1/2" British Parallel Pipe Thread  
(Vent Port 1/4" BPPT, Gauge Port 1/4" BS Taper Thd.)

**OPTIONS**

- G - Gauges
- N - 316 CRES Panel Nut

**CLEANING LEVELS**

- 1 - General Oxygen Service
- 2 - General Pneumatic Service
- 3 - Specify
- 4 - Precision Pneumatic Service

**SEAT MATERIAL**

- 1 - VespeI® (Std.)
- 2 - Kel F (Limited to 3,000 PSI Inlet Pressure, 52 thru 55 only)

**SEAL MATERIAL**

- 0 - Ethylene Propylene
- 1 - Neoprene (Std.)
- 3 - Viton® (Std. for O<sub>2</sub> Service)
- 4 - Buna N

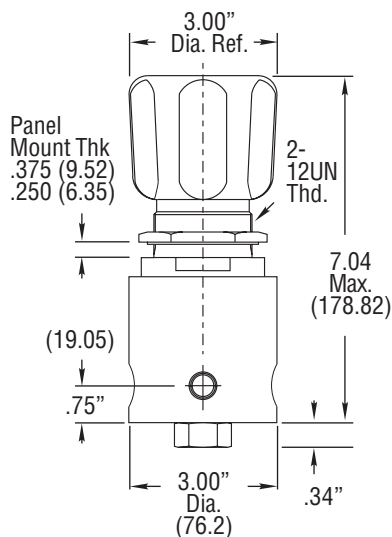
### Notes:

\*For best regulating characteristics use only within 10% to 90% of maximum outlet pressure range.

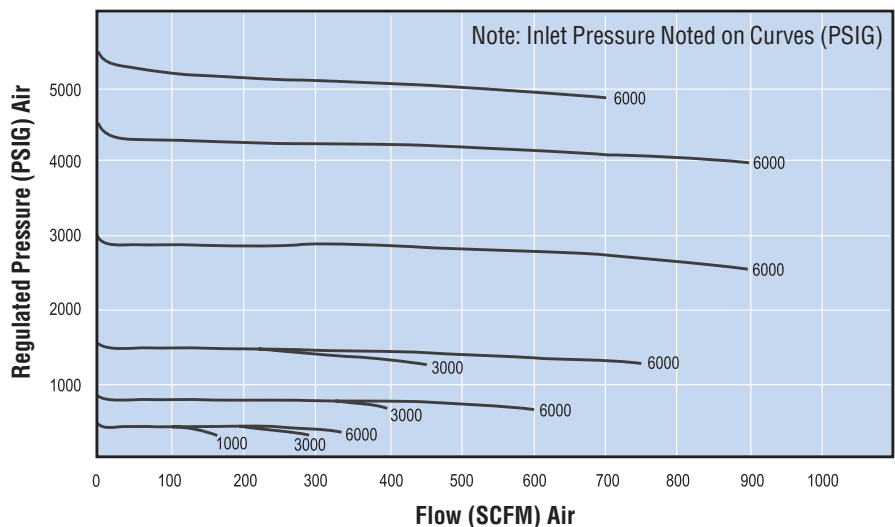
Either liquid or gas is handled equally well by the PR50 Series. No modification is required to convert from gas service to liquid. Seals and seats are available for nearly all liquids or gases. The PR50 is not recommended for continuous liquid service. Please consult your Circle Seal Controls Distributor, Representative or the factory for information on special connections, operating pressures and temperature ranges.

VespeI® is a registered trademark of DuPont and Viton® is a registered trademark of DuPont Dow Elastomers.

## Dimensions & Flow Curves



Air Flow Chart



**CIRCLE SEAL CONTROLS, INC.**

A division of CIRCOR International, Inc.

Certified to ISO 9001