

IR4000 Series

SS High Pressure Regulator Internally Threadless Design



Parker Hannifin Corporation's Veriflo Division presents the IR4000 Series internally threadless pressure regulator for instrument/analyzer and semiconductor applications. The internal threadless design minimizes purge times, and reduces carrier and calibration gas usage. The IR4000's seat materials meet the requirements for corrosive and/or higher temperature media requirements.

Instrument applications include gas management systems in petrochemical/refineries and process analyzer systems. Semiconductor applications include general purpose gas management (Air, Clean Dry Air (CDA), and Plant Nitrogen).

The IR4000 is a high pressure regulator that can be ordered with a variety of options to meet a wide range of system design requirements.



Catalog: 4511
LitPN: 25000173
Revision: A • 11/03



► materials of construction

Wetted

Body 316L Stainless Steel,
Hastelloy C-22®, Monel®
Compression Member Inconel®
Diaphragm Hastelloy C-22®
Poppet Elgiloy®
Poppet Spring Inconel®
Carrier Stainless Steel*, Hastelloy C-22®
Back-up Washer Hastelloy C-22®
Seat PCTFE, PEEK™ or Vespel®
Back-up O-ring Viton®, optional Teflon®
Inlet Screen/Filter 316L Stainless Steel,
Hastelloy C-22® (Hastelloy®, Monel® bodies)

Non-Wetted

Cap Nickel Plated Brass,
optional Stainless Steel
Nut 316 Stainless Steel, Nickel Plated Brass†
Knob (black) ABS Plastic

► operating conditions

Maximum inlet 4000 psig (276 barg)
Outlet . . . 1-10 psig† (.7 barg), 2-30 psig (2 barg),
3-60 psig (4 barg), 4-100 psig (7 barg),
5-250 psig (17 barg), 10-500 psig (35 barg)

Temperature:

PCTFE -40°F to 150°F (-40°C to 65°C)
PEEK™ -40°F to 275°F (-40°C to 135°C)
Vespel® -40°F to 500°F (-40°C to 260°C)

► functional performance

Flow capacity:

Standard $C_v = .06$
Optional $C_v = .02, .15†$
(SEMI Flow Coefficient Test #F-32-0998)

Design Proof Pressure 6000 psig (414 barg)
Design Burst Pressure 12000 psig (828 barg)

Maximum Inboard Design

Leak Rate $< 2 \times 10^{-8}$ scc/sec HE

Supply Pressure Effect:

.02 C_v 23 psig per 100 psig
(.016 barg per 7 barg)
.06 C_v 6 psig per 100 psig
(.04 barg per 7 barg)
.15 C_v 1.5 psig per 100 psig
(.1 barg per 7 barg)

► internal volume

4.0 cc without fittings

► approximate weight

1.5 lbs (.7 kg)

* Proprietary Carpenter Stainless Steel with corrosion resistance equal or better than 316 Stainless Steel.

† Refer to Range Table for specific information.

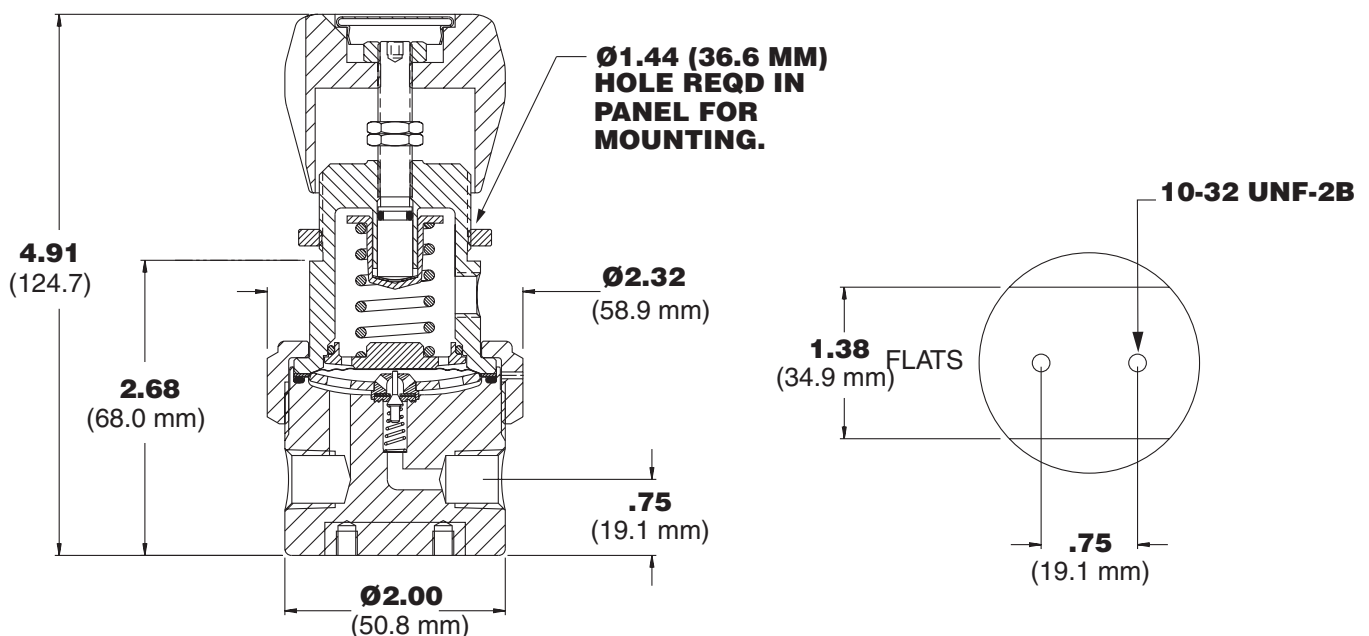
‡ Nickel Plated Brass for PCTFE seat.

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Product Features and Benefits

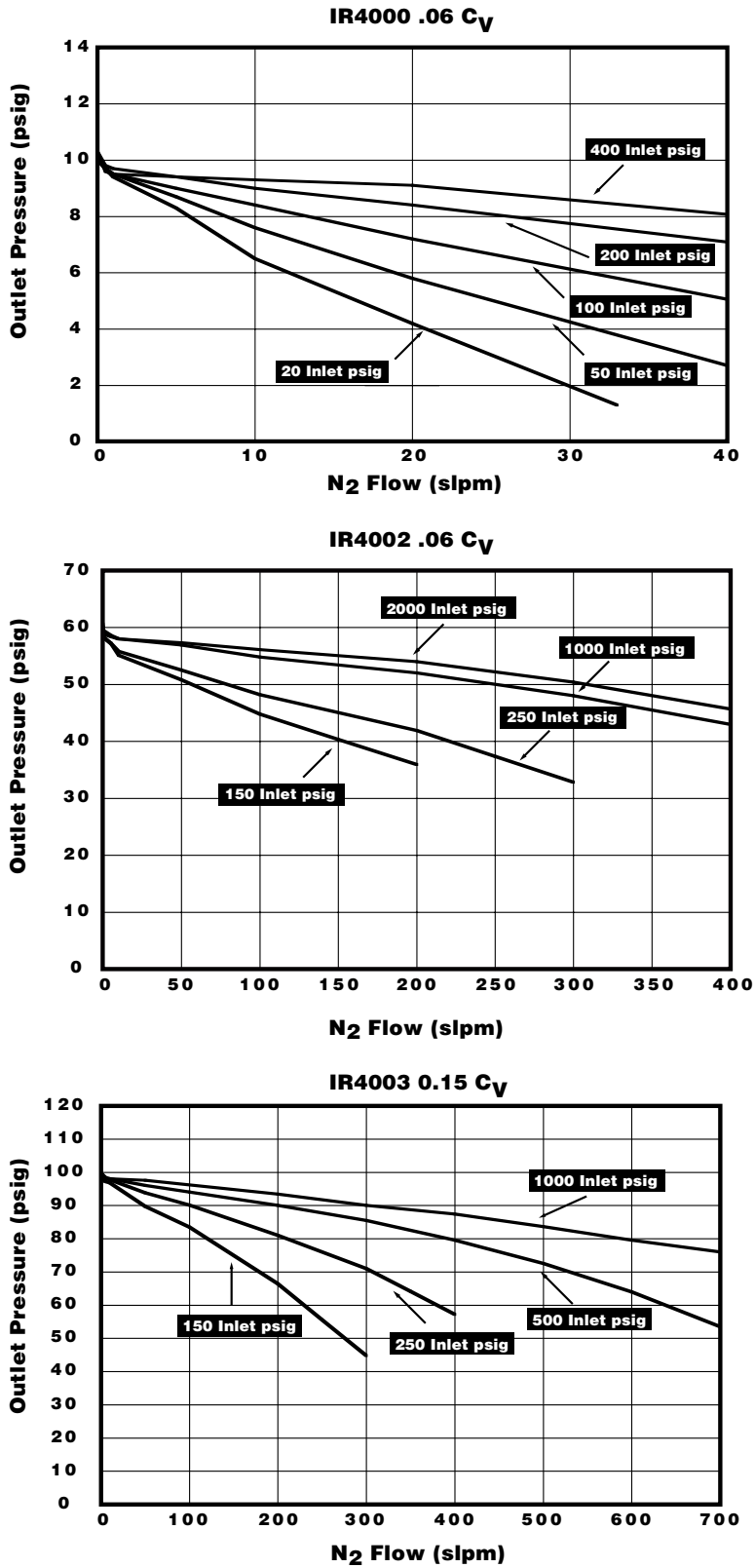
- ▶ Unique patented compression member loads the seal to the body without requiring a threaded nozzle or additional seals to atmosphere.
- ▶ Selection of seat materials for media compatibility and temperature applications.
- ▶ Meets NACE Standard MR0175.
- ▶ O₂ Cleaned.
- ▶ Fully swept design.
- ▶ Internally threadless seat design promotes long seat life.
- ▶ Convuluted, Hastelloy C-22[®] diaphragm provides high corrosion resistance and increases cycle life.
- ▶ Positive upward and downward stops increases cycle life by preventing over stroking of the diaphragm.
- ▶ Low internal volume reduces cycle and purge time.
- ▶ Captured bonnet allows for safety venting.
- ▶ Standard units can be dome loaded (with clean dry air or nitrogen).
- ▶ The use of Inconel[®], Hastelloy C-22[®], and Elgiloy[®] provide superior corrosion resistance and high repeatability.
- ▶ Close tolerances and tight alignment of moving components minimize hysteresis.
- ▶ Unique carrier design disperses gas uniformly through the regulator to improve purging.

Dimensional Drawing

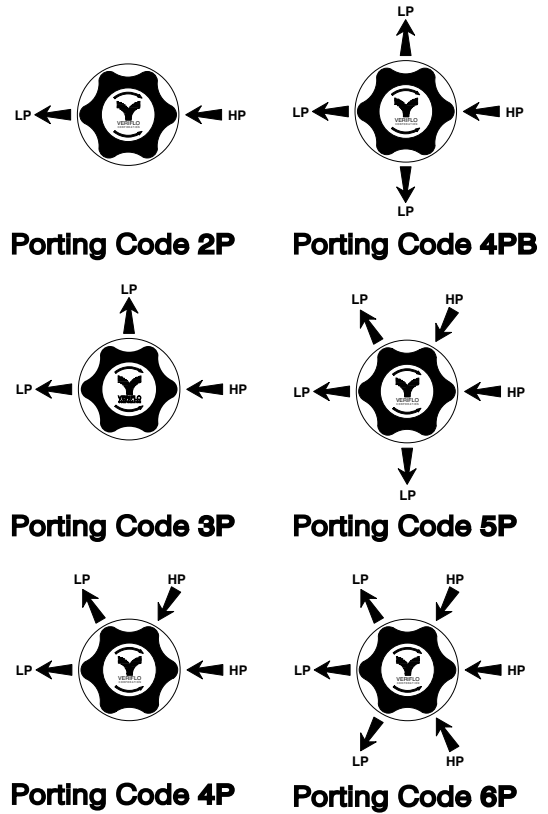


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Flow Curves



Porting Configurations



Gauge Index	
2P	No Gauge Ports
3P	One gauge Port
4P	Two gauge Ports
4PB	One Gauge Port
5P	Two Gauge Ports
6P	Two Gauge Ports

