

NEW

IR4000 Series

High Pressure Regulator Internally Threadless Design



Parker Hannifin Corporation's Veriflo Division introduces the IR4000 Series internally threadless pressure regulator for industrial/analytical and semiconductor applications.

Industrial applications include gas management in refineries and process analyzer systems. Semiconductor applications for use on general purpose gas management (Air, Condensed 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 range of system design requirements.

*Note: Please see **Product Features and Benefits** on page two.*



► **materials of construction**

- Wetted**
- Body 316L Stainless Steel, Hastelloy C-22®, Brass, Monel®
 - Compression Member Inconel®
 - Diaphragm Hastelloy C-22®
 - Poppet Elgiloy®
 - Poppet Spring Inconel®
 - Carrier Stainless Steel*, Hastelloy C-22®
 - Seat PCTFE, PEEK™, Vespel®
 - Back-up O-ring Viton®
 - Inlet Screen/Filter 316L Stainless Steel, Copper and Phosphor/Bronze (Brass body)

- Non-Wetted**
- Nut 316L Stainless Steel
 - Cap Nickel Plated Brass
 - Knob (black) ABS Plastic

► **operating conditions**

- Maximum inlet 4000 psig (276 barg)
- Outlet 1-10 psig† (.7 barg), 1-30 psig (2 barg), 1-60 psig (4 barg), 2-100 psig (7 barg), 2-250 psig (17 barg), 5-500 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 $C_v .02, .15†$
(ANSI/ISA S 75.02 1998)
- Design Leak Rate:
- Outboard 1×10^{-9} scc/sec He
 - Inboard 2×10^{-9} scc/sec He
 - Across seat 4×10^{-8} scc/sec He
- Supply Pressure Effect:
- .02 C_v 0.23 psig per 100 psig (.016 barg per 7 barg)
 - .06 C_v 0.6 psig per 100 psig (.04 barg per 7 barg)
 - .15 C_v 1.5 psig per 100 psig (.1 barg per 7 barg)

► **standard configurations**

- 1/4 inch female pipe threads:
- End to end length $2.00 \pm .02$ in. (50. ± .5 mm)

► **internal volume**

4.0 cc

► **approximate weight**

1.5 lbs (.7 kg)

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

** Temperature ranges available in Stainless Steel body only

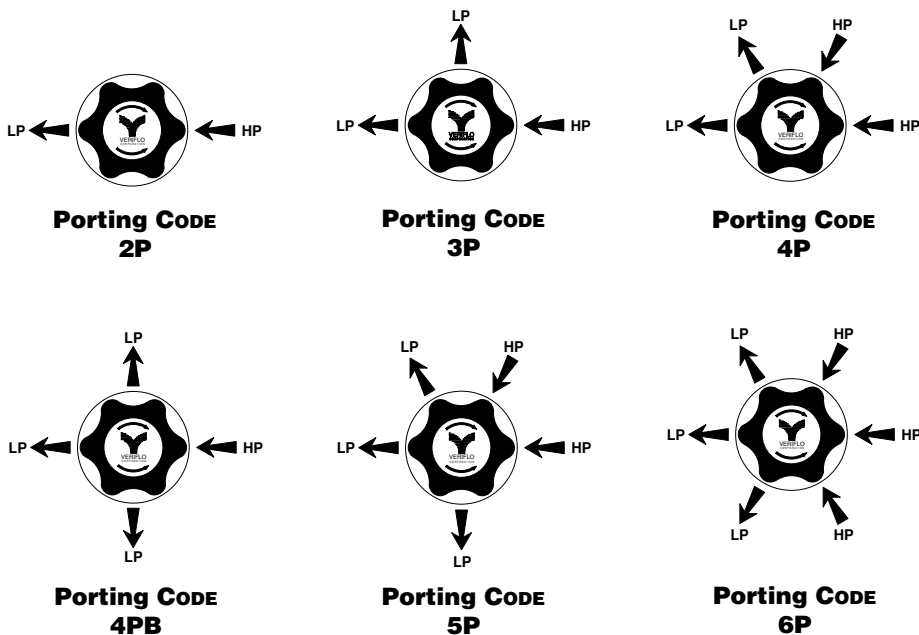
† Refer to Range Table for specific information

IR4000 Series

Product Features and Benefits

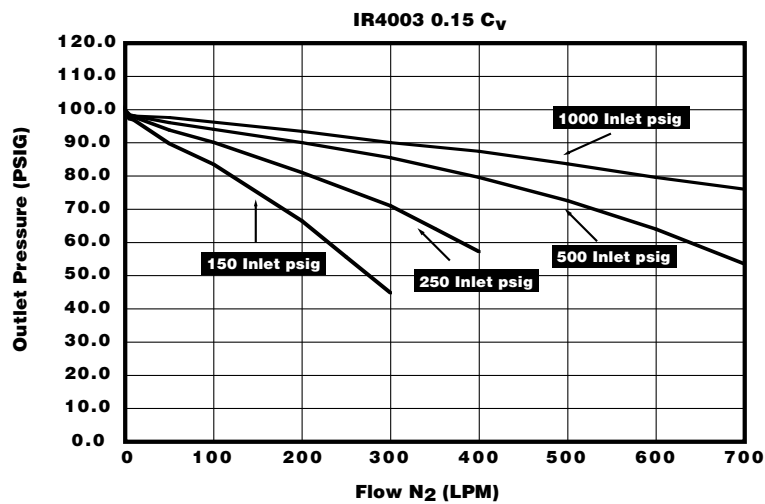
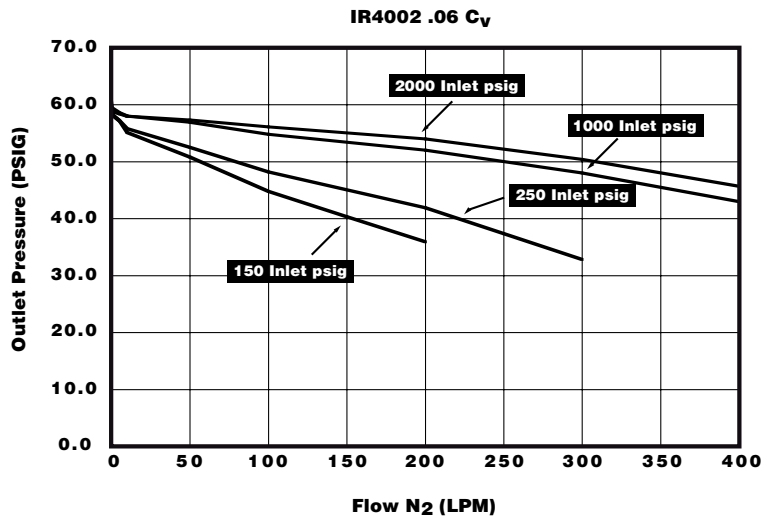
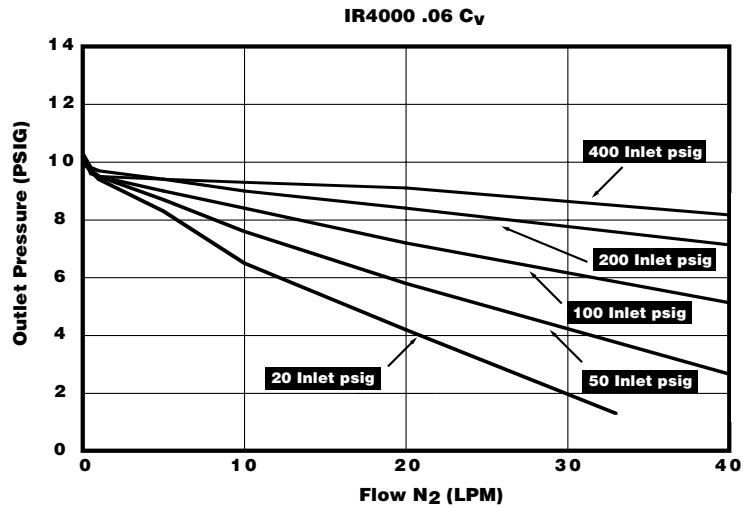
- ▶ Unique patented compression member loads the seal to the body without requiring a threaded nozzle or additional seals to atmosphere.
- ▶ Selection of seat materials for media compatibility and temperature applications.
- ▶ Meets NACE standard MR0175.
- ▶ Compression member for low internal volume.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

Porting Configurations



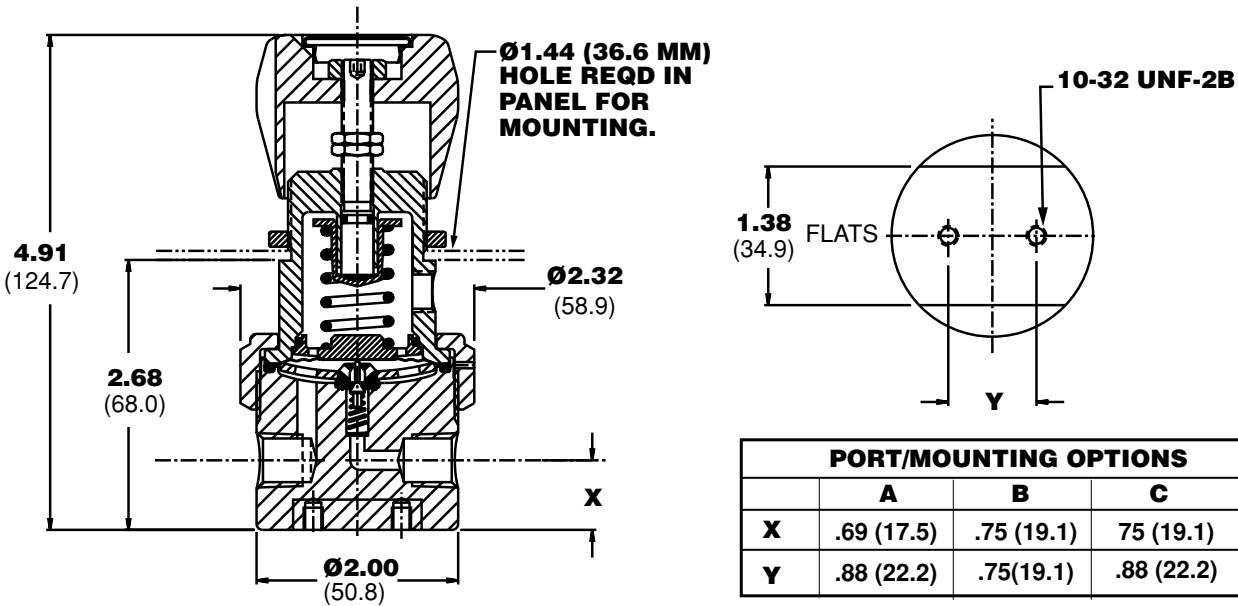
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Flow Curves



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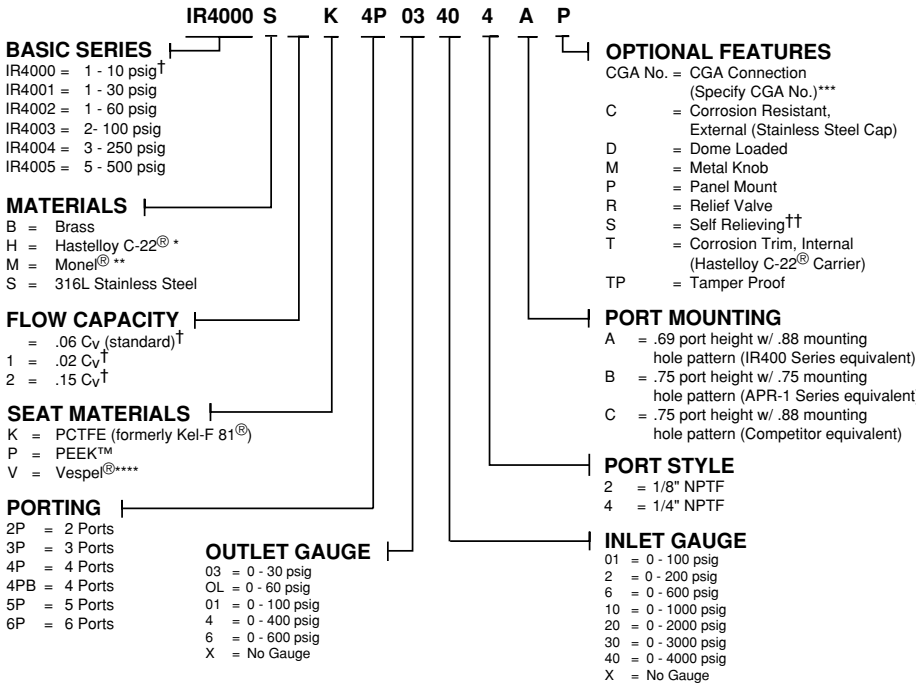
Dimensional Drawing



PORT/MOUNTING OPTIONS			
	A	B	C
X	.69 (17.5)	.75 (19.1)	.75 (19.1)
Y	.88 (22.2)	.75(19.1)	.88 (22.2)

A = IR400 Series equivalent
 B = APR-1 Series equivalent
 C = Competitor equivalent

Ordering Information



Model Basic Series	Range Table		
	Max Inlet PSIG		
	Cv		
	.06	.02	.15
IR4000	400	400	400
IR4001	4000	4000	1250
IR4002	4000	4000	1250
IR4003	4000	4000	1250
IR4004	4000	4000	1250
IR4005	4000	4000	1250

* Hastelloy C-22® material includes: Hastelloy C-22® body, Hastelloy C-22® Carrier
 ** Monel® material includes: Monel® body, Hastelloy C-22® Carrier
 *** Do not exceed the rated pressure of the CGA connection
 **** Recommended for Nitrous Oxide (N2O) Service
 † Refer to Range Table for specific information
 †† Only available with .06 Cv

Hastelloy C-22® is a registered trademark of Haynes International, Inc.
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 PEEK™ is a trademark of Vitrex, Inc.

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