

IR5000 Series

High Pressure Regulator Internally Threadless Design



Parker Hannifin Corporation's Veriflo Division introduces the IR5000 Series high pressure regulator. Veriflo Division continues the internally threadless design of the IR4000 family of products.

Instrument applications include gas management for analyzer systems and other industrial processes. Semiconductor applications include general purpose gas management (Air, Condensed Dry Air (CDA), and Plant Nitrogen) Systems.

The IR5000 is a high pressure regulator that can be ordered with a variety of options to meet a wide 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[®],
Phosphor Bronze (Brass body)
Poppet Spring Inconel[®]
Carrier Stainless Steel*, Hastelloy C-22[®]
Back-up Washer Hastelloy C-22[®]
Seat PCTFE, PEEK[™], Vespel[®]
Back-up O-ring Viton[®]
Optional Teflon[®]
Inlet Screen/Filter 316L Stainless Steel,
Copper and Phosphor Bronze (Brass body)
Hastelloy C-22[®] (Hastelloy[®], Monel[®] bodies)

Non-Wetted

Nut Stainless Steel
Cap Nickel Plated Brass,
Optional Stainless Steel
Knob (black) ABS Plastic

operating conditions

Maximum inlet 3500 psig (241 barg)
Outlet 1-5 psig† (.07-3 barg),
1-30 psig (.07-2.1 barg), 1-60 psig (.07-4 barg),
2-100 psig (.14-7 barg), 2-250psig (.14-17 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 C_v = 0.02, 0.06, 0.15†
(SEMI Flow Coefficient Test #F-32-0998)

Design Proof Pressure 5250 psig (362 barg)
Design Burst Pressure 10500 psig (724 barg)
Design Leak Rate:
Outboard 1 x 10⁻⁹ scc/sec He
Inboard 2 x 10⁻⁹ scc/sec He
Across seat 4 x 10⁻⁸ scc/sec He

Supply Pressure Effect:

.02 C_v 0.12 psig per 100 psig
(.008 barg per 7 barg)
.06 C_v 0.3 psig per 100 psig
(.02 barg per 7 barg)
.15 C_v 0.75 psig per 100 psig
(.05 barg per 7 barg)

standard configurations

See Dimension Table on back page

internal volume

14.3cc

approximate weight

4.5 lbs (2.1 kg)

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

** Temperature Applications not available in Brass body.

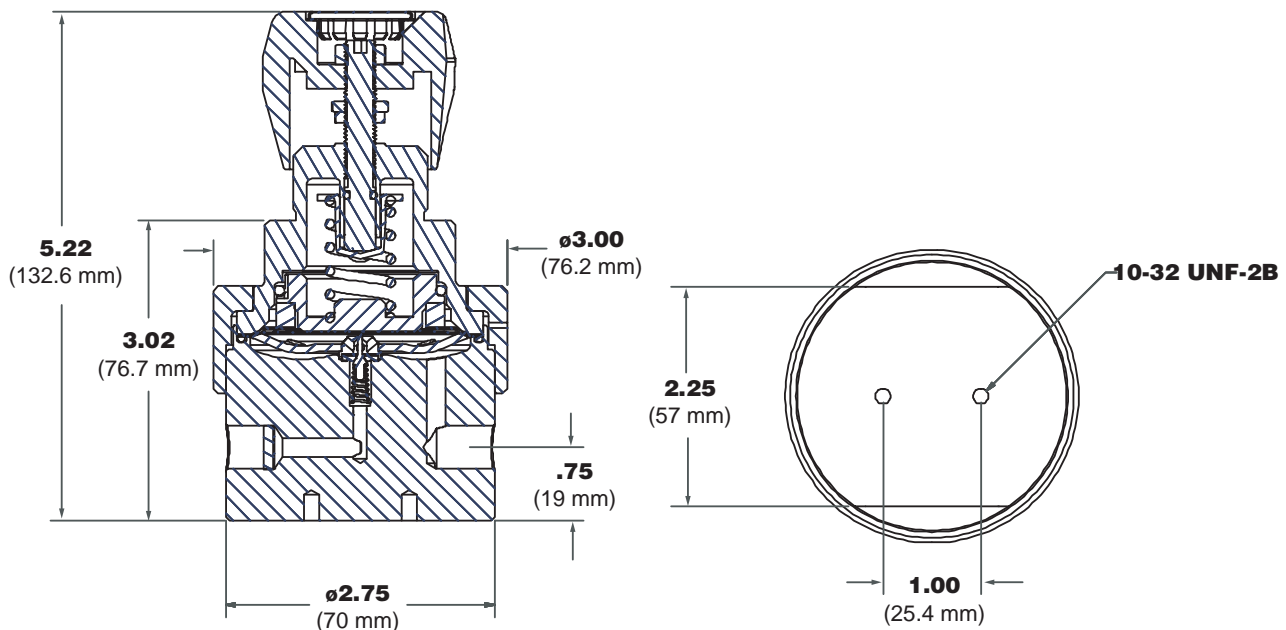
† Refer to Range Table for specific information.

IR5000 Series

Product Features and Benefits

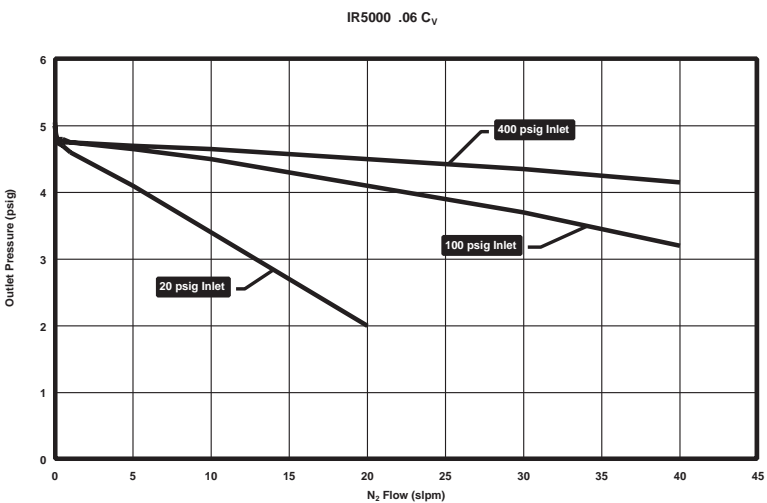
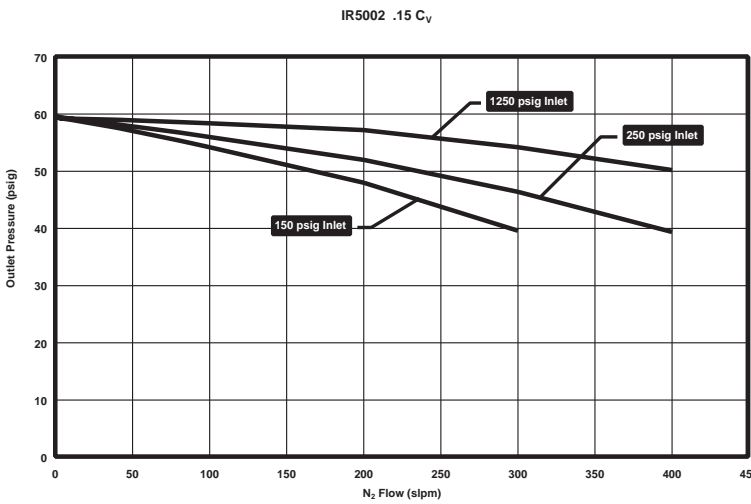
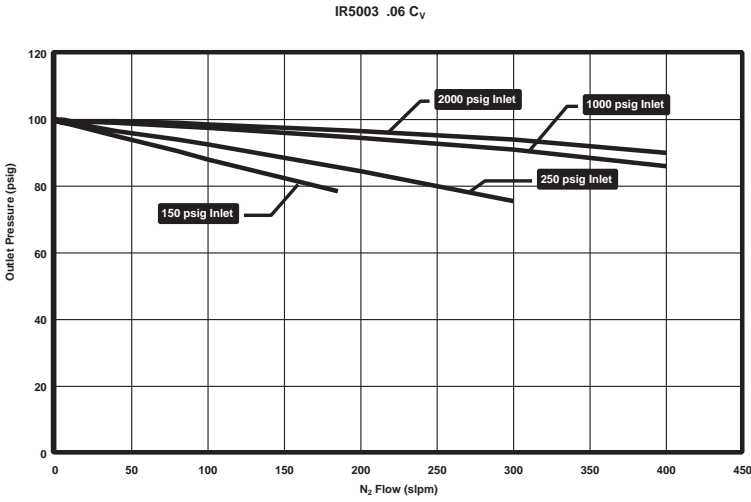
- ▶ Unique patented compression member loads the seal to the body without requiring a threaded nozzle or additional seals to atmosphere.
- ▶ Selection of seat materials for media compatibility and temperature applications.
- ▶ Meets NACE standard MR0175.
- ▶ Cleaned for Oxygen Service.
- ▶ Fully swept design.
- ▶ Internally threadless seat design to promote long seat life.
- ▶ Convuluted, 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.

Dimensional Drawing



IR5000 Series

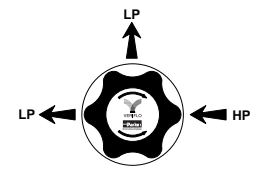
Flow Curves



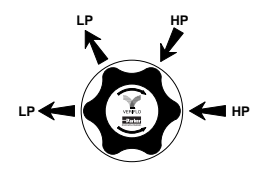
Porting Configurations



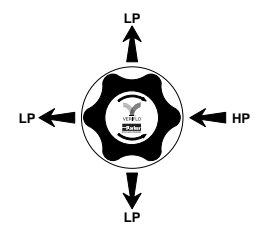
Porting Code 2P



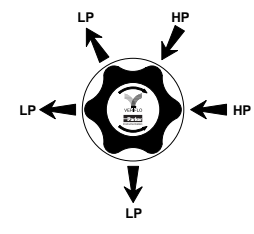
Porting Code 3P



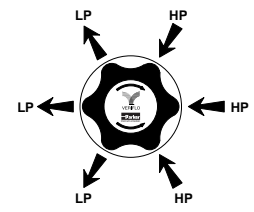
Porting Code 4P



Porting Code 4PB



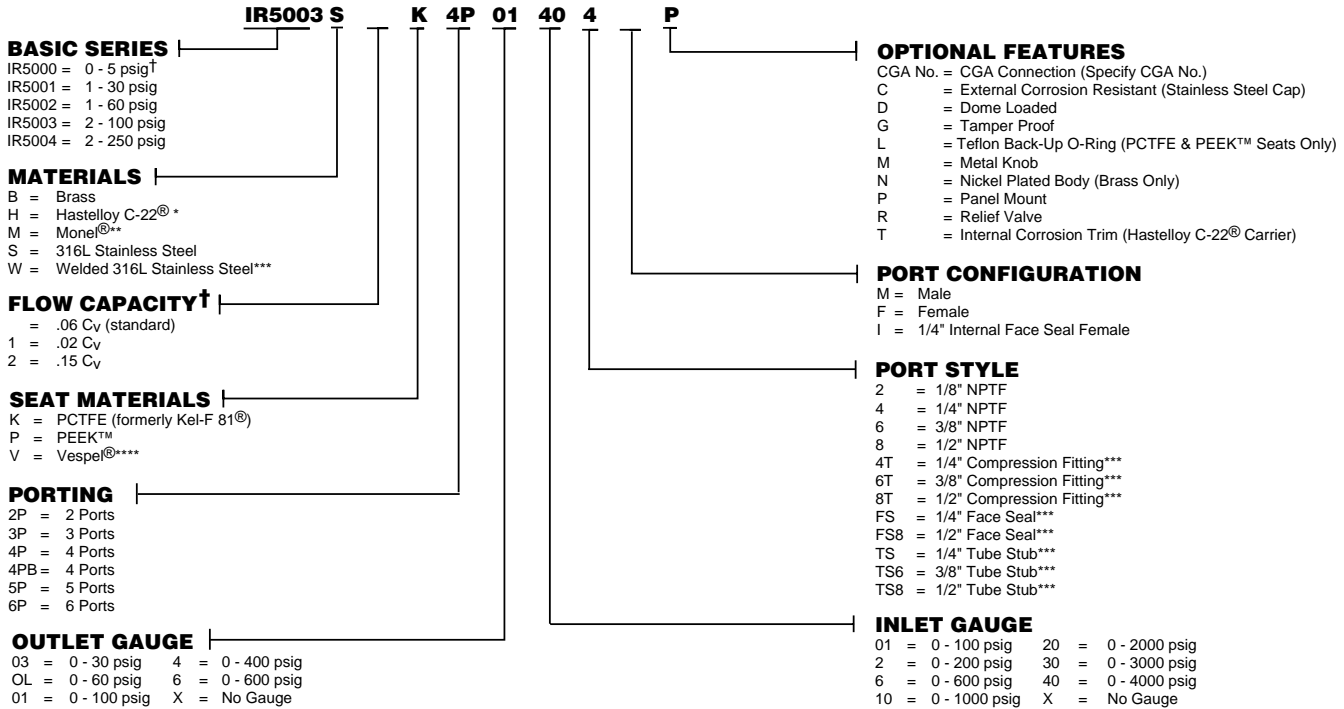
Porting Code 5P



Porting Code 6P

IR5000 Series

Ordering Information



** Monel® material includes: Monel® body, Hastelloy C-22® Carrier, Screen & Filter
 *** Welded units body size is Ø2.38 with .69 port height and 1.0 mounting hole pattern
 **** Recommended for Nitrous Oxide (N₂O) Service
 † Do not exceed the rated pressure of the CGA connection
 † Refer to Range Table for specific information

Hastelloy C-22® is a registered trademark of Haynes International, Inc.
 Kel-F 81® is a registered trademark of 3M Company.
 Incone® and Monel® are registered trademarks of Inco Alloys International.
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 Vespel® and Teflon® are registered trademarks of DuPont Company.
 Vitor® is a registered trademark of DuPont Dow Elastomers.
 PEEK™ is a trademark of Victrex plc.

Range Table			
Model Basic Series	Max Inlet PSIG		
	C _v		
	.06	.02	.15
IR5000	400	400	400
IR5001	3500	3500	1250
IR5002	3500	3500	1250
IR5003	3500	3500	1250
IR5004	3500	3500	1250

Dimension Table	
Connection Type	End to End Dimension
1/8", 1/4" & 3/8" NPTF	2.75 ± .02 in. (70 ± .5 mm)
1/4" Compression Fitting	3.92 ± .02 in. (100 ± .5 mm)
3/8" Compression Fitting	4.07 ± .02 in. (103 ± .5 mm)
1/2" Compression Fitting	4.78 ± .03 in. (121 ± .8 mm)
1/4" Face Seal	4.30 ± .02 in. (109 ± .5 mm)
1/2" Face Seal	5.22 ± .02 in. (133 ± .5 mm)
All Tube Stubs	4.00 ± .02 in. (102 ± .5 mm)

Parker Hannifin Corporation

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