Veriflo Division, Parker Hannifin Corporation is a leading manufacturer of precision valves, regulators and surface mount components for the control and application of liquids and gases used in the fabrication of semiconductors, as well as in the chemical and petrochemical industries.

**A Leading Manufacturer Of Precision Valves, Regulators & Surface Mount Components**

Veriflo Division has maintained industry leadership over the past 95 years through innovative engineering, manufacturing and by placing a premium on quality customer care.

Veriflo maintains two state-of-the-art Class 10 Clean Rooms at its Richmond, CA, facility and has adopted a corporate wide “Lean Manufacturing” philosophy, which is delivering greater value to the customer by eliminating wasteful steps through continuous improvement activities.

Veriflo Division is extremely focused on maintaining the highest of industry standards. The division has achieved an ISO 9001 registration at its Richmond, CA manufacturing plant and its Carson City, NV facility.

This certification confirms Veriflo Division’s dedication to quality & excellence as recognized by the international community.

The Instrumentation Group of Parker Hannifin specializes in high quality, critical flow components for world-wide process instrumentation, ultra-high-purity, medical, analytical and biopharmaceutical applications.

Parker’s Instrumentation Group has ten manufacturing plants and over 300 authorized distributor locations around the world to provide local inventory and technical support.

**Maintained Industry Leadership By Placing A Premium On Quality Customer Care**

Valued markets for Parker Hannifin’s Instrumentation Group include the following: Chemical Process, Power Generation, Oil and Gas Exploration, Semiconductor Manufacturing, Biomedical, and Analytical Equipment.

**Note:** For further information on Veriflo Division and or its product line visit the division web site at www.veriflo.com. For more information on Parker Hannifin visit the corporation’s web site at www.parker.com.
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.

**materials of construction**

**Wetted**
- Body: 316L Stainless Steel, Hastelloy C-22®, Monel®
- Compression Member: Inconel®
- Diaphragm: Hastelloy C-22®, Monel®
- 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: CV = .06
  - Optional: CV = .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 x 10⁻⁸ scc/sec HE
- Supply Pressure Effect:
  - .02 CV: .23 psig per100 psig (.016 barg per 7 barg)
  - .06 CV: .6 psig per100 psig (.04 barg per 7 barg)
  - .15 CV: 1.5 psig per100 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.
**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.
- Convoluted, 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**

- Ø1.44 (36.6 MM) HOLE REQD IN PANEL FOR MOUNTING.
- Ø2.32 (58.9 mm)
- 10-32 UNF-2B
- 1.38 (34.9 mm)
- .75 (19.1 mm)
- .75 (19.1 mm)

---

IR4000 Series
IR4000 Series

Flow Curves

IR4000 .06 C\textsubscript{V}

Outlet Pressure (psig)

N\textsubscript{2} Flow (slpm)

- 400 Inlet psig
- 200 Inlet psig
- 100 Inlet psig
- 50 Inlet psig

IR4002 .06 C\textsubscript{V}

Outlet Pressure (psig)

N\textsubscript{2} Flow (slpm)

- 2000 Inlet psig
- 1000 Inlet psig
- 250 Inlet psig

IR4003 0.15 C\textsubscript{V}

Outlet Pressure (psig)

N\textsubscript{2} Flow (slpm)

- 150 Inlet psig
- 250 Inlet psig
- 500 Inlet psig

Porting Configurations

Porting Code 2P

Porting Code 4PB

Porting Code 3P

Porting Code 5P

Porting Code 4P

Porting Code 6P

Gauge Index

<table>
<thead>
<tr>
<th>Porting Code</th>
<th>Description</th>
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<td>Two Gauge Ports</td>
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<td>6P</td>
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IR4000 Series

**Ordering Information**

**IR400**

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<tr>
<td>5 = 10 - 500 psig</td>
<td>0 - 600 psig</td>
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</tr>
</tbody>
</table>

**BODY MATERIAL**

S = 316L Stainless Steel
(Hastelloy® & Monel® Available Upon Request)

**FLOW CAPACITY**

- .06 CV (Standard)
- 1 = .02 CV
- 2 = .15 CV (See Range Table)

**SEAT MATERIALS**

K = PCTFE
P = PEEK™
V = Vespel®

**PORTING**

**OUTLET GAUGE**

See Outlet Gauge under BASIC SERIES (see above) for standards.
(Additional ranges available upon request)

**INLET GAUGE**

3000 psig std.
4000 psig with the 10 psig range
2000 psig with .15 CV option

**NOTE:**

Outlet Valve: Compression End Connection On Outlet (A-Lok, CPI) Can Be Substituted for NPTF Connection Upon Request.

**ORDERING REGULATORS WITHOUT GAUGES**

**Example #1**

IR4003SK2P4B (No X required for gauges, inlet & outlet ports only)

**Example #2**

IR4003SK3PX4B (One X for gauge port)

**Example #3**

IR4003SK4PBX4B (One X for gauge port)

**Example #4**

IR4003SK4PX4B (Two X’s for gauge ports)

* Do not exceed the rated pressure of the CGA connection

Hastelloy C-22® is a registered trademark of Haynes International, Inc.
PEEK™ is a trademark of Victrex plc.
Inconel® and Monel® are registered trademarks of Inco Alloys International.
Elgiloy® is a registered trademark of Elgiloy Company.
Viton® is a registered trademark of DuPont Dow Elastomers.
Teflon® is a registered trademark of DuPont Company.

**Range Table**

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<tr>
<td>IR4005</td>
<td>4000</td>
<td>1250</td>
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**OPTIONAL FEATURES**

L = Teflon® Back-Up O-Ring
(PCTFE & PEEK™ seat only)
R = Relief Valve (4PB and 5P Only)
V = Outlet Valve NOVAS44MF(STD)(See Notes)

Please select ONE or NONE of the following:

D = Dome Loaded
G = Tamper Proof
M = Metal Knob(Black)

For optional color knobs consult factory

**PORT MOUNTING**

B = .75 (19.1) port height w/ .75 (19.1) mounting hole pattern.
(Additional Port Mounting available on request)

**PORT STYLE**

4 = 1/4" NPT Female Standard
Other = (Additional sizes available upon request)
Parker Hannifin Corporation’s Veriflo Division presents the IR4200 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.

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 IR4200 is a high pressure regulator that can be ordered with a variety of options to meet a wide range of system design requirements.

### materials of construction

**Wetted**
- Body: Brass, Nickel Plated Brass
- Compression Member: Inconel®
- Diaphragm: Hastelloy C-22®
- Poppet: Phosphor Bronze
- Poppet Spring: Inconel®
- Carrier: Stainless Steel*
- Back-up Washer: Phosphor Bronze
- Seat: PCTFE
- Back-up O-ring: Viton®
- Inlet Screen/Filter: Copper and Phosphor Bronze

**Non-Wetted**
- Cap: Nickel Plated Brass
- Nut: 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 140°F (-40°C to 60°C)

### functional performance

- **Flow capacity**: Standard: \( C_v = 0.06 \)
  Optional: \( C_v = 0.02, 0.15^† \)
  (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**: \(< 2 \times 10^{-8} \text{ scc/sec HE}\)
- **Supply Pressure Effect**: \(0.02 C_v \) .23 psig per 100 psig
  \(.016 \text{ barg per 7 barg}\)
- \(0.06 C_v \) .6 psig per 100 psig
  \(.04 \text{ barg per 7 barg}\)
- \(0.15 C_v \) 1.5 psig per 100 psig
  \(.1 \text{ barg per 7 barg}\)

### 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.
**IR4200 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.
- O₂ Cleaned.
- Fully swept design.
- Internally threadless seat design includes promotes long seat life.
- Convoluted, 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® and Hastelloy®, 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**

[Diagram showing dimensions and specifications of the IR4200 Series regulator]
IR4200 Series

Flow Curves

IR4200 .06 Cv

Outlet Pressure (psig)

N2 Flow (slpm)

IR4202 .06 Cv

Outlet Pressure (psig)

N2 Flow (slpm)

IR4203 0.15 Cv

Outlet Pressure (psig)

N2 Flow (slpm)

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
### Ordering Information

**IR4200 Series**

<table>
<thead>
<tr>
<th>IR420</th>
<th>B</th>
<th>K</th>
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<tbody>
<tr>
<td>BASIC SERIES</td>
<td>Range</td>
<td>Outlet Gauge</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0 = 1 - 10 psig</td>
<td>0 - 30 psig</td>
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<tr>
<td>1 = 2 - 30 psig</td>
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<tr>
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<td></td>
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<tr>
<td>3 = 4 - 100 psig</td>
<td>0 - 200 psig</td>
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<tr>
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<tr>
<td>5 = 10 - 500 psig</td>
<td>0 - 600 psig</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

**BODY MATERIAL**
- B = Brass

**FLOW CAPACITY**
- B = .06 CV (Standard)
- 1 = .02 CV
- 2 = .15 CV (See Range Table)

**SEAT MATERIALS**
- K = PCTFE

**PORTING**

**OUTLET GAUGE**
See Outlet Gauge under BASIC SERIES for standards.
(Additional ranges available upon request)

**INLET GAUGE**
- 3000 psig std.
- 400 psig with the 10 psig range
- 2000 psig with .15 CV option

**NOTE:**
Outlet Valve: Compression End Connection On Outlet (A-Lok, CPI) Can Be Substituted for NPTF Connection Upon Request.

**ORDERING REGULATORS WITHOUT GAUGES**

**Example #1**
IR4203BK2P4B (No X required for gauges, inlet & outlet ports only)

**Example #2**
IR4203BK3PX4B (One X for gauge port)

**Example #3**
IR4203BK4PBX4B (One X for gauge port)

**Example #4**
IR4203BK4PXX4B (Two X's for gauge ports)

* Do not exceed the rated pressure of the CGA connection

**PORT STYLE**
- 4 = 1/4" NPT Female Standard
- Other = (Additional sizes available upon request)

**Range Table**

<table>
<thead>
<tr>
<th>Model Basic Series</th>
<th>Max Inlet PSIG</th>
<th>CV</th>
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</thead>
<tbody>
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<td>IR4201</td>
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</tr>
<tr>
<td>IR4205</td>
<td>4000</td>
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</tr>
</tbody>
</table>

**CGA**
- 320
- 330
- 350
- 510
- 580
- 590

**OPTIONAL FEATURES (See Notes)**
- N = Nickel Plate
- R = Relief Valve (4PB and 5P Only)
- V = Outlet Valve NOVAB44MF(STD)(See Notes)

Please select ONE or NONE of the following:
- D = Dome Loaded
- G = Tamper Proof
- M = Metal Knob (Black)

For optional color knobs consult factory

**Note:** PANEL MOUNT OPTION:
Order Panel Nut Ring P/N 41900363 as separate line item.

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Vespel® and Teflon® are registered trademarks of DuPont Company.
Viton® is a registered trademark of DuPont Dow Elastomers.
Teflon® is a registered trademark of DuPont Company.
Parker Hannifin Corporation’s Veriflo Division presents the IR4000W 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 IR4000W’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 IR4000W is a high pressure regulator that can be ordered with a variety of options to meet a wide range of system design requirements.

**materials of construction**

**Wetted**
- Body: 316L Stainless Steel, Hastelloy C-22®
- 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®

**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: \(C_v = 0.06\)
  - Optional: \(C_v = 0.02, 0.15\)†
  - (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: \(< 2 \times 10^{-8} \text{ scc/sec HE}\)
- Supply Pressure Effect:
  - \(0.02 \, C_v\): 0.23 psig per 100 psig (.016 barg per 7 barg)
  - \(0.06 \, C_v\): 0.6 psig per 100 psig (.04 barg per 7 barg)
  - \(0.15 \, C_v\): 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.
**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.
- Convoluted, 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**

- Ø2.00 (50.8 mm)
- 2.68 (68 mm)
- 5.02 (127.6 mm)
- .88 (22.2 mm)
- 1.38 Flats (34.9 mm)
- Hole Reqd In Panel For Mounting
- 10 - 32 UNF - 2B
- .69 (17.5 mm)
- 3.70 (94 mm)
- Ø1.44 (36.6 mm)
Flow Curves

**IR4000W .06 CV**

Outlet Pressure (psig) vs. N₂ Flow (slpm)

- 100 Inlet psig
- 200 Inlet psig
- 400 Inlet psig

**IR4002W .06 CV**

Outlet Pressure (psig) vs. N₂ Flow (slpm)

- 1000 Inlet psig
- 150 Inlet psig
- 250 Inlet psig
- 500 Inlet psig

**IR4003W 0.15 CV**

Outlet Pressure (psig) vs. N₂ Flow (slpm)

- 150 Inlet psig
- 250 Inlet psig
- 500 Inlet psig

Porting Configurations

- Porting Code 2P
- Porting Code 3P
- Porting Code 4P
- Porting Code 4PB

Gauge Index

- 2P No Gauge Ports
- 3P One Gauge Port
- 4P Two Gauge Ports
- 4PB One Gauge Port
**IR4000W Series**

**Ordering Information**

**IR400**

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<tr>
<td>5 = 10 - 500 psig</td>
<td>0 - 600 psig</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**BODY MATERIAL**

W = 316L Stainless Steel (Hastelloy® Available Upon Request)

**FLOW CAPACITY**

- .06 Cv (Standard)
- 1 = .02 Cv
- 2 = .15 Cv (See Range Table)

**SEAT MATERIALS**

K = PCTFE
P = PEEK™
V = Vespel®

**PORTING**

- See Outlet Gauge under BASIC SERIES (see above) for standards.
  (Additional ranges available upon request)

**INLET GAUGE†**

3000 psig std.
400 psig with the 10 psig range
2000 psig with .15 Cv option

† NOTES:

- Gauge Ports are 1/4" FS Male standard.
- Gauge Ports are 1/4" NPT Female for compression ends.

* Do not exceed the rated pressure of the CGA connection

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PEEK™ is a trademark of Victrex plc.
Inconel® is a registered trademark of Inco Alloys International.
Elgiloy® is a registered trademark of Elgiloy Company.
Viton® is a registered trademark of DuPont Dow Elastomers.
Teflon® is a registered trademark of DuPont Company.

**Optional Features (See Notes)**

- L = Teflon® Back-Up O-Ring (PCTFE & PEEK™ seat only)
- R = Relief Valve (4PB Only)

Please select ONE or NONE of the following:

- D = Dome Loaded
- G = Tamper Proof
- M = Metal Knob (Black)

For optional color knobs consult factory

**FLOW CAPACITY**

- .06 Cv (Standard)
- 1 = .02 Cv
- 2 = .15 Cv (See Range Table)

**PORT MOUNTING**

A = .69 (17.5) port height w/ .88 mounting hole pattern

(Additional Port Mounting available upon request)

**PORT CONFIGURATION (Face Seal Only)**

- M = Male Face Seal
- F = Female Face Seal
- I = 1/4" Internal Face Seal Female

**PORT STYLE**

- 4T = 1/4" Compression Fitting
- 6T = 3/8" Compression Fitting
- 8T = 1/2" Compression Fitting
- FS = 1/4" Face Seal
- FS8 = 1/2" Face Seal
- TS = 1/4" Tube Stub
- TS6 = 3/8" Tube Stub
- TS8 = 1/2" Tube Stub

**Range Table**

<table>
<thead>
<tr>
<th>Model Basic Series</th>
<th>Max Inlet PSIG</th>
<th>Cv .06</th>
<th>Cv .02</th>
<th>Cv .15</th>
</tr>
</thead>
<tbody>
<tr>
<td>IR4000W</td>
<td>400</td>
<td>400</td>
<td>400</td>
<td></td>
</tr>
<tr>
<td>IR4001W</td>
<td>4000</td>
<td>4000</td>
<td>4000</td>
<td>1250</td>
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<tr>
<td>IR4002W</td>
<td>4000</td>
<td>4000</td>
<td>4000</td>
<td>1250</td>
</tr>
<tr>
<td>IR4003W</td>
<td>4000</td>
<td>4000</td>
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<td>1250</td>
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<tr>
<td>IR4004W</td>
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<td>4000</td>
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<td>1250</td>
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<tr>
<td>IR4005W</td>
<td>4000</td>
<td>4000</td>
<td>4000</td>
<td>1250</td>
</tr>
</tbody>
</table>

**Dimension Table**

<table>
<thead>
<tr>
<th>Connection Type</th>
<th>End to End Dimension</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4&quot; Compression Fitting</td>
<td>3.34 ± .02 in. (84.8 ± .5 mm)</td>
</tr>
<tr>
<td>3/8&quot; Compression Fitting</td>
<td>3.48 ± .02 in. (88.4 ± .5 mm)</td>
</tr>
<tr>
<td>1/2&quot; Compression Fitting</td>
<td>4.38 ± .03 in. (111.3 ± .8 mm)</td>
</tr>
<tr>
<td>1/4&quot; Face Seal</td>
<td>3.70 ± .02 in. (94 ± .5 mm)</td>
</tr>
<tr>
<td>1/2&quot; Face Seal</td>
<td>4.82 ± .02 in. (122.4 ± .5 mm)</td>
</tr>
<tr>
<td>All Tube Stubs</td>
<td>3.70 ± .02 in. (94 ± .5 mm)</td>
</tr>
</tbody>
</table>

* Do not exceed the rated pressure of the CGA connection

**CGA**

320
330
350
510
580
590

Additional Configurations Available Upon Request

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PEEK™ is a trademark of Victrex plc.
Inconel® is a registered trademark of Inco Alloys International.
Elgiloy® is a registered trademark of Elgiloy Company.
Viton® is a registered trademark of DuPont Dow Elastomers.
Teflon® is a registered trademark of DuPont Company.

**Outlet Gauge†**

- See Outlet Gauge under BASIC SERIES (see above) for standards.
  (Additional ranges available upon request)

**Note:**

Order Panel Mount Option:
Order Panel Nut Ring P/N 41900363 as separate line item.

**Panel Mount Option**

ORDER PANEL MOUNT OPTION:
Order Panel Nut Ring P/N 41900363 as separate line item.

See Outlet Gauge under BASIC SERIES (see above) for standards.
(Additional ranges available upon request)
Parker Hannifin Corporation’s Veriflo Division presents the IR5000 Series high pressure regulator. Veriflo Division continues the internally threadless design of the IR4000 family of products.

IR5000 pressure reducing regulator is designed with a larger convoluted diaphragm than the IR4000. This allows for greater sensitivity, and provides precise outlet pressure control.

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

**materials of construction**

**Wetted**
- Body: 316L Stainless Steel, Hastelloy C-22®, Monel®
- Compression Member: Inconel®
- Diaphragm: Hastelloy C-22®
- Poppet: Bigloy®
- 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, Hastelloy C-22® (Hastelloy®, Monel® bodies)

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

**operating conditions**
- Maximum inlet: 3500 psig (241 barg)
- Outlet: 0-5 psig (400 max inlet), 1-30 psig, 2-60 psig, 3-100 psig, 5-200 psig
- 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**
- Design Proof Pressure: 6000 psig (414 barg)
- Design Burst Pressure: 12000 psig (828 barg)
- Flow capacity:
  - Standard: \( Cv = .06 \)
  - Optional: \( Cv = .02, .15 \)
  - (SEMI Flow Coefficient Test #F-32-0998)
- Maximum Inboard Design Leak Rate: < 2 x 10⁻⁸ scc/sec HE
- Supply Pressure Effect:
  - .02 \( Cv \): .12 psig per 100 psig (.008 barg per 7 barg)
  - .06 \( Cv \): .3 psig per 100 psig (.02 barg per 7 barg)
  - .15 \( Cv \): .75 psig per 100 psig (.05 barg per 7 barg)

**standard configurations**
- See Dimension Table with Ordering Information

**internal volume**
- 11.9 cc

**approximate weight**
- 4.5 lbs (2.1 kg)

* Proprietary Carpenter Stainless Steel with corrosion resistance equal or better than 316 Stainless Steel.
† Refer to Range Table for specific information.
**Product Features and Benefits**

- Unique patented compression member loads the seal to the body without requiring a threaded nozzle or additional seals to atmosphere.
- Large diaphragm provides more sensitive pressure adjustments.
- 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.
- Convoluted, 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®, 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**

![Dimensional Drawing](image-url)
IR5000 Series

Flow Curves

IR5003 .06 Cv

Outlet Pressure (psig)

0 20 40 60 80 100 120

N2Flow (slpm)

0 50 100 150 200 250 300 350 400 450

2000 psig 1000 psig 250 psig 150 psig

IR5002 .15 Cv

Outlet Pressure (psig)

0 10 20 30 40 50 60 70

N2Flow (slpm)

0 50 100 150 200 250 300 350 400 450

1250 psig 250 psig 150 psig

IR5000 .06 Cv

Outlet Pressure (psig)

0 1 2 3 4 5 6

N2Flow (slpm)

0 5 10 15 20 25 30 35 40 45

400 psig 100 psig 20 psig

Porting Configurations

Porting Code 2P

Porting Code 3P

Porting Code 4P

Porting Code 4PB

Gauge Index

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2P</td>
<td>No Gauge Ports</td>
</tr>
<tr>
<td>3P</td>
<td>One gauge Port</td>
</tr>
<tr>
<td>4P</td>
<td>Two gauge Ports</td>
</tr>
<tr>
<td>4PB</td>
<td>One Gauge Port</td>
</tr>
</tbody>
</table>
IR5000 Series

Ordering Information

**IR5000 Series**

**BASIC SERIES**

<table>
<thead>
<tr>
<th>Range</th>
<th>Outlet Gauge</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 = 0 - 5 psig</td>
<td>0 - 15 psig</td>
</tr>
<tr>
<td>1 = 1 - 30 psig</td>
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<td>0 - 100 psig</td>
</tr>
<tr>
<td>3 = 3 - 100 psig</td>
<td>0 - 200 psig</td>
</tr>
<tr>
<td>4 = 5 - 250 psig</td>
<td>0 - 400 psig</td>
</tr>
</tbody>
</table>

**MATERIALS**

| S = 316L Stainless Steel |

(Hastelloy® & Monel® Available Upon Request)

**SEAT MATERIALS**

| K = PCTFE |
| P = PEEK™ |
| V = Vespel® |

**PORTING**

| L = Teflon® Back-Up O-Ring (PCTFE & PEEK™ seat only) |
| R = Relief Valve (4PB only) |
| V = Outlet Valve NOVAS44MF(STD)(See Notes) |

Please select ONE or NONE of the following:

- D = Dome Loaded
- G = Tamper Proof
- M = Metal Knob(Black)

For optional color knobs consult factory

**FLOW CAPACITY**

- .06 Cv (standard)
- .02 Cv
- .15 Cv (See Range Table)

**SEAT MATERIALS**

| K = PCTFE |
| P = PEEK™ |
| V = Vespel® |

**PORT STYLE**

- 4 = 1/4" NPTF (Standard)
- (Other sizes available upon request)

**PORT MOUNTING**

| B = .75 port height w/ 1.00 mounting hole pattern |

**OUTLET GAUGE**

See Outlet Gauge under BASIC SERIES (see above) for standards.

(Additional ranges available upon request)

**NOTES:**

Outlet Valve: Compression End Connection On Outlet (A-Lok, CPI) Can Be Substituted for NPTF Connection Upon Request.

**ORDERING REGULATORS WITHOUT GAUGES**

Example #1

IR5003SK2P4B (No X required for gauges, inlet & outlet ports only)

Example #2

IR5003SK3PX4B (One X for gauge port)

Example #3

IR5003SK4PBX4B (One X for gauge port)

Example #4

IR5003SK4PXX4B (Two X's for gauge ports)

* Do not exceed the rated pressure of the CGA connection
** Hastelloy® & Monel® Get Stainless Steel Gauges.

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**Range Table**

<table>
<thead>
<tr>
<th>Model Series</th>
<th>Max Inlet PSIG</th>
</tr>
</thead>
<tbody>
<tr>
<td>IR5000</td>
<td>400</td>
</tr>
<tr>
<td>IR5001</td>
<td>3500</td>
</tr>
<tr>
<td>IR5002</td>
<td>3500</td>
</tr>
<tr>
<td>IR5003</td>
<td>3500</td>
</tr>
<tr>
<td>IR5004</td>
<td>3500</td>
</tr>
</tbody>
</table>
Parker Hannifin Corporation’s Veriflo Division presents the IR5200 Series high pressure regulator. Veriflo Division continues the internally threadless design of the IR4000 family of products.

IR5200 pressure reducing regulator is designed with a larger convoluted diaphragm than the IR4000. This allows for greater sensitivity, and provides precise outlet pressure control.

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

**materials of construction**
- **Wetted**
  - Body: Brass, Nickel Plated Brass
  - Compression Member: Inconel®
  - Diaphragm: Hastelloy C-22®
  - Poppet: Phosphor Bronze
  - Poppet Spring: Inconel®
  - Carrier: Stainless Steel*
  - Back-up Washer: Phosphor Bronze
  - Seat: PCTFE
  - Back-up O-ring: Viton®
  - Inlet Screen/Filter: Copper and Phosphor Bronze
- **Non-Wetted**
  - Cap: Nickel Plated Brass,
  - Nut: 316L Stainless Steel
  - Knob (black): ABS Plastic

**operating conditions**
- **Maximum inlet**: 3500 psig (241 barg)
- **Outlet**: 0-5 psig (400 max inlet), 1-30 psig, 2-60 psig, 3-100 psig, 5-200 psig
- **Temperature**:
  - Maximum: 150°F (65°C)
  - PCTFE: -40°F to 150°F (-40°C to 65°C)

**functional performance**
- **Flow capacity**:
  - Standard: CV = .06
  - Optional: CV = .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 x 10⁻⁸ scc/sec HE
- **Supply Pressure Effect**:
  - .02 CV: .12 psig per 100 psig (.008 barg per 7 barg)
  - .06 CV: .3 psig per 100 psig (.02 barg per 7 barg)
  - .15 CV: .75 psig per 100 psig (.05 barg per 7 barg)

**standard configurations**
See Dimension Table with Ordering Information

**internal volume**
11.9 cc

**approximate weight**
4.5 lbs (2.1 kg)

* Proprietary Carpenter Stainless Steel with corrosion resistance equal or better than 316 Stainless Steel.
† Refer to Range Table for specific information.
IR5200 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.
- Large diaphragm provides more sensitive pressure adjustments.
- O₂ Cleaned.
- Fully swept design.
- Internally threadless seat design promotes long seat life.
- Convoluted, 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®, 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

![Dimensional Drawing](image-url)
**IR5200 Series**

### Flow Curves

**IR5203 .06 Cv**

- Outlet Pressure (psig): 150, 200, 250, 1000, 2000
- N2Flow (slpm): 0 to 450

**IR5202 .15 Cv**

- Outlet Pressure (psig): 250, 1250, 150
- N2Flow (slpm): 0 to 450

**IR5200 .06 Cv**

- Outlet Pressure (psig): 20, 100
- N2Flow (slpm): 0 to 45

### Porting Configurations

- **Porting Code 2P**
- **Porting Code 3P**
- **Porting Code 4P**
- **Porting Code 4PB**

### Gauge Index

- **2P** No Gauge Ports
- **3P** One gauge Port
- **4P** Two gauge Ports
- **4PB** One Gauge Port
### Ordering Information

**IR5200 Series**

#### BASIC SERIES

<table>
<thead>
<tr>
<th>Range</th>
<th>Outlet Gauge</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 = 0 - 5 psig</td>
<td>0 - 15 psig</td>
</tr>
<tr>
<td>1 = 1 - 30 psig</td>
<td>0 - 60 psig</td>
</tr>
<tr>
<td>2 = 2 - 60 psig</td>
<td>0 - 100 psig</td>
</tr>
<tr>
<td>3 = 3 - 100 psig</td>
<td>0 - 200 psig</td>
</tr>
<tr>
<td>4 = 4 - 250 psig</td>
<td>0 - 400 psig</td>
</tr>
</tbody>
</table>

**MATERIALS**

<table>
<thead>
<tr>
<th>Material</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>Brass</td>
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</tbody>
</table>

**SEAT MATERIALS**

<table>
<thead>
<tr>
<th>Material</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>K</td>
<td>PCTFE</td>
</tr>
</tbody>
</table>

**PORTING**

Optional Features:

- N = Nickel Plated Body
- R = Relief Valve (4PB only)
- V = Outlet Valve NOVAB44MF(STD)(See Notes)

Please select ONE or NONE of the following:

- D = Dome Loaded
- G = Tamper Proof
- M = Metal Knob (Black)

For optional color knobs consult factory.

**FLOW CAPACITY**

- 0.06 CV (standard)
- 0.02 CV
- 0.15 CV (See Range Table)

**SEAT MATERIALS**

<table>
<thead>
<tr>
<th>Material</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>K</td>
<td>PCTFE</td>
</tr>
</tbody>
</table>

**OUTLET GAUGE**

See Outlet Gauge under BASIC SERIES (see above) for standards. (Additional ranges available upon request)

**NOTES:**

Outlet Valve: Compression End Connection On Outlet (A-Lok, CPI) Can Be Substituted for NPTF Connection Upon Request.

**ORDERING REGULATORS WITHOUT GAUGES**

**Example #1**

IR5203BK2P4B (No X required for gauges, inlet & outlet ports only)

**Example #2**

IR5203BK3PX4B (One X for gauge port)

**Example #3**

IR5203BK4PBX4B (One X for gauge port)

**Example #4**

IR5203BK4PXXX4B (Two X’s for gauge ports)

* Do not exceed the rated pressure of the CGA connection

**Range Table**

<table>
<thead>
<tr>
<th>Model</th>
<th>Basic Series</th>
<th>Max Inlet PSIG</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>CV</td>
</tr>
<tr>
<td>IR5200</td>
<td></td>
<td>0.06 400</td>
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<tr>
<td>IR5201</td>
<td></td>
<td>0.02 3500</td>
</tr>
<tr>
<td>IR5202</td>
<td></td>
<td>0.15 3500</td>
</tr>
<tr>
<td>IR5203</td>
<td></td>
<td>0.06 400</td>
</tr>
<tr>
<td>IR5204</td>
<td></td>
<td>0.02 3500</td>
</tr>
</tbody>
</table>

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**Elgiloy®** is a registered trademark of Elgiloy Company.
**Vespel®** and **Teflon®** are registered trademarks of DuPont Company.
**Viton®** is a registered trademark of DuPont Dow Elastomers.
Parker Hannifin Corporation’s Veriflo Division presents the IR5000W Series high pressure regulator. Veriflo Division continues the internally threadless design of the IR4000 family of products.

IR5000W pressure reducing regulator is designed with a larger convoluted diaphragm than the IR4000. This allows for greater sensitivity, and provides precise outlet pressure control.

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

Note: IR5000 Threaded Porting Shown
### Product Features and Benefits

- Unique patented compression member loads the seal to the body without requiring a threaded nozzle or additional seals to atmosphere.
- Large diaphragm provides more sensitive pressure adjustments.
- 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.
- Convoluted, 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®, 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

![Dimensional Drawing Image](image-url)

- Hole Required In Panel For Mounting
- 10-32 UNF-2B
- Ø1.44 (36.6 mm)
- Ø3.00 (76.2 mm)
- Ø2.38 (60.5 mm)
- 5.22 (132.6 mm)
- 3.08 (78.2 mm)
- 4.30 (109.3 mm)
- 1.00 (25.4 mm)
- .69 (17.5 mm)
IR5000W Series

Flow Curves

IR5000W .06 Cv

Outlet Pressure (psig)

2000 psig
1000 psig
250 psig
150 psig

Outlet Pressure (psig)

120
100
80
60
40
20
0

N2Flow (slpm)

0 50 100 150 200 250 300 350 400 450

IR5002W .15 Cv

Outlet Pressure (psig)

70
60
50
40
30
20
10
0

N2Flow (slpm)

0 50 100 150 200 250 300 350 400 450

IR5000W .06 Cv

Outlet Pressure (psig)

6
5
4
3
2
1
0

N2Flow (slpm)

0 5 10 15 20 25 30 35 40 45

Gauge Index

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

Porting Configurations

Porting Code 2P
Porting Code 4PB
Porting Code 3P
Porting Code 4P

VERIFLO CORPORATION LP HP

Porting Code 2P
No Gauge Ports

Porting Code 3P
One gauge Port

Porting Code 4P
Two gauge Ports

Porting Code 4PB
One Gauge Port
IR5000W Series

Ordering Information

IR500

BASIC SERIES

<table>
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<th>Outlet Gauge</th>
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</thead>
<tbody>
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</tr>
<tr>
<td>3 = 4 - 100 psig</td>
<td>0 - 200 psig</td>
</tr>
<tr>
<td>4 = 5 - 250 psig</td>
<td>0 - 400 psig</td>
</tr>
</tbody>
</table>

MATERIALS

W = 316L Stainless Steel
(Hastelloy® Available Upon Request)

FLOW CAPACITY

| 0.06 CV (standard) |
| 0.02 CV |
| 0.15 CV |

SEAT MATERIALS

K = PCTFE
P = PEEK®
V = Vespel®

PORTING

L = Teflon® Back-Up O-Ring
(PCTFE & PEEK® seat only)

Please select ONE or NONE of the following:

D = Dome Loaded
G = Tamper Proof
M = Metal Knob (Black)

For optional color knobs consult factory

CGA#*

320
330
350
510
590
590

Additional Configurations Available Upon Request

OPTIONAL FEATURES

PORT MOUNTING

A = .69 port height w/ 1.00 mounting hole pattern.
(Additional Port Mounting available upon request)

PORT CONFIGURATION (Face Seal Only)

M = Male Face Seal
F = Female Face Seal
I = 1/4” Internal Face Seal Female

PORT STYLE

4T = 1/4” Compression Fitting
6T = 3/8” Compression Fitting
8T = 1/2” Compression Fitting
FS = 1/4” Face Seal
FS8 = 1/2” Face Seal
TS = 1/4” Tube Seal
TS6 = 3/8” Tube Seal
TS8 = 1/2” Tube Seal

INLET GAUGE†

3000 psig std.
400 psig with the 10 psig range
2000 psig with .15 CV option

* Do not exceed the rated pressure of the CGA connection

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Inconel® is a registered trademark of Inco Alloys International.
Elgiloy® is a registered trademark of Elgiloy Company.
Vespel® and Teflon® are registered trademarks of DuPont Company.
Viton® is a registered trademark of DuPont Dow Elastomers.
PEEK® is a trademark of Victrex plc.

<table>
<thead>
<tr>
<th>Model Basic Series</th>
<th>Max Inlet PSIG</th>
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<tr>
<td></td>
<td>CV</td>
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<tr>
<td>IR5000</td>
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<td></td>
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<td>1250</td>
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 Dimension Table

<table>
<thead>
<tr>
<th>Connection Type</th>
<th>End to End Dimension</th>
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</thead>
<tbody>
<tr>
<td>1/4” Compression Fitting</td>
<td>3.92 ± .02 in. (100 ± .5 mm)</td>
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<tr>
<td>3/8” Compression Fitting</td>
<td>4.07 ± .02 in. (103 ± .5 mm)</td>
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<tr>
<td>1/2” Compression Fitting</td>
<td>4.78 ± .03 in. (121 ± .8 mm)</td>
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<tr>
<td>1/4” Face Seal</td>
<td>4.30 ± .02 in. (109 ± .5 mm)</td>
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<tr>
<td>1/2” Face Seal</td>
<td>5.22 ± .02 in. (133 ± .5 mm)</td>
</tr>
<tr>
<td>All Tube Stubs</td>
<td>4.00 ± .02 in. (102 ± .5 mm)</td>
</tr>
</tbody>
</table>
Parker Hannifin Corporation’s Veriflo Division presents the IR6000 Series internally threadless pressure regulator for pressure reducing industrial/analytical applications including cylinder and calibration gases.

Instrument applications include gas management in refineries, process analyzer systems, and cylinder gas pressure reduction.

The IR6000 is a high pressure regulator that can be ordered with a variety of options to meet a wide range of system design requirements.

### materials of construction

#### Wetted

- **Body**: 316L Stainless Steel, Hastelloy C-22®, Monel®
- **Compression Member**: Inconel®
- **Diaphragm**: Hastelloy C-22®
- **Poppet**: Bigloy®
- **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, Hastelloy C-22® (Hastelloy®, Monel® bodies)

#### Non-Wetted

- **Cap**: Nickel Plated Brass, optional Stainless Steel
- **Nut**: 316L 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)

- **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 x 10⁻⁸ scc/sec HE

- **Supply Pressure Effect**: 0.01 psig per 100 psig

### internal volume

- **8.1 cc**

### approximate weight

- **3.5 lbs (1.6 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.
**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.
- Convoluted, 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®, 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**

- Ø1.44 (37 mm)
- Hole Required In Panel For Mounting
- Ø2.32 (59 mm)
- 1.98 (50 mm)
- 4.33 (110 mm)
- 7.22 (183 mm)
Flow Curves

IR6001 .06 Cv
Inlet Pressure - 1500 PSIG

Outlet Pressure (psig)

Outlet Pressure (psig)

Outlet Pressure (psig)

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
**IR6000 Series**

## Ordering Information

### IR600

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<thead>
<tr>
<th>S</th>
<th>2P</th>
<th>3P</th>
<th>Y/X</th>
<th>4P</th>
<th>Y/X</th>
<th>Y/X</th>
<th>5P</th>
<th>Y/X</th>
<th>Y/X</th>
<th>6P</th>
<th>Y/X</th>
<th>Y/X</th>
<th>4</th>
<th>B</th>
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</thead>
<tbody>
<tr>
<td><strong>BODY MATERIAL</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>S = 316L Stainless Steel</td>
<td>(Hastelloy &amp; Monel® Available Upon Request)</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### BODY MATERIAL

- **S** = 316L Stainless Steel
- (Hastelloy & Monel® Available Upon Request)

### SEAT MATERIALS

- **K** = PCTFE
- **P** = PEEK™
- **V** = Vespel®

### FLOW CAPACITY

- .06 CV (Standard)
- 1 = .02 CV
- 2 = .15 CV

### PORTING

**OUTLET GAUGE**

See Outlet Gauge under **BASIC SERIES** for standards.

**INLET GAUGE**

3000 psig standard

### PORT STYLES

**PORT MOUNTING**

- B = Standard (No options)

### NOTES:

**Outlet Valve**: Available Upon request; Compression End Connection Outlet (A-Lok, CPI) Can Be Substituted for NPTF Connection Upon Request.

### ORDERING REGULATORS WITHOUT GAUGES

- **Example #1**
  - IR6003SK2P4B (No X required for gauges, inlet & outlet ports only)
- **Example #2**
  - IR6003SK3PX4B (One X for gauge port)
- **Example #3**
  - IR6003SK4PBX4B (One X for gauge port)
- **Example #4**
  - IR6003SK5PXX4B (Two X’s for gauge ports)

### CGA#*

- 320
- 330
- 350
- 510
- 580
- 590

Additional Configurations Available Upon Request

### OPTIONAL FEATURES (See Notes)

- **L** = Teflon® Back-Up O-Ring (PCTFE & PEEK™ seat only)
- **R2** = Relief Valve (4PB, 5P, 6P only)
- **V** = Outlet Valve NOVAS44MF(Std)(See Notes)

Please select ONE or NONE of the following:

- **D** = Dome Loaded
- **G** = Tamper Proof
- **M** = Metal Knob (Black)

For optional color knobs consult factory

**Note**: **PANEL MOUNT OPTION**:

Order Panel Nut Ring P/N 41900363 as separate line item.

### PORT RANGES

**Range Outlet Gauge**

- 0 = 1 - 10 psig 0 - 30 psig
- 1 = 2 - 30 psig 0 - 60 psig
- 2 = 3 - 60 psig 0 - 100 psig
- 3 = 4 - 100 psig 0 - 200 psig
- 4 = 5 - 250 psig 0 - 400 psig

**Range Inlet Gauge**

- 3000 psig standard

Note: **PANEL MOUNT OPTION**:

Order Panel Nut Ring P/N 41900363 as separate line item.

* Do not exceed the rated pressure of the CGA connection

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Inconel® and Monel® are registered trademarks of Inco Alloys International.

Elgiloy® is a registered trademark of Elgiloy Company.

Viton® is a registered trademark of DuPont Dow Elastomers.
Parker Hannifin Corporation’s Veriflo Division presents the IR6200 Series internally threadless pressure regulator for pressure reducing industrial/analytical applications including cylinder and calibration gases.

Instrument applications include gas management in refineries, process analyzer systems, and cylinder gas pressure reduction.

The IR6200 is a high pressure regulator that can be ordered with a variety of options to meet a wide range of system design requirements.

**materials of construction**

**Wetted**
- Body: Brass, Nickel Plated Brass
- Compression Member: Inconel®
- Diaphragm: Hastelloy C-22®
- Poppet: Phosphor Bronze
- Poppet Spring: Inconel®
- Carrier: Stainless Steel*
- Back-up Washer: Phosphor Bronze
- Seat: PCTFE
- Back-up O-ring: Viton®
- Inlet Screen/Filter: Copper and Phosphor Bronze

**Non-Wetted**
- Cap: Nickel Plated Brass
- Nut: 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)
- Temperature: PCTFE: -40°F to 140°F (-40°C to 60°C)

**functional performance**

Flow capacity:
- Standard: \( C_v = 0.06 \)
- Optional: \( C_v = 0.02, 0.15 \)
  (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 x 10^-8 scc/sec HE
Supply Pressure Effect: 0.01 psig per 100 psig

**internal volume**
- 8.1 cc

**approximate weight**
- 3.5 lbs (1.6 kg)

* Proprietary Carpenter Stainless Steel with corrosion resistance equal or better than 316.
**Product Features and Benefits**

- Unique patented compression member loads the seal to the body without requiring a threaded nozzle or additional seals to atmosphere.
- O₂ Cleaned.
- Fully swept design.
- Internally threadless seat design promotes long seat life.
- Convoluted, 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**

- Ø1.44 (37 mm) Hole Required In Panel For Mounting
- Ø2.32 (59 mm)
- 1.98 (50 mm)
- 4.33 (110 mm)
- 7.22 (183 mm)
IR6200 Series

Flow Curves

IR6201 .06 Cv
Inlet Pressure - 1500 PSIG

Outlet Pressure (psig)

Outlet Pressure (psig)

Outlet Pressure (psig)

IR6202 .06 Cv
Inlet Pressure - 1500 PSIG

N₂ Flow (slpm)

N₂ Flow (slpm)

N₂ Flow (slpm)

IR6203 .06 Cv
Inlet Pressure - 1500 PSIG

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

Porting Configurations

Porting Code 2P

Porting Code 4PB

Porting Code 3P

Porting Code 5P

Porting Code 4P

Porting Code 6P

VERIFLO CORPORATION LP HP
## Ordering Information

### BASIC SERIES

<table>
<thead>
<tr>
<th>Range</th>
<th>Outlet Gauge</th>
<th>CGA#**</th>
</tr>
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<tbody>
<tr>
<td>0 = 1 - 10 psig</td>
<td>0 - 30 psig</td>
<td>320</td>
</tr>
<tr>
<td>1 = 2 - 30 psig</td>
<td>0 - 60 psig</td>
<td>330</td>
</tr>
<tr>
<td>2 = 3 - 60 psig</td>
<td>0 - 100 psig</td>
<td>350</td>
</tr>
<tr>
<td>3 = 4 - 100 psig</td>
<td>0 - 200 psig</td>
<td>510</td>
</tr>
<tr>
<td>4 = 5 - 250 psig</td>
<td>0 - 400 psig</td>
<td>580</td>
</tr>
<tr>
<td>5 = 10 - 500 psig</td>
<td>0 - 600 psig</td>
<td>590</td>
</tr>
</tbody>
</table>

**Notes:**

### Options: See Option Chart For Additional Features.

### Outlet Valve: Compression End Connection Outlet (A-Lok, CPI) Can Be Substituted For NPTF Connection Upon Request.

### ORDERING REGULATORS WITHOUT GAUGES

**Example #1**

IR6203BK2P4B (No X required for gauges, inlet & outlet ports only)

**Example #2**

IR6203BK3PX4B (One X for gauge port)

**Example #3**

IR6203BK4PBX4B (One X for gauge port)

**Example #4**

IR6203BK5PXX4B (Two X's for gauge ports)
Parker Hannifin Corporation’s Veriflo Division presents the IR6000W Series internally threadless pressure regulator for pressure reducing industrial/analytical applications including cylinder and calibration gases.

Instrument applications include gas management in refineries, process analyzer systems, and cylinder gas pressure reduction.

The IR6000W is a high pressure regulator that can be ordered with a variety of options to meet a wide range of system design requirements.

**materials of construction**

- **Wetted**
  - Body: 316L Stainless Steel, Hastellov C-22®
  - Compression Member: Inconel®
  - Diaphragm: Hastellov C-22®
  - Poppet: Bigloy®
  - Poppet Spring: Inconel®
  - Carrier: Stainless Steel, Hastellov C-22®
  - Back-up Washer: Hastellov C-22®
  - Seat: PCTFE, PEEK™, Vespel®
  - Back-up O-ring: Viton®, optional Teflon®
  - Inlet Screen/Filter: 316L Stainless Steel, Hastellov C-22®

- **Non-Wetted**
  - Cap: Nickel Plated Brass, optional Stainless Steel
  - Nut: 316L 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)

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: Cv = .06
  - Optional: Cv = .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 x 10⁻⁸ scc/sec HE
- Supply Pressure Effect: 0.01 psig per 100 psig

**internal volume**

- 8.1 cc

**approximate weight**

- 3.5 lbs (1.6 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.
IR6000W 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.
- O₂ Cleaned.
- Fully swept design.
- Internally threadless seat design promotes long seat life.
- Convoluted, 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®, and Eligloy® 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

- 1.85 (47.0 mm)
- 3.70 (94.0 mm)
- Ø1.44 (36.6 mm) Hole Required In Panel For Mounting.
- Ø2.32 (58.9 mm)
- 1.98 (50.3 mm)
- 4.33 (109.9 mm)
- 7.22 (183.4 mm)
IR6000W Series

Flow Curves

IR6001W .06 Cv
Inlet Pressure - 1500 PSIG

Outlet Pressure (psig)
N₂ Flow (slpm)

IR6002W .06 Cv
Inlet Pressure - 1500 PSIG

Outlet Pressure (psig)
N₂ Flow (slpm)

IR6003W .06 Cv
Inlet Pressure - 1500 PSIG

Outlet Pressure (psig)
N₂ Flow (slpm)

Porting Configurations

Gauge Index

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td>2P</td>
<td>No Gauge Ports</td>
</tr>
<tr>
<td>3P</td>
<td>One gauge Port</td>
</tr>
<tr>
<td>4P</td>
<td>Two gauge Ports</td>
</tr>
<tr>
<td>4PB</td>
<td>One Gauge Port</td>
</tr>
<tr>
<td>5P</td>
<td>Two Gauge Ports</td>
</tr>
<tr>
<td>6P</td>
<td>Two Gauge Ports</td>
</tr>
</tbody>
</table>
IR6000W Series

**Ordering Information**

**IR600**

<table>
<thead>
<tr>
<th><strong>BASIC SERIES</strong></th>
<th><strong>W</strong></th>
<th><strong>B</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Range</strong></td>
<td><strong>Outlet Gauge</strong></td>
<td><strong>CGA#</strong></td>
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<tr>
<td>0 = 1 - 10 psig</td>
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<tr>
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<td>2 = 3 - 60 psig</td>
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<td>3 = 4 - 100 psig</td>
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<td>4 = 5 - 250 psig</td>
<td>0 - 400 psig</td>
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<tr>
<td></td>
<td></td>
<td>590</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Additional Configurations Available Upon Request</td>
</tr>
</tbody>
</table>

**BODY MATERIAL**

W = 316L Stainless Steel (Hastelloy® & Available Upon Request)

**FLOW CAPACITY**

- \(0.06 \text{ Cv} \) (Standard)
- \(1 = 0.02 \text{ Cv} \)
- \(2 = 0.15 \text{ Cv} \) (See Range Table)

**SEAT MATERIALS**

K = PCTFE
P = PEEK™
V = Vespel®

**PORTING**

See Outlet Gauge under BASIC SERIES (see above) for standards.
(Additional ranges available upon request)

**INLET GAUGE**

3000 psig std.
400 psig with the 10 psig range
2000 psig with .15 Cv option

† **NOTES:**
- Gauge Ports are 1/4" FS Male standard.
- Gauge Ports are 1/4" NPT Female for compression ends.
- Do not exceed the rated pressure of the CGA connection

**ORDERING REGULATORS WITHOUT GAUGES**

Example #1

IR6003WK2PFSMMB (No X required for gauges, inlet & outlet ports only)

Example #2

IR6003WK3PXFSMMMB (One X for gauge port)

Example #3

IR6003WK4PBXFSMMMB (One X for gauge port)

Example #4

IR6003WK4PXXFSFSMMMB (Two X's for gauge ports)

(Additional ranges available upon request)

**Dimension Table**

<table>
<thead>
<tr>
<th>Connection Type</th>
<th>End to End Dimension</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4&quot; Compression Fitting</td>
<td>3.34 ± 0.5 mm</td>
</tr>
<tr>
<td>3/8&quot; Compression Fitting</td>
<td>3.48 ± 0.5 mm</td>
</tr>
<tr>
<td>1/2&quot; Compression Fitting</td>
<td>3.70 ± 0.5 mm</td>
</tr>
<tr>
<td>1/4&quot; Face Seal</td>
<td>4.82 ± 0.5 mm</td>
</tr>
<tr>
<td>1/2&quot; Face Seal</td>
<td>4.82 ± 0.5 mm</td>
</tr>
<tr>
<td>All Tube Stubs</td>
<td>3.70 ± 0.5 mm</td>
</tr>
</tbody>
</table>

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PEEK™ is a trademark of Victrex plc.
Inconel® is a registered trademark of Inco Alloys International.
Elgiloy® is a registered trademark of Elgiloy Company.
Viton® is a registered trademark of DuPont Dow Elastomers.
Teflon® is a registered trademark of DuPont Company.
Parker Hannifin Corporation’s Veriflo Division presents the NPR4100 regulator for applications involving negative delivery pressures with low pressure gas sources for instrument/ analyzer applications.

This new regulator is specifically designed to regulate negative pressures down to -26 in Hg vacuum (100 Torr). Typical applications include the delivery of low pressure gases from liquid sources such as WF₆, BCL₃.

### materials of construction

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

**Non-Wetted**
- **Nut**: 316L Stainless Steel
- **Knob (White)**: ABS Plastic
- **Cap**: Nickel Plated Brass, Optional Stainless Steel

### operating conditions

- **Maximum inlet**: 250 psig (17 barg)
- **Outlet**: 100 torr to 10 psig (-26 in Hg to .7 barg)

### functional performance

**Flow capacity**:
- **Standard**: Cv .06
- **Optional**: Cv .02, .15

(SEMI Flow Coefficient Test #F-32-0998)

**Maximum Inboard Design Leak Rate**: < 2 x 10⁻⁸ scc/sec HE

### standard configurations

1/4” and 1/8” female pipe threads

### internal volume

4.0 cc

### approximate weight

1.5 lbs. (.7 kg)

---

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

** Temperature ranges available in Stainless Steel body only.

† Inlet Screen/Filter available on NPT ports only.
NPR4100 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.
- O₂ Cleaned.
- Fully swept design.
- Internally threadless seat design promotes long seat life.
- Convoluted, 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

- Ø1.44 (36.6 mm) HOLE REQD. IN PANEL FOR MOUNTING.
- Ø2.32 (58.9)
- 2.68 (68.0)
- Ø2.00 (50.8)
- 1.38 FLATS (34.9)
- .75 (17.5)
- .75 (22.2)
- 10 – 32 UNF – 2B
NPR4100 Series

Flow Curve

NPR4000 (Cv = .06)
Inlet Pressure - 4 PSIG

Outlet Pressure (torr)

Flow (LPM)

Porting Configurations

NPR4100 Series

Ordering Information

**BASIC SERIES**
NPR4100

**MATERIALS**
B = Brass
S = 316L Stainless Steel
(Hastelloy® & Monel® Available Upon Request)

**SEAT MATERIALS**
K = PCTFE
P = PEEK™
V = Vespel®

**FLOW CAPACITY**
= .06 CV (standard)
1 = .02 CV
2 = .15 CV

**PORTING**

**OUTLET GAUGE**
V3 = -30 in Hg-0-30 psig

**INLET GAUGE**
4 = 0-400 psig

**ORDERING REGULATORS WITHOUT GAUGES**

*Do not exceed the rated pressure of the CGA connection
**Recommended for Nitrous Oxide (N₂O) Service

Example #1
NPR4100SK2P4B (No X required for gauges, inlet & outlet ports only)

Example #2
NPR4100SK3PX4B (One X for gauge port)

Example #3
NPR4100SK4PBX4B (One X for gauge port)

Example #4
NPR4100SK4PXX4B (Two X's for gauge ports)

**CGA#**
320
330
350
510
580
590

Additional Configurations Available Upon Request

**OPTIONAL FEATURES**
L = Teflon® Back-Up O-Ring (PCTFE & PEEK™ seat only)
G = Tamper Proof
M = Metal Knob (White)

*Note: PANEL MOUNT OPTION:
Order Panel Nut Ring P/N 41900363 as separate line item.

**PORT STYLE**
4 = 1/4" NPT Female Standard

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Hastelloy C-22® is a registered trademark of Haynes International, Inc.
Inconel® and Monel® are registered trademarks of Inco Alloys International.
Elgiloy® is a registered trademark of Elgiloy Company.
Vespel® is a registered trademark of DuPont Company.
PEEK™ is a trademark of Victrex plc.
Parker Hannifin Corporation’s Veriflo Division presents the MIR700 Series regulator. The MIR 700 is a general purpose, compact regulator designed for low to medium pressure applications.

constructed from brass or stainless steel bar stock this unit is capable of handling a broad range of media. Its reliable performance and modest size make the MIR700 Series regulator ideal for applications that require pressure control in a compact space.

**features**
- Precise flexing, Hastelloy C-22® Diaphragm.
- 100% tested.
- O2 Cleaned.
- Proven valve seat assembly.
- Low internal volume.
- Machined from solid bar stock.
- Meets NACE MR-01-75.

**options**
- Pressure gauges.
- Miniature instrument knob.
- Panel mount.
- CGA fittings.
- Relief Valve.
- Fairprene Diaphragm.

**materials of construction**

<table>
<thead>
<tr>
<th>Wetted</th>
<th>316L Stainless Steel, Nickel Plated Brass</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poppet</td>
<td>316L Stainless Steel or Brass</td>
</tr>
<tr>
<td>Poppet Spring</td>
<td>Inconel® 625</td>
</tr>
<tr>
<td>Gasket</td>
<td>Teflon®</td>
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<tr>
<td>Nozzle Assy</td>
<td>316 Stainless Steel or Brass</td>
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<tr>
<td>Seat</td>
<td>PTFE</td>
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<tr>
<td>Diaphragm</td>
<td>Hastelloy C-22®, optional Fairprene®</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Non-wetted</th>
<th>Chrome Plated Brass</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cap</td>
<td>ABS Plastic</td>
</tr>
</tbody>
</table>

**operating conditions**
- Maximum inlet pressure . . . 3,000 psig (207 barg)
- Outlet pressure . . . . . . . 1-15 psig (1 barg)
  - 2-30 psig (2 barg), 3-100 psig (7 barg)
  - 4-200 psig (14 barg)
- Temperature . . . . . -40°F to 150°F (-40°C to 66°C)

**functional performance**
- Flow capacity . . . . . . . Cv = .02, (SEMI Coefficient Test #F-32-0998)
- Supply pressure effect . . . .0.6 psig per 100 psig
  - (0.03 barg per 6.80 barg)
- Maximum Inboard Design Leak Rate . . . . . . . . . . < 2 x 10^-8 scc/sec HE

**design parameters**
- Design proof pressure . . . . 4500 psig (310 barg)
- Design burst pressure . . . . 9,000 psig (621 barg)

**standard connections**
- 1/8” or 1/4” female pipe threads (NPT) or optional CGA

**approximate weight**
- 1.1 lbs (.5 kg)
MIR700 Series

**Dimensional Drawing**

**Flow Curves**

Inlet Pressure: 2000 psig
(Fairprene® Diaphragm)

Inlet Pressure: 2000 psig
(Hastelloy C-22® Diaphragm)

**Ordering Information**

**MIR700**

**BASIC SERIES**

MIR700

**PRESSURE SETTING**

15 = 1 - 15 psig  
30 = 2 - 30 psig  
100 = 3 - 100 psig  
200 = 4 - 200 psig

**MATERIAL**

B = Brass  
S = 316L Stainless Steel

**PORTING**

2P = 2 Ports  
3P = 3 Ports  
4P = 4 Ports  
4PB = 4 Ports

**OUTLET GAUGE**

03 = 0 - 30 psig  
01 = 0 - 100 psig  
2 = 0 - 200 psig  
X = No Gauge

**OPTIONS**

CGA = Inlet Connection (Specify CGA No.)†  
FTD = Fairprene Diaphragm  
M = Miniature Instrument Knob  
MH = Mounting Holes  
PM = Panel Mount  
R = Relief Valve

**PORT CONFIGURATION**

2 = 1/8" NPTF  
4 = 1/4" NPTF

**INLET GAUGE**

01 = 0 - 100 psig  
2 = 0 - 200 psig  
6 = 0 - 600 psig  
10 = 0-1000 psig  
20 = 0-2000 psig  
30 = 0-3000 psig  
40 = 0-4000 psig  
X = No Gauge

† Caution: Do not exceed the rated pressure of the CGA Connection.

Fairprene® and Teflon® are registered trademarks of DuPont Company.  
Inconel® is a registered trademark of Inco Alloys International.  
Hastelloy C-22® is a registered trademark of Hayes International, Inc.
Parker Hannifin Corporation’s Veriflo Division presents the HFR900 series is designed and engineered for use in those applications using high flow rates requiring a compact pressure regulator for control.

**features**

- “VeriClean”, Veriflo’s low sulfur high purity 316L Stainless Steel, which enhances electropolishing, and corrosion resistance.
- Also available in Brass.
- O₂ Cleaned.
- Self-contained, replaceable valve seat assembly.
- Over 20 years of proven reliability.

**applications**

- Fluid media: corrosive and non-corrosive gases.
- Point-of-use applications.
- Most high flow requirement with less than 500 psig supply pressure.

**materials of construction**

**Wetted**

- Body ............. “VeriClean”, Veriflo’s high purity type 316L Stainless Steel or Brass
- Seat Assembly . . . . . 316L Stainless Steel or Brass
- Seal .................. Teflon® and Viton® or Teflon® and Kalrez®
- Diaphragm . . . . . . . . . . . . . . . . . . . . . 316L Stainless Steel, Teflon® lined

**Non-Wetted**

- Cap .................. Nickel plated Brass or Brass
- Knob (Black) .................. ABS Plastic

**operating conditions**

- Maximum supply pressure:
  - Viton® Seal ................. 500 psig (35 barg)
  - Kalrez® Seal ............... 200 psig (14 barg)
- Outlet Pressures ............
  - 1-30 psig (.06-2 barg)
  - 2-75 psig (.1-5 barg)
  - 5-150 psig (.3-10 barg)
- Design burst pressure ....... 1500 psig (103 barg)
- Design proof pressure ...... 1000 psig (69 barg)
- Temperature .................. –40°F to 165°F
  (-40°C to 73°C)
- Temperature (Brass) ...... –40°F to 150°F
  (-40°C to 66°C)

**functional performance**

- Flow capacity .................. Cv = .85
  (SEMI Flow Coefficient Test# F-32-0998)
- Maximum Inboard Design
- Leak Rate ................. < 2 x 10⁻⁸ scc/sec HE

**standard connections**

- 1/4”, 3/8” or 1/2” Female pipe threads (NPT)
- 1/4”, 3/8” or 1/2” Compression fittings

**internal volume**

- 2.33 cu in (38 c.c.)

**surface finishes**

- Standard Ra ................. 15-20 micro inch (.38 to .5 micro meter) or less

**approximate weight**

- 2.5 lbs. (1.2 kg)
**HFR900 Series**

**Dimensional Drawing**

- **5.0 (127 mm) MAX**
- **.69 (17.5 mm)**
- **1.00 (25.4 mm)**
- **Ø2.38 (60.5 mm)**
- **Ø3.00 (76.2 mm)**
- **10-32 UNF Mounting Holes**

**Flow Curves**

**HFR900W**
- **Range:** 1-30 psig
- **Outlet Pressure Range:** 0-30 psig

**HFR901W**
- **Range:** 2-75 psig
- **Outlet Pressure Range:** 2-75 psig

**HFR902W**
- **Range:** 5-150 psig
- **Outlet Pressure Range:** 5-150 psig

**Porting Configuration**

- **Porting Code**
  - **2P**
  - **3P**
  - **4PB**
  - **4P**

**Ordering Information**

**BASIC SERIES**
- **HFR900** = 1-30 psig
- **HFR901** = 2-75 psig
- **HFR902** = 5-150 psig

**MATERIALS**
- **B** = Brass
- **S** = 316L Stainless Steel

**PORTING**
- **2P** = 2 Ports
- **3P** = 3 Ports
- **4P** = 4 Ports

**REGULATOR OUTLET GAUGE**
- 03 = 0-30 psig
- 01 = 0-100 psig
- 2 = 0-200 psig
- X = No Gauge

**REGULATOR INLET GAUGE**
- 4 = 0-400 psig
- 6 = 0-600 psig
- X = No Gauge

**OPTIONAL FEATURES**
- **PM** = Panel Mount
- **RI** = Relief Valve

**SEAL MATERIAL**
- **K** = Kalrez® (200 psig max)
- **V** = Viton® (500 psig max)

**FLOW STYLE**
- **4** = 1/4" NPTF
- **6** = 3/8" NPTF
- **8** = 1/2" NPTF
- **4T** = 1/4" Compression Fittings*
- **6T** = 3/8" Compression Fittings*
- **8T** = 1/2" Compression Fittings*

*Compression fittings are threaded and include nuts and ferrules.*

**Viton®** is a registered trademark of DuPont Dow Elastomers.

**Kalrez®** and **Teflon®** are registered trademarks of DuPont Company.

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Viton® is a registered trademark of DuPont Dow Elastomers. Kalrez® and Teflon® are registered trademarks of DuPont Company.
Parker Hannifin Corporation’s Veriflo Division presents the HPR800 Series High Pressure Regulator. The HPR800’s were designed to meet those applications requiring high outlet pressures to 2500 psig.

**features**

- "VeriClean", Veriflo’s custom low sulfur, high purity type 316L VAR Stainless Steel, enhances electropolishing and welding.
- Also available in Brass.
- Low actuating torque.
- Diaphragm sensing regulator.
- Easily maintained.
- Self-contained valve seat assembly.
- Fluid media capabilities: Corrosive and non-corrosive gases.

**materials of construction**

**Wetted**
- Body: "VeriClean", Veriflo’s high purity type 316L Stainless Steel or Brass
- Poppet: 316 Stainless Steel or Brass
- Poppet Spring: Inconel® 625
- Nozzle Assembly: 316 Stainless Steel, Brass
- Nozzle Assembly Seal: Teflon®
- Seat: PCTFE
- Diaphragm: 316L Stainless Steel, Teflon® lined

**Non-wetted**
- Spring housing: Nickel Plated Brass, Brass
- Bushing: Nickel Plated Brass
- Stem Handle Tee: Nickel Plated Brass

**operating conditions**
- Maximum inlet: 5000 psig @ 70°F (345 barg @ 21°C)
- For oxygen: 3000 psig (207 barg)
- Outlet: 10-800 psig (.7 - 55 barg) adjustable
- 20-1500 psig (1.4 - 103 barg) adjustable
- 50-2500 psig (3.4 - 172 barg) adjustable
- Temperature: -40°F to 165°F (–40°C to 74°C)
- Temp. (Brass): -40°F to 150°F (–40°C to 66°C)

**functional performance**
- Flow capacity: Cv = .02 (ANSI/ISA S75.02 1988 using water)
- Design Burst Pressure: 15,000 psig (1,034 barg)
- Design Proof Pressure: 22,500 psig (1,551 barg)
- Maximum Inboard Design Leak Rate: < 2 x 10^-8 scc/sec HE
- Supply pressure effect: 0.5 psig per 100 psig (.03 barg per 7 barg)

**standard configurations**
- ¼ inch female pipe threads inlet and outlet
- End to end length: 1.88 in. (47.8 mm)
- Any combination of FS male and/or female fittings.
- 1/4" gland to gland length: 1.85 ± .02 in. (47 ± .05 mm)

**internal volume**
- 6.5 cc

**approximate weight**
- 2.19 lbs. (.993 kg)
**HPR800 Series**

### Dimensional Drawing

- **Panel Mounting, 1.38 Dia (35.1 mm) Hole Required**
- **5.8 MAX (147 mm)**
- **2.30 (58.4 mm)**
- **2.30 (58.4 mm)**
- **4.00 (101.6 mm)**
- **1.88 Dia (47.6 mm)**
- **.88 (22.4 mm)**
- **10-32 UNF-2B 2 Places**

### Flow Curve

- **HPR800 & HPR801**
  - Pressure Range 10-800 psig and 20-1500 psig
- **HPR802**
  - Pressure Range 50-2500 psig

### Ordering Information

#### BASIC SERIES
- HPR800 = 10 - 800 psig
- HPR801 = 20 - 1500 psig
- HPR802 = 50 - 2500 psig

#### MATERIALS
- B = Brass
- S = 316L Stainless Steel
- W = 316L Welded Stainless Steel

#### PORTING
- 2P = 2 Port
- 3P = 3 Port
- 4P = 4 Port
- 5P = 5 Port

#### REGULATOR OUTLET GAUGE
- 10 = 0 - 1000 psig
- 20 = 0 - 2000 psig
- 30 = 0 - 3000 psig
- X = No Gauge

#### OPTIONAL FEATURES
- CGA = Inlet Connector (Specify CGA No.)*
- PM = Panel Mount

#### PORT CONFIGURATION
- 4 = 1/4" NPTF (Standard)
- FSM = 1/4" Male Face Seal
- FSF = 1/4" Female Face Seal
- FSI = Internal Face Seal**

#### REGULATOR INLET GAUGE
- 30 = 0 - 3000 psig
- 40 = 0 - 4000 psig
- 60 = 0 - 6000 psig
- X = No Gauge

* Do not exceed the rated pressure of the CGA Connection.
** Uses a 2" Diameter Body.

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Teflon® is a registered trademark of Dupont.
Inconel® is a registered trademark of Inco Alloys International.

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47 • PRESSURE REGULATORS
Parker Hannifin Corporation’s Veriflo Division presents the APR66 Series is a high pressure reducing single-stage regulator designed to operate at inlet pressures up to 6000 psig. The APR66 offers a full range of pressure sensing without time consuming spring and piston change outs.

**features**

- Piston sensing.
- Thrust bearing allows low actuating torque and precise setability.
- O₂ Cleaned.
- Low friction adjusting screw sleeve provides smooth operation.
- Optional self relieving feature allows user to decrease outlet pressure in closed systems (feature is actuated by turning the adjusting knob counterclockwise).

**NOTE:** For safety purposes, the optional self-relieving feature is not recommended for toxic or flammable gases or liquids.

**materials of construction**

**Wetted**

- Body ................. 316L Stainless Steel, Nickel Plated Brass
- Screen ................. Hastelloy C-22®
- Washer ................. Stainless Steel
- Spring ................. Hastelloy C-22®
- Poppet ................. Stainless Steel
- Seat .................. PEEK™
- Seat and Screw Clamp .... Stainless Steel
- Plug and Screw ........ Stainless Steel
- Piston .................. Torlon
- Piston Housing .......... Stainless Steel
- Stem .................. Stainless Steel
- Seals ................... Aflas®, Teflon® and PCTFE

**Non-Wetted**

- Cap ..................... Nickel plated brass
- Cap nut ................ 316L Stainless Steel
- Knob .................... ABS Plastic (black)
- optional Metal Knob (black)

**operating conditions**

- Inlet pressure ........ 6000 psig (414 barg)
- Outlet pressure ....... 100-1000 psig (69 barg)
- 100-2000 psig (138 barg), 100-3000 psig (207 barg), 100-6000 psig (414 barg)
- Temperature .......... -40°F to 165°F (-40°C to 74°C)

**functional performance**

- Design proof pressure .... 9000 psig (620 barg)
- Design burst pressure .... 18000 psig (1241 barg)
- Flow capacity .............. Cᵥ 0.05
  (SEMI Flow Coefficient Test #F-32-0998)
- Supply pressure effect .... 4 psig per 100 psig (.28 barg per 7 barg) for 100-1000, 2000 & 3000 psig ranges (69, 138 & 207 barg) 6 psig per 100 psig (.4 barg per 7 barg) for 100-6000 psig (419 barg) range
- Maximum Inboard Design
- Leak Rate ............... < 2 x 10⁻⁸ scc/sec HE

**standard connections**

- 1/8", 1/4" female pipe threads MS 33649 or DIN ISO 228/1

**approximate weight**

- 3.0 lbs (1.4 kg)
### APR66 Series

#### Dimensional Drawing

- **Diameter Hole Required for Panel Mounting:**
  - 1.38 (35 mm)

- **Hole Diameter:**
  - 2.18 (55.4 mm)

- **DIA:**
  - 6.11 (155.2 mm)

- **Height:**
  - 2.90 (71.1 mm)

- **Porting Code:**
  - 3P

#### Flow Curve

- **Inlet Pressure:** 5000 psig

#### Ordering Information

**BASIC SERIES**
- APR66

**MATERIALS**
- S = 316L Stainless Steel
- B = Nickel Plated Brass

**PORTING**
- 2P = 2 Ports
- 3P = 3 Ports
- 4P = 4 Ports

**PRESSURE RANGE**
- 1 = 100 - 1000 psig
- 2 = 100 - 2000 psig
- 3 = 100 - 3000 psig
- 4 = 100 - 6000 psig

* Do not exceed the rated pressure of the CGA connection

**OPTIONAL FEATURES**
- CGA = CGA Connection (Specify CGA No.)*
- SR = Self Relieving
- M = Metal Knob (Black)

**PORT STYLE**
- 2 = 1/8" NPTF
- 4 = 1/4" NPTF
- D = DIN ISO 228/1**
- MS = M533649**

**INLET GAUGE†**
- 40 = 0 - 4000 psig
- 60 = 0 - 6000 psig
- X = No Gauge

**OUTLET GAUGE†**
- 10 = 0 - 1000 psig
- 20 = 0 - 2000 psig
- 30 = 0 - 3000 psig
- 40 = 0 - 4000 psig
- 60 = 0 - 6000 psig
- X = No Gauge

Note: Each unit is standard with a threaded cap and panel mount nut.

Aflas® is a registered trademark of 3M Company.
Teflon® is a registered trademark of DuPont Company.
Peek™ is a trademark of Victrex plc.
Parker Hannifin Corporation’s Veriflo Division presents the XPR Series High Pressure Regulator. The new regulator safely reduces pressures from 10,000 psig (6,000 psig Brass) inlet down to as low as 50 psig by utilizing seven different ranges. The new self relieving feature comes standard with all XPR Series regulators.

**materials of construction**

- **Wetted**
  - Body: 316L Stainless Steel, Brass
  - Seat: Vespel®
  - Piston: 316L Stainless Steel
  - Poppet: 316L Stainless Steel
  - Poppet Spring: Inconel®
  - Back Up Ring: Teflon®
  - O-Rings: Viton®
  - Self-Relieving Seat: Vespel®

- **Non-wetted**
  - Cap: 316L Stainless Steel, Nickel Plated Brass
  - Knob (black): ABS Plastic
  - “T” Handle: Nickel Plated Brass

**operating conditions**

- Maximum inlet pressure:
  - 316L Stainless Steel: 10,000 psig (690 barg)
  - Brass: 6,000 psig (414 barg)
  - Outlet pressure: 50-500 psig (3.5 - 34.5 barg)
    - 50-800 psig (3.5 - 55.2 barg)
    - 100-1500 psig (7 - 103.4 barg)
    - 135-2500 psig (9.3 - 172.4 barg)
    - 200-4000 psig (17 - 276 barg)
    - 300-6000 psig (20.7 - 414 barg)
    - *500-10,000 psig (34.5 - 690 barg)
      - *316L Stainless Steel Only

- Temperature: -40°F to 150°F (-40°C to 66°C)

**surface finishes**

- Standard Ra: 63 Ra

**functional performance**

- Design proof pressure:
  - 316L Stainless Steel: 15,000 psig (1035 barg)
  - Brass: 9,000 psig (620 barg)
- Design burst pressure:
  - 316L Stainless Steel: 30,000 psig (2070 barg)
  - Brass: 18,000 psig (1240 barg)
- Design Leak Rate:
  - Across Seat: 1 x 10^-4 scc/sec He
  - Inboard: 1 x 10^-4 scc/sec He
  - Outboard: 1 x 10^-4 scc/sec He
- Flow Capacity: Cv .07 (SEMI Flow Coefficient Test # F-32-0998)

**internal volume**

- Self Relieving: 0.853 in³ (13.99 cm³)
- Non Self Relieving: 0.831 in³ (13.62 cm³)

**standard connections**

- 1/8 NPT, 1/4 NPT

**approximate weight**

- 6.5 lbs (3 kg)
**XPR Series**

### Dimensional Drawing

![Dimensional Drawing]

### Flow Curve

![Flow Curve]

### Ordering Information

**BASIC SERIES**

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<thead>
<tr>
<th>XPR</th>
<th>Material</th>
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</thead>
<tbody>
<tr>
<td>B</td>
<td>Brass (6000 psig max)</td>
</tr>
<tr>
<td>S</td>
<td>316L Stainless Steel (10000 psig max)</td>
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</tbody>
</table>

**RANGE**

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<tr>
<th>Range</th>
<th>Outlet Gauge</th>
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<tr>
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<td>0 - 600 psi</td>
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<tr>
<td>8</td>
<td>0 - 1000 psi</td>
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<td>0 - 3000 psi</td>
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<td>0 - 6000 psi</td>
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<td>60</td>
<td>0 - 6000 psi</td>
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<tr>
<td>100</td>
<td>0 - 10000 psi</td>
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</table>

**PORTING**

| 2P   | 3 Ports |
| 3P   | 4 Ports |
| 4P   | 4 Ports |
| 4PB  |          |

*Stainless Steel material only

Vespel®, Teflon® and Kalrez® are registered trademarks of DuPont Company.

Viton® is a registered trademark of DuPont Dow Elastomers.

Inconel® is a registered trademark of Inco Alloys International.

*Note: PANEL MOUNT OPTION:
Order Panel Nut Ring P/N 40400440 as separate line item.
Parker Hannifin Corporation’s Veriflo Division presents the Quantum 959. The 959 is a high purity, high pressure tied diaphragm regulator. The 959 regulator controls pressure flows accurately and predictably without changing the liquids or gases and without adding particles or ions to the flowing material. Subatmospheric pressure control available with the NPR959.

**features**

- “VeriClean”, Veriflo’s low sulfur high purity 316L Stainless Steel™ enhances electropolishing, welding, and corrosion resistance.
- Unique patented compression member loads the seal to the body without requiring a threaded nozzle or additional seals to atmosphere.
- Internally threadless nozzle assembly.
- Metal-to-metal diaphragm-to-body seal assures high leak integrity.
- Minimal particle generation and entrapment.
- High cycle life.
- 100% Helium leak tested.

**materials of construction**

**Wetted**

- **Body**: “VeriClean”, Veriflo’s high purity type 316L Stainless Steel™, Hastelloy C-22®
- **Seat**: PTFE, optional Vespel®
- **Diaphragm**: 316L Stainless Steel, Hastelloy C-22®
- **Poppet**: 316L Stainless Steel, Hastelloy C-22®
- **Poppet Spring**: 316L Stainless Steel, Inconel®
- **Compression Member**: 316L Stainless Steel™, Hastelloy C-22®
- **Screen**: Hastelloy C-22®

**Non-Wetted**

- **Nut**: 316L Stainless Steel
- **Cap**: Nickel Plated Brass
- **Knob**: 959 (Black) ABS Plastic, NPR959 (White) ABS Plastic

**operating conditions**

- **Maximum inlet**: 3500 psig (240 barg)
- **Outlet**: 0-30 psig (2 barg), 0-100 psig (7 barg), 0-150 psig (10.3 barg)
- **NPR**: -25 in Hg to 30 psig
- **Temperature**: -40°F to 150°F (-40°C to 65°C)

**functional performance**

- **Flow capacity**: $C_v = 0.04$ (SEMI Flow Coefficient Test # F-32-0998)
- **Design Leak Rate**:
  - Outboard: $1 \times 10^{-4}$ scc/sec He
  - Inboard: $2 \times 10^{-4}$ scc/sec He
  - Across seat: $2 \times 10^{-4}$ scc/sec He

**standard configurations**

- Any combination of FS male and/or female fittings:
  - 1/4 inch Gland to gland length: 3.70 ± .02 in. (94.0 ± .5 mm)
  - 1/4 inch tube stubs inlet and outlet: 3.70 ± .02 in. (94.0 ± .5 mm)
  - 1/4 inch female pipe threads inlet and outlet: 1.88 ± .02 in. (47.7± .5 mm)

**internal volume**

- 5.41 cc

**surface finishes**

- Standard Ra: 15-20 m inch (.38 to .5 m meter) or less
- Optional Ra: EX = 10 m inch (.25 m meter) or less
- $EV = 5$ m inch (.13 to .5 m meter) or less

**approximate weight**

- 2 lbs (.9 kg)
**Dimensional Drawing**

HOLE REQUIRED FOR PANEL MOUNTING

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ø1.88</td>
<td>(47.8 mm)</td>
</tr>
<tr>
<td>Ø2.14</td>
<td>(54.4 mm)</td>
</tr>
<tr>
<td>1.38 FLATS</td>
<td>(35.1 mm)</td>
</tr>
<tr>
<td>0.69</td>
<td>(17.3 mm)</td>
</tr>
<tr>
<td>0.68</td>
<td>(22.4 mm)</td>
</tr>
<tr>
<td>2.02</td>
<td>(51.3 mm)</td>
</tr>
<tr>
<td>4.90 MAX</td>
<td>(124.5 mm)</td>
</tr>
</tbody>
</table>

**Flow Curves**

**Outlet Pressure (psig)**

**N2 Flow (slpm)**

**Porting Configurations**

**Ordering Information**

**Basic Series**

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>95930</td>
<td>0 - 30 psig</td>
</tr>
<tr>
<td>959100</td>
<td>0 - 100 psig</td>
</tr>
<tr>
<td>959150</td>
<td>0 - 150 psig</td>
</tr>
<tr>
<td>NPR95930</td>
<td>-25 in Hg - 0-30 psig</td>
</tr>
</tbody>
</table>

**Materials**

- **S**: 316L Stainless Steel
- **W**: Welded 316L Stainless Steel
- **H**: Hastelloy C-22®

**Porting**

- **2P**: 2 Ports
- **3P**: 3 Ports
- **4P**: 4 Ports
- **4PB**: 4 Ports

**Outlet Gauge**

- **V3**: -30 in Hg - 0-30 psig
- **V1**: -30 in Hg - 0-100 psig
- **V2**: -30 in Hg - 0-200 psig
- **3**: 0 - 30 psig
- **1**: 0 - 100 psig
- **2**: 0 - 200 psig

**Inlet Gauge**

- **V3**: -30 in Hg - 0-30 psig
- **V1**: -30 in Hg - 0-100 psig
- **2**: 0-200 psig
- **6**: 0-600 psig
- **10**: 0-1000 psig
- **20**: 0-2000 psig
- **30**: 0-3000 psig
- **40**: 0-4000 psig

**Optional Features**

- **DO**: Dome Loaded
- **PM**: Panel Mount
- **TH**: Trim Hastelloy C-22® Internals
- **VESP**: Vespel® Seat

**Port Configuration**

- **M**: Male
- **F**: Female
- **I**: Internal Face Seal

**Port Style**

- **FS**: 1/4" Face Seal
- **4**: 1/4" NPTF
- **TS**: 1/4" Tube Stubs

- **Use Material Code W**

---

*Hastelloy® C-22® Material Includes: Hastelloy C-22® Body, Compression Member, Poppet, Diaphragm, Screen, and Inconel® Spring*

**Trim Hastelloy C-22® Includes: 316L Stainless Steel Body, Hastelloy C-22® Compression Member, Poppet, Diaphragm, Screen, and Inconel® Spring**

***Use Material Code ‘W’***

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

Vespel® is a registered trademark of DuPont Company.

Inconel® is a registered trademark of Inco Alloys International.
Parker Hannifin Corporation’s Veriflo Division presents the 735TDR. The two stage, tied-diaphragm regulator is designed to provide constant outlet pressure regardless of inlet pressure fluctuations.

Subatmospheric pressure control available with the NPR735.

**features**

- “VeriClean”, Veriflo’s custom low sulfur, high purity 316L Stainless Steel™ enhances electropolishing, welding and corrosion resistance.
- Tied diaphragm for added safety.
- Adjustment range spring may be replaced without breaking diaphragm seal to body and exposing the wetted area to contamination.
- Unique patented compression member loads seal to body without requiring a threaded nozzle or additional seals to atmosphere.
- Metal-to-metal diaphragm-to-body seal assures high leak integrity.
- 100% Helium leak tested.
- Hurricane cleaning, optional proprietary cleaning process, removes metallic ions, organic films and surface adhering particles.

**materials of construction**

**Wetted**
- Body ........... “VeriClean”, Veriflo’s custom high purity type 316L Stainless Steel™, Hastelloy C-22®
- Seat ............ PTFE, optional Vespel®
- Diaphragm ........ 316L Stainless Steel
- Poppet ........... 316L Stainless Steel
- Poppet Spring .... 316L Stainless Steel
- Compression Member .... 316L Stainless Steel
- Filter ............. Hastelloy C-22®

**Non-Wetted**
- Nut, .................. 316L Stainless Steel
- Cap .................. Nickel plated Brass

**operating conditions**

- Maximum inlet ........ 3,500 psig (240 bar)
- Outlet ............. 0 to 30 psig (2 bar) adjustable
- 0 to 100 psig (7 bar) adjustable
- NPR .......................... -25 in Hg to 30 psig
- Temperature .... –40°F to 150°F (–40°C to 65°C)

**functional performance**

- Flow capacity ............... \( C_v = .04 \) (SEMI Flow Coefficient Test # F-32-0998)
- Design Leak Rate
  - Outboard .............. 1 x 10^{-9} scc/sec He
  - Inboard ................. 2 x 10^{-10} scc/sec He
  - Across seat: .............. less than 2 x 10^{-9} scc/sec He
- Supply pressure effect ........ 0.2 psi (.01 bar) per 100 psi (6.8 bar), See flow curves

**standard configurations**

- Any configuration of FS male and/or female fittings.
- Gland to gland length .......... 3.70 (94 mm)
- Optional .................. 3.40 (86.4 mm)

- ¼ inch female pipe threads Other configurations available as options, including as many as seven ports

**internal volume**

- 10.10 cc

**surface finishes**

- Standard Ra ..................... 15-20 micro inch (.381 to .508 micro meter) or less
- Optional Ra ..................... 10 micro inch (.254 micro meter) or less
- 5 micro inch (.127 micro meter) or less

**approximate weight**

- 3.5 lbs (1.6 kg)
These tests were performed using Nitrogen at ambient conditions.

**Dimensional Drawing**

- **Outlet Pressure (psig)**: 100, 95, 90, 85, 80, 75, 70
- **Flow (slpm)**: 0, 25, 50, 75, 100, 125, 150

**Flow Curves**

- **Inlet Pressure 3500-200 psig**
- **Outlet Pressure (psig)**: 30, 25, 20, 15, 10, 5, 0
- **Flow (slpm)**: 0, 25, 50, 75, 100, 125, 150

**Ordering Information**

- **BASIC SERIES**
  - 73530 = 0-30 psig
  - 735100 = 0-100 psig
  - NPR73530 = -25 in Hg-0-30 psig

- **MATERIALS**
  - S = 316L Stainless Steel
  - W = Welded 316L Stainless Steel
  - H = Hastelloy C-22® *

- **PORTING**
  - 2P = 2 Ports
  - 3P = 3 Ports
  - 4P = 4 Ports
  - 5P = 5 Ports
  - 7P = 7 Ports

- **REGULATOR OUTLET GAUGE**
  - V3 = -30 in Hg-0-30 psig
  - L = -30 in Hg-0-60 psig
  - V1 = -30 in Hg-0-100 psig
  - 03 = 0-30 psig
  - 0L = 0-60 psig
  - 01 = 0-100 psig
  - X = No Gauge

- **OPTIONS FEATURES**
  - CGA = Inlet Connection (Specify CGA. No.)**
  - PM = Panel Mount
  - R1 = Relief Valve, 1st Stage (7P only)
  - R2 = Relief Valve, 2nd Stage
  - R3 = Relief Valve, Both Stages (7P only)
  - TH = Hastelloy C-22® Trim***
  - VESP = Vespel® Seat
  - VOF = 944SS Outlet Valve, Female
  - VQM = 944SS Outlet Valve, Male
  - 3.4 = FS Fittings 3.4" Face to Face

- **PORT CONFIGURATION**
  - M = Male
  - F = Female
  - I = Internal Female Face Seal

- **PORT STYLE**
  - FS = 1/4" Face Seal
  - TS = Tube Stubs
  - 4 = 1/4" NPTF

- **REGULATOR INLET GAUGE**
  - 10 = 0-1000 psig
  - 20 = 0-2000 psig
  - 30 = 0-3000 psig
  - 40 = 0-4000 psig
  - X = No Gauge

---

*Includes body, diaphragm, compression member, poppet, and spring.

**Do not exceed rated pressure of CGA connection.

*** Includes diaphragm compression member, poppet, and spring.

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

Vespel® is a registered trademark of DuPont Company.

Inconel® is a registered trademark of Inco Alloys International.

Parker Instrumentation
Parker Hannifin Corporation’s Veriflo Division presents the ChangeOver System. The COS is a compact turnkey module designed for continuous gas and fluid management.

The ChangeOver System combines the IR4000 Series pressure reducing regulator with the NOVA Series diaphragm valves to create a compact gas delivery system for continuous gas or fluid applications.

This unique device directs the flow of gas from two separate sources to the user’s application. When one source empties, the ChangeOver System automatically draws from the second source. The first source can then be changed without flow interruption.

### materials of construction

**Wetted**
- Body: Nickel Plated Brass or 316L Stainless Steel
- Seats: PCTFE
- Back up O-ring: Viton®
- Valve Seat: Metal to Metal
- Regulator Diaphragm: Hastelloy C-22®
- Valve Diaphragm: Elgiloy® or equivalent
- Poppet: Elgiloy®
- Poppet spring: Inconel®
- Carrier: Stainless Steel*
- Compression Member: Inconel®

**Non-Wetted**
- Regulator Cap: Nickel Plated Brass or 303 Stainless Steel
- Panel: Aluminum or 304 Stainless Steel
- Knobs (Black): ABS Plastic

### operating conditions

- Maximum inlet pressure: 3,500 psig (207 barg) maximum
- Outlet pressure: up to 250 psig (17 barg) maximum
- Temperature: -40°F to 150°F (-40°C to 66°C)

### functional performance

- Design proof pressure: 4,500 psig (310 barg)
- Design burst pressure: 9,000 psig (620 barg)
- Flow capacity: \( C_v = 0.6^{**} \) (SEMI Flow Coefficient Test # F-32-0998)
- Supply pressure effect: 0.4 psig per 100 psig (.03 per 7 barg)

### standard configurations

- 1/4” female pipe threads (Stainless Steel, Brass)
- 1/4” compression fitting (Stainless Steel, Brass)
- Welded fittings (Stainless Steel Only)

### approximate weight

- 8.5 lbs. 3.86 (kg)

* Proprietary Carpenter Stainless Steel with corrosion resistance equal or better than 316.
** Consult factory for additional information regarding flow capacity.
ChangeOver System

Features

- Prevents unnecessary downtime by providing continuous uninterrupted gas flow.
- Convoluted diaphragm provides outlet pressure stability with changes in flow.
- Integral diaphragm stop provides excellent leak integrity.
- Valve controlled high pressure purge allows user to clean or purge lines before adding a new cylinder.
- Quick changeover control enhances safety by minimizing exposure to toxic and flammable media.
- Designed for easy change of sources while in operation.
- Separate gauges to monitor both inlet sources.
- Available in Nickel Plated Brass or 316L Stainless Steel.
- Alarm sensor port for systems integration allowing user to monitor gas consumption.
- Optional outlet regulator maintains constant outlet pressure.
- All Stainless Steel panel and trim design available.
- Especially suited for continuous on-stream analyzers.

Applications

Specialty Gases

- All Specialty Gases used for Process and Purging Applications

Industrial/Analyzer

- Refineries
- Laboratories
- Research and Development
- Emission Analysis
- Test Cells
- Back-up System for Compressors, Generators or Other Plant Air Sources
- Gas and Liquid Chromatography
- High Volume Gas Manufacturing Facilities
- Laser Gas Systems

ChangeOver System

Flow Rates

(Based on 400 psig Cylinder Change)

<table>
<thead>
<tr>
<th>COS Model</th>
<th>Maximum Recommended Flow</th>
</tr>
</thead>
<tbody>
<tr>
<td>COS 200</td>
<td>70 slpm $N_2$</td>
</tr>
<tr>
<td>COS 250</td>
<td>70 slpm $N_2$</td>
</tr>
<tr>
<td>COS 150</td>
<td>70 slpm $N_2$</td>
</tr>
<tr>
<td>COS 100</td>
<td>100 slpm $N_2$</td>
</tr>
<tr>
<td>COS XXX OR*</td>
<td>70 slpm $N_2$</td>
</tr>
</tbody>
</table>

* ChangeOver System with optional outlet regulators
**Change Over System**

### Pressure Drop

**Change Over System With Outlet Regulator**

![Diagram showing pressure drop over time]

**Note:** Outlet pressure should drop approximately 20 psig for the 100 & 150 psig version and approximately 40 psig for the 200 & 250 psig version. Outlet flow will continue.

### Ordering Information

**BASIC SERIES**

| COS |

**PRESSURE SETTING**

- 100 = 100 psig
- 150 = 150 psig
- 200 = 200 psig
- 250 = 250 psig

**MATERIAL**

- B = Brass
- S = 316L Stainless Steel
- W = Welded 316L Stainless Steel (Non-UHP applications)

**OPTIONS**

- A1 = Pressure Switches** (includes 2 pressure switches; Annunciator sold separately)
- OR = Outlet Regulator
- P = Stainless Steel Panel

* For Audio/Visual Annunciator details see COS Annunciator Literature Sheet. Annunciator ordering part number: 46600696

Note: Inlet valves and gauges are standard on all units.

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

Viton® is a registered trademark of DuPont Dow Elastomers.

Inconel® is a registered trademark of Inco Alloys International.

Elgiloy® is a registered trademark of Elgiloy Company.
Parker Hannifin Corporation’s Veriflo Division presents the ChangeOver System Annunciator. The Annunciator is designed to be used with the ChangeOver System. This gives users both an audible and visual indication of when it is time to change out cylinders. The Annunciator is equipped with four channels to allow for the connection of multiple ChangeOver Systems.

The alarm signal is activated when either cylinder has dropped below a preset pressure. The signal is activated through two pressure switches which are located on each inlet valve of the ChangeOver System.

### materials of construction
- **Outer Box**: 94HB Plastic
- **Strain Relief**: Nylon 6/6
- **Back Plate**: Steel
ChangeOver System Annunciator

Wiring Diagram

Notes
1. Cut and Tape Red Wire (Not Used)
2. PS-1 & PS-2 Close On Increasing Pressure

Circuit Schematic

Annunciator Terminal Strip

Change Over 3 & 4 Are The Same As 1 & 2

PS-1 White
Red 1
Black
White
Black
Red 1
PS-2
Change Over System 1

PS-1 White
Red 1
Black
White
Black
Red 1
PS-2
Change Over System 2

Ordering Information

ChangeOver System Annunciator: P/N 46600696
Parker Hannifin Corporation

About Parker Hannifin Corporation
Parker Hannifin is a leading global motion-control company dedicated to delivering premier customer service. A Fortune 500 corporation listed on the New York Stock Exchange (PH), our components and systems comprise over 1,400 product lines that control motion in some 1,000 industrial and aerospace markets. Parker is the only manufacturer to offer its customers a choice of hydraulic, pneumatic, and electromechanical motion-control solutions. Our Company has the largest distribution network in its field, with over 7,500 distributors serving nearly 400,000 customers worldwide.

Parker’s Charter
To be a leading worldwide manufacturer of components and systems for the builders and users of durable goods. More specifically, we will design, market and manufacture products controlling motion, flow and pressure. We will achieve profitable growth through premier customer service.

Product Information
North American customers seeking product information, the location of a nearby distributor, or repair services will receive prompt attention by calling the Parker Product Information Center at our toll-free number: 1-800-C-PARKER (1-800-272-7537). In Europe, call 00800-C-PARKER-H (00800-2727-5374).

The Fluid Connectors Group designs, manufactures and markets rigid and flexible connectors, and associated products used in pneumatic and fluid systems.

The Hydraulics Group designs, produces and markets a full spectrum of hydraulic components and systems to builders and users of industrial and mobile machinery and equipment.

The Automation Group is a leading supplier of pneumatic and electromechanical components and systems to automation customers worldwide.

The Aerospace Group is a leader in the development, design, manufacture and servicing of control systems and components for aerospace and related high-technology markets, while achieving growth through premier customer service.

The Seal Group designs, manufactures and distributes industrial and commercial sealing devices and related products by providing superior quality and total customer satisfaction.

The Filtration Group designs, manufactures and markets quality filtration and clarification products, providing customers with the best value, quality, technical support, and global availability.

The Instrumentation Group is a global leader in the design, manufacture and distribution of high-quality critical flow components for worldwide process instrumentation, ultra-high-purity, medical and analytical applications.

The Climate & Industrial Controls Group designs, manufactures and markets system-control and fluid-handling components and systems to refrigeration, air-conditioning and industrial customers worldwide.

The Instrumentation Group