FACILITY REGULATORS

Microelectronics Product Line

Catalog 4509/USA

October 2003

VERIFLO

ISO 9001 Certified

FACILITY REGULATORS

Microelectronics Product Line

Catalog 4509/USA

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IR4000 Series

SS High Pressure Regulator Internally Threadless Design

VERIFLO
ISO 9001 Certified

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

Non-Wetted

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

operating conditions

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

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

functional performance

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

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

Maximum Inboard Design
Leak Rate . . . . . < 2 x 10^{-8} scc/sec HE

Supply Pressure Effect:
.02 C_V . . . . . .23 psig per100 psig (.016 barg per 7 barg)
.06 C_V . . . . . .6 psig per100 psig (.04 barg per 7 barg)
.15 C_V . . . . . 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.

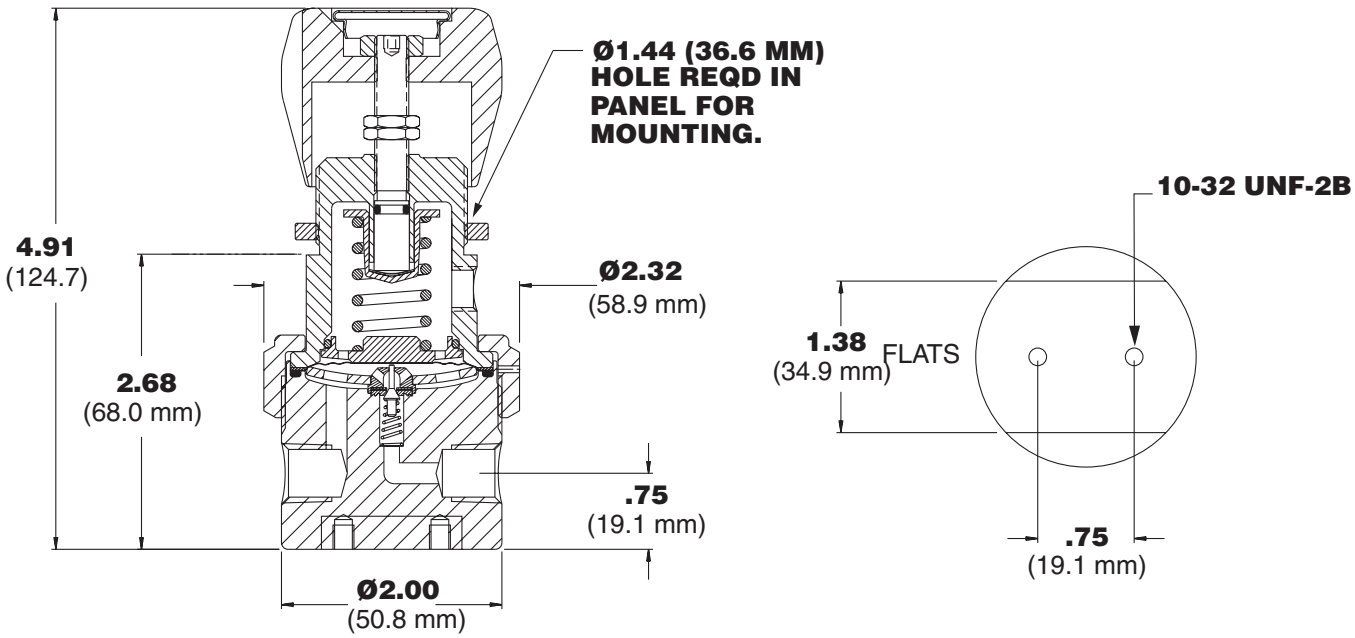
Parker Instrumentation

IR4000 Series

Product Features and Benefits

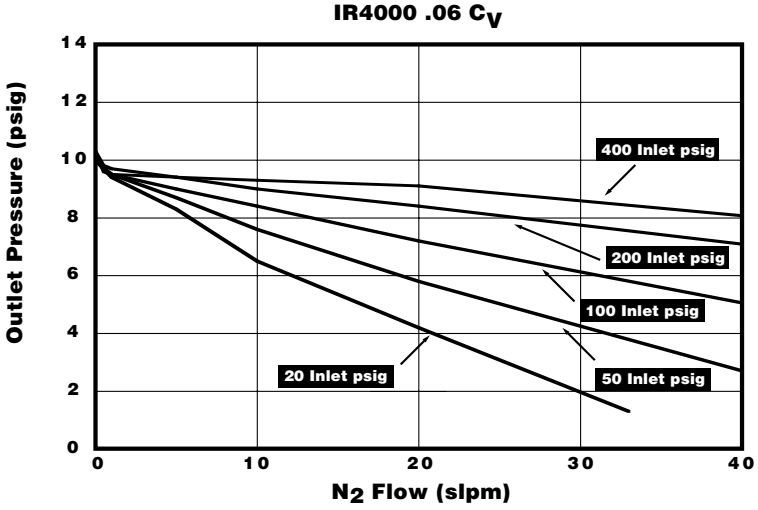
- Unique patented compression member loads the seal to the body without requiring a threaded nozzle or additional seals to atmosphere.
- Selection of seat materials for media compatibility and temperature applications.
- Meets NACE Standard MR0175.
- O_2 Cleaned.
- Fully swept design.
- Internally threadless 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.

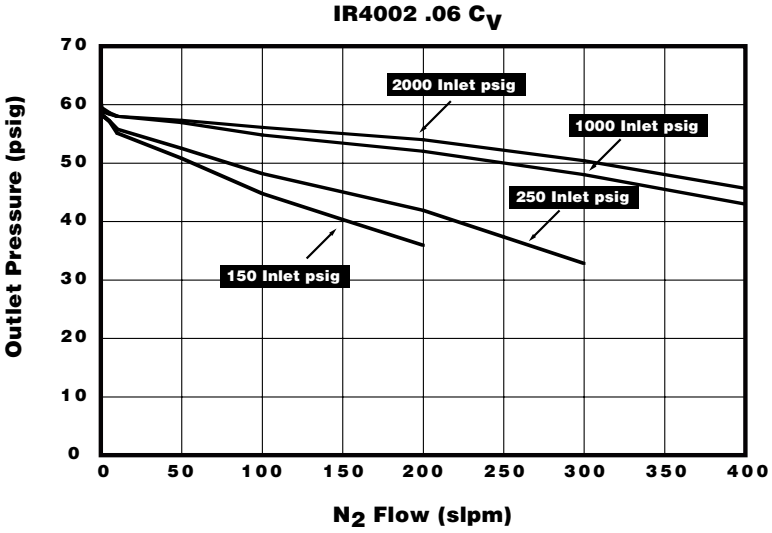
Dimensional Drawing

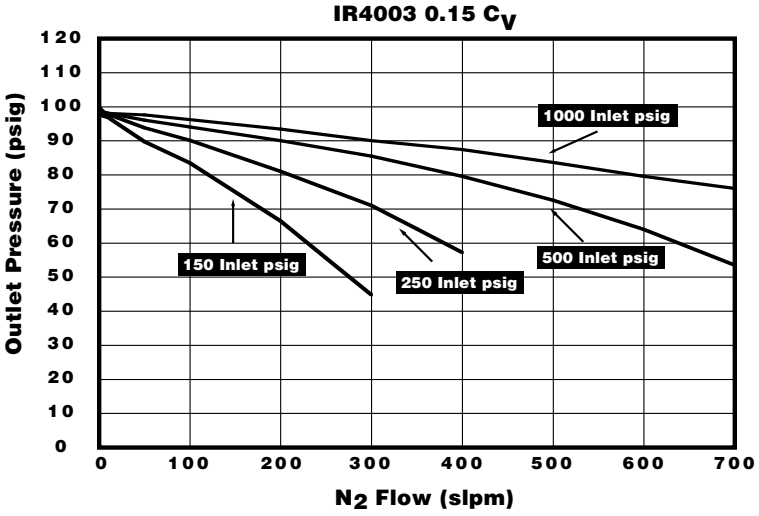


IR4000 Series

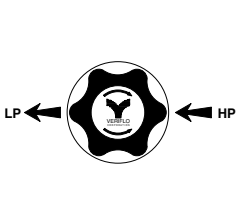
Flow Curves







Porting Configurations



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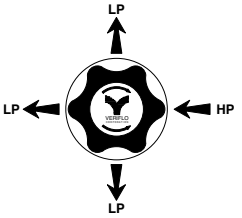

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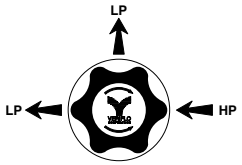

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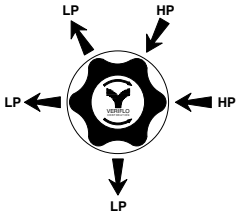
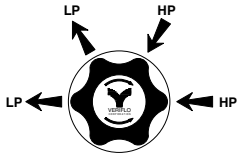


Porting Code 5P



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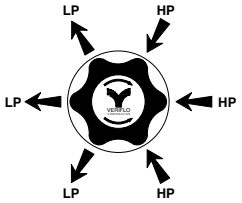


Porting Code 6P

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

IR4000 Series

Ordering Information

IR400 S 2P – – 4 B

BASIC SERIES

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
5 = 10 - 500 psig	0 - 600 psig

BODY MATERIAL

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

FLOW CAPACITY

= .06 C_V (Standard)
1 = .02 C_V
2 = .15 C_V (See **Range Table**)

SEAT MATERIALS

K = PCTFE
P = PEEK™
V = Vespel®

PORTING

2P	–	–
3P	Y/X	–
4P	Y/X	Y/X
4PB	Y/X	–
5P	Y/X	Y/X

OUTLET GAUGE

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 C_V option

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)
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

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

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)

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
IR4003SK**2P**4B (*No X required for gauges, inlet & outlet ports only*)

Example #2
IR4003SK**3P**X4B (*One X for gauge port*)

Example #3
IR4003SK**4PB**X4B (*One X for gauge port*)

Example #4
IR4003SK**4P**XX4B (Two X's for gauge ports)

***** Do not exceed the rated pressure of the CGA connection

Range Table

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

Parker Instrumentation

IR4200 Series

Brass High Pressure Regulator Internally Threadless Design

VERIFLO
ISO 9001 Certified

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 = .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:
.02 C_V . . . . . .23 psig per100 psig (.016 barg per 7 barg)
.06 C_V . . . . . .6 psig per100 psig (.04 barg per 7 barg)
.15 C_V . . . . . 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.

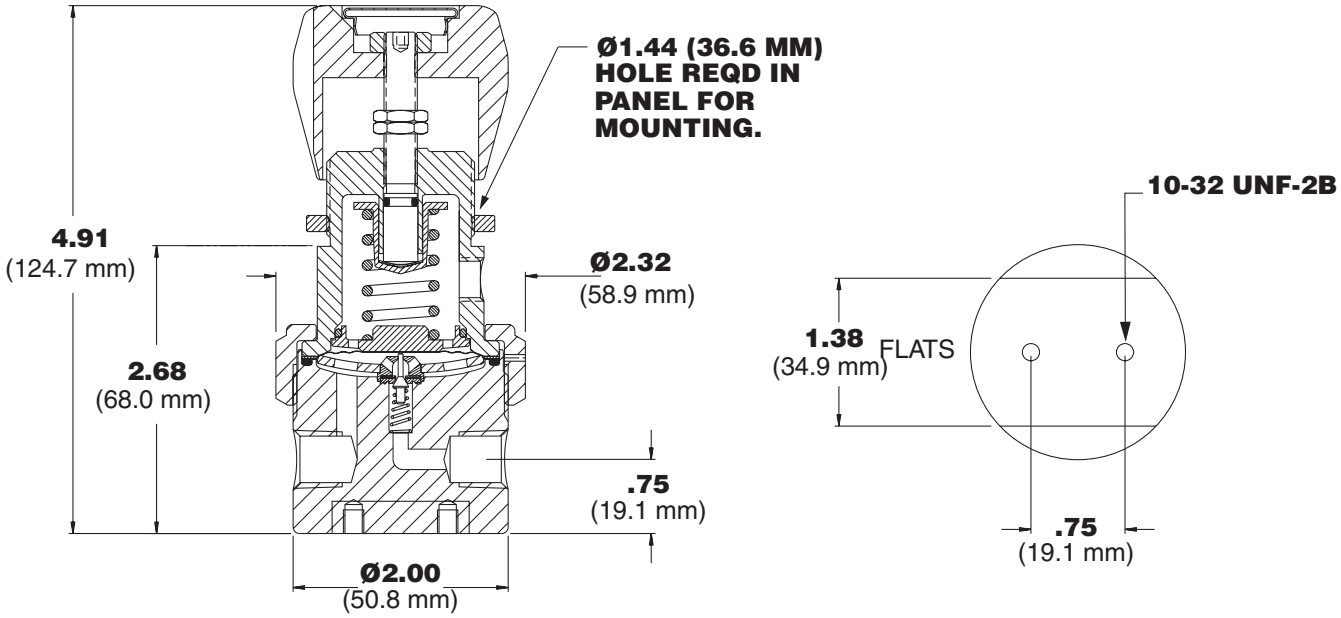
Parker Instrumentation

IR4200 Series

Product Features and Benefits

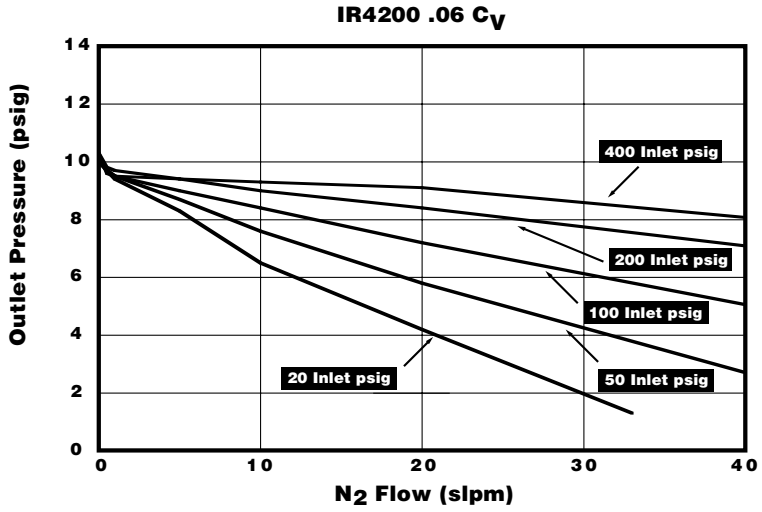
- Unique patented compression member loads the seal to the body without requiring a threaded nozzle or additional seals to atmosphere.
- O_2 Cleaned.
- Fully swept design.
- Internally threadless seat design include promotes long seat life.
- Convoluted, Hastelloy C-22® diaphragm provides high corrosion 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.

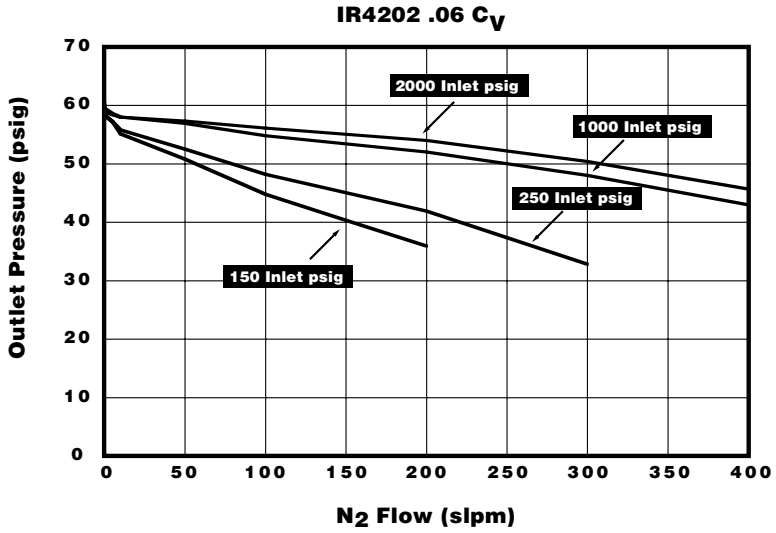
Dimensional Drawing

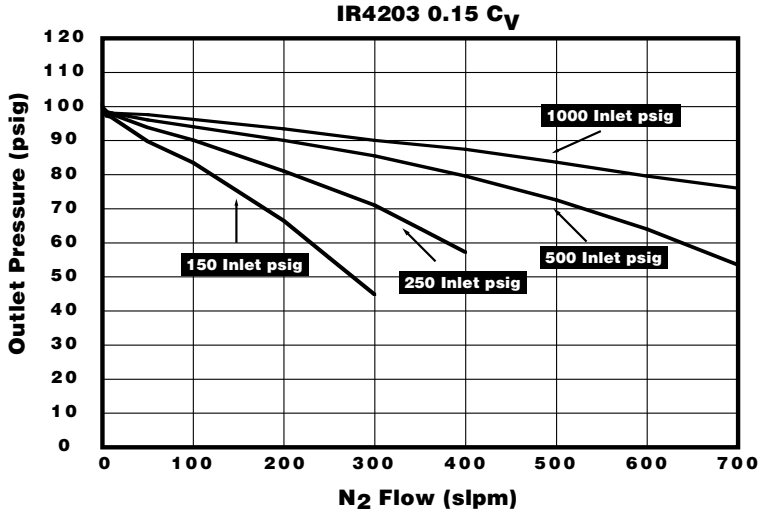


IR4200 Series

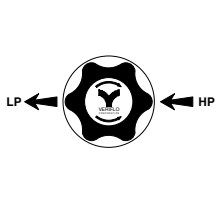
Flow Curves



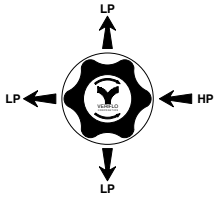




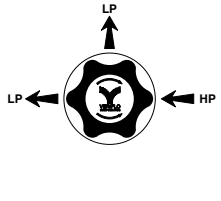
Porting Configurations



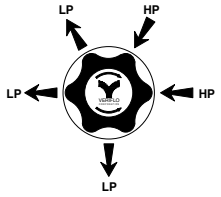
Porting Code 2P



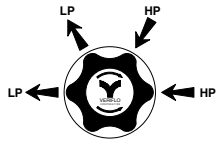
Porting Code 4PB



Porting Code 3P



Porting Code 5P



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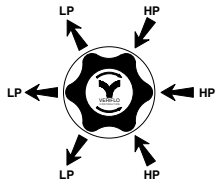


Porting Code 6P

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

IR4200 Series

Ordering Information

IR420 B K _ _ _ 4 B _ _

BASIC SERIES

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
5 = 10 - 500 psig	0 - 600 psig

BODY MATERIAL
B = Brass

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

SEAT MATERIALS
K = PCTFE

PORTING

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

2P	–	–
3P	Y/X	–
4P	Y/X	Y/X
4PB	Y/X	–
5P	Y/X	Y/X

INLET GAUGE
3000 psig std.
400 psig with the 10 psig range
2000 psig with .15 C_V 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
IR4203BK**2P**4B (*No X required for gauges, inlet & outlet ports only*)

Example #2
IR4203BK**3P**X4B (*One X for gauge port*)

Example #3
IR4203BK**4PB**X4B (*One X for gauge port*)

Example #4
IR4203BK**4P**XX4B (Two X's for gauge ports)

***** Do not exceed the rated pressure of the CGA connection

CGA#*
320
330
350
510
580
590
Additional Configurations
Available Upon Request

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.

PORT MOUNTING
B = .75 port height w/ .75 mounting hole pattern

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

Range Table

Model Basic Series	Max Inlet PSIG C_V		
	.06	.02	.15
IR4200	400	400	400
IR4201	4000	4000	1250
IR4202	4000	4000	1250
IR4203	4000	4000	1250
IR4204	4000	4000	1250
IR4205	4000	4000	1250

IR4000W Series

Welded High Pressure Regulator Internally Threadless Design

VERIFLO
ISO 9001 Certified

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 = .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:
.02 C_V . . . . . .23 psig per100 psig (.016 barg per 7 barg)
.06 C_V . . . . . .6 psig per100 psig (.04 barg per 7 barg)
.15 C_V . . . . . 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.

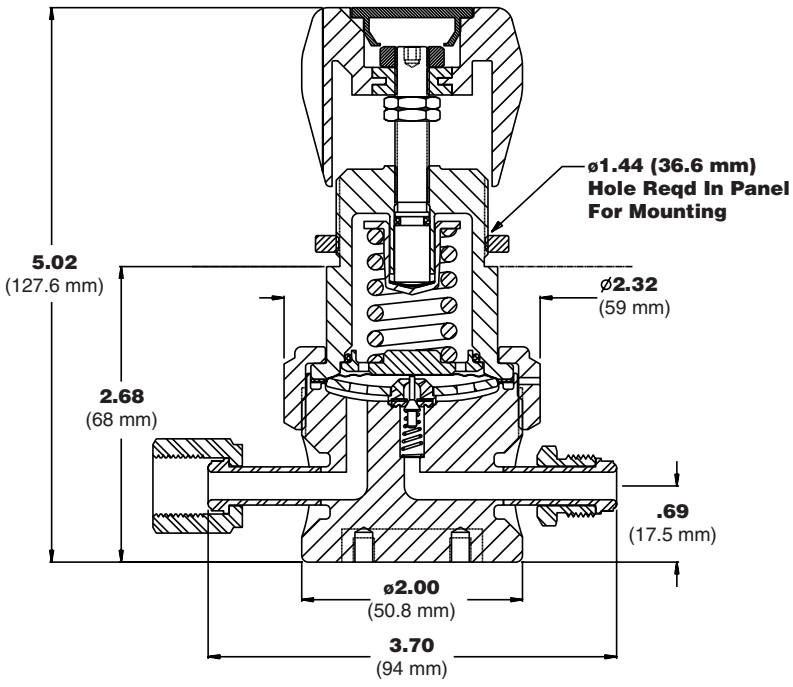
Parker Instrumentation

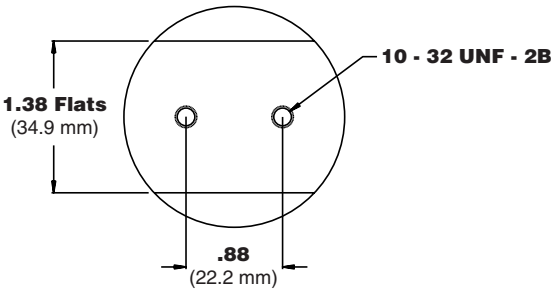
IR4000W Series

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.
- O_2 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.

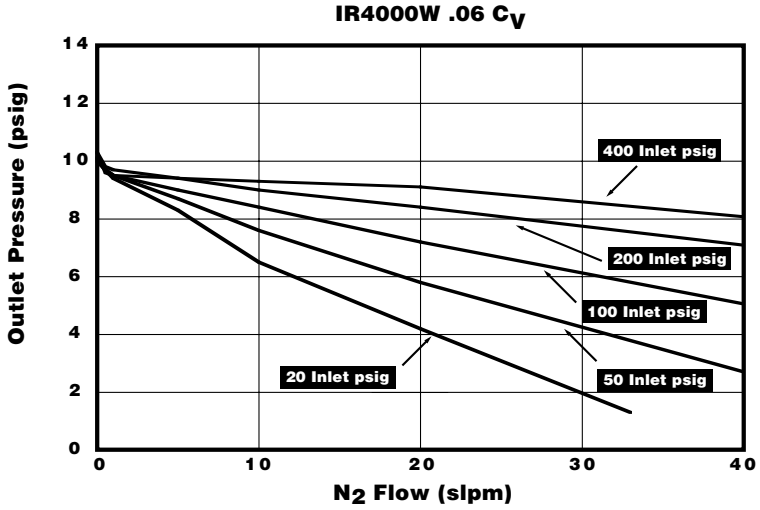
Dimensional Drawing

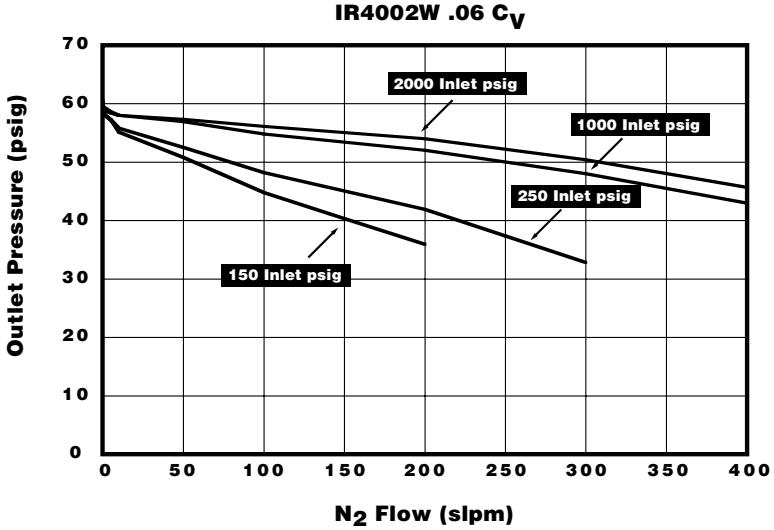


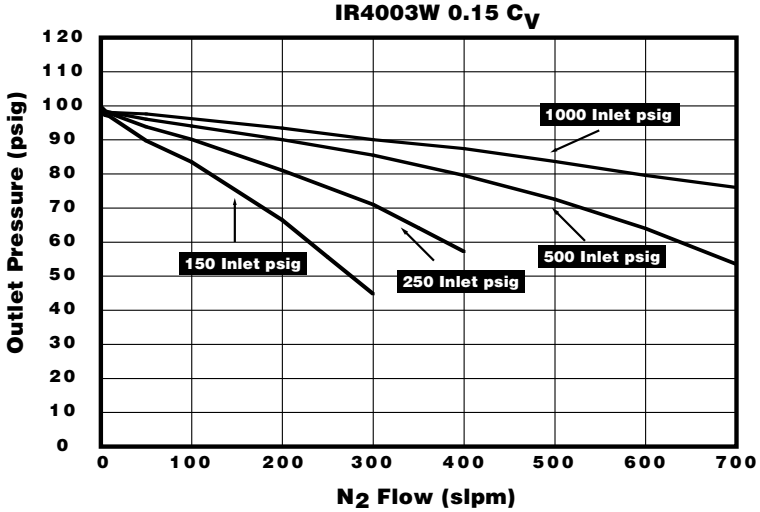


IR4000W Series

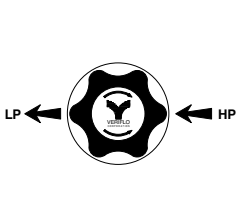
Flow Curves



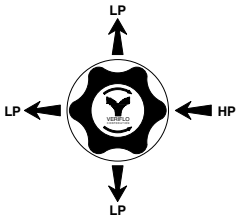




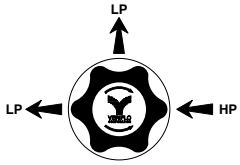
Porting Configurations



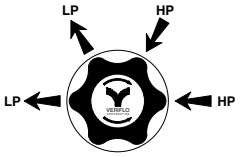
Porting Code 2P



Porting Code 4PB



Porting Code 3P

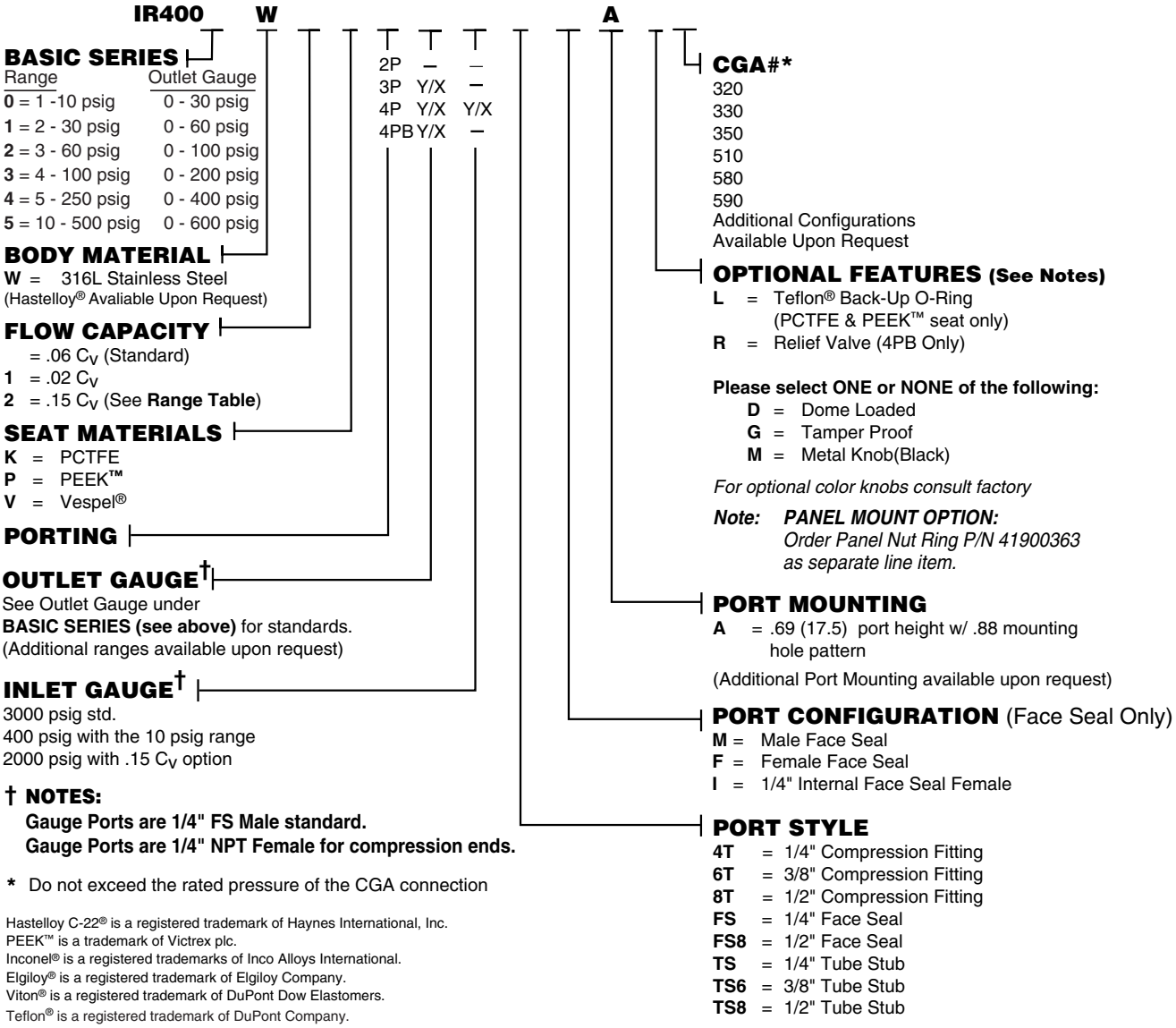


Porting Code 4P

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

IR4000W Series

Ordering Information



† 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

Range Table

Model Basic Series	Max Inlet PSIG C_V		
	.06	.02	.15
IR4000W	400	400	400
IR4001W	4000	4000	1250
IR4002W	4000	4000	1250
IR4003W	4000	4000	1250
IR4004W	4000	4000	1250
IR4005W	4000	4000	1250

Dimension Table

Connection Type	End to End Dimension
1/4" Compression Fitting	3.34 ± .02 in. (84.8 ± .5 mm)
3/8" Compression Fitting	3.48 ± .02 in. (88.4 ± .5 mm)
1/2" Compression Fitting	4.38 ± .03 in. (111.3 ± .8 mm)
1/4" Face Seal	3.70 ± .02 in. (94 ± .5 mm)
1/2" Face Seal	4.82 ± .02 in. (122.4 ± .5 mm)
All Tube Stubs	3.70 ± .02 in. (94 ± .5 mm)

Parker Instrumentation

IR5000 Series

SS High Pressure Regulator Internally Threadless Design

VERIFLO
ISO 9001 Certified

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 . . . . . Elgiloy®
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. . . . . C_V = .06
Optional . . . . . C_V = .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 C_V . . . . . .12 psig per100 psig (.008 barg per 7 barg)
.06 C_V . . . . . .3 psig per100 psig (.02 barg per 7 barg)
.15 C_V . . . . . .75 psig per100 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.

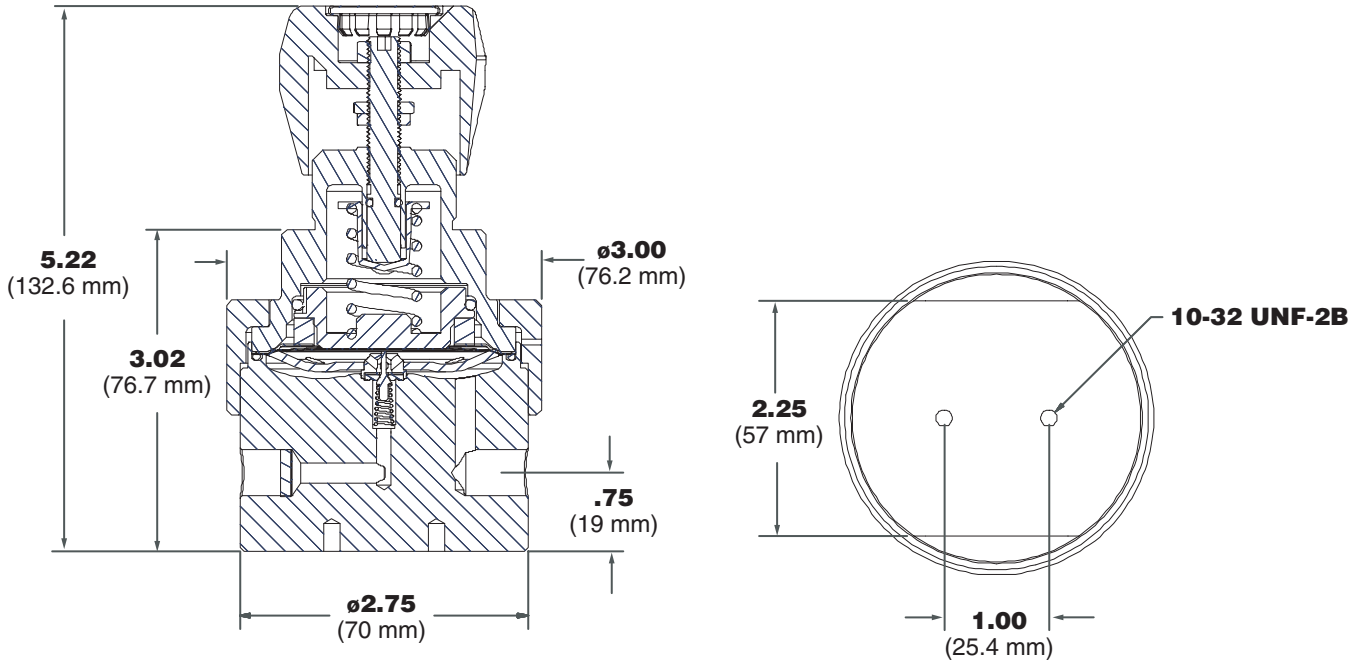
Parker Instrumentation

IR5000 Series

Product Features and Benefits

- Unique patented compression member loads the seal to the body without requiring a threaded nozzle or additional seals to atmosphere.
- Large diaphragm provides more sensitive pressure adjustments.
- Selection of seat materials for media compatibility and temperature applications.
- Meets NACE Standard MR0175.
- O_2 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.

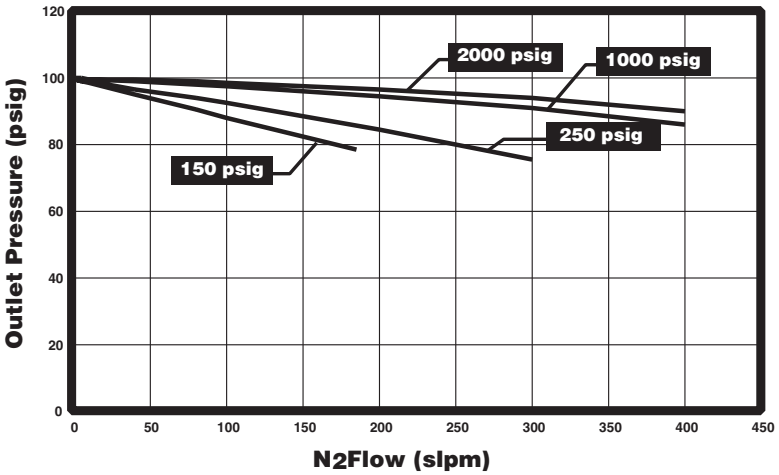
Dimensional Drawing



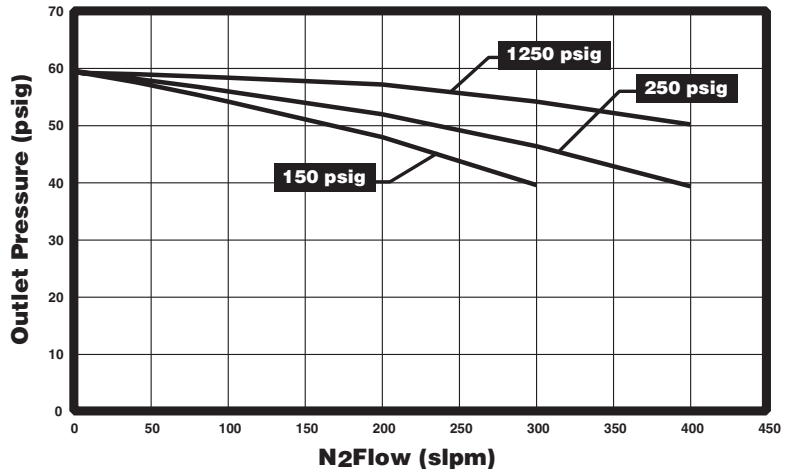
IR5000 Series

Flow Curves

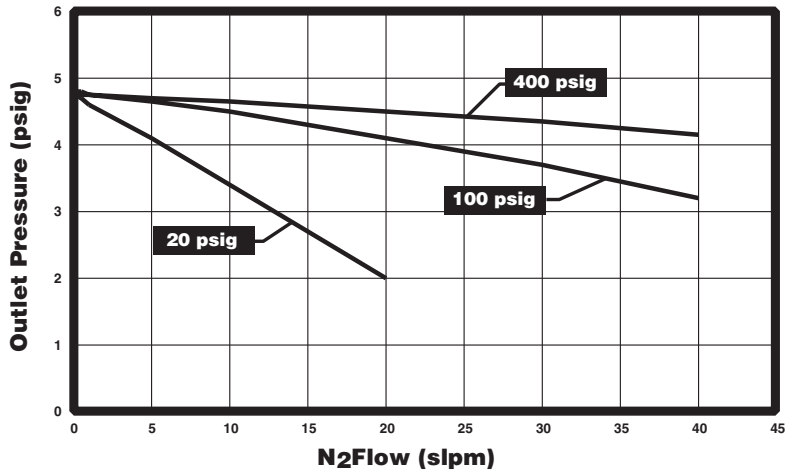
IR5003 .06 C_V



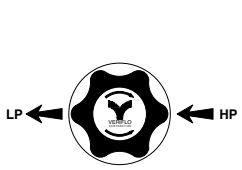
IR5002 .15 C_V



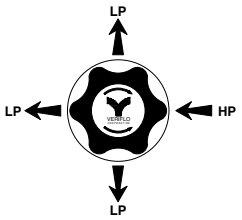
IR5000 .06 C_V



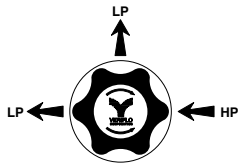
Porting Configurations



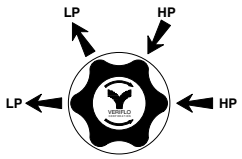
Porting Code 2P



Porting Code 4PB



Porting Code 3P



Porting Code 4P

Gauge Index

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

IR5000 Series

Ordering Information

IR500 S 2P – – 4 B

BASIC SERIES

Range	Outlet Gauge
0 = 0 - 5 psig	0 - 15 psig
1 = 1 - 30 psig	0 - 60 psig
2 = 2 - 60 psig	0 - 100 psig
3 = 3 - 100 psig	0 - 200 psig
4 = 5 - 250 psig	0 - 400 psig

MATERIALS

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

FLOW CAPACITY

= .06 C_V (standard)
1 = .02 C_V
2 = .15 C_V (See **Range Table**)

SEAT MATERIALS

K = PCTFE
P = PEEK™
V = Vespel®

PORTING

2P	–	–
3P	Y/X	–
4P	Y/X	Y/X
4PB	Y/X	–

OUTLET GAUGE

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

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
IR5003SK**2P**4B (*No X required for gauges, inlet & outlet ports only*)

Example #2
IR5003SK**3P**X4B (*One X for gauge port*)

Example #3
IR5003SK**4PB**X4B (*One X for gauge port*)

Example #4
IR5003SK**4P**XX4B (Two X's for gauge ports)

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

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

INLET GAUGE

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

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

PORT MOUNTING

CGA#*

320
330
350
510
580
590
Additional Configurations Available Upon Request

OPTIONAL FEATURES

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

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

Range Table

Model Basic Series	Max Inlet PSIG C_V		
	.06	.02	.15
IR5000	400	400	400
IR5001	3500	3500	1250
IR5002	3500	3500	1250
IR5003	3500	3500	1250
IR5004	3500	3500	1250

IR5200 Series

Brass High Pressure Regulator Internally Threadless Design

VERIFLO
ISO 9001 Certified

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. . . . . 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:
.02 C_V . . . . . .12 psig per 100 psig (.008 barg per 7 barg)
.06 C_V . . . . . .3 psig per 100 psig (.02 barg per 7 barg)
.15 C_V . . . . . .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.

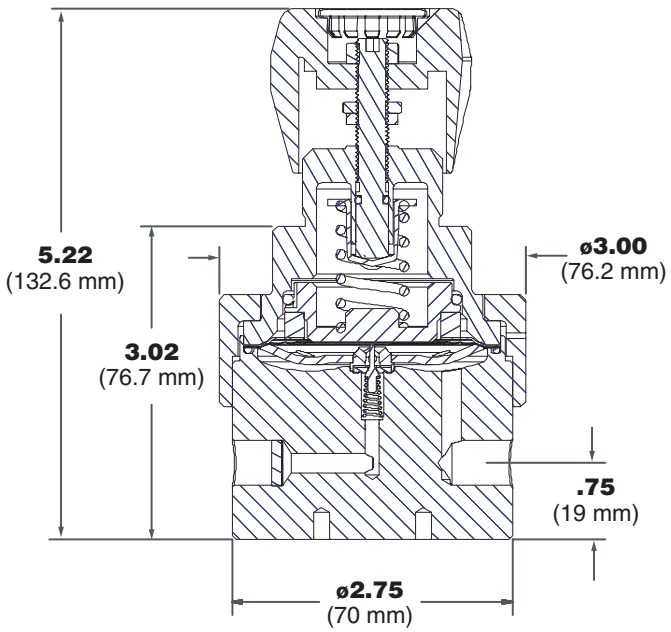
Parker Instrumentation

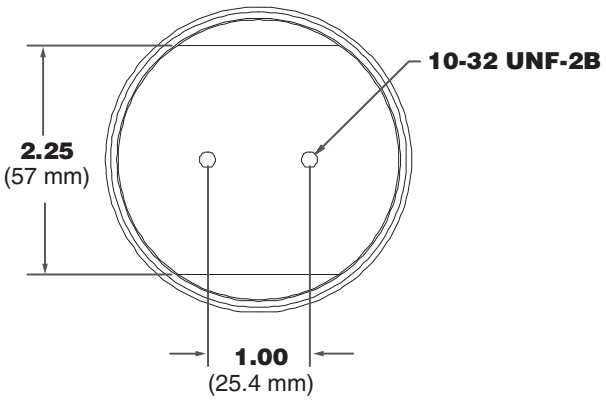
IR5200 Series

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.
- O_2 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.

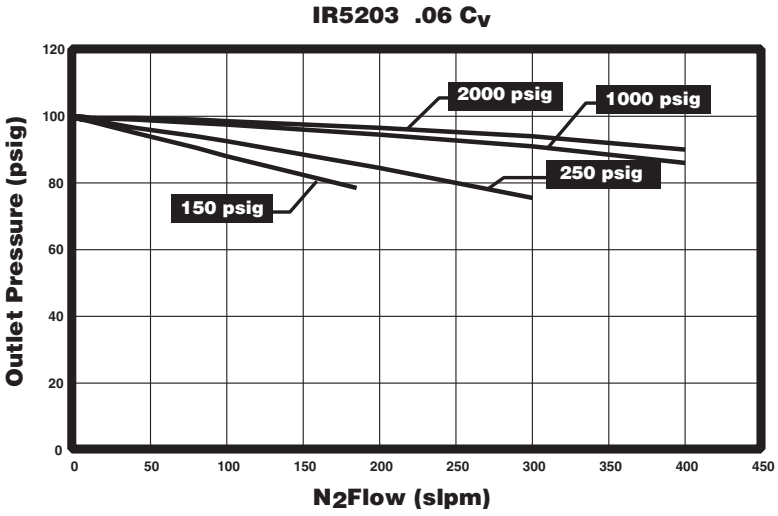
Dimensional Drawing

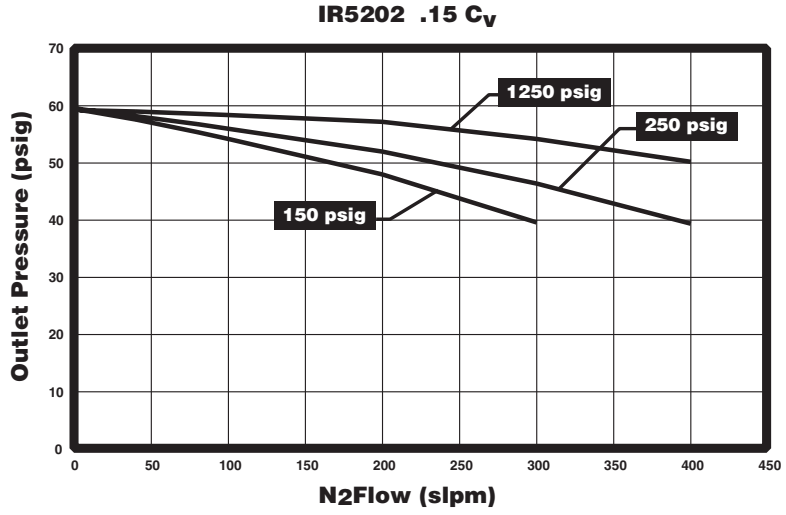


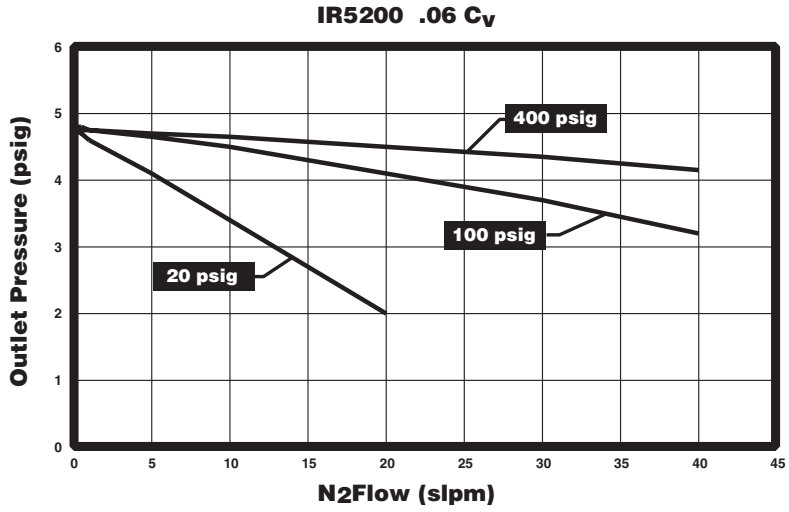


IR5200 Series

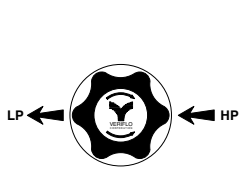
Flow Curves



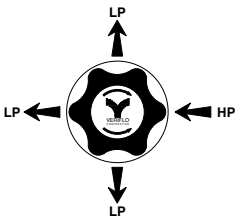




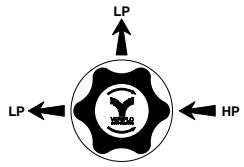
Porting Configurations



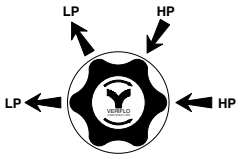
Porting Code 2P



Porting Code 4PB



Porting Code 3P



Porting Code 4P

Gauge Index

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

IR5200 Series

Ordering Information

IR520 ___ B ___ ___ ___ 4 B ___

BASIC SERIES

Range	Outlet Gauge
0 = 0 - 5 psig	0 - 15 psig
1 = 1 - 30 psig	0 - 60 psig
2 = 2 - 60 psig	0 - 100 psig
3 = 3 - 100 psig	0 - 200 psig
4 = 5 - 250 psig	0 - 400 psig

MATERIALS
B = Brass

FLOW CAPACITY
= .06 C_V (standard)
1 = .02 C_V
2 = .15 C_V (See **Range Table**)

SEAT MATERIALS
K = PCTFE

PORTING

2P	–	–
3P	Y/X	–
4P	Y/X	Y/X
4PB	Y/X	–

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
IR5203BK**2P**4B (*No X required for gauges, inlet & outlet ports only*)

Example #2
IR5203BK**3P**X4B (*One X for gauge port*)

Example #3
IR5203BK**4PB**X4B (*One X for gauge port*)

Example #4
IR5203BK**4P**XX4B (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.
Inconel® is a registered trademarks 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.

CGA#*
320
330
350
510
580
590
Additional Configurations
Available Upon Request

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

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

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

PORT STYLE
4 = 1/4" NPTF (**Standard**)
(Other sizes available upon request)

INLET GAUGE
3000 psig std.
400 psig with the 10 psig range
2000 psig with .15 C_V option

Range Table

Model Basic Series	Max Inlet PSIG C_V		
	.06	.02	.15
IR5200	400	400	400
IR5201	3500	3500	1250
IR5202	3500	3500	1250
IR5203	3500	3500	1250
IR5204	3500	3500	1250

Parker Instrumentation

IR5000W Series

Welded High Pressure, Regulator Internally Threadless Design

VERIFLO
ISO 9001 Certified

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

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™, 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), 2-30 psig, 3-60 psig, 4-100 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. . . . . C_V = .06
Optional . . . . . C_V = .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 C_V . . . . . .12 psig per 100 psig (.008 barg per 7 barg)
.06 C_V . . . . . .3 psig per 100 psig (.02 barg per 7 barg)
.15 C_V . . . . . .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.

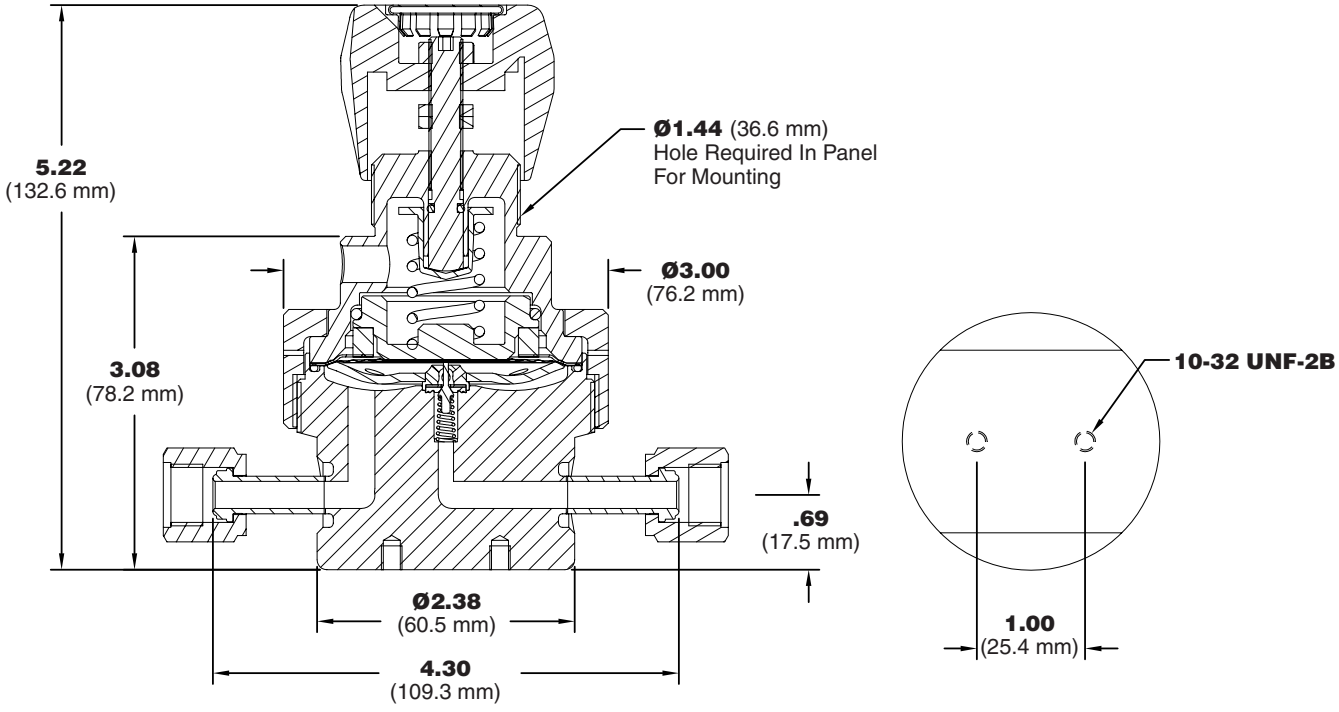
Parker Instrumentation

IR5000W Series

Product Features and Benefits

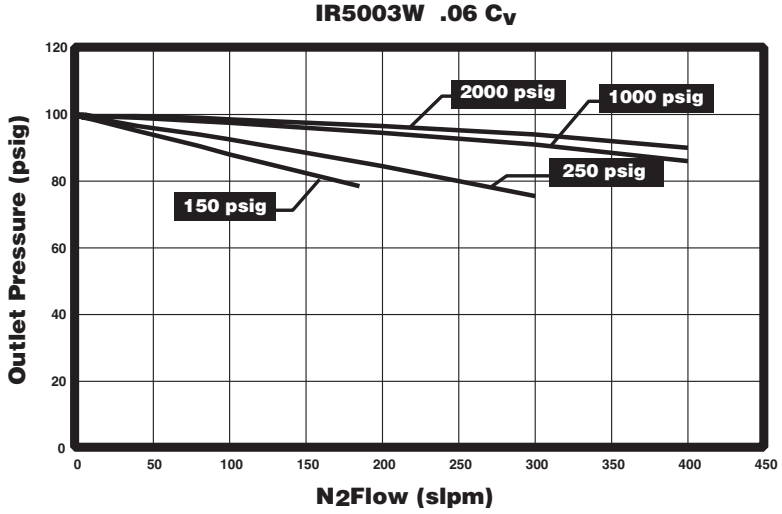
- Unique patented compression member loads the seal to the body without requiring a threaded nozzle or additional seals to atmosphere.
- Large diaphragm provides more sensitive pressure adjustments.
- Selection of seat materials for media compatibility and temperature applications.
- Meets NACE Standard MR0175.
- O_2 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.

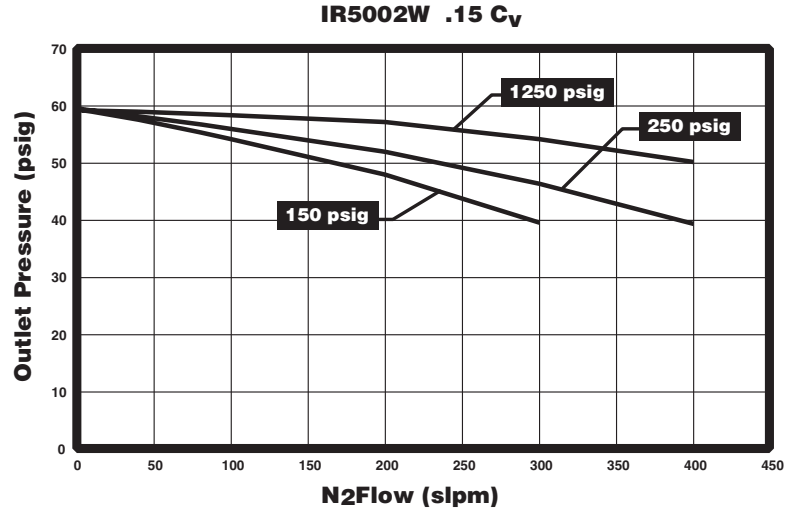
Dimensional Drawing

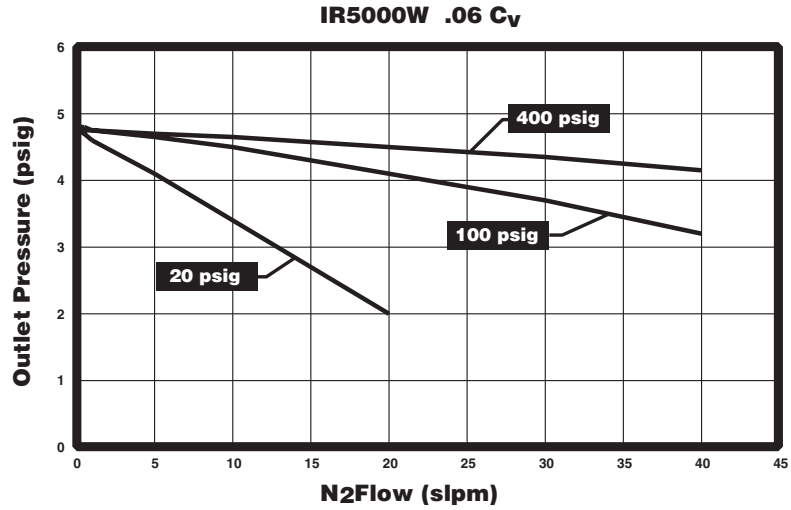


IR5000W Series

Flow Curves

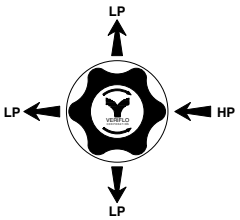




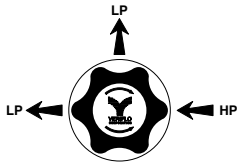


Porting Configurations

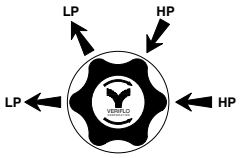
Porting Code 2P



Porting Code 4PB



Porting Code 3P



Porting Code 4P

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

IR5000W Series

Ordering Information

IR500 W 2P – – A

BASIC SERIES

Range	Outlet Gauge
0 = 0 - 5 psig	0 - 15 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

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

FLOW CAPACITY
= .06 C_V (standard)
1 = .02 C_V
2 = .15 C_V (See **Range Table**)

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

PORTING
2P
3P
4P
4PB

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

2P	– –
3P	Y/X –
4P	Y/X Y/X
4PB	Y/X –

ORDERING REGULATORS WITHOUT GAUGES

Example #1
IR5003WK**2P**FSMMA (*No X required for gauges, inlet & outlet ports only*)

Example #2
IR5003WK**3P**XFSMMMA (*One X for gauge port*)

Example #3
IR5003WK**4PB**XFSMMMMA (*One X for gauge port*)

Example #4
IR5003WK**4P**XXFSMMMMA (Two X's for gauge ports)

† 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

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

CGA#*
320
330
350
510
580
590
Additional Configurations
Available Upon Request

OPTIONAL FEATURES
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

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

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 C_V option

Range Table

Model Basic Series	Max Inlet PSIG C_V		
	.06	.02	.15
IR5000	400	400	400
IR5001	3500	3500	1250
IR5002	3500	3500	1250
IR5003	3500	3500	1250
IR5004	3500	3500	1250

Dimension Table

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

Parker Instrumentation

IR6000 Series

SS Two Stage Regulator Internally Threadless Design

VERIFLO
ISO 9001 Certified

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 . . . . . Elgiloy®
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 per100 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.

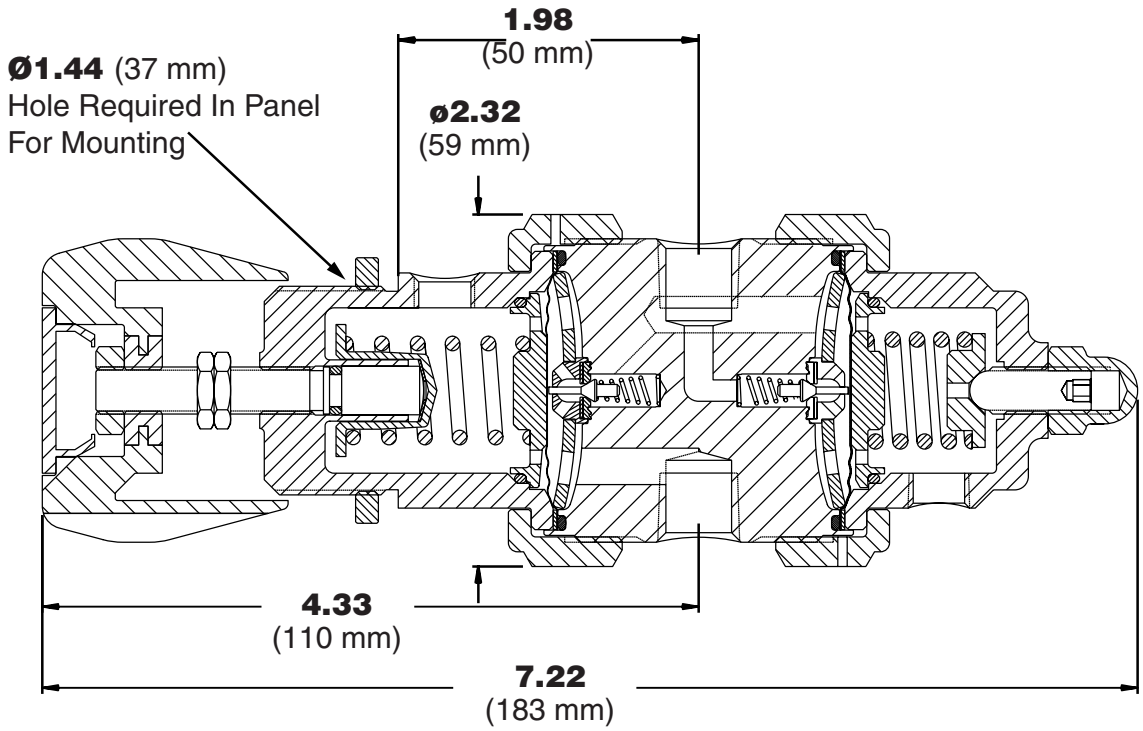
Parker Instrumentation

IR6000 Series

Product Features and Benefits

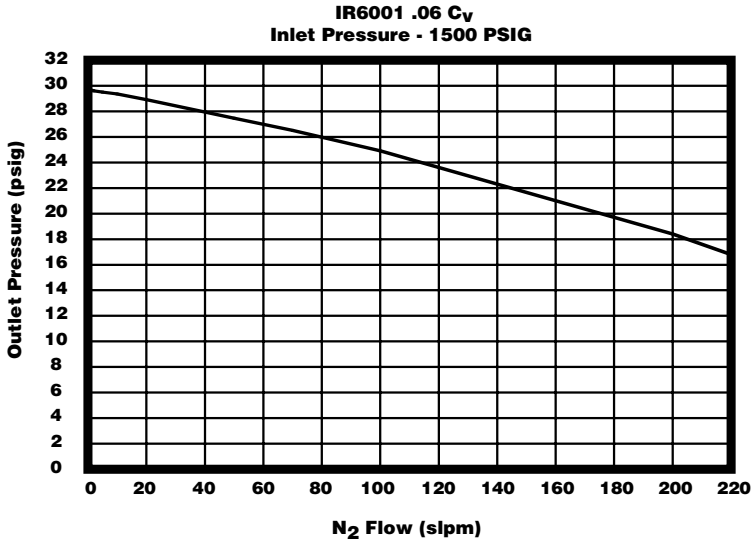
- Unique patented compression member loads the seal to the body without requiring a threaded nozzle or additional seals to atmosphere.
- Selection of seat materials for media compatibility and temperature applications.
- Meets NACE Standard MR0175.
- O_2 Cleaned.
- Fully swept design.
- Internally threadless 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.

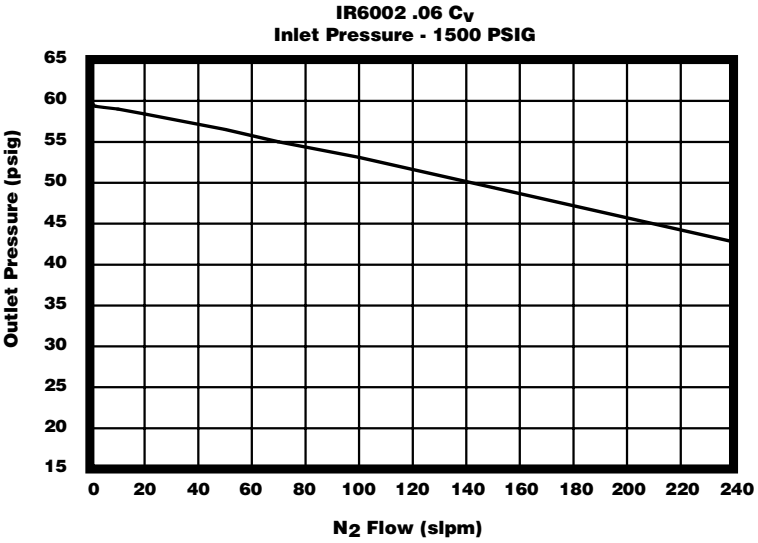
Dimensional Drawing

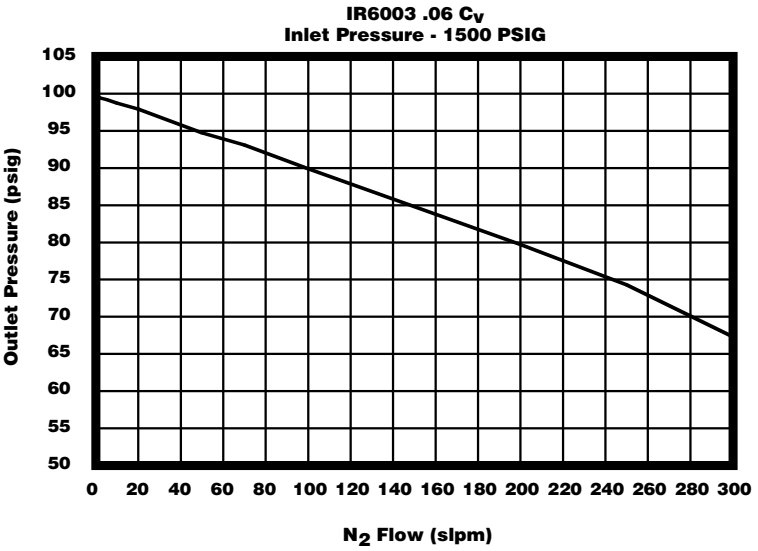


IR6000 Series

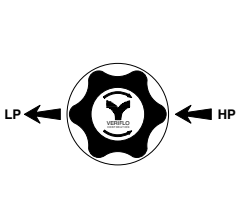
Flow Curves



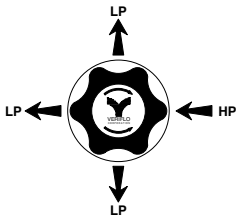




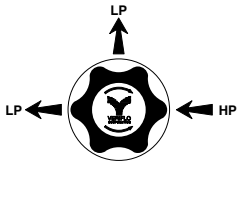
Porting Configurations



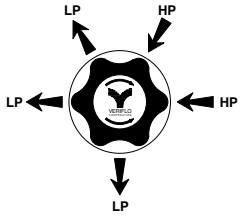
Porting Code 2P



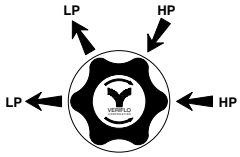
Porting Code 4PB



Porting Code 3P



Porting Code 5P



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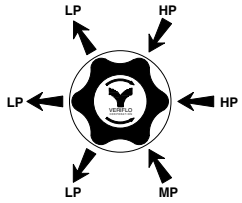


Porting Code 6P

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 S _ _ _ 4 B _

BASIC SERIES

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

BODY MATERIAL

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

FLOW CAPACITY

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

SEAT MATERIALS

K = PCTFE
P = PEEK™
V = Vespel®

PORTING

2P	—	—
3P	Y/X	—
4P	Y/X	Y/X
4PB	Y/X	—
5P	Y/X	Y/X
6P	Y/X	Y/X

OUTLET GAUGE

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

INLET GAUGE

3000 psig std.

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 MOUNTING

B = Standard (No options)

PORT STYLE

4 = 1/4" NPT Female Standard
(Additional sizes available upon request)

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
IR6003SK**2P**4B (*No X required for gauges, inlet & outlet ports only*)
Example #2
IR6003SK**3P**X4B (*One X for gauge port*)
Example #3
IR6003SK**4PB**X4B (*One X for gauge port*)
Example #4
IR6003SK**5P**XX4B (Two X's for gauge ports)

* Do not exceed the rated pressure of the CGA connection

IR6200 Series

Brass Two Stage Regulator Internally Threadless Design

VERIFLO
ISO 9001 Certified

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 .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 per100 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.

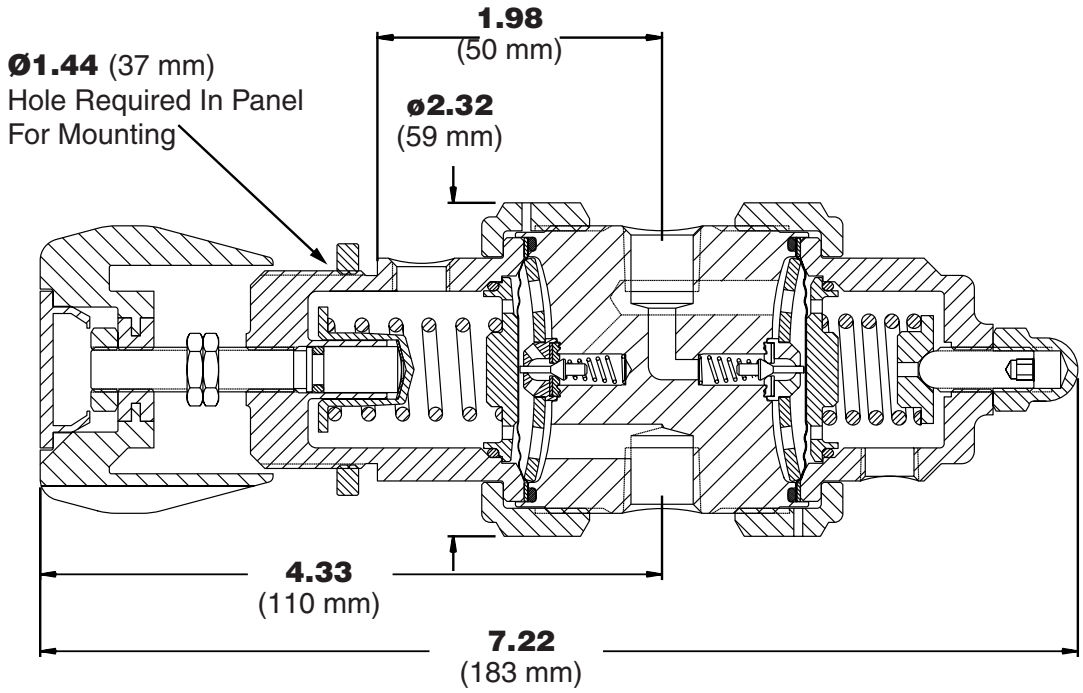
Parker Instrumentation

IR6200 Series

Product Features and Benefits

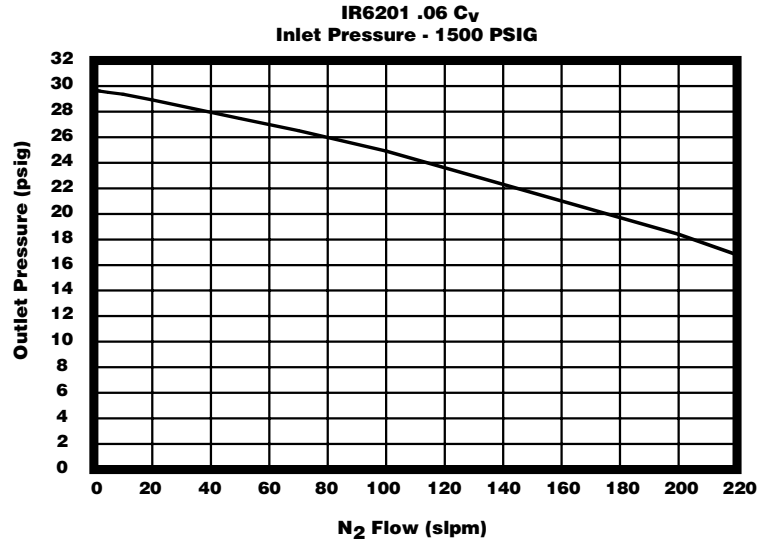
- Unique patented compression member loads the seal to the body without requiring a threaded nozzle or additional seals to atmosphere.
- O_2 Cleaned.
- Fully swept design.
- Internally threadless seat design promotes long seat life.
- Convoluted, Hastelloy C-22® diaphragm provides high corrosion resistance 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.

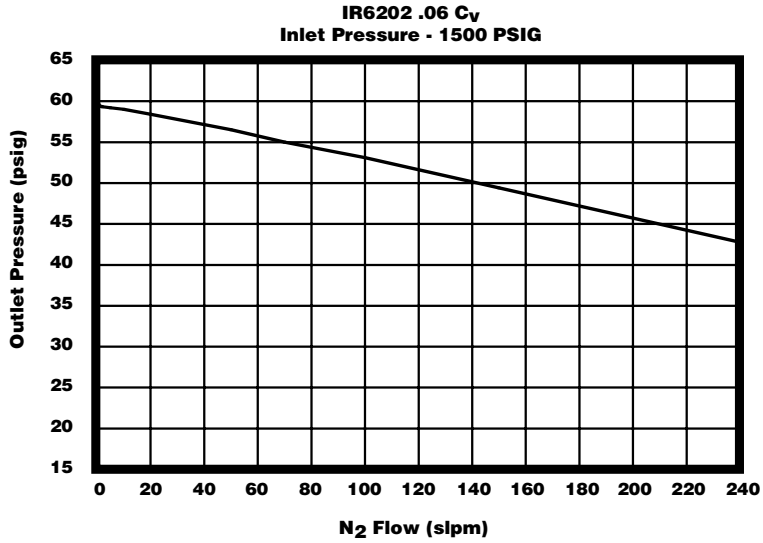
Dimensional Drawing

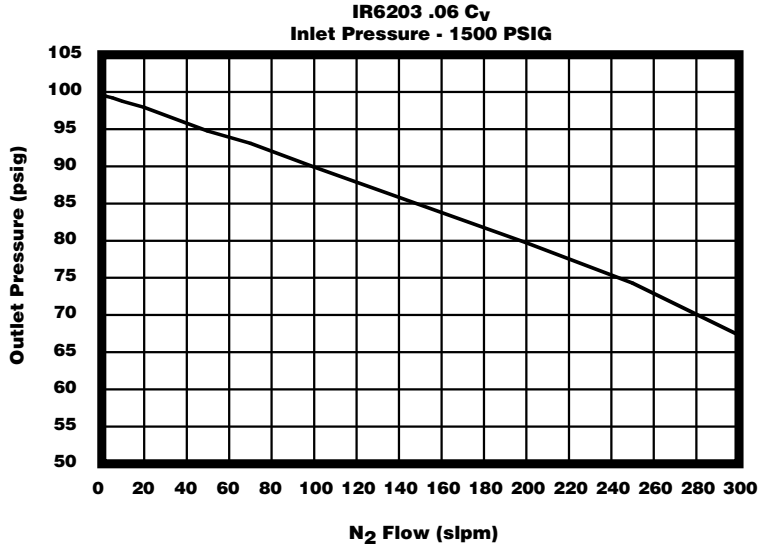


IR6200 Series

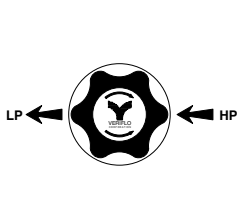
Flow Curves



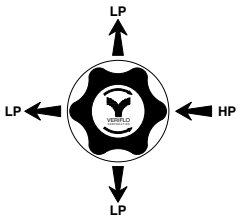




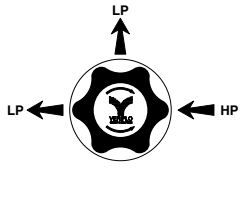
Porting Configurations



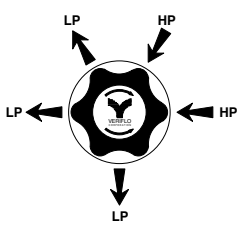
Porting Code 2P



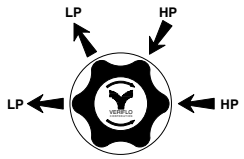
Porting Code 4PB



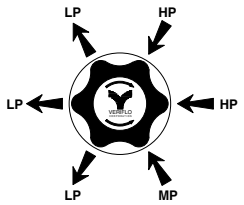
Porting Code 3P



Porting Code 5P



Porting Code 4P



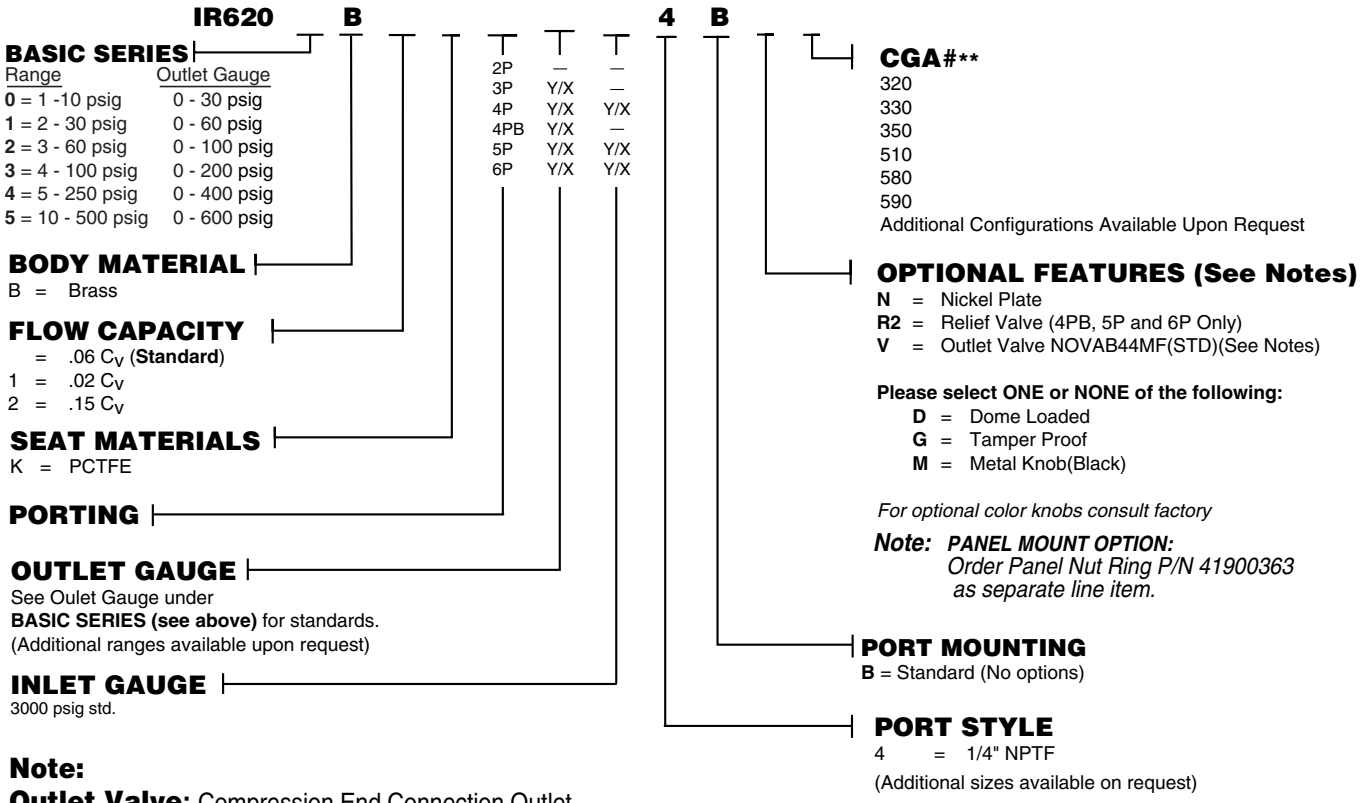
Porting Code 6P

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

IR6200 Series

Ordering Information



Note:

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

ORDERING REGULATORS WITHOUT GAUGES

Example #1

IR6203BK**2P**4B (*No X required for gauges, inlet & outlet ports only*)

Example #2

IR6203BK**3P**X4B (*One X for gauge port*)

Example #3

IR6203BK**4PB**X4B (*One X for gauge port*)

Example #4

IR6203BK**5P**XX4B (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.
Inconel® is a registered trademarks of Inco Alloys International.
Elgiloy® is a registered trademark of Elgiloy Company.
Viton® is a registered trademark of DuPont Dow Elastomers.

Parker Instrumentation

IR6000W Series

Welded Two Stage Regulator Internally Threadless Design

VERIFLO
ISO 9001 Certified

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.

Note: IR6000 Threaded Porting Shown

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™, 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 . . . . 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 per100 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.

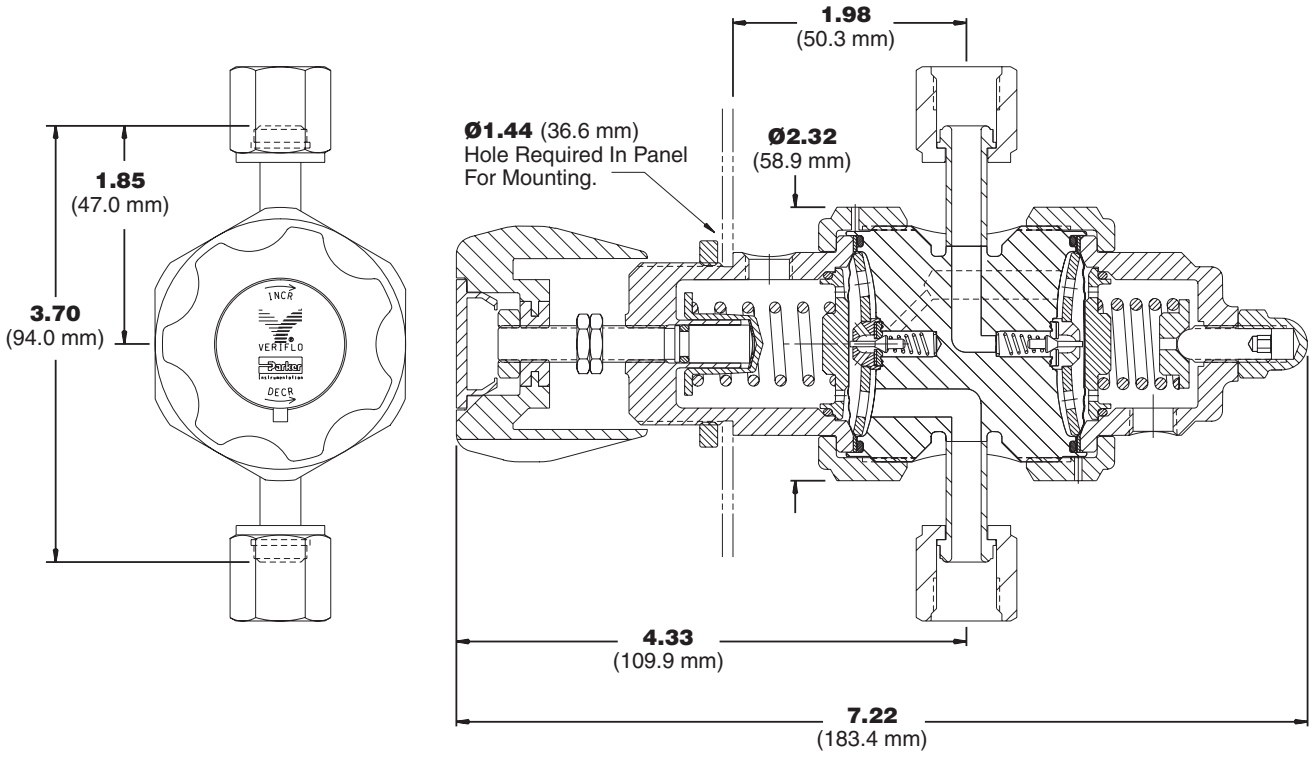
Parker Instrumentation

IR6000W Series

Product Features and Benefits

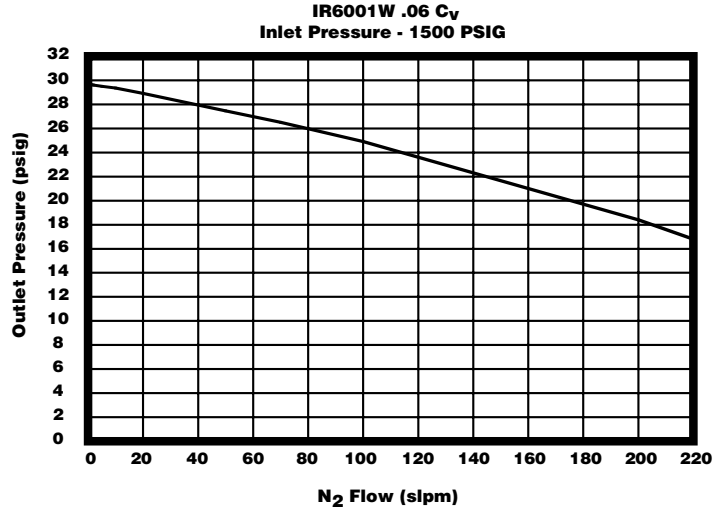
- Unique patented compression member loads the seal to the body without requiring a threaded nozzle or additional seals to atmosphere.
- Selection of seat materials for media compatibility and temperature applications.
- Meets NACE Standard MR0175.
- O_2 Cleaned.
- Fully swept design.
- Internally threadless 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.

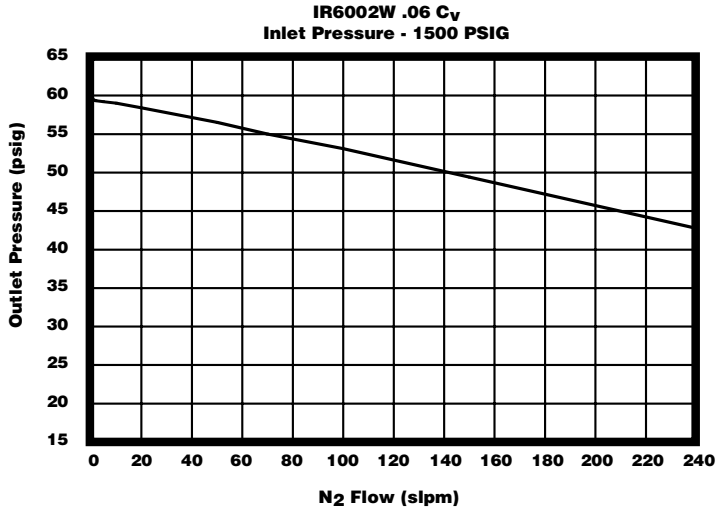
Dimensional Drawing

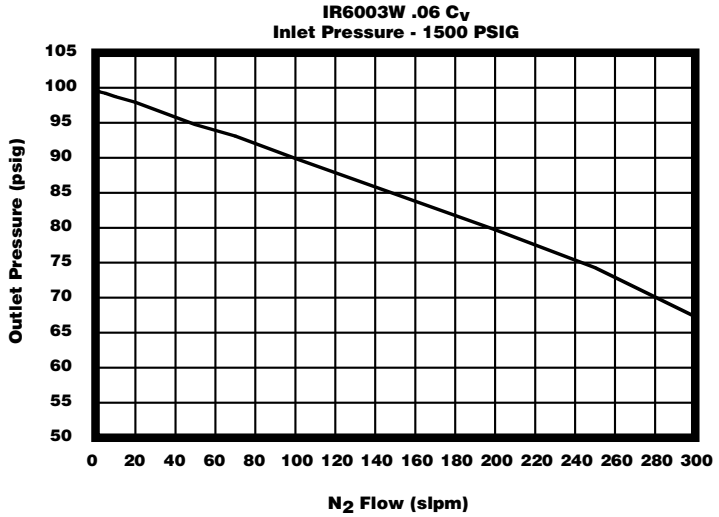


IR6000W Series

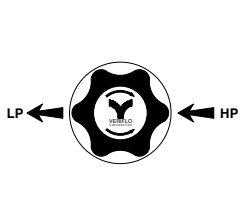
Flow Curves



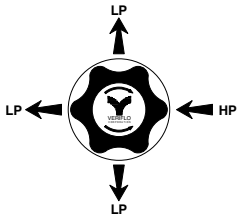




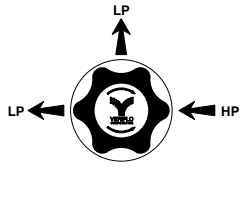
Porting Configurations



Porting Code 2P



Porting Code 4PB



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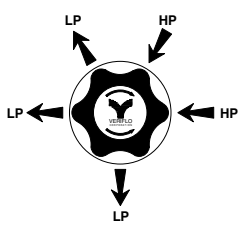
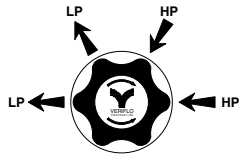


Porting Code 5P



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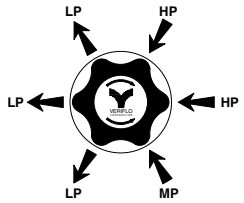

Porting Code 6P

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

IR6000W Series

Ordering Information

IR600 W 2P – – B

BASIC SERIES

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

BODY MATERIAL
W = 316L Stainless Steel
(Hastelloy® & Avaliable Upon Request)

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

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

PORTING

2P	–	–
3P	Y/X	–
4P	Y/X	Y/X
4PB	Y/X	–

OUTLET GAUGE†
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 C_V 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
IR6003WK**2P**FSMMB (*No X required for gauges, inlet & outlet ports only*)

Example #2
IR6003WK**3P**XFSMMMB (*One X for gauge port*)

Example #3
IR6003WK**4PB**XFSMMMMB (*One X for gauge port*)

Example #4
IR6003WK**4P**XXFSMMMMB (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))

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 MOUNTING
B = Standard (No Options)

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

(Additional ranges available upon request)

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PEEK™ is a trademark of Victrex plc.
Inconel® is a 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.

Dimension Table

Connection Type	End to End Dimension
1/4" Compression Fitting	3.34 ± .02 in. (84.8 ± .5 mm)
3/8" Compression Fitting	3.48 ± .02 in. (88.4 ± .5 mm)
1/2" Compression Fitting	4.38 ± .03 in. (111.3 ± .8 mm)
1/4" Face Seal	3.70 ± .02 in. (94 ± .5 mm)
1/2" Face Seal	4.82 ± .02 in. (122.4 ± .5 mm)
All Tube Stubs	3.70 ± .02 in. (94 ± .5 mm)

Parker Instrumentation

NPR4000 Series

Welded Negative Pressure Regulator

VERIFLO
ISO 9001 Certified

Parker Hannifin Corporation's Veriflo Division presents the High Purity NPR4000 regulator for applications involving negative delivery pressures with low pressure gas sources.

This 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 WF_6, BCL_3.

features

- "VeriClean", Veriflo's low sulfur high purity 316L, Stainless Steel™ that enhances electropolishing, welding, and corrosion resistance.
- Consistently maintains outlet set point.
- Fluid media: corrosive and non-corrosive gases.
- Low internal volume.
- Positive upward and downward diaphragm stops.

materials of construction

Wetted

Body . . . . . "VeriClean", Veriflo's high purity type 316L Stainless Steel, Hastelloy C-22®
Compression Member. . . . . Inconel®
Diaphragm . . . . . Hastelloy C-22®
Pin . . . . . Hastelloy C-22®
Poppet . . . . . Elgiloy®
Poppet Spring . . . . . 316L Stainless Steel, Hastelloy C-22®
Screen. . . . . Hastelloy C-22®
Carrier. . . . . Stainless Steel*, Hastelloy C-22®
Seat . . . . . PCTFE , PEEK™, Vespel®

Non-Wetted

Cap. . . . . Nickel Plated Brass
Nut . . . . 316L Stainless Steel, Nickel Plated Brass††
Knob(White) . . . . . ABS Plastic

operating conditions

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

Temperature:
PCTFE. . . . . -40°F to 150°F (-40°C to 66°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 Leak Rate:
Outboard . . . . . .1 x 10^{-9} scc/sec He
Inboard . . . . . .2 x 10^{-10} scc/sec He
Across seat . . . . . .4 x 10^{-8} scc/sec He

Supply Pressure Effect . . . . . .06 psig (.04 barg) per 100 psig(6.80 barg)

standard configurations

Any configuration of 1/4" FS male and/or female fittings:
Gland to gland length 3.70± .02 in. (94.0 ± .5 mm)
See Porting Guide for available configurations.

internal volume

4.0 cc

surface finishes

Standard Ra . . . 10 micro inch (.25 micro meter)

approximate weight

1.5 lbs. (.7 kg)

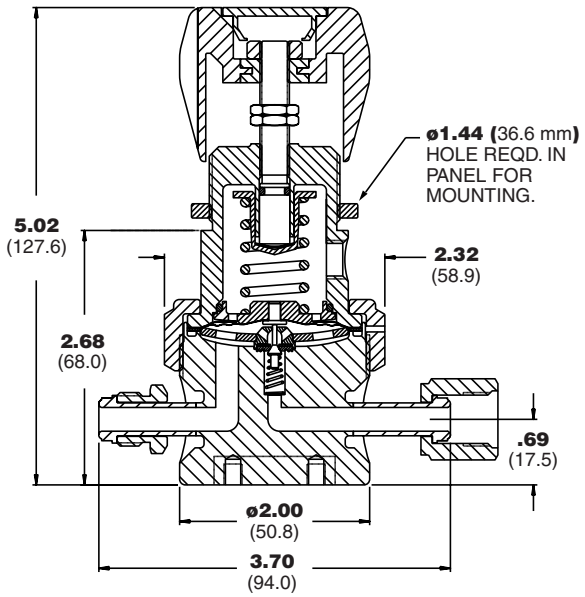
* Proprietary Carpenter Stainless Steel with corrosion resistance equal or better than 316.

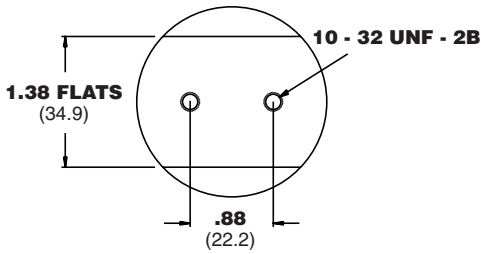
†† Nickel Plated Brass for PCTFE seat.

Parker Instrumentation

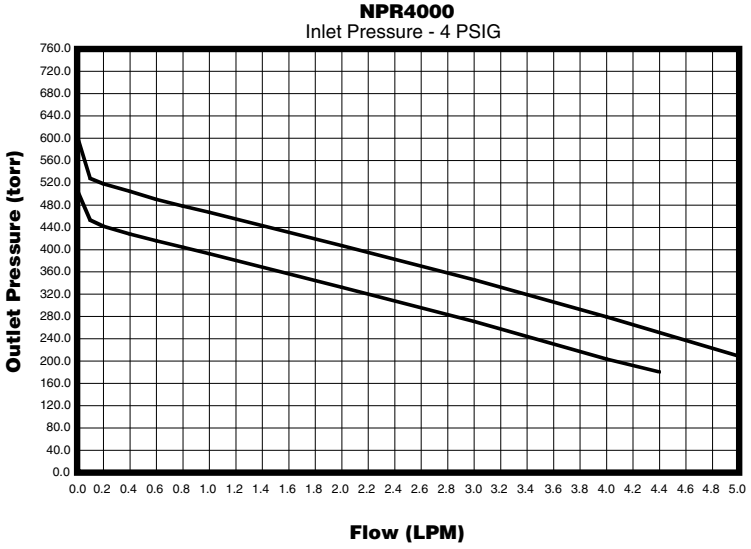
NPR4000 Series

Cross Sectional Drawing



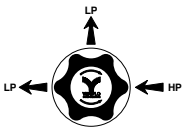


Flow Curves

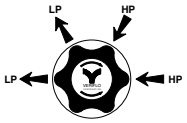


Porting Configurations

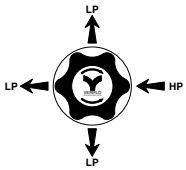
Porting Code 2P



Porting Code 3P



Porting Code 4P



Porting Code 4PB

Ordering Information

NPR4000 S K 4P V3 V1 S MMMF T

BASIC SERIES
NPR4000

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

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

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

PORTING
2P
3P
4P
4PB

OUTLET GAUGE
V3 = -30 in Hg-0-30 psig
X` = No Gauge

INLET GAUGE
V3 = -30 in Hg-0-30 psig
V1 = -30 in Hg-0-100 psig
4 = 0 - 400 psig
X = No Gauge

OPTIONAL FEATURES
T = Corrosion trim, Internal (Hastelloy® C-22 Carrier)

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

PORT CONFIGURATION
M = Male
F = Female

PORT STYLE
FS = 1/4" Face Seal
TS = 1/4" Tube Stub
4T = 1/4" Compression Fitting

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

* **Recommended for Nitrous Oxide (N_2O) Service**

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Inconel® is a registered trademark 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.

HFR900W Series

Welded High Flow Regulator

VERIFLO
ISO 9001 Certified

Parker Hannifin Corporation's Veriflo Division presents the HFR900W Regulator. The HFR900W is designed and engineered used for the control of high purity, corrosive, toxic, flammable, and inert gases, at a high flow rate and low inlet pressure.

features

- "VeriClean", Veriflo's low sulfur high purity 316L, Stainless Steel™ that enhances electropolishing, welding, and corrosion resistance.
- Internally Electropolished.
- Connections are welded to the regulator body by autogenous butt welding. This process eliminates small cavities that could create long-term "virtual leaks" and affect the purity of the process gas.
- The HFR900W was designed to withstand an internal vacuum without distortion of the diaphragm or deterioration of the seat and seal.
- The low leakage rates of the HFR900W Series eliminates the back diffusion of atmospheric contamination into the system.

materials of construction

Wetted

Body . . . . . "VeriClean", Veriflo's high purity type 316L Stainless Steel
Diaphragm . . . . . 316L Stainless Steel
Seat . . . . . 316L Stainless Steel
Seal . . . . . Teflon® and Viton® or optional Teflon® and Kalrez®

Non-Wetted

Cap . . . . . Nickel Plated Brass
Knob (Black) . . . . . ABS Plastic

operating conditions

Maximum supply pressure:
HFR90(_)WV . . . . . 500 psig (35 barg)
HFR90(_)WK . . . . . 200 psig (14 barg)
Outlet Pressure . . . . . 1-30 psig (2 barg)
2-75 psig (5 barg)
5-150 psig (10 barg)
Temperature . . . . –40°F to 150°F (–40°C to 66°C)

functional performance

Design burst pressure:
90(_)WV . . . . . 1500 psig (105 barg)
90(_)WK . . . . . 600 psig(41 barg)

Design Proof pressure:
90(_)WV . . . . . 750 psig (51 barg)
90(_)WK . . . . . 300 psig (21 barg)

Flow capacity . . . . . C_V = .85
(SEMI Flow Coefficient Test #F-32-0998)

Design Leak Rate:
Outboard . . . . . 2 x 10^{-8} scc/sec He
Inboard . . . . . 2 x 10^{-9} scc/sec He

Supply pressure effect:
4 psig per 100 psig(.3 per 7 barg)

standard configurations

3/8", 1/2" Tube Stub
1/2" Parker Face Seal Fittings
1/4", 1/2" Parker A-Lok Compression Fittings

See Regulator Porting Guide of other available optons.

internal volume

2.33 cu in (38 cc)

surface finishes

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

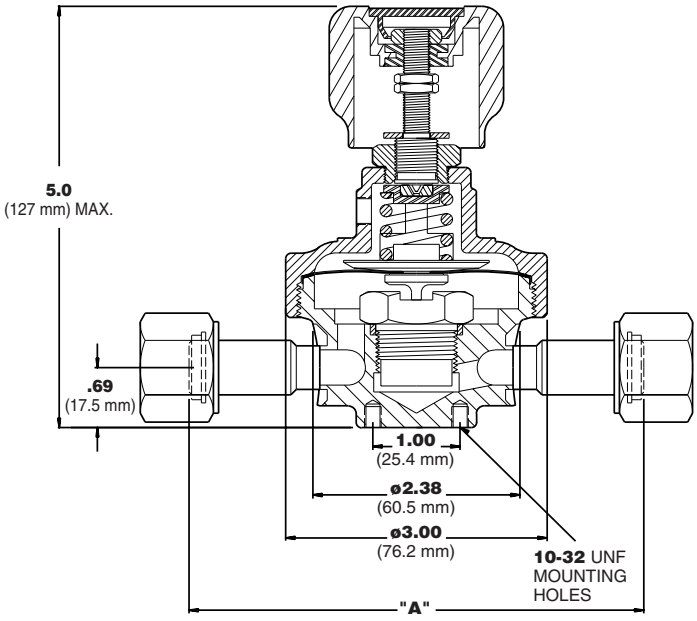
approximate weight

2.5 lbs. (1.2 kg)

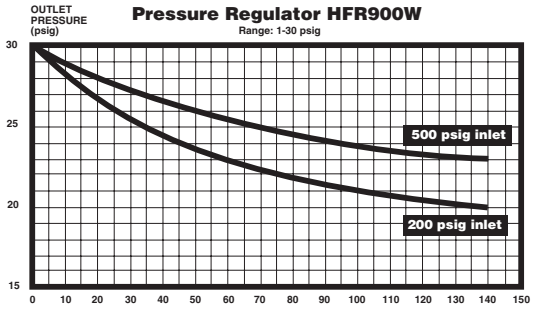
Parker Instrumentation

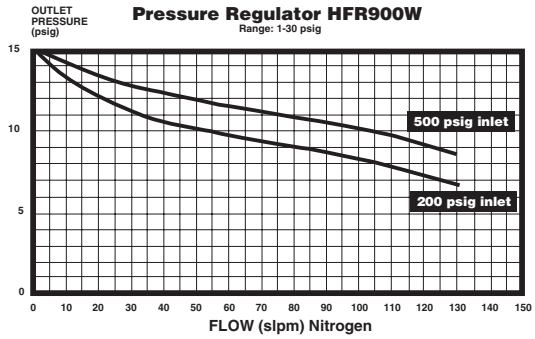
HFR900W Series

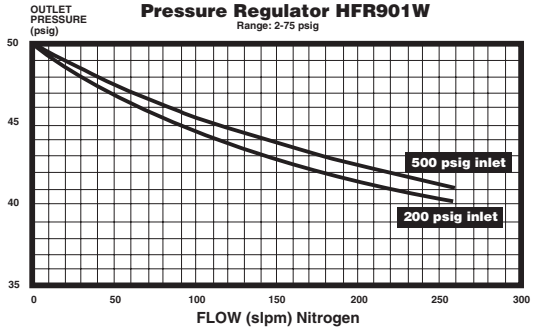
Cross Sectional Drawing

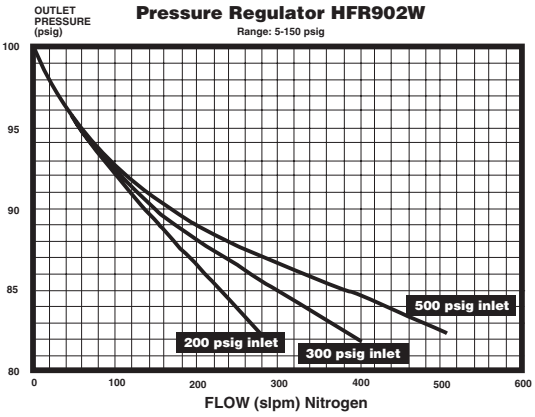


Flow Curves









Connection Chart

Connection Size inlet & outlet	"A"	
	inch	mm
1/4" TS	3.76	95.50
3/8" TS	5.00	127.00
1/2" TS	5.00	127.00
1/4" FS	4.30	109.00
1/2" FS	5.20	133.00
1/2" Compression Fittings	4.78	121.40

Ordering Information

HFR900 W 4P 03 6 FS8 FMMF V PM

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

MATERIALS
W = Welded 316L Stainless Steel

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

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

*** Compression fittings are welded and inclusive of nuts and ferrules.**

Viton® is a registered trademark of DuPont Dow Elastomers.
Kalrez® and Teflon® are registered trademarks of DuPont Company.

OPTIONAL FEATURES
PM = Panel Mount
R = Relief Valve

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

PORT CONFIGURATION
M = Male
F = Female
I = Internal Face Seal (1/4" Gauge Port Only)

PORT STYLE
FS = 1/4" Face Seal
FS8 = 1/2" Face Ssal
TS = 1/4" Tube Stub
TS6 = 3/8" Tube Stub
TS8 = 1/2" Tube Stub
8T = 1/2" Compression Fittings*

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

Parker Instrumentation

BFR5K Series

Bulk Gas Regulator

VERIFLO
ISO 9001 Certified

Parker Hannifin Corporation's Veriflo Division presents the BFR5K Bulk Gas Series regulator. The BFR5K was created in response to the need for a small, high flow, high performance regulator for semiconductor processing.

This state-of-the-art device builds on the knowledge gained in fabrication of the Veriflo SQ regulator line to provide the cleanest operating gas components available in the world.

The BFR5K provides a stable outlet pressure over a wide variety of conditions with flow rates as high as 10,000 slpm.

The unique balanced poppet design allows the regulator to maintain the outlet pressure setting regardless of changes in the upstream pressure.

features

- Standard 316L Stainless Steel Poppet and 321 Stainless Steel Bellows.
- High flow capacity with minimal pressure drop.
- Balanced poppet provides for minimal supply pressure effect.
- Tied diaphragm to poppet for added safety.
- Hurricane cleaning for "near absolute" contamination control.
- Capable of operating at a wide range of flows from 100 up to 10,000 slpm.
- Design and materials of construction ensure compatibility with semiconductor bulk gases.
- No wetted spring.

materials of construction

Wetted

Body . . . . . "VeriClean", Veriflo's high purity type 316L VAR Stainless Steel™
Seat . . . . . PCTFE
Bellows:
Inner. . . . . Inconel® 718
Outer . . . . . 321 Stainless Steel
Poppet & Trim. . . . . "VeriClean", Veriflo's high purity type 316L VAR Stainless Steel

Non-wetted

Cap. . . . . Nickel Plated Brass

operating conditions

Maximum inlet pressure. . . . . 500 psig
Outlet pressure. . . . . 0-200 psig
Temperature . . . . . -40°F to 150°F (-40°C to 66°C)

functional performance

Flow Capacity. . . . . C_V 4.5 (SEMI Flow Coefficient F-32)

Design Leak Rate:
Across Seat . . . . . 5×10^{-6} scc/sec He
Inboard . . . . . 2×10^{-10} scc/sec He
Outboard . . . . . 1×10^{-9} scc/sec He

standard connections

See chart on reverse side

surface finishes

Standard Ra . . . . . 10 micro inch (.25 micro meter) or less
Optional Ra . . . . . EV=5 micro inch (.13 micro meter) or less

internal volume

71 cc without connections

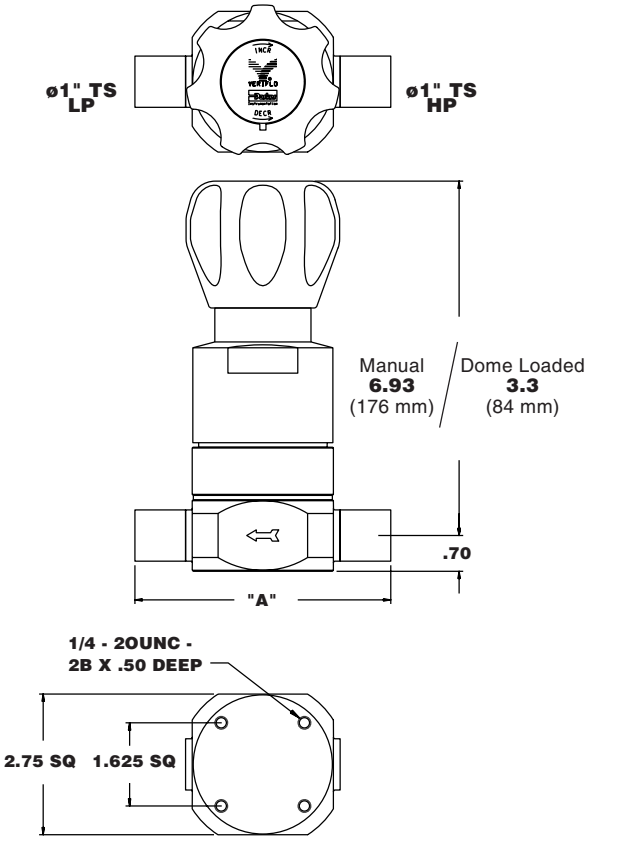
approximate weight

Dome Loaded . . . . . 5.7 lbs (2.6 kg)
Manual . . . . . 7.7 lbs (3.5 kg)
(with 1.00" Tube Stubs)

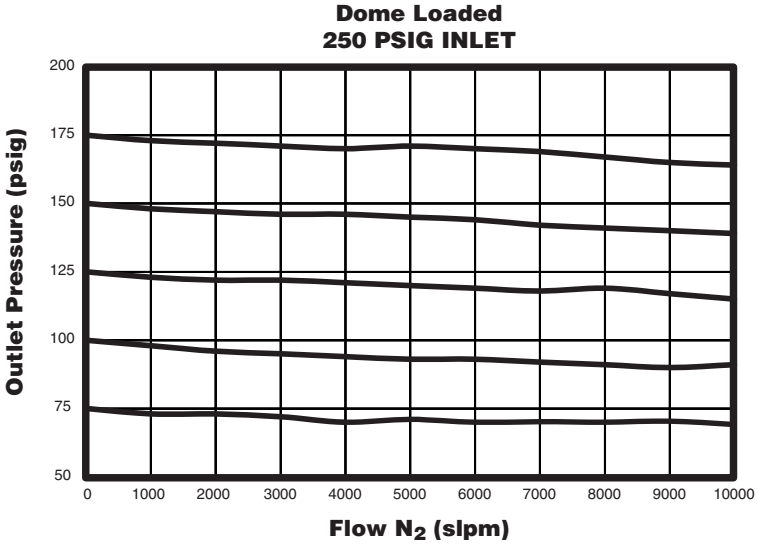
Parker Instrumentation

BFR5K Series

Dimensional Drawing



Flow Curves



End to End Dimension Chart

Tubing			
	3/4" Tube	1" Tube	1.5" Tube
"A" inches	5.0	5.0	10.5
"A" mm	127.0	127.0	266.7
Fitting			
	3/4" Face Seals	1" Face Seals	
"A" inches	6	6.5	
"A" mm	152.4	165.1	

Ordering Information

BFR5K 100 S K 3P 01 FS16 MMM G

BASIC SERIES
BFR5K

PRESSURE SETTING
60 = 0 - 60 psig
100 = 0 - 100 psig
150 = 0 - 150 psig
200 = 0 - 200 psig
DL = 0 - 200 psig (Dome Loaded)

MATERIALS
S = 316L Stainless Steel

SEAT MATERIALS
K = PCTFE

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

OPTIONAL FEATURES
G = Tamper Proof

PORT CONFIGURATION*
M = Male
F = Female

PORT STYLE (Line Size)
TS12 = 3/4" Tube Stub
TS16 = 1" Tube Stub
TS24 = 1.5" Tube Stub
FS12 = 3/4" Face Seal
FS16 = 1" Face Seal

OUTLET GAUGE
OL = 0 - 60 psig
01 = 0 - 100 psig
2 = 0 - 200 psig
4 = 0 - 400 psig
X = No Gauge

*** Gauge port is standard 1/4" Face Seal Male only.**

Inconel® is a registered trademark on Inco Alloys International.
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