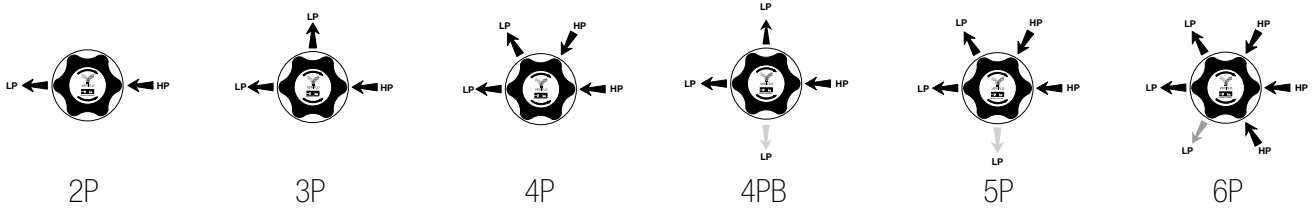


# PRESSURE REGULATORS

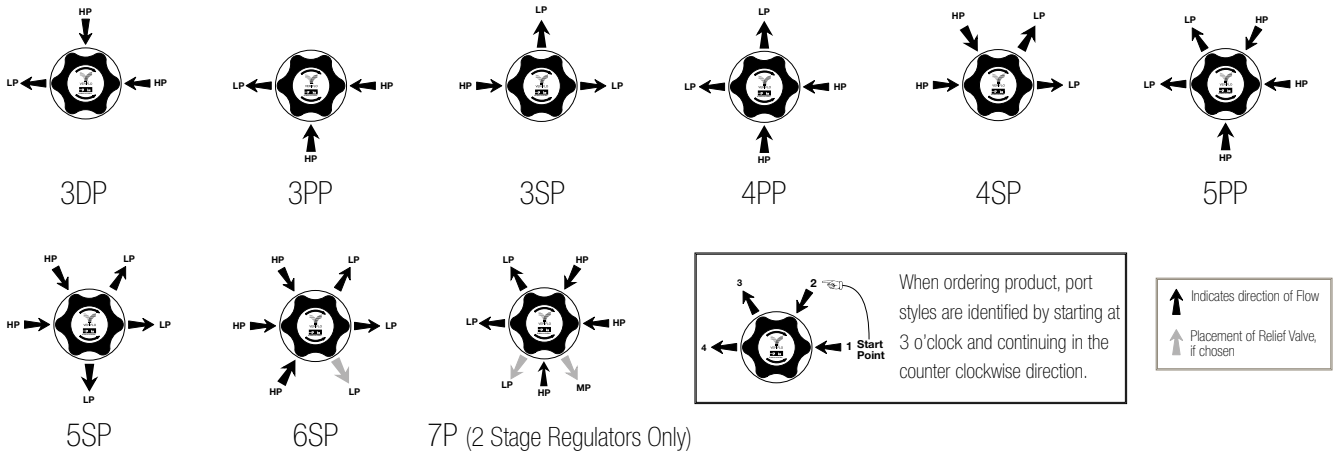


# Regulator Porting Guide

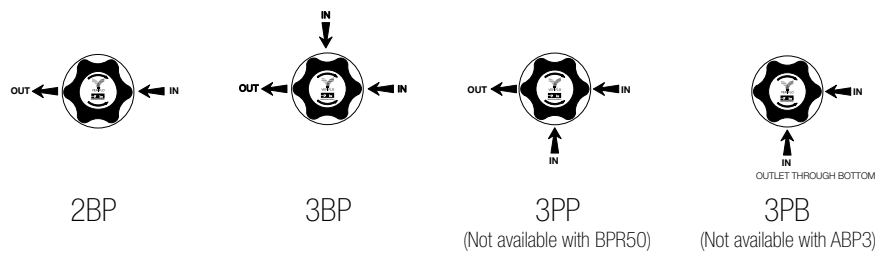
## Standard Configurations



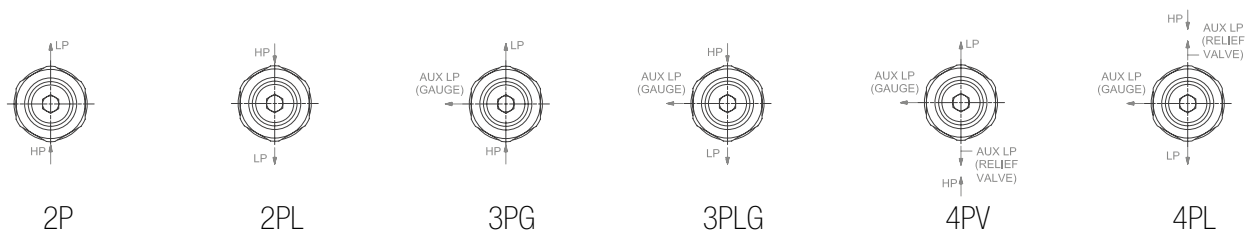
## Special Configurations



## Back Pressure Regulator Configurations (ABP1, ABP3 & BPR50)



## Vaporizing Regulator Configurations (AVR3 & AVR4)



# IR4000 Series

316L SS, Single Stage,  
General Purpose

## Product Features & Benefits



- Unique patented compression member loads the seal to the body without requiring a threaded nozzle or additional seals.
- Internally threadless design reduces particle generation. Low internal volume reduces purge times.
- Cleaned for O<sub>2</sub> service is standard.
- Positive upward and downward stops increase cycle life by preventing over stroking of the diaphragm.
- Selection of seat materials for media compatibility and temperature applications.
- Express Service Program available.

RANGE TABLE			
Basic Model	Max Inlet PSIG		
	0.06 C <sub>V</sub>	0.02 C <sub>V</sub>	0.15 C <sub>V</sub>
IR4000	400	400	400
IR4001	4000	4000	1250
IR4002	4000	4000	1250
IR4003	4000	4000	1250
IR4004	4000	4000	1250
IR4005	4000	4000	1250
IR4015	4000	4000	1250

### Functional Performance

#### Leak Rate

Internal	Bubble Tight
External	Bubble Tight

#### Supply Pressure Effect

Based upon C<sub>V</sub> Option

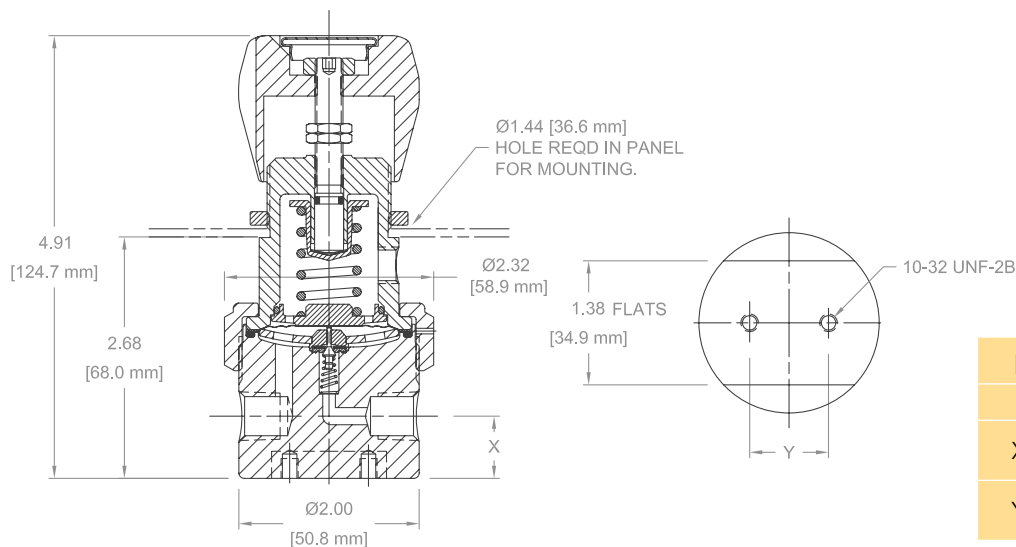
0.02 C <sub>V</sub>	0.23 psig/100 psig (0.016 barg/7 barg)
0.06 C <sub>V</sub>	0.6 psig/100 psig (0.04 barg/7 barg)
0.15 C <sub>V</sub>	1.5 psig/100 psig (0.1 barg/7 barg)

### Operating Conditions

Temperature	Based upon seat material choice
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)

\* For detailed information on Materials of Construction, visit us at [www.parker.com/veriflo](http://www.parker.com/veriflo) to review the complete product literature sheet.

## Dimensional Drawing



### PORT MOUNTING


	A	B (Std)
X	0.69 (17.5mm)	0.75 (19.1mm)
Y	0.88 (22.2mm)	0.75 (19.1mm)

# IR4000 Series *continued*

## Ordering Information

Build an IR4000 Series Regulator by replacing the numbered symbols with an option from the corresponding tables below.

Note: Options in *blue/italic* type are available for the *Express Service Program*.


  
 Sample: **IR40 02 S K 4P 01 30 4 B R 580**  
 Finished Order: **IR4002SK4P01304BR580**

### 1 Basic Series

Range	Outlet Gauge
00 = 0 - 10 psig	0 - 30 psig
01 = 1 - 30 psig	0 - 60 psig
02 = 2 - 60 psig	0 - 100 psig
03 = 3 - 100 psig	0 - 200 psig
15 = 5 - 150 psig	0 - 200 psig
04 = 10 - 250 psig	0 - 400 psig
05 = 20 - 500 psig	0 - 600 psig

### 2 Body Material (1)

*S* = 316L Stainless Steel  
*H* = Hastelloy C-22® (SST gauges)  
*M* = Monel® (SST gauges)  
*A* = 316L Annealed, ≤22HRC

### 3 Flow Capacity

= 0.06 C<sub>V</sub> (Standard)  
 1 = 0.02 C<sub>V</sub>  
 2 = 0.15 C<sub>V</sub>

### 4 Seat Material

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

### 5 Porting

*2P* = 2 Ports - No *X* required for gauges, Inlet & outlet ports only  
*3P* = 3 Ports - One *X* for gauge port  
*4P* = 4 Ports - Two *X*'s for gauge ports  
*4PB* = 4 Ports - One *X* for gauge port  
*5P* = 5 Ports - Two *X*'s for gauge ports

**Note:** Ports may be plugged for NPT threaded product.

See Regulator Porting Guide for more information.

### 6 Outlet Gauge

Outlet Gauge	Basic Series
03 = 0 - 30 psig	IR4000
0L = 0 - 60 psig	IR4001
01 = 0 - 100 psig	IR4002
2 = 0 - 200 psig	IR4003
4 = 0 - 400 psig	IR4004
6 = 0 - 600 psig	IR4005
<i>X</i> = No Gauge	

(Additional ranges available upon request)

### 7 Inlet Gauge

*X* = No Gauge  
*30* = 3000 psig (Standard)  
*4* = 400 psig with the 10 psig range  
 20 = 2000 psig with the 0.15 Cv option  
 40 = 4000 psig

(Additional ranges available upon request)

### 8 Port Style

2 = 1/8" NPT Female  
*4* = 1/4" NPT Female  
 6 = 3/8" NPT Female  
 4T = 1/4" A-LOK®  
 6T = 3/8" A-LOK®

(All Gauge ports are 1/4" NPT Female)

### 9 Port Mounting

*A* = 0.69 (17.5mm) port height w/0.88 (22.2mm) mounting  
*B* = 0.75 (19.1mm) port height w/0.75 (19.1mm) mounting (Standard)

### 10 Optional Features

This section can have multiple options

*B* = True Ported Body (no plugs)  
*C* = Corrosion Resistant External (Stainless Steel Cap)  
*D* = Dome Loaded (Not available with *G* or *M* options)  
*G* = Tamper Proof (Not available with *D* or *M* options)  
*M* = Metal Knob (Black) (Not available with *D* or *G* options)  
*L* = PTFE Backup O-Ring (PCTFE and PEEK™ Seats Only)  
*R* = Relief Valve (4PB and 5P Only)  
*S* = Self Relieving  
*V* = Outlet Valve NOVAS44MF  
*T* = Hastelloy Trim (Includes carrier and back-up washer. Option is for Stainless Steel body - Hastelloy® Trim is std with Hastelloy® and Monel® bodies)

**Note:** Panel Mount Option:

Order Panel Nut Ring p/n: 41900363 as a separate line item.

Vent Muffler Option:

Order Vent Muffler p/n: 46600581 as a separate line item.

### 11 CGA#

*320, 330, 350, 510, 580*  
*590 or 660*

Do not exceed the rated pressure of the CGA connection.

#### NOTE:

##### (1) Option recommendations for H<sub>2</sub>S-containing fluids

Body option "H" (Hastelloy C-22®) and "A" (316L annealed, ≤22HRC) utilize materials for critical wetted parts that are compliant with NACE™ standard MR0175/ISO 15156-3:2003/Cor.2:2005(E), Petroleum and natural gas industries – Materials for use in H<sub>2</sub>S-containing environments in oil and gas production, Part 3: Cracking-resistant CRAs (corrosion-resistant alloys) and other alloys. These wetted materials are resistant to cracking in H<sub>2</sub>S - containing fluids, but are not necessarily immune to cracking under all service conditions. The user should consult MR0175/ISO 15156 for further guidance. The user should consult Instrumentation Product Division Catalog 4230/4233 for A-Lok Tube Fitting application recommendations. It is the user's responsibility to select materials suitable for the intended service.

The following options and accessories are **not** recommended for H<sub>2</sub>S-containing fluids:

- Pressure gauges
- V – Outlet Valve NOVAS44MF
- S – Self Relieving
- CGA connections
- R – Relief valve

# IR4000W Series

## Product Features & Benefits



- Unique patented compression member loads the seal to the body without requiring a threaded nozzle or additional seals to atmosphere.
- Internally threadless design reduces particle generation. Low internal volume reduces purge times.
- Cleaned for O<sub>2</sub> service is standard.
- Positive upward and downward stops increase cycle life by preventing over stroking of the diaphragm.
- Selection of seat materials for media compatibility and temperature applications.

RANGE TABLE			
Basic Model	Max Inlet PSIG		
	0.06 C <sub>V</sub>	0.02 C <sub>V</sub>	0.15 C <sub>V</sub>
IR4000W	400	400	400
IR4001W	4000	4000	1250
IR4002W	4000	4000	1250
IR4003W	4000	4000	1250
IR4004W	4000	4000	1250
IR4005W	4000	4000	1250
IR4015W	4000	4000	1250

### Functional Performance

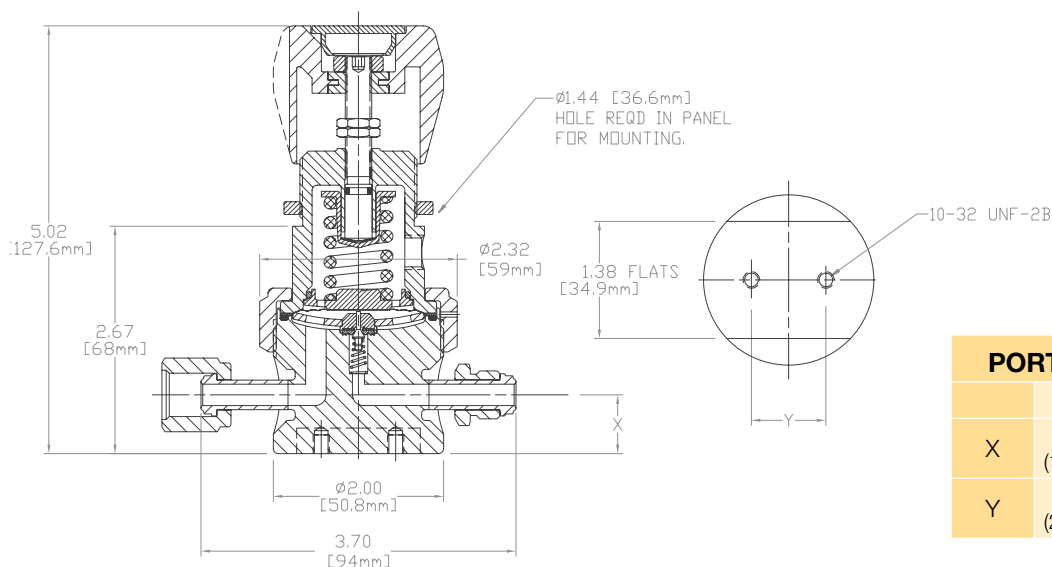
Leak Rate	Inboard Test Method
Internal	$\leq 4 \times 10^{-8}$ cc/sec He
External	$\leq 2 \times 10^{-8}$ cc/sec He
Supply Pressure Effect	Based upon C <sub>V</sub> Option
0.02 C <sub>V</sub>	0.23 psig/100 psig (0.016 barg/7 barg)
0.06 C <sub>V</sub>	0.6 psig/100 psig (0.04 barg/7 barg)
0.15 C <sub>V</sub>	1.5 psig/100 psig (0.1 barg/7 barg)

### Operating Conditions

Temperature	Based upon seat material choice
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)

\* For detailed information on Materials of Construction, visit us at [www.parker.com/veriflo](http://www.parker.com/veriflo) to review the complete product literature sheet.

## Dimensional Drawing



### PORT MOUNTING

	A (Std)	B
X	0.69 (17.5mm)	0.75 (19.1mm)
Y	0.88 (22.2mm)	0.75 (19.1mm)

# IR4000W Series *continued*

## Ordering Information

Build an IR4000W Series Regulator by replacing the numbered symbols with an option from the corresponding tables below.

Sample: **IR40 01 W K 3P X FS MMM A L**  
 Finished Order: **IR4001WK3PXFMMML**

### 1 Basic Series

Range	Outlet Gauge
00 = 0 - 10 psig	0 - 30 psig
01 = 1 - 30 psig	0 - 60 psig
02 = 2 - 60 psig	0 - 100 psig
03 = 3 - 100 psig	0 - 200 psig
15 = 5 - 150 psig	0 - 200 psig
04 = 10 - 250 psig	0 - 400 psig
05 = 20 - 500 psig	0 - 600 psig

### 2 Body Material

W = 316L Stainless Steel

### 3 Flow Capacity

= 0.06 Cv (Standard)  
 1 = 0.02 Cv  
 2 = 0.15 Cv

### 4 Seat Material

K = PCTFE  
 P = PEEK™  
 V = Vespel®

### 5 Porting

2P = 2 Ports - No X required for gauges, Inlet & outlet ports only  
 3P = 3 Ports - One X for gauge port  
 4P = 4 Ports - Two X's for gauge ports  
 4PB = 4 Ports - One X for gauge port  
 5P = 5 Ports - Two X's for gauge ports

See Regulator Porting Guide for more information

### 6 Outlet Gauge

Outlet Gauge	Basic Series
03 = 0 - 30 psig	IR4000W
OL = 0 - 60 psig	IR4001W
01 = 0 - 100 psig	IR4002W
2 = 0 - 200 psig	IR4003W
4 = 0 - 400 psig	IR4004W
6 = 0 - 600 psig	IR4005W
X = No Gauge	

(Additional ranges available upon request)

### 7 Inlet Gauge

X = No Gauge  
 30 = 3000 psig (Standard)  
 4 = 400 psig with the 10 psig range  
 20 = 2000 psig with the 0.15 Cv option  
 40 = 4000 psig

(Additional ranges available upon request)

### 8 Port Style

4T = 1/4" A-LOK®  
 6T = 3/8" A-LOK®  
 8T = 1/2" A-LOK®  
 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

### 9 Port Style

M = Male  
 F = Female  
 I = Internal

### 10 Port Mounting

A = 0.69 (17.5mm) port height w/0.88 (22.2mm) mounting (Standard)  
 B = 0.75 (19.1mm) port height w/0.75 (19.1mm) mounting

### 11 Optional Features

This section can have multiple options

C = Corrosion Resistant External (Stainless Steel Cap)  
 D = Dome Loaded (Not available with G or M options)  
 G = Tamper Proof (Not available with D or M options)  
 M = Metal Knob (Black) (Not available with D or G options)  
 L = PTFE Backup O-Ring (PCTFE and PEEK™ Seats Only)  
 R = Relief Valve (4PB and 5P Only)  
 S = Self Relieving  
 T = Hastelloy Trim (Includes carrier and back-up washer.)

Note: Panel Mount Option:  
 Order Panel Nut Ring p/n: 41900363 as a separate line item.

### 12 Industrial CGA#

320, 330, 350, 510, 580  
 590 or 660

#### DISS CGA#

634, 716, 718, 724, or 728

Do not exceed the rated pressure of the CGA connection.



# IR4200 Series

Brass, Single Stage,  
General Purpose

## Product Features & Benefits



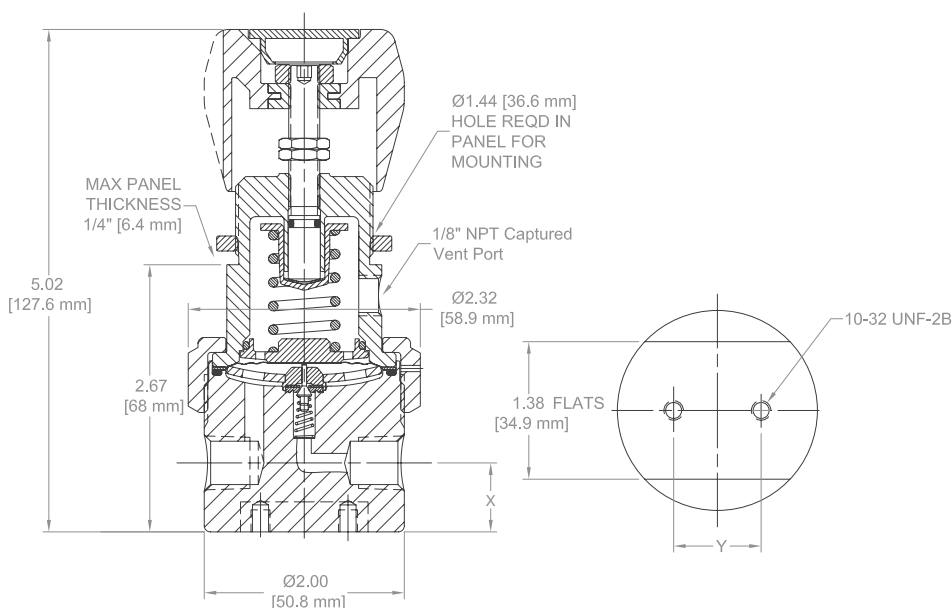
- Unique patented compression member loads the seal to the body without requiring a threaded nozzle or additional seals to atmosphere.
- Internally threadless design reduces particle generation. Low internal volume reduces purge times.
- Cleaned for O<sub>2</sub> service is standard.
- Positive upward and downward stops increase cycle life by preventing over stroking of the diaphragm.
- Express Service Program available.

RANGE TABLE			
Basic Model	Max Inlet PSIG		
	0.06 C <sub>V</sub>	0.02 C <sub>V</sub>	0.15 C <sub>V</sub>
IR4200	400	400	400
IR4201	4000	4000	1250
IR4202	4000	4000	1250
IR4203	4000	4000	1250
IR4204	4000	4000	1250
IR4205	4000	4000	1250
IR4215	4000	4000	1250

Functional Performance	
Leak Rate	
Internal	Bubble Tight
External	Bubble Tight
Supply Pressure Effect	
Based upon C <sub>V</sub> Option	
0.02 C <sub>V</sub>	0.23 psig/100 psig (0.016 barg/7 barg)
0.06 C <sub>V</sub>	0.6 psig/100 psig (0.04 barg/7 barg)
0.15 C <sub>V</sub>	1.5 psig/100 psig (0.1 barg/7 barg)
Operating Conditions	
Temperature	-40°F to 150°F (-40°C to 66°C)

\* For detailed information on Materials of Construction, visit us at [www.parker.com/veriflo](http://www.parker.com/veriflo) to review the complete product literature sheet.

## Dimensional Drawing



PORT MOUNTING		
	A	B (Std)
X	0.69 (17.5mm)	0.75 (19.1mm)
Y	0.88 (22.2mm)	0.75 (19.1mm)

# IR4200 Series *continued*

## Ordering Information

Build an IR4200 Series Regulator by replacing the numbered symbols with an option from the corresponding tables below.

Note: Options in *blue/italic* type are available for the *Express Service Program*.

Sample: **IR42 02 B K 4P 01 30 4 B S 580**  
 Finished Order: **IR4202BK4P01304BS580**

### 1 Basic Series

Range	Outlet Gauge
00 = 0 - 10 psig	0 - 30 psig
01 = 1 - 30 psig	0 - 60 psig
02 = 2 - 60 psig	0 - 100 psig
03 = 3 - 100 psig	0 - 200 psig
15 = 5 - 150 psig	0 - 200 psig
04 = 10 - 250 psig	0 - 400 psig
05 = 20 - 500 psig	0 - 600 psig

### 2 Body Material

B = Brass

### 3 Flow Capacity

= 0.06 Cv (Standard)  
 1 = 0.02 Cv  
 2 = 0.15 Cv

### 4 Seat Material

K = PCTFE

### 5 Porting

2P = 2 Ports - No X required for gauges, Inlet & outlet ports only  
 3P = 3 Ports - One X for gauge port  
 4P = 4 Ports - Two X's for gauge ports  
 4PB = 4 Ports - One X for gauge port  
 5P = 5 Ports - Two X's for gauge ports

Note: Ports may be plugged for NPT threaded product.

See Regulator Porting Guide for more information.

### 6 Outlet Gauge

Outlet Gauge	Basic Series
03 = 0 - 30 psig	IR4200
OL = 0 - 60 psig	IR4201
01 = 0 - 100 psig	IR4202
2 = 0 - 200 psig	IR4203
4 = 0 - 400 psig	IR4204
6 = 0 - 600 psig	IR4205
X = No Gauge	

(Additional ranges available upon request)

### 7 Inlet Gauge

X = No Gauge  
 30 = 3000 psig (Standard)  
 4 = 400 psig with the 10 psig range  
 20 = 2000 psig with the 0.15 Cv option  
 40 = 4000 psig

(Additional ranges available upon request)

### 8 Port Style

2 = 1/8" NPT Female  
 4 = 1/4" NPT Female  
 6 = 3/8" NPT Female  
 4T = 1/4" A-LOK®  
 6T = 3/8" A-LOK®

(All Gauge ports are 1/4" NPT Female)

### 9 Port Mounting

A = 0.69 (17.5mm) port height w/0.88 (22.2mm) mounting  
 B = 0.75 (19.1mm) port height w/0.75 (19.1mm) mounting (Standard)

### 10 Optional Features

This section can have multiple options

B = True Ported Body (no plugs)  
 D = Dome Loaded (Not available with G or M options)  
 G = Tamper Proof (Not available with D or M options)  
 M = Metal Knob (Not available with D or G options)  
 N = Nickel Plate  
 R = Relief Valve (4PB and 5P Only)  
 S = Self Relieving  
 V = Outlet Valve NOVAB44MF

Note: Panel Mount Option:

Order Panel Nut Ring p/n: 41900363 as a separate line item.

Vent Muffler Option:

Order Vent Muffler p/n: 46600581 as a separate line item.

### 11 CGA#

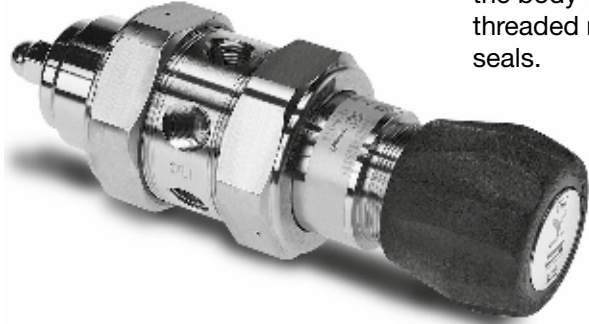
320, 330, 350, 510, 580 or 590

Do not exceed the rated pressure of the CGA connection.



# IR6000 Series

## Product Features & Benefits



- Unique patented compression member loads the seal to the body without requiring a threaded nozzle or additional seals.
- Internally threadless design reduces particle generation. Low internal volume reduces purge times.
- Cleaned for O<sub>2</sub> service is standard.
- Positive upward and downward stops increase cycle life by preventing over stroking of the diaphragm.
- Selection of seat materials for media compatibility and temperature applications.
- Express Service Program available.

### Functional Performance

#### Leak Rate

Internal	Bubble Tight
External	Bubble Tight

#### Supply Pressure Effect

Based upon C<sub>V</sub> Option

0.02 C <sub>V</sub>	0.01 psig/100 psig (0.0007 barg/7 barg)
0.06 C <sub>V</sub>	0.01 psig/100 psig (0.0007 barg/7 barg)
0.15 C <sub>V</sub>	0.02 psig/100 psig (0.001 barg/7 barg)

### Operating Conditions

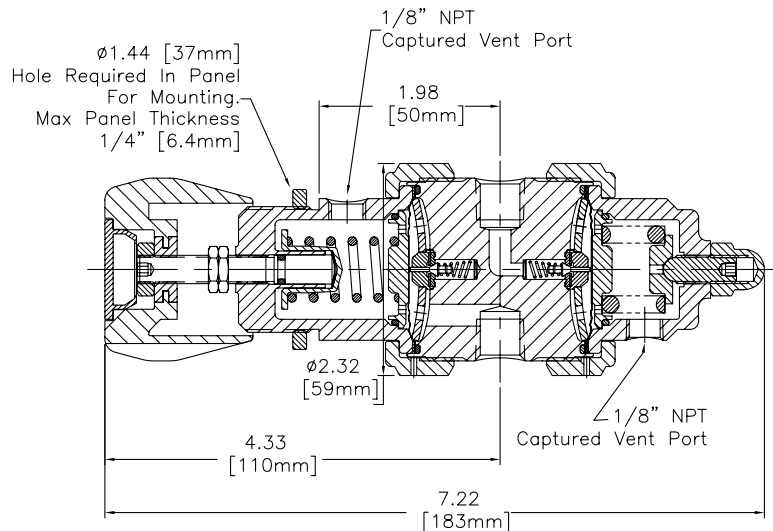
Temperature	Based upon seat material choice
PCTFE	-40°F to 150°F (-40°C to 66°C)
PEEK™	-40°F to 275°F (-40°C to 135°C)
Vespel®	-40°F to 500°F (-40°C to 260°C)

\* For detailed information on Materials of Construction, visit us at [www.parker.com/veriflo](http://www.parker.com/veriflo) to review the complete product literature sheet.

### RANGE TABLE

Basic Model	Max Inlet PSIG		
	0.06 C <sub>V</sub>	0.02 C <sub>V</sub>	0.15 C <sub>V</sub>
IR6000	4000	4000	1250
IR6001	4000	4000	1250
IR6002	4000	4000	1250
IR6003	4000	4000	1250
IR6004	4000	4000	1250
IR6015	4000	4000	1250

## Dimensional Drawing



# IR6000 Series *continued*

## Ordering Information

Build an IR6000 Series Regulator by replacing the numbered symbols with an option from the corresponding tables below.

Note: Options in *blue/italic* type are available for the *Express Service Program*.

1
2
3
4
5
6
7
8
9
10
11

Sample: **IR60 02 S K 4P 01 30 4 B S 580**

Finished Order: **IR6002SK4P01304BS580**

### 1 Basic Series

Range	Outlet Gauge
00 = 0 - 10 psig	0 - 30 psig
01 = 1 - 30 psig	0 - 60 psig
02 = 2 - 60 psig	0 - 100 psig
03 = 3 - 100 psig	0 - 200 psig
15 = 5 - 150 psig	0 - 200 psig
04 = 10 - 250 psig	0 - 400 psig

### 2 Body Material

S = 316L Stainless Steel  
H = Hastelloy C-22® (SST gauges)  
M = Monel® (SST gauges)

### 3 Flow Capacity

= 0.06 Cv (Standard)  
1 = 0.02 Cv  
2 = 0.15 Cv

### 4 Seat Material

K = PCTFE  
P = PEEK™  
V = Vespel®

### 5 Porting

2P = 2 Ports - No X required for gauges, Inlet & outlet ports only  
3P = 3 Ports - One X for gauge port  
4P = 4 Ports - Two X's for gauge ports  
4PB = 4 Ports - One X for gauge port  
5P = 5 Ports - Two X's for gauge ports  
6P = 6 Ports - Two X's for gauge ports

Note: Ports may be plugged for NPT threaded product.

See Regulator Porting Guide for more information.

### 6 Outlet Gauge

Outlet Gauge	Basic Series
03 = 0 - 30 psig	IR6000
OL = 0 - 60 psig	IR6001
01 = 0 - 100 psig	IR6002
2 = 0 - 200 psig	IR6003
4 = 0 - 400 psig	IR6004
X = No Gauge	

(Additional ranges available upon request)

### 7 Inlet Gauge

X = No Gauge  
30 = 3000 psig (Standard)  
20 = 2000 psig with the 0.15 Cv option  
40 = 4000 psig

(Additional ranges available upon request)

### 8 Port Style

2 = 1/8" NPT Female  
4 = 1/4" NPT Female  
6 = 3/8" NPT Female  
4T = 1/4" A-LOK®  
6T = 3/8" A-LOK®

(All Gauge ports are 1/4" NPT Female)

### 9 Port Mounting

B = Standard - No other options

### 10 Optional Features

This section can have multiple options

B = True Ported Body (no plugs)  
C = Corrosion Resistant External (Stainless Steel Cap)  
D = Dome Loaded (Not available with G or M options)  
G = Tamper Proof (Not available with D or M options)  
M = Metal Knob (Black) (Not available with D or G options)  
L = PTFE Backup O-Ring (PCTFE and PEEK™ Seats Only)  
R2 = Relief Valve, 2nd Stage (LP) (4PB, 5P and 6P Only)  
S = Self Relieving  
V = Outlet Valve NOVAS44MF  
T = Hastelloy Trim (Includes carrier and back-up washer. Option is for Stainless Steel body - Hastelloy® Trim is std with Hastelloy® and Monel® bodies)

Note: Panel Mount Option:  
Order Panel Nut Ring p/n: 41900363 as a separate line item.  
Vent Muffler Option:  
Order Vent Muffler p/n: 46600581 as a separate line item.

### 11 CGA#

320, 330, 350, 510, 580  
590 or 660

Do not exceed the rated pressure of the CGA connection.

# IR6000W Series

**316L SS, Two Stage,  
General Purpose**

## Product Features & Benefits



- Unique patented compression member loads the seal to the body without requiring a threaded nozzle or additional seals.
- Internally threadless design reduces particle generation. The low internal volume reduces purge times.
- Positive upward and downward stops increase cycle life by preventing over stroking of the diaphragm.
- Captured bonnet allows for safety venting
- Selection of seat materials for media compatibility and temperature applications.
- Cleaned for O<sub>2</sub> service is standard.

RANGE TABLE			
Basic Model	Max Inlet PSIG		
	0.06 C <sub>V</sub>	0.02 C <sub>V</sub>	0.15 C <sub>V</sub>
IR6000W	4000	4000	1250
IR6001W	4000	4000	1250
IR6002W	4000	4000	1250
IR6003W	4000	4000	1250
IR6004W	4000	4000	1250
IR6015W	4000	4000	1250

### Functional Performance

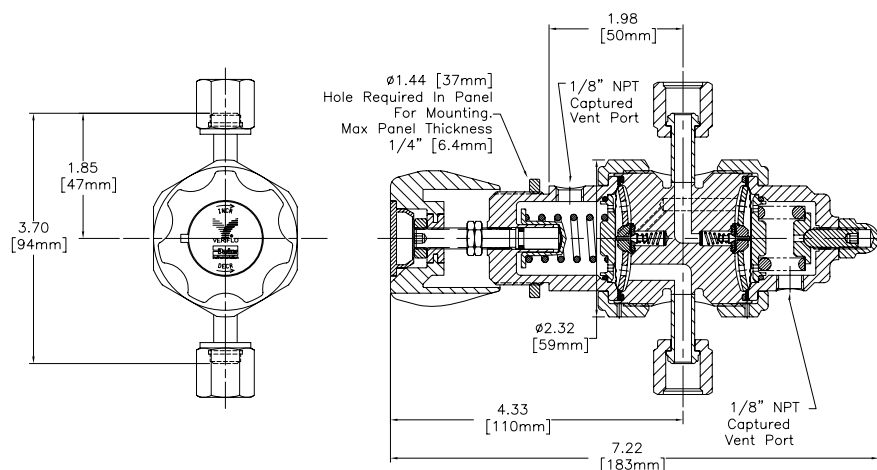
Leak Rate	Inboard Test Method
Internal	≤ 4 X 10 <sup>-8</sup> cc/sec He
External	≤ 2 X 10 <sup>-8</sup> cc/sec He
Supply Pressure Effect	Based upon C <sub>V</sub> Option
0.02 C <sub>V</sub>	0.01 psig/100 psig (0.0007 barg/7 barg)
0.06 C <sub>V</sub>	0.01 psig/100 psig (0.0007 barg/7 barg)
0.15 C <sub>V</sub>	0.02 psig/100 psig (0.001 barg/7 barg)

### Operating Conditions

Temperature	Based upon seat material choice
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)

\* For detailed information on Materials of Construction, visit us at [www.parker.com/veriflo](http://www.parker.com/veriflo) to review the complete product literature sheet.

## Dimensional Drawing



# IR6000W Series *continued*

## Ordering Information

Build an IR6000W Series Regulator by replacing the numbered symbols with an option from the corresponding tables below.

Sample: **IR60 01 W K 3P X FS MMM B L**

Finished Order: **IR6001WK3PXFMMMBL**

### 1 Basic Series

Range	Outlet Gauge
00 = 0 - 10 psig	0 - 30 psig
01 = 1 - 30 psig	0 - 60 psig
02 = 2 - 60 psig	0 - 100 psig
03 = 3 - 100 psig	0 - 200 psig
15 = 5 - 150 psig	0 - 200 psig
04 = 10 - 250 psig	0 - 400 psig

### 2 Body Material

W = 316L Stainless Steel

### 3 Flow Capacity

= 0.06 Cv (Standard)

1 = 0.02 Cv

2 = 0.15 Cv

### 4 Seat Material

K = PCTFE

P = PEEK™

V = Vespel®

### 5 Porting

2P = 2 Ports - No X required for gauges, Inlet & outlet ports only

3P = 3 Ports - One X for gauge port

4P = 4 Ports - Two X's for gauge ports

4PB = 4 Ports - One X for gauge port

5P = 5 Ports - Two X's for gauge ports

### 6 Outlet Gauge

Outlet Gauge	Basic Series
03 = 0 - 30 psig	IR6000W
OL = 0 - 60 psig	IR6001W
01 = 0 - 100 psig	IR6002W
2 = 0 - 200 psig	IR6003W
4 = 0 - 400 psig	IR6004W
X = No Gauge	

(Additional ranges available upon request)

### 7 Inlet Gauge

X = No Gauge

30 = 3000 psig (Standard)

20 = 2000 psig with the 0.15 Cv option

40 = 4000 psig

(Additional ranges available upon request)

### 8 Port Style

4T = 1/4" A-LOK®

6T = 3/8" A-LOK®

8T = 1/2" A-LOK®

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

### 9 Port Style

M = Male

F = Female

I = Internal

### 10 Port Mounting

B = Standard (No other options)

### 11 Optional Features

This section can have multiple options

C = Corrosion Resistant External (Stainless Steel Cap)

D = Dome Loaded (Not available with G or M options)

G = Tamper Proof (Not available with D or M options)

L = PTFE Backup O-Ring (PCTFE and PEEK™ Seats Only)

M = Metal Knob (Not available with D or G options)

R2 = Relief Valve (4PB, 5P and 6P Only)

S = Self Relieving

T = Hastelloy Trim

(Includes carrier and back-up washer)

**Note:** Panel Mount Option:

Order Panel Nut Ring p/n: 41900363 as a separate line item.

Vent Muffler Option:

Order Vent Muffler p/n: 46600581 as a separate line item.

### 12 Industrial CGA#

320, 330, 350, 510, 580  
590 or 660

**DISS CGA#**

634, 716, 718, 724, or 728

Do not exceed the rated pressure of the CGA connection.

See Regulator Porting Guide for more information

# IR6200 Series

## Product Features & Benefits



- Unique patented compression member loads the seal to the body without requiring a threaded nozzle or additional seals.
- Internally threadless design reduces particle generation. The low internal volume reduces purge times.
- Cleaned for O<sub>2</sub> service is standard.
- Positive upward and downward stops increase cycle life by preventing over stroking of the diaphragm.
- Express Service Program available.

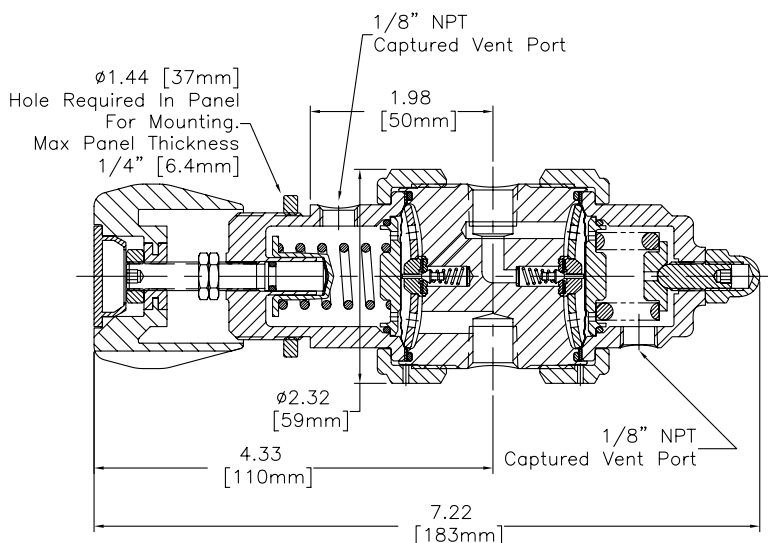
RANGE TABLE			
Basic Model	Max Inlet PSIG		
	0.06 C <sub>V</sub>	0.02 C <sub>V</sub>	0.15 C <sub>V</sub>
IR6200	4000	4000	1250
IR6201	4000	4000	1250
IR6202	4000	4000	1250
IR6203	4000	4000	1250
IR6204	4000	4000	1250
IR6215	4000	4000	1250

### Functional Performance

Leak Rate	
Internal	Bubble Tight
External	Bubble Tight
Supply Pressure Effect	
Based upon C <sub>V</sub> Option	
0.02 C <sub>V</sub>	0.01 psig/100 psig (0.0007 barg/7 barg)
0.06 C <sub>V</sub>	0.01 psig/100 psig (0.0007 barg/7 barg)
0.15 C <sub>V</sub>	0.02 psig/100 psig (0.0014 barg/7 barg)
Operating Conditions	
Temperature	-40°F to 150°F (-40°C to 66°C)

\* For detailed information on Materials of Construction, visit us at [www.parker.com/veriflo](http://www.parker.com/veriflo) to review the complete product literature sheet.

## Dimensional Drawing



# IR6200 Series *continued*

## Ordering Information

Build an IR6200 Series Regulator by replacing the numbered symbols with an option from the corresponding tables below.

Note: Options in *blue/italic* type are available for the *Express Service Program*.



Sample: **IR62 02 B K 4P 01 30 4 B N 580**

Finished Order: **IR6202BK4P01304BN580**

### 1 Basic Series

Range	Outlet Gauge
00 = 0 - 10 psig	0 - 30 psig
01 = 1 - 30 psig	0 - 60 psig
02 = 2 - 60 psig	0 - 100 psig
03 = 3 - 100 psig	0 - 200 psig
15 = 5 - 150 psig	0 - 200 psig
04 = 10 - 250 psig	0 - 400 psig

### 2 Body Material

*B = Brass*

### 3 Flow Capacity

= *0.06 C<sub>v</sub>* (Standard)

1 = 0.02 C<sub>v</sub>

2 = 0.15 C<sub>v</sub>

### 4 Seat Material

*K = PCTFE*

### 5 Porting

2P = 2 Ports - *No X required for gauges, Inlet & outlet ports only*

3P = 3 Ports - *One X for gauge port*

*4P = 4 Ports - Two X's for gauge ports*

4PB = 4 Ports - *One X for gauge port*

*5P = 5 Ports - Two X's for gauge ports*

6P = 6 Ports - *Two X's for gauge ports*

*Note: Ports may be plugged for NPT threaded product.*

*See Regulator Porting Guide for more information.*

### 6 Outlet Gauge

Outlet Gauge	Basic Series
03 = 0 - 30 psig	IR6200
OL = 0 - 60 psig	IR6201
01 = 0 - 100 psig	IR6202
2 = 0 - 200 psig	IR6203
4 = 0 - 400 psig	IR6204
X = No Gauge	

*(Additional ranges available upon request)*

### 7 Inlet Gauge

*X = No Gauge*

30 = 3000 psig (Standard)

20 = 2000 psig with the 0.15 C<sub>v</sub> option

40 = 4000 psig

*(Additional ranges available upon request)*

### 8 Port Style

2 = 1/8" NPT Female

4 = 1/4" NPT Female

6 = 3/8" NPT Female

4T = 1/4" A-LOK®

6T = 3/8" A-LOK®

*All Gauge ports are 1/4" NPT Female*

### 9 Port Mounting

*B = Standard Mounting*

*No other options*

### 10 Optional Features

This section can have multiple options

B = True Ported Body (*no plugs*)

D = Dome Loaded (*Not available with G or M options*)

G = Tamper Proof (*Not available with D or M options*)

M = Metal Knob (*Not available with D or G options*)

N = Nickel Plate

*R2 = Relief Valve (4PB, 5P and 6P Only)*

S = Self Relieving

*V = Outlet Valve NOVAB44MF*

**Note:** Panel Mount Option:

*Order Panel Nut Ring p/n:*

*41900363 as a separate line item.*

**Vent Muffler Option:**

*Order Vent Muffler p/n: 46600581*

*as a separate line item.*

### 11 CGA#

*320, 330, 350, 510, 580 or 590*

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



# IR5000 Series

**316L SS, Single Stage, General Purpose, High Sensitivity**

## Product Features & Benefits



- Unique patented compression member loads the seal to the body without requiring a threaded nozzle or additional seals.
- Internally threadless design reduces particle generation. Low internal volume reduces purge times.
- Cleaned for O<sub>2</sub> service is standard.
- Positive upward and downward stops increase cycle life by preventing over stroking of the diaphragm.
- Selection of seat materials for media compatibility and temperature applications.
- Express Service Program available.

RANGE TABLE			
Basic Model	Max Inlet PSIG		
	0.06 C <sub>V</sub>	0.02 C <sub>V</sub>	0.15 C <sub>V</sub>
IR5000	400	400	400
IR5001	3500	3500	1250
IR5002	3500	3500	1250
IR5003	3500	3500	1250
IR5004	3500	3500	1250

### Functional Performance

#### Leak Rate

Internal	Bubble Tight
External	Bubble Tight

#### Supply Pressure Effect

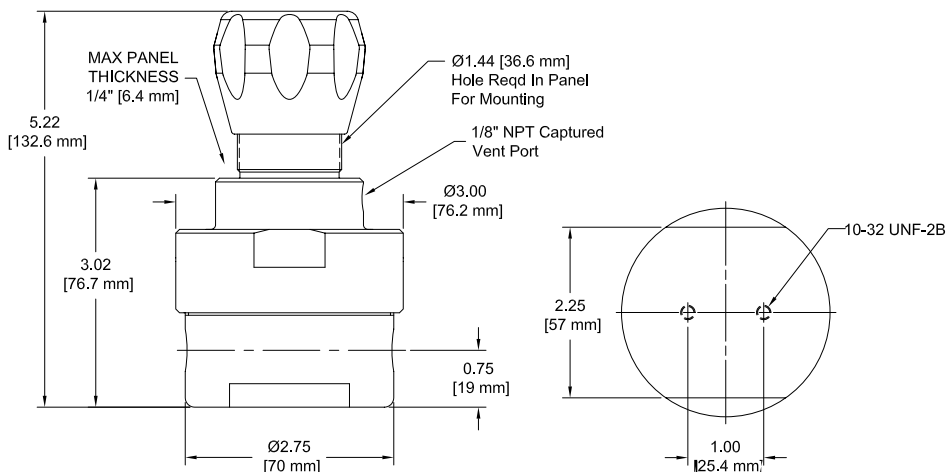
	Based upon C <sub>V</sub> Option
0.02 C <sub>V</sub>	0.12 psig/100 psig (0.008 barg/7 barg)
0.06 C <sub>V</sub>	0.3 psig/100 psig (0.02 barg/7 barg)
0.15 C <sub>V</sub>	0.75 psig/100 psig (0.05 barg/7 barg)

### Operating Conditions

Temperature	
Standard IR5000	Based upon seat material choice
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)
Low Pressure IR5000 (P)	-40°F to 150°F (-40°C to 66°C)

\* For detailed information on Materials of Construction, visit us at [www.parker.com/veriflo](http://www.parker.com/veriflo) to review the complete product literature sheet.

## Dimensional Drawing



# IR5000 Series *continued*

## Ordering Information

Build an IR5000 Series Regulator by replacing the numbered symbols with an option from the corresponding tables below.

Note: Options in *blue/italic* type are available for the *Express Service Program*.

1
2
3
4
5
6
7
8
9
10
11

Sample: **IR50 02 S K 4P 01 30 4 B 580**

Finished Order: **IR5002SK4P01304B580**

### 1 Basic Series

Range	Outlet Gauge
<i>00 = 0 - 5 psig</i>	<i>0 - 30 psig</i>
<i>Note: Max inlet pressure is 400 psig</i>	
<i>01 = 1 - 30 psig</i>	<i>0 - 60 psig</i>
<i>02 = 2 - 60 psig</i>	<i>0 - 100 psig</i>
<i>03 = 3 - 100 psig</i>	<i>0 - 200 psig</i>
<i>04 = 10 - 250 psig</i>	<i>0 - 400 psig</i>

### 2 Body Material

*S = 316L Stainless Steel*  
H = Hastelloy C-22® *Stainless Steel gauges*  
M = Monel® *Stainless Steel gauges*

### 3 Flow Capacity

*omit = 0.06 C<sub>v</sub> Standard*  
1 = 0.02 C<sub>v</sub>  
2 = 0.15 C<sub>v</sub>

### 4 Seat Material

*K = PCTFE*  
P = PEEK™  
V = Vespel® *Recommended for Nitrous Oxide (N<sub>2</sub>O) Service*

### 5 Porting

*2P = 2 Ports* No X required for gauges, Inlet & outlet ports only  
*3P = 3 Ports* One X for gauge port  
*4P = 4 Ports* Two X's for gauge ports  
*4PB = 4 Ports* One X for gauge port

*Note: Ports may be plugged for NPT threaded product.*

*See Regulator Porting Guide for additional options and port layouts*

### 6 Outlet Gauge

Outlet Gauge	Basic Series
<i>05 = 0 - 15 psig</i>	<i>IR5000</i>
<i>OL = 0 - 60 psig</i>	<i>IR5001</i>
<i>01 = 0 - 100 psig</i>	<i>IR5002</i>
<i>2 = 0 - 200 psig</i>	<i>IR5003</i>
<i>4 = 0 - 400 psig</i>	<i>IR5004</i>
<i>X = No Gauge</i>	

*Additional ranges available upon request*

### 7 Inlet Gauge

*X = No Gauge*  
*30 = 3000 psig Standard*  
*4 = 400 psig with the 5 psig range*  
20 = 2000 psig with the 0.15 C<sub>v</sub> option  
40 = 4000 psig

*Additional ranges available upon request*

### 8 Port Style

2 = 1/8" NPT Female  
*4 = 1/4" NPT Female*  
6 = 3/8" NPT Female  
8 = 1/2" NPT Female  
4T = 1/4" A-LOK®  
6T = 3/8" A-LOK®  
8T = 1/2" A-LOK®

*All Gauge ports are 1/4" NPT Female*

### 9 Port Mounting

*B = 0.75 (19.1 mm) port height w/1.0 (25.4 mm) mounting (Standard)*

**Note:** 1. Veriflo reserves the right to plug NPT ports. If a true ported body is required, please contact Customer Service.  
2. A gas with low molecular weight, such as Hydrogen and Helium, may cause flow vibration.

### 10 Optional Features

This section can have multiple options

C = Corrosion Resistant External *Stainless Steel Cap*  
D = Dome Loaded *Not available with G or M options*  
G = Tamper Proof *Not available with D or M options*  
L = PTFE Backup O-Ring *PCTFE and PEEK™ Seats Only*  
M = Metal Knob *Not available with D or G options*  
*R = Relief Valve 4PB Only*  
T = Hastelloy Trim  
*Includes carrier and back-up washer. Option is for Stainless Steel body - Hastelloy® Trim is std with Hastelloy® and Monel® bodies*  
*V = Outlet Valve NOVAS44MF*  
P = Low Pressure *Only available for 5 psig and 30 psig ranges. Temperature rating: -40°F to 150°F. Max flow rating: 10 slpm Nitrogen.*

**Note:** Panel Mount Option:

*Order Panel Nut Ring p/n: 41900363 as a separate line item.*

**Vent Muffler Option:**

*Order Vent Muffler p/n: 46600581 as a separate line item.*

### 11 CGA#

*320, 330, 350, 510, 580, 590 or 660*

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

# HFR900 Series

316L SS or Brass, Single Stage, High Flow

## Product Features & Benefits



- Self-contained, replaceable valve seat assembly.
- Over 20 years of proven reliability.
- Cleaned for O<sub>2</sub> Service is standard.
- Available in Brass or 316L Stainless Steel.
- 1/8" NPT Captured vent port is standard.
- Large orifice for high flow (up to 500 LPM).
- Large diaphragm for higher sensitivity.
- Dome Load, Relief Valve, Panel Mount and Tamper Proof options available.

### Operating Conditions

Maximum Inlet	(based upon seat option)
Fluorocarbon	500 psig (35 barg)
Perfluoroelastomer	200 psig (14 barg)
Temperature	-40°F to 150°F (-40°C to 66°C)

### Functional Performance

Flow Capacity	C <sub>v</sub> 0.85
Leak Rate	
Internal	Bubble Tight
External	Bubble Tight

\* For detailed information on Materials of Construction, visit us at [www.parker.com/veriflo](http://www.parker.com/veriflo) to review the complete product literature sheet.

## Ordering Information

Sample: **HFR90** **0** **S** **4P** **03** **6** **4** **K**

Finished Order: **HFR900S4P0364K**

- 1 Range**
- 0 = 1 - 30 psig
  - 1 = 2 - 75 psig
  - 2 = 5 - 150 psig

- 2 Body Material**
- B = Brass
  - S = 316L Stainless Steel

- 3 Porting**
- 2P = 2 Ports - No X required for gauges, Inlet & outlet ports only
  - 3P = 3 Ports - One X for gauge port
  - 4P = 4 Ports - Two X's for gauge ports
  - 4PB = 4 Ports - One X for gauge port

See Regulator Porting Guide for more information.

- 4 Outlet Gauge**
- 03 = 0 - 30 psig
  - OL = 0 - 60 psig
  - 01 = 0 - 100 psig
  - 2 = 0 - 200 psig
  - X = No Gauge
- (Additional ranges available upon request)

- 5 Inlet Gauge**
- 4 = 0 - 400 psig
  - 6 = 0 - 600 psig
  - X = No Gauge
- (Additional ranges available upon request)

- 6 Port Style**
- 4 = 1/4" NPT Female
  - 6 = 3/8" NPT Female
  - 8 = 1/2" NPT Female
  - 4T = 1/4" A-LOK®
  - 6T = 3/8" A-LOK®
  - 8T = 1/2" A-LOK®
- (All Gauge ports are 1/4" NPT Female)

- 7 Seat Material**
- K = Perfluoroelastomer (FFKM)  
(200 psig max)
  - V = Fluorocarbon (FKM)  
(500 psig max)

- 8 Optional Features**
- This section can have multiple options
- NP = Nickel Plate (Brass bodies only)
  - PM = Panel Mount (captured vent not available)
  - R = Relief Valve (Fluorocarbon seal - 4PB Only)

# HF1200 & HFT 1200 Series 316L SS, Single Stage, High Flow

## Product Features & Benefits



- High inlet pressure with 1.2 Cv to meet a variety of applications.
- Hastelloy C-22® diaphragm for high corrosion resistance.
- HFT offers a tied diaphragm for positive shut off.
- Large convoluted diaphragm provides stable pressure control.
- 59% greater effective diaphragm area over competitive products.
- HFT offers Hastelloy trim for corrosive applications.

### Operating Conditions

Maximum Inlet	1,250 psig (86 barg)
<b>Temperature</b>	
PCTFE	-40°F to 150°F (-40°C to 66°C)

### Functional Performance

<b>Flow Capacity</b>	C <sub>v</sub> 1.2
<b>Leak Rate</b>	
Internal	Bubble Tight at 70 psig minimum
External	Bubble Tight
<b>Supply Pressure Effect</b>	5.4 psig / 100 psig

\* For detailed information on Materials of Construction, visit us at [www.parker.com/veriflo](http://www.parker.com/veriflo) to review the complete product literature sheet.

## Ordering Information

Sample: **HFT12 01 S K 3P 2 8 B**

Finished Order: **HFT1201SK3P28B**

**1 Basic Series**  
HF12 (Non-Tied Diaphragm)  
HFT12 (Tied Diaphragm)

**2 Pressure Range**  
00 = 5 - 50 psig  
01 = 5 - 100 psig  
15 = 5 - 150 psig  
02 = 20 - 200 psig

**3 Body Material**  
S = 316L Stainless Steel

**4 Seat Material**  
K = PCTFE

**5 Porting**  
2P = 2 Ports *No X required for gauges, inlet & outlet ports only*  
3P = 3 Ports *One X for gauge port*  
4P = 4 Ports *Two X for gauge port*  
4PB = 4 Ports *One X for gauge port*  
*See Regulator Porting Guide for additional options and port layouts*

**6 Outlet Gauge**  
VX = -30 in Hg 0 - 150 psig  
*- HFT1200 only.*  
OL = 0 - 60 psig  
01 = 0 - 100 psig  
2 = 0 - 200 psig  
X = No Gauge  
*Additional ranges available upon request*

**7 Port Style**  
8 = 1/2" NPT Female  
8T = 1/2" A-LOK®  
12T = 3/4" A-LOK®  
*1/4" NPT Gauge Ports are Standard*

**8 Place Holder**  
B = Place Holder

**9 Options**  
TH = Hastelloy Trim - *HFT1200 only.*  
*Includes Hastelloy C-22® poppet, seat retainer and Inconel X750® poppet spring*

# APR66 Series

316L SS or Brass, Single Stage, High Pressure

## Product Features & Benefits



- Thrust bearing allows low actuating torque and precise setability.
- Cleaned for O<sub>2</sub> service is standard.
- Low friction adjusting screw sleeve provides smooth operation.
- Piston sensing.
- Optional self relieving feature allows user to decrease outlet pressure in closed systems. Feature is actuated by turning the adjusting knob counterclockwise.

### Operating Conditions

Maximum Inlet	6,000 psig (414 barg)
Temperature	-40°F to 165°F (-40°C to 74°C)

### Functional Performance

<b>Flow Capacity</b>	C <sub>v</sub> 0.05
<b>Leak Rate</b>	
Internal	Bubble Tight
External	Bubble Tight
<b>Supply Pressure Effect</b>	
100 - 1,000 psig	4 psig/100 psig (0.28 barg/7 barg)
100 - 2,000 psig	4 psig/100 psig (0.28 barg/7 barg)
100 - 3,000 psig	4 psig/100 psig (0.28 barg/7 barg)
100 - 6,000 psig	6 psig/100 psig (0.4 barg/7 barg)

\* For detailed information on Materials of Construction, visit us at [www.parker.com/veriflo](http://www.parker.com/veriflo) to review the complete product literature sheet.

## Ordering Information

Sample: **APR66**   **S**   **4P**   **1**   **X**   **X**   **4**   **M**   **320**  
 Finished Order: **APR66S4P1XX4M320**

### 1 Body Material

B = Nickel Plated Brass  
 S = 316L Stainless Steel

### 2 Porting

2P = 2 Ports - No X required for gauges, Inlet & outlet ports only  
 3P = 3 Ports - One X for gauge port  
 4P = 4 Ports - Two X's for gauge ports

See Regulator Porting Guide for more information

### 3 Pressure Range

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

### 4 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  
 (Additional ranges available upon request)

### 5 Inlet Gauge

40 = 0 - 4000 psig  
 60 = 0 - 6000 psig  
 X = No Gauge  
 (Additional ranges available upon request)

### 6 Port Style

2 = 1/8" NPT Female  
 4 = 1/4" NPT Female  
 D = DIN ISO 228/1 - Inlet and Outlet Ports Only  
 MS = MS33649 - Inlet and Outlet Ports Only  
 (All Gauge ports are 1/4" NPT Female)

### 7 Optional Features

This section can have multiple options

B = Buna-N Seal  
 M = Metal Knob (Black)  
 SR = Self Relieving For safety purposes, the optional self-relieving feature is not recommended for toxic or flammable gases or liquids.

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

### 8 CGA#

320, 330, 350, 510, 580, 590 or 660\*

\* CGA 660 not available in brass  
 Do not exceed the rated pressure of the CGA connection.

# HPR800 Series

## Product Features & Benefits



- Low actuating torque.
- Diaphragm sensing regulator.
- Cleaned for O<sub>2</sub> service is standard.
- Self-contained valve seat assembly.
- Fluid media capabilities: Corrosive and non-corrosive gases.
- Easily maintained.
- Maximum inlet of 5,000 psig.

### Operating Conditions

Maximum Inlet	5,000 psig @70°F (345 barg @ 21°C)
For Oxygen	3,000 psig (206.9 barg)
Temperature	-40°F to 150°F (-40°C to 66°C)

### Functional Performance

<b>Flow Capacity</b>	C <sub>v</sub> 0.02
<b>Leak Rate</b>	
Internal	Bubble Tight
External	Bubble Tight
<b>Supply Pressure Effect</b>	0.5 psig / 100 psig (0.03 barg / 7 barg)

\* For detailed information on Materials of Construction, visit us at [www.parker.com/veriflo](http://www.parker.com/veriflo) to review the complete product literature sheet.

## Ordering Information

Sample: **HPR80 1 S 3P 10 4**  
 Finished Order: **HPR801S3P104**

### 1 Basic Series

- 0 = 10 - 800 psig
- 1 = 20 - 1500 psig
- 2 = 50 - 2500 psig

### 2 Body Material

- B = Brass
- S = 316L Stainless Steel

### 3 Porting

- 2P = 2 Ports - No X required for gauges, Inlet & outlet ports only
- 3P = 3 Ports - One X for gauge port
- 4P = 4 Ports - Two X's for gauge ports
- 5P = 5 Ports - Two X's for gauge ports

See Regulator Porting Guide for more information.

### 4 Outlet Gauge

- 10 = 0 - 1000 psig
  - 20 = 0 - 2000 psig
  - 30 = 0 - 3000 psig
  - X = No Gauge
- (Additional ranges available upon request)

### 5 Inlet Gauge

- 30 = 0 - 3000 psig
  - 40 = 0 - 4000 psig
  - 60 = 0 - 6000 psig
  - X = No Gauge
- (Additional ranges available upon request)

### 6 Port Style

- 4 = 1/4" NPT Female
- (All Gauge ports are 1/4" NPT Female)

### 7 Optional Features

This section can have multiple options

PM = Panel Mount

Vent Muffler Option:

Order Vent Muffler p/n: 46600581 as a separate line item.

### 8 CGA#

320, 330, 350, 510, 580, 590 or 660

Do not exceed the rated pressure of the CGA connection.



# XPR Series

316L SS or Brass, Single Stage, High pressure

## Product Features & Benefits



- Bonnet assembly allows easy changeout.
- Self relieving adjustment with allen wrench.
- Self relieving allows downstream pressure to be vented through regulator.
- Cleaned for O<sub>2</sub> service.
- Seven range assemblies available.

### Operating Conditions

	Stainless Steel	Brass
Temperature	-40°F to 150°F (-40°C to 66°C)	

### Functional Performance

#### Leak Rate

Internal	Bubble Tight
External	Bubble Tight

#### Flow Capacity

C<sub>v</sub> 0.07

\* For detailed information on Materials of Construction, visit us at [www.parker.com/veriflo](http://www.parker.com/veriflo) to review the complete product literature sheet.

## Ordering Information

Sample: **XPR S 15 3P 20 60 4 O T**  
 Finished Order: **XPRS153P20604OT**

- 1 Body Material**  
 S = 316L Stainless Steel *10,000 psig max inlet*  
 B = Brass *6,000 psig max inlet*

- 2 Range** **Outlet Gauge**  
 5 = 50-500 psig 0-600 psig  
 8 = 50-800 psig 0-1000 psig  
 15 = 100-1,500 psig 0-2000 psig  
 25 = 135-2,500 psig 0-3000 psig  
 40 = 200-4,000 psig 0-6000 psig  
 60 = 300-6,000 psig 0-6000 psig  
 100 = 500-10,000 psig\* 0-10000 psig  
*\* Available with Stainless Steel body material only*

- 3 Porting**  
 2P = 2 Ports *No X required for gauges, Inlet & outlet ports only*  
 3P = 3 Ports *One X for gauge port*  
 4P = 4 Ports *Two X's for gauge ports*  
 4PB = 4 Ports *One X for gauge port*

*See Regulator Porting Guide for additional options and port layouts*

- 4 Outlet Gauge**  
 6 = 0 - 600 psig  
 10 = 0 - 1,000 psig  
 20 = 0 - 2,000 psig  
 30 = 0 - 3,000 psig  
 60 = 0 - 6,000 psig  
 100 = 0 - 10,000 psig  
*Additional ranges available upon request*

- 5 Inlet Gauge**  
 60 = 0 - 6,000 psig *Std*  
 100 = 0 - 10,000 psig *Std for 100 range option*  
*Additional ranges available upon request*

- 6 Port Style**  
 2 = 1/8" NPT Female  
 4 = 1/4" NPT Female  
 6 = 3/8" NPT Female  
*1/4" NPT Female Gauge Ports are Standard*

- 7 O-ring Material**  
 O = FKM

- 8 Optional Features**  
*This section can have multiple options*  
 N = Non-self relieving  
 Q = Nickel Plate *Brass body material only*  
 T = Tee Bar Handle

**Note:** Panel Mount Option:  
*Order Panel Nut Ring p/n: 40400440 as a separate line item.*

# 735 Series

**316L SS, Two Stage,  
High Pressure**

## Product Features & Benefits



- Unique patented compression member loads the seal to body eliminating threads in the wetted area.
- Tied Diaphragm for added safety.
- Metal-to-metal diaphragm-to-body seal assures high leak integrity.
- Cleaned for O<sub>2</sub> service is standard.

### Operating Conditions

Maximum Inlet	3,500 psig (240 barg)
Temperature	-40°F to 150°F (-40°C to 65°C)

### Functional Performance

#### Leak Rate

Internal	Bubble Tight
External	Bubble Tight

#### Supply Pressure Effect

0.04 Cv	0.2 psig to 100 psig (0.01 barg to 7 barg)
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\* For detailed information on Materials of Construction, visit us at [www.parker.com/veriflo](http://www.parker.com/veriflo) to review the complete product literature sheet.

## Ordering Information

Sample: **735 30 S 4P OL 30 4 TH 330**  
 Finished Order: **73530S4POL304TH330**

### 1 Range

30 = 1 - 30 psig  
 100 = 3 - 100 psig

### 2 Body Material

S = VeriClean® 316L Stainless Steel  
 H = Hastelloy C-22® (Includes Hastelloy C-22® body, diaphragm, compression member, poppet and Inconel® spring.)

### 3 Porting

2P = 2 Ports - No X required for gauges, Inlet & outlet ports only  
 3P = 3 Ports - One X for gauge port  
 4P = 4 Ports - Two X's for gauge ports  
 5P = 5 Ports - Two X's for gauge ports  
 7P = 7 Ports - Two X's for gauge ports

See Regulator Porting Guide for more information.

### 4 Outlet Gauge

03 = 0 - 30 psig  
 OL = 0 - 60 psig  
 01 = 0 - 100 psig  
 X = No Gauge  
 Additional ranges available upon request

### 5 Inlet Gauge

30 = 3000 psig  
 4 = 400 psig  
 40 = 4000 psig  
 X = No Gauge  
 Additional ranges available upon request

### 6 Port Style

4 = 1/4" NPT Female  
 Note: All Gauge ports are 1/4" NPT Female

### 7 Optional Features

This section can have multiple options

PM = Panel Mount  
 R2 = Relief Valve (5P Only)  
 TH = Hastelloy Trim Available on Stainless Steel body, only. Includes Hastelloy C-22® diaphragm, compression member, poppet and screen with an Inconel® spring.  
 VESP = Vespel® Seat (Recommended for N<sub>2</sub>O Service)

### 8 CGA# (Specify CGA No.)

320, 330, 350, 510, 580, 590, or 660  
 Do not exceed the rated pressure of the CGA connection.

# 959 Series

## Product Features & Benefits



- Tied Diaphragm for added safety.
- Unique patented compression member loads seal to body without requiring a threaded nozzle or additional seals to atmosphere.
- Adjustment range spring may be replaced without breaking diaphragm seal to body and exposing the wetted area to contamination.
- Metal-to-metal diaphragm-to-body seal assures high leak integrity.
- Cleaned for O<sub>2</sub> service is standard.

Operating Conditions	
Maximum Inlet	based on C <sub>v</sub> Option
C <sub>v</sub> 0.04	3,500 psig (240 barg)
C <sub>v</sub> 0.2	1,250 psig (86 barg)
Outlet Options	1 - 30 psig (2 barg) 3 - 100 psig (7 barg) 30 - 150 psig (10.3 barg)
Temperature	-40°F to 150°F (-40°C to 65°C)

Functional Performance	
<b>Flow Capacity</b>	
Cv Options	C <sub>v</sub> 0.04 (std) or C <sub>v</sub> 0.2
<b>Leak Rate</b>	
Internal	Bubble Tight
External	Bubble Tight
<b>Supply Pressure Effect</b>	
C <sub>v</sub> 0.04	0.6 psig/100 psig
C <sub>v</sub> 0.2	1.5 psig/100 psig

\* For detailed information on Materials of Construction, visit us at [www.parker.com/veriflo](http://www.parker.com/veriflo) to review the complete product literature sheet.

## Ordering Information

Sample: **959 30 S 4P OL 30 4 TH**  
 Finished Order: **95930S4POL304TH**

<p><b>1 Range</b></p> <p>30 = 1 - 30 psig          100 = 3 - 100 psig          150 = 5 - 150 psig</p>	<p><b>4 Outlet Gauge</b></p> <p>03 = 0 - 30 psig          OL = 0 - 60 psig          01 = 0 - 100 psig          2 = 0 - 200 psig          X = No Gauge  <i>Additional ranges available upon request</i></p>	<p><b>6 Port Style</b></p> <p>4 = 1/4" NPT Female  <i>All Gauge Ports are 1/4" NPT Female</i></p>
<p><b>2 Body Material</b></p> <p>S = 316L Stainless Steel          H = Hastelloy C-22® <i>Includes Hastelloy C-22® body, diaphragm, compression member, poppet and Inconel® spring</i></p>	<p><b>5 Inlet Gauge</b></p> <p>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  <i>Additional ranges available upon request</i></p>	<p><b>7 Optional Features</b>          This section can have multiple options</p> <p>2 = 0.2 C<sub>v</sub>          DO = Dome Loaded          PM = Panel Mount          R = Relief Valve <i>4PB, 5P and 6P Only</i>          TH = Hastelloy Trim <i>Available on Stainless Steel body, only. Includes Hastelloy C-22® diaphragm, compression member, poppet and screen with an Inconel® spring</i>          VESP = Vespel® Seat <i>Recommended for N<sub>2</sub>O Service</i></p>
<p><b>3 Porting</b></p> <p>2P = 2 Ports <i>No X required for gauges, inlet &amp; outlet ports only</i>          3P = 3 Ports <i>One X for gauge port</i>          4P = 4 Ports <i>Two X's for gauge ports</i>          4PB = 4 Ports <i>One X for gauge port</i>          5P = 5 Ports <i>Two X's for gauge ports</i>          6P = 6 Ports <i>Two X's for gauge ports</i></p> <p><i>See Regulator Porting Guide for additional options and port layouts</i></p>		

# MIR700 Series

316L SS or Brass, Single Stage, Compact Regulator

## Product Features & Benefits



- Precise flexing Hastelloy C-22® diaphragm.
- Low internal volume.
- Cleaned for O<sub>2</sub> service is standard.
- Machined from solid bar stock.
- Proven valve seat assembly.

### Operating Conditions

Maximum Inlet	3,000 psig (207 barg)
Temperature	-40°F to 150°F (-40°C to 66°C)

### Functional Performance

<b>Flow Capacity</b>	C <sub>v</sub> 0.02
<b>Leak Rate</b>	
Internal	Bubble Tight
External	Bubble Tight
<b>Supply Pressure Effect</b>	0.6 psig/100 psig (0.03barg/6.80 barg)

\* For detailed information on Materials of Construction, visit us at [www.parker.com/veriflo](http://www.parker.com/veriflo) to review the complete product literature sheet.

## Ordering Information

Sample: **MIR700** **30** **B** **4P** **03** **30** **4**

Finished Order: **MIR70030B4P03304**

### 1 Pressure Setting

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

### 2 Body Material

B = Nickel Plated Brass  
S = 316L Stainless Steel

### 3 Porting

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

See Regulator Porting Guide for more information.

### 4 Outlet Gauge

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

(Additional ranges available upon request)

### 5 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

(Additional ranges available upon request)

### 6 Port Style

2 = 1/8" NPT Female  
4 = 1/4" NPT Female

### 7 Optional Features

This section can have multiple options

FTD = Fairprene® Diaphragm  
M = Miniature Instrument Knob  
MH = Mounting Holes  
PM = Panel Mount  
R = Relief Valve (4PB Only)

### 8 CGA#

320, 330, 350, 510, 580  
590 or 660

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

# ABP1 Series

## 316L SS, Back Pressure Regulator

### Product Features & Benefits



- Standard Hastelloy C-22® diaphragm for superior strength and corrosion resistance.
- Convoluted diaphragm provides outlet pressure stability with changes in flow.
- Integral diaphragm stop provides an additional safety measure.
- Cleaned for O<sub>2</sub> service is standard.
- Express Service Program is available.

#### Operating Conditions

Max. Control Pressure	20 - 500 psig (35 barg)
Max. Temperature of Flow Media	-15°F to 400°F (26°C to 204°C) <i>Note: Metal Knob required for high temperature applications</i>

#### Functional Performance

##### Flow Capacity

C <sub>V</sub>	0.3 C <sub>V</sub> (std), 0.1 C <sub>V</sub> or 0.06 C <sub>V</sub>
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##### Leak Rate

Internal	Bubble Tight
External	Bubble Tight

\* For detailed information on Materials of Construction, visit us at [www.parker.com/veriflo](http://www.parker.com/veriflo) to review the complete product literature sheet.

### Ordering Information

Note: Options in *blue/italic* type are available for the *Express Service Program*.

Sample: **ABP1**    **S**    **T**    **3**    **3BP**    **2**    **4**

Finished Order: **ABP1ST33BP24**

**1 Body Material**  
*S = 316L Stainless Steel*  
 H = Hastelloy C-22®  
 M = Monel®

**2 Seat Material**  
*T = PTFE*  
 V = Fluorocarbon Elastomer (FKM)  
 K = Perfluoroelastomer (FFKM)

**3 Pressure Range**

Range	Gauge
<i>1 = 1 - 25 psig</i>	<i>03 0 - 30 psig</i>
<i>2 = 2 - 50 psig</i>	<i>OL 0 - 60 psig</i>
<i>3 = 3 - 100 psig</i>	<i>2 0 - 200 psig</i>
<i>4 = 10 - 250 psig</i>	<i>4 0 - 400 psig</i>
<i>5 = 20 - 500 psig</i>	<i>6 0 - 600 psig</i>

**4 Porting**  
*(Refer to Porting Guide on Page 3)*  
*2BP = 2 Ports - No X required for gauges, Inlet & outlet ports only,*  
*3BP = 3 Ports - One X for gauge port*  
*3PB = 3 Ports - One X for gauge port (outlet though bottom)*  
*3PP = 3 Ports - One X for gauge ports*

**5 Inlet Gauge**  
*03 = 0 - 30 psig*  
*OL = 0 - 60 psig*  
*2 = 0 - 200 psig*  
*4 = 0 - 400 psig*  
*6 = 0 - 600 psig*  
*X = No Gauge*  
*(Additional ranges available upon request)*

**6 Port Style**  
*2 = 1/8" NPT Female*  
*4 = 1/4" NPT Female*  
*(All Gauge ports are 1/4" NPT Female)*

**7 Optional Features**  
 This section can have multiple options  
**DO= Dome Loaded** *(Not available with M option)*  
**M = Metal Knob** *(Black) (Not available with DO options)*  
**06 = 0.06 Cv**  
**1 = 0.1 Cv**

**Note: Panel Mount Option:**  
*Order Panel Nut Ring p/n: 41900363 as a separate line item.*  
**Vent Muffler Option:**  
*Order Vent Muffler p/n: 46600581 as a separate line item.*

# ABP3 Series

## 316L SS, Back Pressure Regulator

### Product Features & Benefits



- Standard Hastelloy C-22® diaphragm for superior strength and corrosion resistance.
- Cleaned for O<sub>2</sub> service is standard.
- Convoluted diaphragm provides outlet pressure stability with changes in flow.
- Integral diaphragm stop provides an additional safety measure.
- Express Service Program is available.

#### Operating Conditions

Max. Control Pressure	2 - 60 psig (0.2 - 4.1 barg)
Max. Temperature of Flow Media	-15°F to 400°F (26°C to 204°C) <i>Note: Metal Knob required for high temperature applications</i>

#### Functional Performance

Flow Capacity	
C <sub>V</sub>	0.3 C <sub>V</sub> (std), 0.1 C <sub>V</sub> or 0.06 C <sub>V</sub>
Leak Rate	
Internal	Bubble Tight
External	Bubble Tight

\* For detailed information on Materials of Construction, visit us at [www.parker.com/veriflo](http://www.parker.com/veriflo) to review the complete product literature sheet.

### Ordering Information

Note: Options in *blue/italic* type are available for the *Express Service Program*.

Sample: **ABP3**    **S**    **T**    **3**    **3BP**    **01**    **4**

Finished Order: **ABP3ST33BP014**

**1 Body Material**  
*S = 316L Stainless Steel*  
 H = Hastelloy C-22®

**2 Seat Material**  
*T = PTFE*  
 V = Fluorocarbon Elastomer (FKM)  
 K = Perfluoroelastomer (FFKM)

**3 Pressure Range**

Range	Gauge
<i>1 = 1 - 5 psig</i>	<i>05 0 - 15 psig</i>
<i>2 = 1 - 30 psig</i>	<i>OL 0 - 60 psig</i>
<i>3 = 2 - 60 psig</i>	<i>01 0 - 100 psig</i>

**4 Porting**  
 (Refer to Porting Guide on Page 3)  
*2BP = 2 Ports - No X required for gauges, Inlet & outlet ports only.*  
*3BP = 3 Ports - One X for gauge port*  
*3PP = 3 Ports - One X for gauge port*

**5 Inlet Gauge**  
*05 = 0 - 15 psig*  
*OL = 0 - 60 psig*  
*01 = 0 - 100 psig*  
*X = No Gauge*  
 (Additional ranges available upon request)

**6 Port Style**  
 2 = 1/8" NPT Female  
 4 = 1/4" NPT Female  
 (All Gauge ports are 1/4" NPT Female)

**7 Optional Features**  
 This section can have multiple options  
 DO= Dome Loaded (Not available with M option)  
 M = Metal Knob (Black) (Not available with DO options, required for higher temperatures)  
 06 = 0.06 Cv  
 1 = 0.1 Cv

**Note:** Panel Mount Option:  
*Order Panel Nut Ring p/n: 41900363 as a separate line item.*

**Vent Muffler Option:**  
*Order Vent Muffler p/n: 46600581 as a separate line item.*



# BPR50 Series

## Product Features & Benefits



- 316L Stainless Steel construction.
- Cleaned for O<sub>2</sub> service is standard.
- Gas or Liquid Service.
- Simple construction makes maintenance easy.
- Panel mount option is available.
- Adjustable pressures from 100 to 1,200 psig and 200 to 2,000 psig.
- Flow Coefficient of 0.45 C<sub>v</sub>.

### Operating Conditions

Control Pressure	100 - 1,200 psig (7 - 83 barg) 200 - 2,000 psig (14 - 138 barg)
Temperature	-40°F to 150°F (-40°C to 66°C)

### Functional Performance

#### Leak Rate

Internal	Bubble Tight
External	Bubble Tight

\* For detailed information on Materials of Construction, visit us at [www.parker.com/veriflo](http://www.parker.com/veriflo) to review the complete product literature sheet.

## Ordering Information

Sample: **BPR50** **S** **3PB** **1** **BH** **PM**  
 Finished Order: **BPR50S3PB1BHPM**

**1 Body Material**  
 S = 316L Stainless Steel

**2 Porting**  
 (Refer to Porting Guide on Page 3)  
 2PB = 2 Ports - Outlet through bottom  
 3BP = 3 Ports  
 3PB = 3 Ports - Outlet through bottom

**3 Adjustment Range**  
 1 = 100 - 1200 psig  
 2 = 200 - 2000 psig

**4 Actuation Devices**  
 BH = T Bar Handle  
 Omit = Broach Stem (Standard)

**5 Optional Features**  
 This section can have multiple options  
 K = Perfluoroelastomer (FFKM) O-ring with PCTFE Seal  
 PM = Panel Mount

# AVR3 Series

## Steam Heated, Pressure Reducing, Vaporizing Regulator

### Product Features & Benefits



- Ultra low internal volume.
- Cleaned for O<sub>2</sub> service is standard.
- Convuluted Hastelloy C-22® diaphragm for superior strength and corrosion resistance provides outlet pressure stability with changes in flow.
- Integral diaphragm stop provides additional measure of safety.
- Field serviceable heat transfer element.
- Express Service Program is available.

Functional Performance	
<b>Flow Capacity</b>	C <sub>v</sub> 0.06 Nominal
<b>Leak Rate</b>	
Internal	Bubble Tight
External	Bubble Tight

Operating Conditions	
Maximum Inlet	3,500 psig (241 barg) or 250 psig (17.2 barg) for 10 psig range
Temperatures	based upon seat option
PCTFE	150°F (66°C)
PEEK™	275°F (135°C)
Vespel®	500°F (260°C)
Maximum Steam Supply	600 psig, 500°F (41 barg, 260°C)

\* For detailed information on Materials of Construction, visit us at [www.parker.com/veriflo](http://www.parker.com/veriflo) to review the complete product literature sheet.

### Ordering Information

Note: Options in *blue/italic* type are available for the *Express Service Program*.

Sample: **AVR3** **S** **K** **1** **X** **3PG**  
 Finished Order: **AVR3SK1X3PG**

**1 Body Material**  
*S = 316L Stainless Steel*  
 H = Hastelloy C-22®  
 M = Monel®

**2 Seat Material**  
*K = PCTFE*  
*P = PEEK™*  
*V = Vespel®*

**3 Pressure Range**  
 0 = 0 - 10 psig (max inlet 250 psig)  
*1 = 1 - 30 psig*  
*2 = 2 - 60 psig*  
*3 = 3 - 100 psig*  
 4 = 10 - 250 psig  
 5 = 20 - 500 psig

**4 Outlet Gauge**  
*03 = 0 - 30 psig*  
*OL = 0 - 60 psig*  
*01 = 0 - 100 psig*  
 4 = 0 - 400 psig  
 6 = 0 - 600 psig  
*X = No Gauge*

**5 Porting Configuration**  
 (Refer to Porting Guide on Page 3)  
*blank = 2 Port*  
*3PG = 3 Port - Relief Valve or Gauge Port*  
 4PV = 4 Port - Relief Valve and Gauge Port  
 2PL = 2 Port - Reverse Entry

3PLG = 3 Port - Reverse Entry Relief Valve or Gauge Port  
 4PL = 4 Port - Reverse Entry Relief Valve and Gauge Port

**6 Optional Features**  
*RV = Relief Valve*

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

Note: Additional options are available. Contact Veriflo for more information

# AVR4 Series

## Electrically Heated, Pressure Reducing, Vaporizing Regulator

### Product Features & Benefits



- Ultra low internal volume.
- CSA, CE-ATEX certified.
- Cleaned for O<sub>2</sub> service is standard.
- Convoluted Hastelloy C-22® diaphragm for superior strength and corrosion resistance provides outlet pressure stability with changes in flow.
- Field serviceable heat transfer element.
- TCO (Thermal cut-out) is standard for all heat ranges.
- Integral diaphragm stop provides additional measure of safety.
- Express Service Program is available.



Functional Performance	
<b>Flow Capacity</b>	C <sub>v</sub> 0.06 Nominal
<b>Leak Rate</b>	
Internal	Bubble Tight
External	Bubble Tight

Operating Conditions	
Maximum Inlet	3,500 psig (241 barg) or 250 psig (17.2 barg) for 10 psig range
Temperatures	based upon seat option
PCTFE	150°F (66°C)
PEEK™	275°F (135°C)
Vespel®	500°F (260°C)
Ambient Temperature	-4°F to +104°F (-20°C to +40°C)

\* For detailed information on Materials of Construction, visit us at [www.parker.com/veriflo](http://www.parker.com/veriflo) to review the complete product literature sheet.

### Ordering Information

Note: Options in *blue/italic* type are available for the *Express Service Program*.

Sample: **AVR4** **S** **K** **1** **120** **D** **L** **X** **3PG** **RV**  
 Finished Order: **AVR4SK1120DLX3PGRV**

#### 1 Body Material

*S* = 316L Stainless Steel  
 H = Hastelloy C-22®  
 M = Monel®

#### 2 Seat Material

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

#### 3 Pressure Range

0 = 0 - 10 psig (max inlet 250 psig)  
*1* = 1 - 30 psig  
*2* = 2 - 60 psig  
*3* = 3 - 100 psig  
 4 = 10 - 250 psig  
 5 = 20 - 500 psig

#### 4 Voltage

*120* = 120V  
*240* = 240V

#### 5 Heater Wattage

A = 40  
 C = 100  
*D* = 150  
*E* = 200

#### 6 Temperature Controller

*L* = 75°F to 220°F (24°C - 104°C)  
*H* = 220°F to 380°F (104°C - 193°C)

#### 7 Outlet Gauge

*03* = 0 - 30 psig  
*OL* = 0 - 60 psig  
*01* = 0 - 100 psig  
 4 = 0 - 400 psig  
 6 = 0 - 600 psig  
*X* = No Gauge

#### 8 Porting Configuration

(Refer to Porting Guide on Page 3)

*blank* = 2 Port  
 2PL = 2 Port - Reverse Entry  
*3PG* = 3 Port - Relief Valve or Gauge Port

3PLG = 3 Port - Reverse Entry Relief Valve or Gauge Port

4PV = 4 Port - Relief Valve and Gauge Port

4PL = 4 Port - Reverse Entry Relief Valve and Gauge Port

Note: High Pressure port standard is 1/8" NPT Female.  
 1/4" NPT Female on auxiliary outlet ports.

#### 9 Optional Features

*RV* = Relief Valve  
 SL1 = SilcoNert™ 1000

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

# NPR4100 Series

## 316L SS, Negative Pressure Regulator

### Product Features & Benefits



- Unique patented compression member loads the seal to the body without requiring a threaded nozzle or additional seals.
- Internally threadless design reduces particle generation. The low internal volume reduces purge times.
- Cleaned for O<sub>2</sub> service is standard.
- Positive upward and downward stops increase cycle life by preventing over stroking of the diaphragm.
- Selection of seat materials for media compatibility and temperature applications.
- Unique carrier design disperses gas uniformly through the regulator to improve purging.

Functional Performance	
<b>Leak Rate</b>	
Internal	Bubble Tight
External	Bubble Tight

#### Operating Conditions

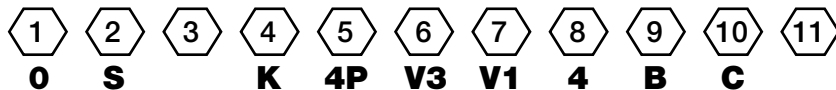
Maximum Inlet	250 psig (17 barg)
Temperature	Based upon seat material choice
PCTFE	-40°F to 150°F (-40°C to 66°C)
PEEK™ *	-40°F to 275°F (-40°C to 135°C)
Vespel® *	-40°F to 500°F (-40°C to 260°C)

\*Not available for Brass Bodies

\*\*For detailed information on Materials of Construction, visit us at [www.parker.com/veriflo](http://www.parker.com/veriflo) to review the complete product literature sheet.

### Ordering Information

Sample: **NPR410**



Finished Order: **NPR4100SK4PV3V14BC**

- 1 Pressure Range**  
0 = -26 in Hg - 10 psig
- 2 Body Material**  
S = 316L Stainless Steel  
B = Brass  
H = Hastelloy C-22® SST gauges  
M = Monel® SST gauges
- 3 Flow Capacity**  
omit = 0.06 Cv (Standard)  
1 = 0.02 Cv  
2 = 0.15 Cv
- 4 Seat Material**  
K = PCTFE  
P = PEEK™  
V = Vespel® Recommended for Nitrous Oxide (N<sub>2</sub>O) Service
- 5 Porting**  
2P = 2 Ports No X required for gauges, Inlet & outlet ports only  
3P = 3 Ports One X for gauge port  
4P = 4 Ports Two X's for gauge ports  
4PB = 4 Ports One X for gauge port  
**Note:**  
Ports may be plugged for NPT threaded product.  
See Regulator Porting Guide for additional options and port layouts

- 6 Outlet Gauge**  
V3 = -30 in Hg 0 - 30 psig  
X = No Gauge
- 7 Inlet Gauge**  
V3 = -30 in Hg 0 - 30 psig  
V1 = -30 in Hg 0 - 100 psig  
2 = 0 - 200 psig  
4 = 0 - 400 psig  
X = No Gauge
- 8 Port Style**  
2 = 1/8" NPT Female  
4 = 1/4" NPT Female  
6 = 3/8" NPT Female  
4T = 1/4" A-LOK®  
6T = 3/8" A-LOK®  
8T = 1/2" A-LOK®  
All Gauge ports are 1/4" NPT Female
- 9 Port Mounting**  
B = 0.75 port height w/0.75 mounting hole pattern
- 10 Optional Features**  
This section can have multiple options  
B = True Ported Body no plugs  
C = Corrosion Resistant External Stainless Steel Cap  
D = Dome Loaded Not available with G or M options

- G = Tamper Proof Not available with D or M options  
L = PTFE Backup O-Ring PCTFE and PEEK™ Seats Only  
M = Metal Knob (White) Not available with D or G options  
N = Nickel Plate Brass bodies only  
R = Relief Valve 4PB Only  
T = Hastelloy® Trim Includes carrier and back-up washer. Option is for Stainless Steel body - Hastelloy® Trim is std with Hastelloy® and Monel® bodies  
V = Outlet Valve NOVAS44MF or NOVAB44MF for Brass Body

**Note:** Panel Mount Option:  
Order Panel Nut Ring p/n: 41900363 as a separate line item.

Vent Muffler Option:  
Order Vent Muffler p/n: 46600581 as a separate line item.

**11 CGA#**  
320, 330, 350, 510, 580, or 590

Do not exceed the rated pressure of the CGA connection.

# NPR959 Series

**316L SS, Negative Pressure Regulator**

## Product Features & Benefits



- Tied Diaphragm for added safety.
- Unique patented compression member loads seal to body without requiring a threaded nozzle or additional seals to atmosphere.
- Adjustment range spring may be replaced without breaking diaphragm seal to body and exposing the wetted area to contamination.
- Metal-to-metal diaphragm-to-body seal assures high leak integrity.
- Cleaned for O<sub>2</sub> service is standard.

Operating Conditions	
Maximum Inlet	<i>based on C<sub>v</sub> Option</i>
C <sub>v</sub> 0.04	3,500 psig (240 barg)
C <sub>v</sub> 0.2	1,250 psig (86 barg)
Outlet Option	-25 in Hg - 0-30 psig
Temperature	-40°F to 150°F (-40°C to 65°C)

Functional Performance	
<b>Flow Capacity</b>	
C <sub>v</sub> Options	C <sub>v</sub> 0.04 (std) or C <sub>v</sub> 0.2
<b>Leak Rate</b>	
Internal	Bubble Tight
External	Bubble Tight
<b>Supply Pressure Effect</b>	
C <sub>v</sub> 0.04	0.6 psig/100 psig
C <sub>v</sub> 0.2	1.5 psig/100 psig

\* For detailed information on Materials of Construction, visit us at [www.parker.com/veriflo](http://www.parker.com/veriflo) to review the complete product literature sheet.

## Ordering Information

Sample: **959 30 S 4P OL 30 4 TH**  
 Finished Order: **95930S4POL304TH**

**1 Range**  
 NPR959 = -25 in Hg 0 - 30 psig

**2 Body Material**  
 S = 316L Stainless Steel  
 H = Hastelloy C-22® *Includes Hastelloy C-22® body, diaphragm, compression member, poppet and Inconel® spring*

**3 Porting**  
 2P = 2 Ports *No X required for gauges, inlet & outlet ports only*  
 3P = 3 Ports *One X for gauge port*  
 4P = 4 Ports *Two X's for gauge ports*  
 4PB = 4 Ports *One X for gauge port*  
 5P = 5 Ports *Two X's for gauge ports*  
 6P = 6 Ports *Two X's for gauge ports*

*See Regulator Porting Guide for additional options and port layouts*

**4 Outlet Gauge**  
 V3 = -30 in Hg 0 - 30 psig  
 V1 = -30 in Hg 0 - 100 psig  
 X = No Gauge  
*Additional ranges available upon request*

**5 Inlet Gauge**  
 V3 = -30 in Hg 0 - 30 psig  
 V1 = -30 in Hg 0 - 100 psig  
 X = No Gauge  
*Additional ranges available upon request*

**6 Port Style**  
 4 = 1/4" NPT Female  
*All Gauge Ports are 1/4" NPT Female*

**7 Optional Features**  
 This section can have multiple options

2 = 0.2 C<sub>v</sub>  
 DO = Dome Loaded  
 PM = Panel Mount  
 R = Relief Valve *4PB, 5P and 6P Only*  
 TH = Hastelloy Trim *Available on Stainless Steel body, only. Includes Hastelloy C-22® diaphragm, compression member, poppet and screen with an Inconel® spring*  
 VESP = Vespel® Seat *Recommended for N<sub>2</sub>O Service*

# 16 Series

## 316L SS, High Pressure, High Flow Valve

### Product Features & Benefits



- Metal diaphragm sealed.
- Spring type design.
- Minimal particle generation.
- High cycle life.
- Cleaned for O<sub>2</sub> service.
- 3,000 psig for both manual and pneumatic styles.

#### Operating Conditions

Pressure Rating	Vacuum to 3,000 psig
Actuation Pressure	70 psig min to 125 psig max
Max Differential Back Pressure	200 psid
Temperature	-65°F to 150°F (-54°C to 66° C)

#### Functional Performance

Flow Capacity	C <sub>v</sub> 0.3
Leak Rate	
Internal (NPT Threaded)	Bubble Tight
Internal (Welded)	2 x 10 <sup>-8</sup> scc/sec He (Outboard Test Method)
External	2 x 10 <sup>-9</sup> scc/sec He (Outboard Test Method)

\* For detailed information on Materials of Construction, visit us at [www.parker.com/veriflo](http://www.parker.com/veriflo) to review the complete product literature sheet.

### Ordering Information

Sample: **93-16 88 2 VM VM -PI**  
 Finished Order: **93-16882VMVM-PI**

- 1 Basic Series**  
 16- = Handwheel  
 93-16 = Pneumatic
- 2 Port Size**  
 88 = 1/2" Inlet/Outlet
- 3 Body Material**  
 2 = 316L Stainless Steel

- 4 Inlet Connection**  
 C = A-LOK®  
 F = 1/2" NPT Female  
 M = 1/2" NPT Male  
 TW = Tube Stub  
 VF = VacuSeal™ Female  
 VM = VacuSeal™ Male
- 5 Outlet Connection**  
 C = A-LOK®  
 F = 1/2" NPT Female  
 M = 1/2" NPT Male  
 TW = Tube Stub  
 VF = VacuSeal™ Female  
 VM = VacuSeal™ Male

- 6 Optional Features**  
 -PI = Vespel® Seat Material  
 PM = Panel Mount Rings



# NV17 Series

**316L SS, High Pressure,  
Compact Size Valve**

## Product Features & Benefits



- Internally threadless and springless.
- High cycle life.
- Compact size.
- Cleaned for oxygen service.
- Low internal volume.
- Metal-to-metal seal to atmosphere.
- Low actuation pressure for AOP configuration.
- Tamper resistant bonnet design.

Functional Performance	
<b>Flow Capacity</b>	
Standard	C <sub>v</sub> 0.17
Lever	C <sub>v</sub> 0.15
<b>Leak Rate</b>	
Internal	Bubble Tight
External	Bubble Tight

### Operating Conditions

Operating Pressure	
Manual	vacuum to 3500 psig (241 barg)
AOPNO	vacuum to 500 psig (34.47 barg)
AOP1	vacuum to 250 psig (17.24 barg)
AOP2	vacuum to 500 psig (34.47 barg)
AOP3	vacuum to 250 psig (17.24 barg)
Actuation Pressure	
AOPNO	50 psig min. (3.45 barg) at 500 psig inlet
AOP1	65 psig min. (4.48 barg)
AOP2	75 psig min. (5.17 barg)
AOP3	40 psig min. (2.75 barg)
Temperature	-40°F to 150°F (-40°C to 66°C)

\* For detailed information on Materials of Construction, visit us at [www.parker.com/veriflo](http://www.parker.com/veriflo) to review the complete product literature sheet.

## Ordering Information

Sample: **NV17 AOP2 S 44MF VESP**  
 Finished Order: **NV17AOP2S44MFVESP**

### 1 Type

AOPNO = Air Operated, Normally Open  
 AOP1 = Air Operated, Normally Closed  
 AOP2 = Air Operated, Normally Closed  
 AOP3 = Air Operated, Normally Closed  
 I = Indicating Handwheel  
 L = Lever  
 S = Spin handwheel  
 M = Mini Lever

### 2 Material

S = Stainless Steel  
 B = Brass

### 3 Connections

44TM = 1/4" Compression in and 1/4" NPT male out  
 44MT = 1/4" NPT in and 1/4" Compression out  
 44TT = 1/4" Compression in and out  
 44FF = 1/4" Female NPT in and out  
 44MM = 1/4" Male NPT in and out  
 44MF = 1/4" Male NPT in and Female NPT out

### 4 Optional Features

This section can have multiple options

PEEK = PEEK™ Seat

VESP = Vespe® Seat

Note: Vespe seat material is recommended for Nitrous Oxide (N<sub>2</sub>O) service. Compression ends include nuts and ferrules)

# NV55 Series

316L SS, High Flow,  
Compact Size Valve

## Product Features & Benefits



- Internally threadless and springless.
- High cycle life.
- Compact size.
- Positive, consistent shut off.
- Metal-to-metal seal to atmosphere.
- Cleaned for O<sub>2</sub> service.
- Ideal for high flow applications.
- Fully functional from vacuum to 125 psig for AOP valves and 250 psig for manual valves.

### Operating Conditions

Operating Pressures	
Manual	vacuum to 250 psig (17.2 barg)
AOPLP	vacuum to 125 psig (8.6 barg)
Actuator Pressure	70 - 125 psig (4.8 - 8.6 barg)
Temperature	-15°F to 150°F (-26°C to 66°C)

### Functional Performance

#### Flow Capacity

AOP versions, Indicator Knob and Handwheel	C <sub>v</sub> 0.55
Lever versions	C <sub>v</sub> 0.48

#### Leak Rate

Internal	Bubble Tight
External	Bubble Tight

\* For detailed information on Materials of Construction, visit us at [www.parker.com/veriflo](http://www.parker.com/veriflo) to review the complete product literature sheet.

## Ordering Information

Sample: **NV55** **LL** **S** **44MM** **VESP**  
 Finished Order: **NV55LLS44MMVESP**

1

### Type

- AOPLPNC = Air Operated, Low Pressure, Normally Closed  
 AOPLPNO = Air Operated, Low Pressure, Normally Open  
 I = Indicator Knob  
 L = Lever  
 LL = Locking Lever  
 M = Mini Lever  
 S = Spin Handwheel

2

### Material

- S = Stainless Steel

3

### Connections

- 44MM = 1/4" Male NPT In & Out  
 44FF = 1/4" Female NPT In & Out  
 44TT = 1/4" Compression In & Out  
 66MM = 3/8" Male NPT In & Out  
 66FF = 3/8" Female NPT In & Out  
 66TT = 3/8" Compression In & Out  
 88MM = 1/2" Male NPT In & Out  
 88FF = 1/2" Female NPT In & Out  
 88TT = 1/2" Compression In & Out  
 Compression ends include nuts and ferrules

4

### Optional Features

This section can have multiple options

- PM = Panel Mount (not available with Indicator Knob (I) or AOP units (AOPLPNC or AOPLPNO))  
 PEEK = PEEK™ Seat (not available with VESP option)  
 VESP = Vespel® Seat (not available with PEEK™ option)  
 Note: Vespel seat material is recommended for Nitrous Oxide (N<sub>2</sub>O) service.

# FS190 Series

316L SS, Excess Flow  
Shut-Off Valve

## Product Features & Benefits

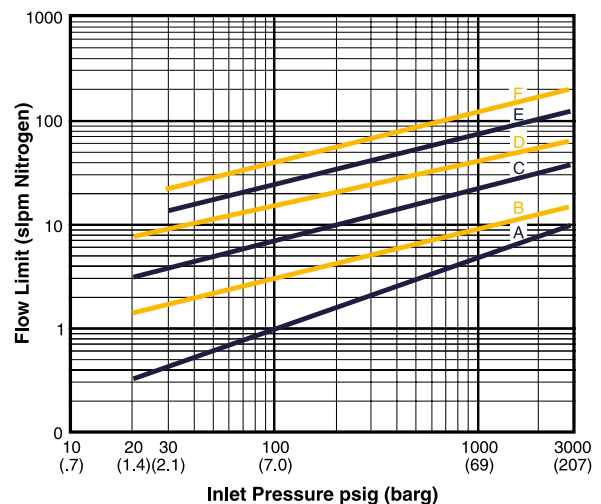


- Offered with 6 different pressure/flow limits.
- Differential pressure that is created is not affected by mounting orientation (non-attitude sensitive).
- Offered with 6 different pressure/flow limits.
- Actuating knob designed to manually operate valve and clearly indicate relative operating position - Open (Reset) or Auto (Shut off).
- Pneumatic actuator available to reset the valve remotely.
- Cleaned for O<sub>2</sub> service.

### Operating Conditions

Temperature	-10°F to 150°F (-23°C to 66°C)
Supply Pressure	Based upon Flow Limit Setting
A - D Flow Limits:	10 psig to 3,500 psig (0.7 barg to 241 barg)
E - F Flow Limits:	20 psig to 3,500 psig (1.4 barg to 241 barg)
Differential Pressure	5 psig or 12 psig (0.3 barg or 0.8 barg)

\* For detailed information on Materials of Construction, visit us at [www.parker.com/veriflo](http://www.parker.com/veriflo) to review the complete product literature sheet.



## Ordering Information

Sample: **FS190** **S** **A** **FSFM** **AOP**  
 Finished Order: **FS190SAFSFMAOP**

### 1 Material

S = 316L Stainless Steel

### 2 Flow Limit Setting

Nominal Flow Limit at:

1000 psig Inlet

30 psig Inlet

A	=	4.8 SLPM	0.4 SLPM
B	=	9.1 SLPM	1.7 SLPM
C	=	21.8 SLPM	3.9 SLPM
D	=	39.5 SLPM	9.0 SLPM
E	=	72.3 SLPM	14.4 SLPM
F	=	120.6 SLPM	22.5 SLPM

### 3 Connection (Inlet & Outlet)

P = 1/4" NPTF

FSMM = 1/4" FS Male In, Male Out

FSFF = 1/4" FS Female In, Female Out

FSFM = 1/4" FS Female In, Male Out

FSMF = 1/4" FS Male In, Female Out

TS = 1/4" Welded Tube Stubs

### 4 Optional Features

This section can have multiple options

AOP = Air Operated

EX = 10 Ra microinch Finish (not available with P Connection Option)

TH = Hastelloy C-22® Trim Internals (Includes compression member, poppet, spring and orifice)

3.46 = FLV 110 Dimensional Replacement (3.46" end-to-end dimensions)

3.70 = FLV 120 Dimensional Replacement (3.70" end-to-end dimensions)

5.25 = 5.25" end-to-end dimensions

5.75 = 5.75" end-to-end dimensions

# VR7 Series

316L SS or Brass,  
Pressure Relief Valve

## Product Features & Benefits



The VR7 Series is an economical relief valve designed to vent excess pressure from a regulator should a minor seat leak occur. This valve is recommended for use with regulators to protect the regulator and outlet pressure gauge and is not intended for applications where repeated or frequent venting is required.

- Choice of seal materials for system compatibility.
- Hex body provides wrench flats.
- Available with a variety of connections.
- Cleaned for O<sub>2</sub> service.

**Note:** The VR7 **SHOULD ONLY** be used to protect Article 3, Paragraph 3 category equipment as defined in Pressure Equipment Directive 97/23/EC Dated 29, May 1997.

Functional Performance	
Flow Capacity	0.37 C <sub>v</sub>
Operating Conditions	
Maximum Pressure	750 psig (52 barg)
Temperature	-30°F to 400°F (-35°C to 204°C)
Adjustable Ranges	10 - 20 psig (0.6 - 1.4 barg) 20 - 100 psig (1.4 - 7 barg) 100 - 250 psig (7 - 17 barg) 250 - 500 psig (17 - 34 barg)

\* For detailed information on Materials of Construction, visit us at [www.parker.com/veriflo](http://www.parker.com/veriflo) to review the complete product literature sheet.

## Ordering Information

Sample: **VR7 44MF 1 S V**  
 Finished Order: **VR744MF1SV**

**1 Connection (Inlet & Outlet)**  
 44MF = 1/4" NPTM x 1/4" NPTF  
 4FSF = 1/4" FS Female x 1/4" NPTF  
 (available for Stainless Steel body Only)  
 4FSM = 1/4" FS Male x 1/4" NPTF  
 (available for Stainless Steel body Only)

**2 Adjustable Range**  
 1 = 10 - 20 psig  
 2 = 20 - 100 psig  
 3 = 100 - 250 psig  
 4 = 250 - 500 psig

**3 Body Material**  
 S = 316L Stainless Steel  
 B = Brass

**4 Seal**  
 K = FFKM  
 V = FKM

**NOTE:** After relieving, service is required.

# F9 Series

316L SS, All Welded  
Check Valve

## Product Features & Benefits



- Noise Free Operation with the patented asymmetric spring design.
- Reduced footprint with the welded design.
- Two seal offerings to meet all SEMI gas compatibility requirements.
- Class 100 clean room assembled and packaged.
- Electropolished (EP) version for Ultra High Purity applications available.
- VeriClean™ 316L Stainless Steel enhances electropolishing and corrosion resistance.

### Operating Conditions

Based Upon Seal Options:	Fluorocarbon Elastomer (FKM)	Perfluoroelastomer (FFKM)
Maximum Operating Pressure	3,000 psig (206 barg)	1,000 psig (68 barg)
Maximum Back Pressure	3,000 psig (206 barg)	1,000 psig (68 barg)
Cracking	≤ 2 psig (0.13 barg)	≤ 2 psig (0.13 barg)
Reset	≤ 2 psig (0.13 barg)	≤ 2 psig (0.13 barg)
Temperature	-10°F to 150°F (-23°C to 66°C)	

### Functional Performance

Flow Capacity	Flow curves available. Please consult factory.
1/4" Tube Stub	C <sub>v</sub> 0.45 (X <sub>r</sub> 0.89)
1/4" & 1/2" Face Seal	C <sub>v</sub> 0.90 (X <sub>r</sub> 0.78)
3/8" & 1/2" Tube Stub	C <sub>v</sub> 0.90 (X <sub>r</sub> 0.78)
Leak Rate	
External	1 x 10 <sup>-9</sup> scc/sec He Inboard Test Method
Internal	Bubble Tight

\* For detailed information on Materials of Construction, visit us at [www.parker.com/veriflo](http://www.parker.com/veriflo) to review the complete product literature sheet.

## Ordering Information

Samples: **F9** **M** **4** **3** **4** **5** **6**  
**F9** **T** **6** **M** **8** **KR** **-EP**  
 Finished Orders: **F9M4V-EP**  
**F9T6M8KR**

**1 Inlet Port Type**  
 M = Face Seal Male  
 T = Tube Stub

**2 Inlet Port Size**  
 4 = 1/4"  
 6 = 3/8" (Not available with Face Seal Male)  
 8 = 1/2"

**3 Outlet Port Type**  
 M = Face Seal Male  
 T = Tube Stub

**4 Outlet Port Size**  
 4 = 1/4"  
 6 = 3/8" (Not available with Face Seal Male)  
 8 = 1/2"

**5 Seal Material**  
 V = Fluorocarbon Elastomer (FKM) (rated at 3,000 psig max. pressure)  
 KR = Perfluoroelastomer (FFKM) (rated at 1,000 psig max. pressure)

**6 Internal Surface Finish**  
 -EP = Electropolish 7 R<sub>a</sub> (blue label)  
 Omit = Passivate 10 R<sub>a</sub> (gold label)

# LC223S Series

**316L SS, High Pressure,  
Gas or Liquid Flow Controller**

## Product Features & Benefits



- **Repeatability:** Flow is stable within  $\pm 0.2\%$  of flow value under the following conditions:
  1. Ambient temperature varies no more than  $10^{\circ}\text{F}$ .
  2. Inlet pressure remains constant.
  3. Downstream pressure does not vary by more than 70% of established value.
- **Wide Flow Range:** From 25sccm to 40 slpm.
- **Wide Pressure Range:** From 200 to 5000 psig (14 to 345 barg).
- **Corrosion resistant.**

Operating Conditions	
Maximum Inlet	5,000 psig (345 barg)
Maximum Dome Pressure	5,000 psig (345 barg)
Required Differential Pressure	200 psig (14 barg)
Temperature	-20°F to 200°F (-29°C to 93°C)

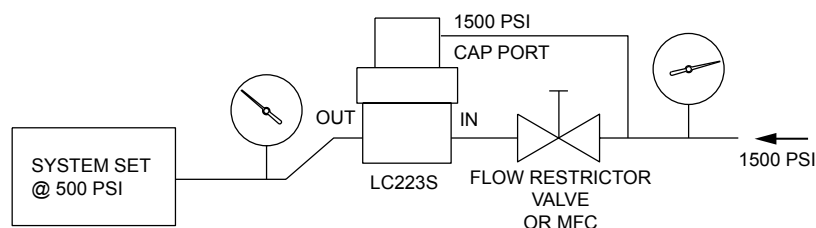
Functional Performance	
<b>Flow Range</b>	25 sccm to 40 slpm <i>Established by Customer supplied flow restriction device</i>
<b>Internal Volume</b>	
Dome	2.0 cc
Body	2.1 cc

\* For detailed information on Materials of Construction, visit us at [www.parker.com/veriflo](http://www.parker.com/veriflo) to review the complete product literature sheet.

## Ordering Information

**LC223S Part Number .....54018192**

### EXAMPLE APPLICATION





# SC423XL Series

## Product Features & Benefits

### 316L SS, Low Flow, Gas Flow Controller



- Rugged design.
- Reliable Precision Flow Control as low as 1 scc/m.
- Adjustable Flows.
- Hastelloy C-22<sup>®</sup> diaphragms.
- Stable flows as vacuum pressure changes from 28 in. Hg to 5 in. Hg.
- Tamper Proof.
- Stable flows over a wide temperature band.
- Color coded orifices.
- Special CFC Free cleaning.

#### Operating Conditions

Maximum Inlet	Atmospheric
Outlet	Vacuum
Flow	As low as 1 scc/m
Temperature	-40°F to 200°F (-40°C to 94°C)

#### Functional Performance

<b>Leak Rate</b>	Inboard Test Method
External	1 x 10 <sup>-6</sup> scc/sec He

\* For detailed information on Materials of Construction, visit us at [www.parker.com/veriflo](http://www.parker.com/veriflo) to review the complete product literature sheet.

## Ordering Information

Sample: **SC423XL**    **S**    **24**    **4T**    **4TS**  
 Finished Order: **SC423XLS244T4TS**

**1 Body Material**  
 S = 316L Stainless Steel

**2 Sample Time/Flow Rate**  
 3 = 27.1 - 27.7 sccm (Yellow)  
 8 = 10.0 - 10.4 sccm (Green)  
 12 = 6.5 - 6.9 sccm (Blue)  
 24 = 3.1 - 3.4 sccm (Red)

**3 Inlet Connection**  
 4T = 1/4" A-LOK<sup>®</sup>

**4 Outlet Connection**  
 X = No Connections  
 4TS = 1/4" Tube Fitting

# COSE Series

## Changeover System

### Product Features & Benefits



- Fully enclosed to protect internal components.
- Removable side panels for field maintenance.
- Allows change out of depleted cylinder(s) while maintaining gas flow.
- Especially suited for continuous on-stream analyzers.
- Alarm sensor port for systems integration allowing user to monitor gas consumption.
- Cleaned for Oxygen service.
- Regulator design integrates positive upward and downward stops which increases cycle life by preventing over stroking of the diaphragm.

#### Operating Conditions

Maximum Inlet Pressure	3,000 psig (207 barg)
Temperature	-40°F to 150°F (-40°C to 66°C)

#### Functional Performance

<b>Flow Capacity</b>	$C_v = 0.06$ SEMI Flow Coefficient Test #F32-0998
<b>Supply Pressure Effect</b>	0.4 psig/100psig (.03/7 barg) without Outlet Regulator option
<b>Leak Rate</b>	
External Seal	Bubble Tight
Internal Seal	Bubble Tight

\* For detailed information on Materials of Construction, visit us at [www.parker.com/veriflo](http://www.parker.com/veriflo) to review the complete product literature sheet.

### Ordering Information

Note: Options in *blue/italic* type are available for the *Express Service Program*.

#### Changeover System Flow Rates (Based on 400 psig Cylinder Change)

COS Model	Maximum Recommended Flow
COS 200	70 slpm $N_2$
COS 250	70 slpm $N_2$
COS 150	70 slpm $N_2$
COS 100	100 slpm $N_2$
COS XXX OR*	70 slpm $N_2$

\* ChangeOver System with optional outlet regulators

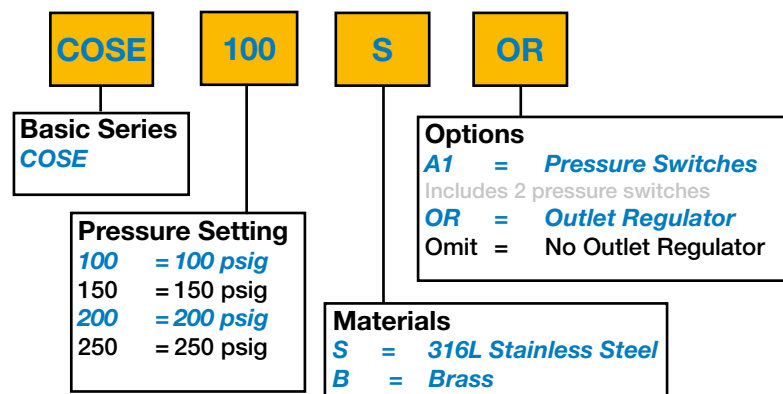
#### Notes:

*ESP COSE's include outlet regulator as standard*  
Configurations without outlet regulator are available at standard lead times.

Inlet valves and gauges are standard on all units.

For audio/visual annunciator details, see COS Annunciator literature sheet.

Annunciator ordering part number: 54017373



# COSM Series

## Product Features & Benefits



Functional Performance	
<b>Flow Capacity</b>	C <sub>v</sub> 0.06
<b>Leak Rate</b>	
Internal	Bubble Tight
External	Bubble Tight
<b>Supply Pressure Effect</b>	0.01 psig/100 psig (0.0007 barg/7 barg)
Operating Conditions	
Maximum Inlet	3000 psig (207 barg)
Temperature	-40°F to 150°F (-40°C to 66°C)

\* For detailed information on Materials of Construction, visit us at [www.parker.com/veriflo](http://www.parker.com/veriflo) to review the complete product literature sheet.

Changeover System Flow Rates (Based on 400 psig Cylinder Change)	
COSM Model	Maximum Recommended Flow
COSM250	70 slpm N <sub>2</sub>
COSM200	70 slpm N <sub>2</sub>
COSM150	70 slpm N <sub>2</sub>
COSM100	100 slpm N <sub>2</sub>

## Mini Changeover System, Compact Size

- Allows change out of depleted cylinder(s) while maintaining gas flow.
- Especially suited for continuous on-stream analyzers.
- Compact design reduces footprint.
- Max Inlet Pressure of 3,000 psig with 4 delivery options (100, 150, 200 or 250 psig).
- Outlet Regulator for constant or steady line pressure during change over.
- Regulator design integrates positive upward and downward stops which increases cycle life by preventing over stroking of the diaphragm.
- Available in Stainless Steel or Brass.

## Ordering Information

Sample: **COSM** **100** **S** **OR** **G**  
 Finished Order: **COSM100SORG**

**1 Pressure Setting**  
 100 = 100 psig  
 150 = 150 psig  
 200 = 200 psig  
 250 = 250 psig

**2 Body Material**  
 S = 316L Stainless Steel  
 B = Nickel Plated Brass

**3 Outlet Regulator**  
 OR = Outlet Regulator *Std - no other options*

**4 Optional Features**  
 G = Gauges *Includes 2 inlet gauges and one outlet gauge*

# CGA Valve Outlet Plugs & Caps (Includes Ring and Chain)

## 53 Series

High Integrity for high purity-specialty gases in Instrument/Analyzer and Process Applications

CGA Number	Model Number	Part Number	Material	F Hex Flat	S Hex Flat	H Length	Gas-Tight*
320, 326, 346	53-30C-3PR	44800681	Stainless Steel with Polyethylene disc	1"	—	0.54"	No
330	53-33C-3PR	44800331	Stainless Steel with Polyethylene disc	1"	—	0.54"	No
350	53-350GTC-3R	44800430	Stainless Steel	1-1/8"	—	0.82"	Yes
510	53-510P-3TR	44800584	Stainless Steel with PTFE O-Ring	—	3/8"	1"	Yes
580	53-580P-3TR	44800218	Stainless Steel with PTFE O-Ring	—	3/8"	1"	Yes
590	53-590P-3TR	44803061	Stainless Steel with PTFE O-Ring	—	3/8"	1"	Yes
660	53-660C-3PR	44800073	Stainless Steel with Polyethylene disc	1-1/4"	—	0.54"	No
670, 677, 678 or 679	53-67C-3PR	44800137	Stainless Steel with Polyethylene disc	1-1/4"	—	0.54"	No
705	53-705C-3PR	44803739	Stainless Steel with Polyethylene disc	1-3/8"	—	0.54"	No

\* Components not rated Gas-Tight are intended only to keep valve outlets clean and provide protection to threads. They must not be relied on to contain pressure if the valve leaks or is inadvertently opened.

# CGA Inlet Connection Components Nipples, Nuts, and Washers

## 56 Series

High Integrity for high purity-specialty gases in Instrument/Analyzer and Process Applications

CGA Number	End Connection	H Overall Length	Nipple Model Number	Nipple Part Number	Nut Model Number	Nut Part Number	F1 Flat Hex	Washer Model Number**	Washer Part Number*
170	1/4" Auto Tube Weld	1-1/4"	56-170-4TW2-P	44803332	55-170-3	44800264	11/16"	50-170-T	44803474
	1/8" NPT Male	1-1/4"	56-170-2M2-20	44800891				50-170-K	44803475
180	1/4" Auto Tube Weld	1-1/4"	56-180-4TW2-P	44803336	55-180-3	44800139	3/4"	50-180-T	44803476
	1/8" NPT Male	1-3/4"	56-180-2M2-28	44800162				50-180-K	44803547
290	1/4" Auto Tube Weld	2-5/8"	56-290-4TW2-P	44803733	55-290-3	44800726	1"	N/A	N/A
	1/4" NPT Male	2-1/4"	56-290-4M2-36	44800724				N/A	N/A
296	1/4" Auto Tube Weld	2-5/8"	56-296-4TW2-P	44800661	55-296-3	44800333	7/8"	N/A	N/A
	1/4" Vac Male	2-3/4"	56-296-4VM2-P	44803605					
	1/4" NPT Male	3-1/2"	56-296-4M2-56	44800385					

-P indicates internal surface finish of 9 Ra Electropolish

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\* All gaskets sold in 25 pack.

\*\* Washer numbers ending in "T" are PTFE and those ending in "K" are PCTFE.

# CGA Inlet Connection Components

## Nipples, Nuts, and Washers

### 56 Series

High Integrity for high purity-specialty gases in Instrument/Analyzer and Process Applications

CGA Number	End Connection	H Overall Length	Nipple Model Number	Nipple Part Number	Nut Model Number	Nut Part Number	F1 Flat Hex	Washer Model Number**	Washer Part Number*
320	1/4" Auto Tube Weld	1-3/4"	56-32-4TW2-P	44800083	55-320-3	44800219	1-1/8"	50-320-T	44803477
	1/4" Vac Male	1-3/4"	56-32-4VM2-P	44800199					
	1/4" Auto Tube Weld	2-1/2"	56-32-4TW2-40-P	44803734				50-320-K	44803478
	1/4" NPT Male	2-1/2"	56-32-4M2-40	44800322					
	1/4" NPT Male	4"	56-32-4M2-64	44803728					
326	1/4" Auto Tube Weld	2-1/4"	56-326-4TW2-P	44800307	55-326-3	44800306	1-1/8"	N/A	See Seal Enhancers
	1/4" Vac Male	2-1/4"	56-326-4VM2-P	44800493					
	1/4" NPT Male	3"	56-326-4M2-48	44800343					
330	1/4" Auto Tube Weld	1-3/4"	56-32-4TW2-P	44800083	55-330-3	44800108	1-1/8"	50-320-T	44803477
	1/4" Vac Male	1-3/4"	56-32-4VM2-P	44800199					
	1/4" Auto Tube Weld	2-1/2"	56-32-4TW2-40-P	44803734				50-320-K	44803478
	1/4" NPT Male	2-1/2"	56-32-4M2-40	44800322					
	1/4" NPT Male	4"	56-32-4M2-64	44803728					
346	1/4" Auto Tube Weld	2-5/16"	56-346-4TW2-P	44803631	55-346-3	44800395	1-1/8"	N/A	See Seal Enhancers
	1/4" Vac Male	2-1/4"	56-346-4VM2-P	44803738					
	1/4" NPT Male	3"	56-346-4M2-48	44800414					
350	1/4" Auto Tube Weld	2-5/16"	56-350-4TW2-P	44800128	55-350-3	44800078	1-1/8"	N/A	See Seal Enhancers
	1/4" Vac Male	2-1/4"	56-350-4VM2-P	44800234					
	1/4" Auto Tube Weld	2-1/2"	56-350-4TW2-40-P	44803735					
	1/4" NPT Male	3"	56-350-4M2-48	44800160					
	1/4" NPT Male	4"	56-350-4M2-64	44803729					
510	1/4" Auto Tube Weld	2-5/8"	56-50-4TW2-P	44800044	55-510-3	44800292	1-1/8"	N/A	N/A
	1/4" Vac Male	2-3/4"	56-50-4VM2-P	44800043					
	1/4" Auto Tube Weld	2-1/2"	56-50-4TW2-40-P	44803736					
	1/4" NPT Male	3-1/2"	56-50-4M2-56	44800070					
	1/4" NPT Male	4"	56-50-4M2-64	44803730					
	1/4" NPT Male	4-1/2"	56-50-4M2-72	44803731					
540	1/4" Auto Tube Weld	2-1/4"	56-54-4TW2-P	44800257	55-540-3	44800188	1-1/8"	N/A	N/A
	1/4" Vac Male	2-1/4"	56-54-4VM2-P	44800422					
	1/4" NPT Male	3"	56-54-4M2-48	44800275					

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\*\* Washer numbers ending in "T" are PTFE and those ending in "K" are PCTFE.

# CGA Inlet Connection Components

## Nipples, Nuts, and Washers

### 56 Series

High Integrity for high purity-specialty gases in Instrument/Analyzer and Process Applications

CGA Number	End Connection	H Overall Length	Nipple Model Number	Nipple Part Number	Nut Model Number	Nut Part Number	F1 Flat Hex	Washer Model Number**	Washer Part Number*
555	1/4" Auto Tube Weld	2-1/4"	56-54-4TW2-P	44800257	55-555-3	44803175	1-1/8"	N/A	N/A
	1/4" Vac Male	2-1/4"	56-54-4VM2-P	44800422					
	1/4" NPT Male	3"	56-54-4M2-48	44800275					
580	1/4" Auto Tube Weld	2-5/8"	56-50-4TW2-P	44800044	55-580-3	44800027	1-1/8"	N/A	N/A
	1/4" Vac Male	2-3/4"	56-50-4VM2-P	44800043					
	1/4" Auto Tube Weld	2-1/2"	56-50-4TW2-40-P	44803736					
	1/4" NPT Male	3-1/2"	56-50-4M2-56	44800070					
	1/4" NPT Male	4"	56-50-4M2-64	44803730					
	1/4" NPT Male	4-1/2"	56-50-4M2-72	44803731					
590	1/4" Auto Tube Weld	2-5/8"	56-50-4TW2-P	44800044	55-590-3	44800173	1-1/8"	N/A	N/A
	1/4" Vac Male	2-3/4"	56-50-4VM2-P	44800043					
	1/4" Auto Tube Weld	2-1/2"	56-50-4TW2-40-P	44803736					
	1/4" NPT Male	3-1/2"	56-50-4M2-56	44800070					
	1/4" NPT Male	4"	56-50-4M2-64	44803730					
	1/4" NPT Male	4-1/2"	56-50-4M2-72	44803731					
660	1/4" Auto Tube Weld	2-3/16"	56-60-4TW2-P	44800159	55-660-3	44800123	1-1/4"	50-60-T	44803479
	1/4" Vac Male	1-7/8"	56-60-4VM2-P	44800082				50-60-K	44803480
	1/4" Auto Tube Weld	2-1/2"	56-60-4TW2-40-P	44803737					
	1/4" NPT Male	2-5/8"	56-60-4M2-42	44800273					
	1/4" NPT Male	4"	56-60-4M2-64	44803732					
670	1/4" Auto Tube Weld	2-3/16"	56-60-4TW2-P	44800159	55-670-3	44800423	1-1/4"	50-60-T	44803479
	1/4" Vac Male	1-7/8"	56-60-4VM2-P	44800082				50-60-K	44803480
	1/4" Auto Tube Weld	2-1/2"	56-60-4TW2-40-P	44803737					
	1/4" NPT Male	2-5/8"	56-60-4M2-42	44800273					
	1/4" NPT Male	4"	56-60-4M2-64	44803732					
678	1/4" Auto Tube Weld	2-1/2"	56-678-4TW2-P	44800470	55-678-3	44800387	1-1/4"	50-66-T	44803481
	1/4" Vac Male	2"	56-678-4VM2-P	44800508				50-66-K	44803482
	1/4" NPT Male	2-3/8"	56-678-4M2-38	44803514					
679	1/4" Auto Tube Weld	2-1/2"	56-679-4TW2-P	44800673	55-679-3	44800545	1-1/4"	50-110-T	44803472
	1/4" Vac Male	2"	56-679-4VM2-P	44803707					
	1/4" NPT Male	2-1/2"	56-679-4M2-40	44803624					

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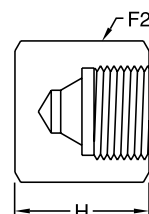
# CGA Outlet Adapters, Blank Caps & Plugs

## 57 Series

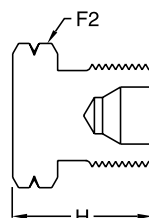
High Integrity for high purity-specialty gases in Instrument/Analyzer and Process Applications

CGA Number	End Connection	Model Number	Part Number	H Overall Length	F2 Flat Hex
180	1/4" NPT Female	57-180M4F-2	44800409	1.38"	3/4"
296	Blank Cap	57-296FXX-3	44800712	1.37"	1-1/8"
	1/4" VacuSeal™ Male	57-296F4VM-2	44803297	2.00"	
	1/4" NPT Female	57-296F4F-2	44803438	2.00"	
320	Blank Plug	57-320MXX-3	44800374	1.12"	1"
	1/4" VacuSeal™ Male	57-320M4VM-2	44803070	1.74"	
	1/4" NPT Female	57-320M4F-2	44800265	1.12"	
326	Blank Plug	57-326MXX-3	44800543	1.12"	1"
	1/4" VacuSeal™ Male	57-326M4VM-2	44800740	1.74"	
	1/4" NPT Female	57-326M4F-2	44800713	1.31"	
330	Blank Plug	57-330MXX-3	44800269	1.12"	1"
	1/4" VacuSeal™ Male	57-330M4VM-2	44800567	1.74"	
	1/4" NPT Female	57-330M4F-2	44800203	1.31"	
346	Blank Plug	57-346MXX-3	44803441	1.12"	1"
	1/4" VacuSeal™ Male	57-346M4VM-2	44803440	1.88"	
	1/4" NPT Female	57-346M4F-2	44803439	1.31"	
350	Blank Plug	57-350MXX-3	44800164	1.12"	1"
	1/4" VacuSeal™ Male	57-350M4VM-2	44800308	1.88"	
	1/4" NPT Female	57-350M4F-2	44800358	1.31"	
510	Blank Cap	57-510FXX-3	44800740	1.37"	1-1/4"
	1/4" VacuSeal™ Male	57-510F4VM-2	44800510	2.00"	
	1/4" NPT Female	57-510F4F-2	44800599	2.00"	
540	Blank Plug	57-540MXX-3	44800436	1.12"	1"
	1/4" VacuSeal™ Male	57-540M4VM-2	44800411	1.87"	
	1/4" NPT Female	57-540M4F-2	44800685	1.25"	
580	Blank Cap	57-580FXX-3	44800122	1.37"	1-1/4"
	1/4" VacuSeal™ Male	57-580F4VM-2	44800238	2.00"	
	1/4" NPT Female	57-580F4F-2	44800214	2.00"	
590	Blank Cap	57-590FXX-3	44800317	1.37"	1-1/4"
	1/4" VacuSeal™ Male	57-590F4VM-2	44800592	2.00"	
	1/4" NPT Female	57-590F4F-2	44800487	2.00"	
660	Blank Plug	57-660MXX-3	44800226	0.88"	1-1/8"
	1/4" VacuSeal™ Male	57-660M4VM-2	44800444	1.50"	
	1/4" NPT Female	57-660M4F-2	44800097	1.25"	
670	Blank Plug	57-670MXX-3	44800664	0.88"	1-1/8"
	1/4" VacuSeal™ Male	57-670M4VM-2	44800477	1.50"	
	1/4" NPT Female	57-670M4F-2	44800711	1.25"	
678	Blank Plug	57-678MXX-3	44800671	1.00"	1-1/8"
	1/4" VacuSeal™ Male	57-678M4VM-2	44800565	1.50"	
679	Blank Plug	57-679MXX-3	44800708	0.88"	1-1/8"
	1/4" VacuSeal™ Male	57-679M4VM-2	44800315	1.75"	
	1/4" NPT Female	57-679M4F-2	44800570	1.25"	

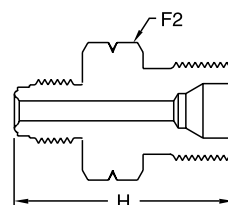
**Blank Cap  
CGA 580**



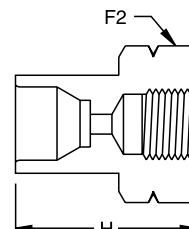
**Blank Plug  
CGA 350**



**Vac Male  
CGA 350**



**NPT Female  
CGA 350**



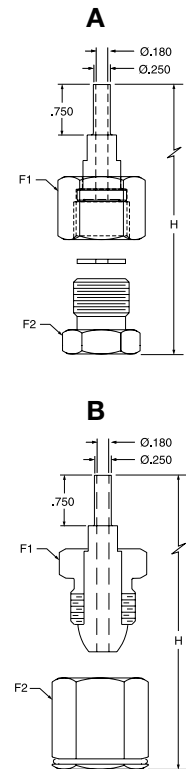
# CGA Pigtail Connections

## 58 Series

High Integrity for high purity-specialty gases in Instrument/Analyzer and Process Applications

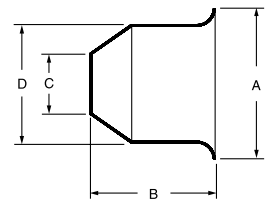
CGA Number	Drawing	Model Number	Part Number	H Overall Length	F1 Hex Flat	F2 Hex Flat	Washer Material
296	B	58-296-4TW2-P	44800293	3.03	7/8"	1-1/8"	—
320	A	58-320-4TW2-P	44800178	2.96	1-1/8"	1"	PCTFE
326	A	58-326-4TW2-P	44800168	3.01	1-1/8"	1"	—
330	A	58-330-4TW2-P	44800072	2.96	1-1/8"	1"	PCTFE
346	A	58-346-4TW2-P	44803741	2.97	1-1/8"	1"	—
350	A	58-350-4TW2-P	44800028	2.96	1-1/8"	1"	—
510	B	58-510-4TW2-P	44800432	3.03	1-1/8"	1-1/4"	—
540	A	58-540-4TW2-P	44800129	2.96	1-1/8"	1"	—
555	A	58-555-4TW2-P	44803742	2.96	1-1/8"	1"	—
580	B	58-580-4TW2-P	44800021	3.03	1-1/8"	1-1/4"	—
590	B	58-590-4TW2-P	44800147	3.03	1-1/8"	1-1/4"	—
660	A	58-660-4TW2-P	44800068	2.96	1-1/4"	1-1/8"	PCTFE
670	A	58-670-4TW2-P	44800424	2.96	1-1/4"	1-1/8"	PCTFE
678	A	58-678-4TW2-P	44800428	3.08	1-1/4"	1-1/8"	PCTFE
679	A	58-679-4TW2-P	44800237	2.96	1-1/4"	1-1/8"	PTFE

Electropolished I.D. components designated by the "-P" suffix are cleaned and packaged in a clean room.  
 -P indicates internal surface finish of 9 Ra Electropolish



## Seal Enhancers (10 Per Package)

Material	Model Number	Part Number	A Overall Length	B Overall Length	C Overall Length	D Overall Length
Nickel 200	50-326-NI	44801258	.54	.45	.22	.43
Nickel 200	50-346-NI	44801077	.62	.54	.29	.50
Nickel 200	50-350-NI	44801079	.62	.54	.29	.50

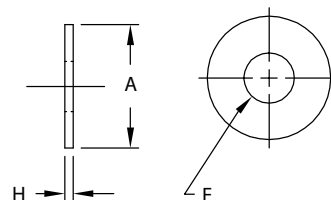


# Washers

(25 Per Package)

High Integrity for high purity-specialty gases in Instrument/Analyzer and Process Applications

CGA Number	Material	Model Number	Part Number	A Overall Length	H Overall Width	E Overall Bore
170	PTFE	50-170-T	44803474	.425	.1	.187
170	PCTFE	50-170-K	44803475	.425	.1	.187
180	PTFE	50-180-T	44803476	.437	.094	.320
180	PCTFE	50-180-K	44803547	.437	.094	.320
320, 330	PTFE	50-320-T	44803477	.703	.094	.250
320, 330	PCTFE	50-320-K	44803478	.718	.064	.265
660, 670	PTFE	50-60-T	44803479	.938	.063	.383
660, 670	PCTFE	50-60-K	44803480	.937	.062	.375
678	PTFE	50-66-T	44803481	.609	.062	.295
678	PCTFE	50-66-K	44803482	.609	.062	.295
679	PTFE	50-110-T	44803472	.531	.063	.312



# Flexible Pigtails

Part Number	Material	End Connections	H Overall Length	Maximum Working Pressure
44803751	316 Double Braided Stainless Steel Hose	1/4" MNPT x 1/4" FNPT	12"	3625 PSI
44803752	316 Double Braided Stainless Steel Hose	1/4" MNPT x 1/4" FNPT	24"	3625 PSI
44803753	316 Double Braided Stainless Steel Hose	1/4" MNPT x 1/4" FNPT	36"	3625 PSI
44803754	316 Double Braided Stainless Steel Hose	1/4" MNPT x 1/4" FNPT	48"	3625 PSI
44803755	316 Double Braided Stainless Steel Hose	1/4" MNPT x 1/4" FNPT	60"	3625 PSI
44803756	316 Double Braided Stainless Steel Hose	1/4" MNPT x 1/4" FNPT	72"	3625 PSI

# Torque Wrenches

77 Series

Model Number	Part Number	Factory Set Torque	For Use With	CGA 326, 346, 350 Hex Flat
77-350-TW	44803230	40 ft-lbs	Nickel Seal Enhancers	1-1/8"

Torque wrenches are specifically designed for use with the Compressed Gas Association's CGA 326, 346 and 350 series of connections. Torque is factory set to the CGA recommendations. Calibration service is also available and is recommended every six months or 4,000 cycles, whichever comes first.