

# QR4000 & NPR4000 Series

High Purity Internally Threadless  
Pressure Regulator

aerospace  
climate control  
electromechanical  
filtration  
fluid & gas handling  
hydraulics  
pneumatics  
process control  
sealing & shielding

## Customer Value Proposition:

The QR4000 is a high purity, high pressure non-tied diaphragm regulator. It utilizes a metal-to-metal diaphragm seal which provides enhanced leak integrity.

The NPR4000 regulator is for applications involving negative delivery pressures with low pressure gas sources. Typical applications include the delivery of low pressure gases from liquid sources such as WF6, BCL3.



## Contact Information:

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[www.parker.com/veriflo](http://www.parker.com/veriflo)

## Product Features:

- “VeriClean”, Veriflo’s custom low sulfur high purity 316L Stainless Steel™ enhances electropolishing, welding and corrosion resistance.
- Unique compression member loads the seal to the body without requiring a threaded nozzle or additional seals to atmosphere.
- Threadless internal nozzle assembly.
- Metal-to-metal diaphragm to body seal assures high leak integrity.
- Minimal particle generation and entrapment.
- Positive upward and downward diaphragm stops.



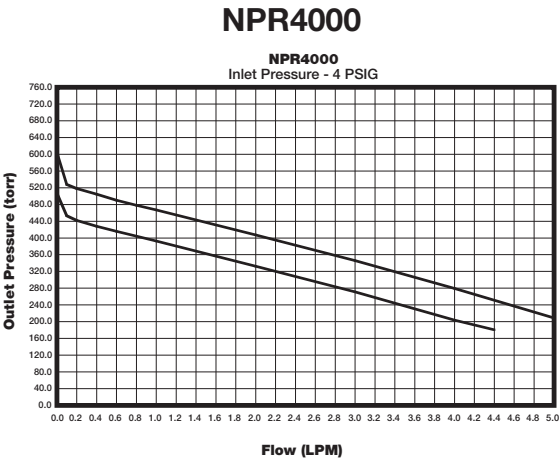
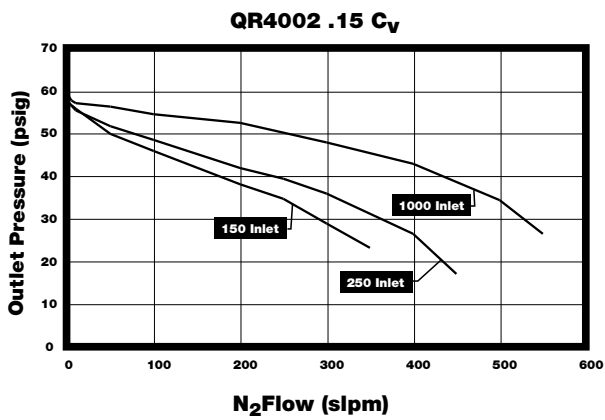
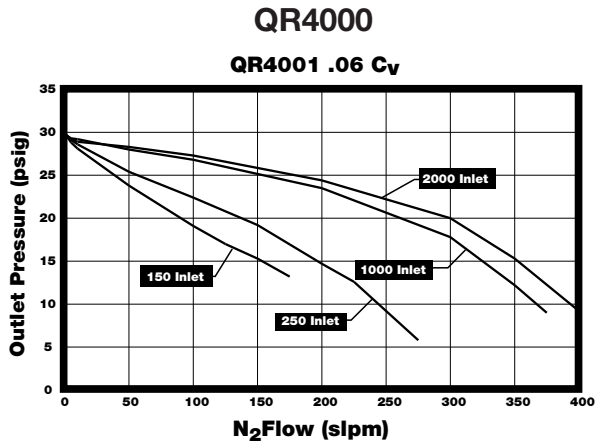
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# QR4000 & NPR4000

## Flow Curves

Additional flow curves available upon request



Basic Model	Max Inlet PSIG		
	0.06 C <sub>v</sub>	0.02 C <sub>v</sub>	0.15 C <sub>v</sub>
QR4000	400	400	400
QR4001	4000	4000	1250
QR4002	4000	4000	1250
QR4003	4000	4000	4000*
QR4004	4000	4000	1250
QR4005	4000	4000	1250
QR4015	4000	4000	4000*
NPR4000	250	250	250

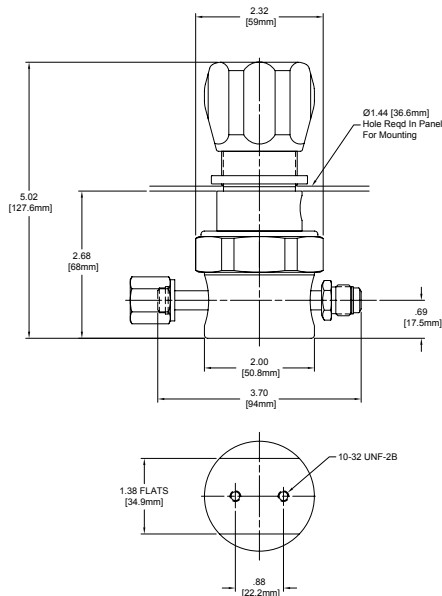
\* 4000 PSIG max inlet pressure for PCTFE seats only (HP option).  
1250 PSIG max inlet pressure for PEEK and Vespel seats.

When setting the delivery pressure, ensure that the maximum outlet pressure of the regulator is not exceeded for any operating condition including increases in delivery pressure due to flow shutoff and supply pressure effect. Supply pressure effect will result in a significant rise in outlet pressure as the inlet pressure decreases.

The stop settings will be adjusted to accommodate typical inlet and outlet pressure ranges. Please contact the factory if specific stop settings are required.

Refer to the Safety Guide 25000194 and the Pressure Regulators Installation and Operation Guide 25000169 for more information.

## Dimensional Drawing



DIMENSION TABLE	
Connection Type	End to End Dimension
1/4" Face Seal	3.70 ± .02 in. (94 ± .5 mm)
1/2" Face Seal	4.82 ± .02 in. (122.4 ± .5 mm)
All Tube Stubs	3.70 ± .02 in. (94 ± .5 mm)

Safety Guide and Installation and Operating Instructions available at  
[www.parker.com/veriflo](http://www.parker.com/veriflo)



# QR4000 & NPR4000

## Ordering Information

Build a QR4000 or NPR4000 Series regulator by replacing the numbered symbols with an option from the corresponding tables below.

Sample: **QR40 03 S K 4P 01 40 FS MMMM D**  
 Finished Order: **QR4003SK4P0140FSMMMMMD**

### 1 Basic Series

QR40  
NPR40

### 2 Pressure Ranges

QR40

00 = 1 - 10 psig  
 01 = 1 - 30 psig  
 02 = 1 - 60 psig  
 03 = 2 - 100 psig  
 15 = 5 - 150 psig  
 04 = 3 - 250 psig  
 05 = 20 - 500 psig

NPR40

00 = -26" Hg - 10 psig  
 01 = -26" Hg - 30 psig  
 02 = -26" Hg - 60 psig

### 3 Body Material

S = 316L Stainless Steel  
 H = Hastelloy C-22® *Hastelloy C-22® materials include: Hastelloy C-22® body, Hastelloy C-22® Carrier*

### 4 Flow Capacity

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

### 5 Seat Material

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

### 6 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 additional options and port layouts*

### 7 Outlet Gauge

V3 = -30 in Hg 0 - 30 psig  
 V1 = -30 in Hg 0 - 100 psig  
 OL = 0 - 60 psig  
 01 = 0 - 100 psig  
 4 = 0 - 400 psig  
 6 = 0 - 600 psig  
 X = No Gauge

*Additional ranges available upon request*

### 8 Inlet Gauge

V3 = -30 in Hg 0 - 30 psig  
 V1 = -30 in Hg 0 - 100 psig  
 01 = 0 - 100 psig  
 4 = 0 - 400 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*

### 9 Port Style

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

### 10 Port Configuration

M = Male  
 F = Female  
 I = 1/4" Internal Face Seal  
*1/4" FS-M Gauge Ports are Standard*

### 11 Optional Features

*This section can have multiple options*

D = Dome Loaded - *QR4000 only. Not available with G or M options*  
 M = Metal Knob (Black) *Not available with D option. Required for temperatures above 150° F*  
 T = Hastelloy C-22® Trim *Includes carrier and back-up washer*  
 HP = 4000 psig Max Inlet Pressure *For .15 C<sub>V</sub> QR4003 and QR4015 with PCTFE seats only*

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



# QR4000 & NPR4000

## Specifications

Materials of Construction		Functional Performance <i>Continued...</i>	
<b>Wetted</b>		<b>Supply Pressure Effect</b>	
Body Options	316L Stainless Steel (std) or Hastelloy C-22® ( <i>Hastelloy® Trim is std with Hastelloy® bodies</i> )	QR4000	
Compression Member	Inconel 625®	0.02 C <sub>V</sub>	0.23 psig/100 psig (0.16 barg/7 barg)
Diaphragm	Hastelloy C-22®	0.06 C <sub>V</sub>	0.6 psig/100 psig (0.04 barg/7 barg)
Pin	Hastelloy C-22® - <i>NPR4000 Only</i>	0.15 C <sub>V</sub>	1.5 psig/100 psig (0.1 barg/7 barg)
Poppet	Hastelloy C-276®	<b>Internal Volume</b>	
Poppet Spring	Inconel X750®	4.0 cc without fittings	
Screen	Hastelloy C-22®	<b>Approx. Weight</b>	
Seat Options	PCTFE, PEEK™ or Vespel®	1.5 lbs. (0.7 kg)	
Carrier Options	316L Stainless Steel (std) or Hastelloy C-22®	<b>Operating Conditions</b>	
Washer Back-up	316 Stainless Steel (std) or Hastelloy C-276®	Maximum Inlet	Refer to Range Table for specific information
<b>Non-wetted</b>		Outlet Options	
Cap	Nickel Plated Brass	QR4000	1 - 10 psig (.07 barg), 1 - 30 psig (2 barg), 1 - 60 psig (4 barg), 2 - 100 psig (7 barg), 3 - 250 psig (17 barg), 5 - 150 psig, (10 barg), 20 - 500 psig (35 barg)
Nut	316L Stainless Steel	NPR4000	100 torr - 10 psig (-26 in Hg - 0.7 barg), 100 torr - 30 psig (-26 in Hg - 2 barg), 100 torr - 60 psig (-26 in Hg - 4 barg)
Knob Options	ABS (Black) - <i>QR4000 Only</i>	<b>Temperature</b>	
	ABS (White) - <i>NPR4000 Only</i>	PCTFE	-40°F to 150°F (-40°C to 66°C)
	Aluminum (Black)	PEEK™	-40°F to 275°F (-40°C to 135°C)
<b>Functional Performance</b>		Vespel®	-40°F to 500°F (-40°C to 260°C)
<b>Flow Capacity</b>			
Cv Options	C <sub>V</sub> 0.06, C <sub>V</sub> 0.2, C <sub>V</sub> 0.15		
<b>Leak Rate</b>			
External	Inboard Test Method		
Internal	2 x 10 <sup>-10</sup> scc/sec He		
	4 x 10 <sup>-8</sup> scc/sec He		

For additional information on materials of construction, functional performance and operating conditions, please contact factory.

Vespel® is a registered trademark of DuPont Performance Elastomers L.L.C.  
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Hastelloy C-22® is a registered trademark of Haynes International, Inc.  
VeriClean™ is a trademark of Parker Hannifin Corporation  
Inconel® is a registered trademark of Special Metals Corporation  
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