QR4000 & NPR4000 Series

UHP Single Stage, Pressure Regulator
Internally Threadless, Welded, Stainless Steel

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

Value Proposition:

The QR4000 is a high purity, high pressure non-tied diaphragm regulator. It utilizes a metal-to-metal diaphram 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:

Parker Hannifin Corporation
Veriflo Division
250 Canal Blvd
Richmond, California 94804

phone 510 235 9590
fax 510 232 7396
veriflo.sales@parker.com

www.parker.com/veriflo
Mobile App: m.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
- Standard full internal electropolish

Parker Veriflo

ENGINEERING YOUR SUCCESS.

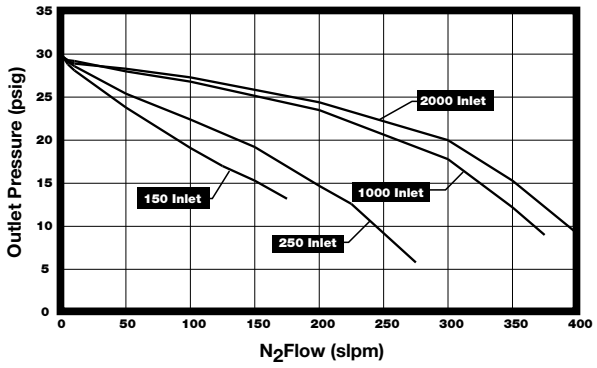
QR4000 & NPR4000 Series

Flow Curves

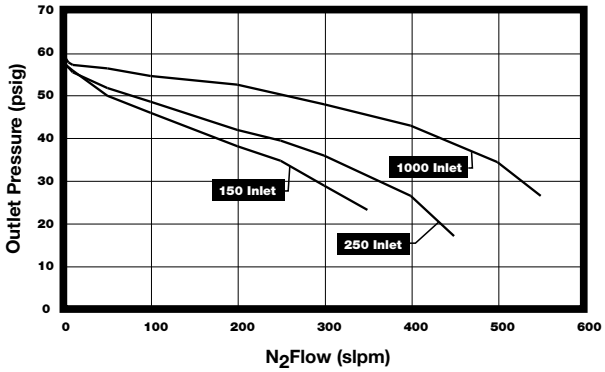
Additional flow curves available upon request

QR4000

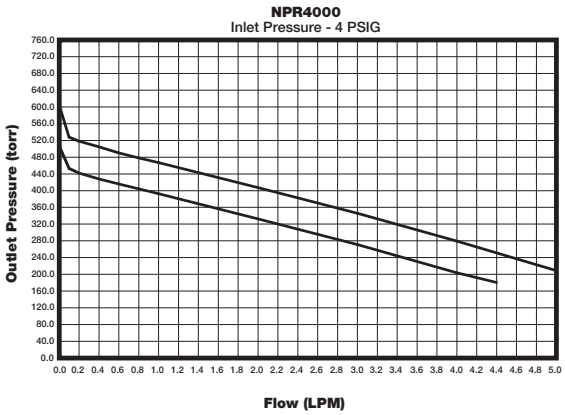
QR4001 .06 C_V



QR4002 .15 C_V



NPR4000



RANGE TABLE			
Basic Model	Max Inlet PSIG		
	0.06 C_V	0.02 C_V	0.15 C_V
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

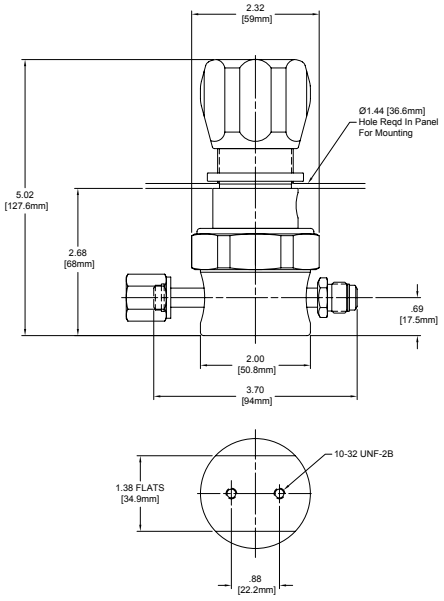
* 4000 PSIG max inlet pressure for PCTFE seats only (HP option).
1250 PSIG max inlet pressure for PEEK and Vespel seats.

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

QR4000 & NPR4000 Series

Ordering Information

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

Color Explanations: Black = Standard Lead Time Configurations
Blue = Extended Lead Time Configurations

For an explanation of Ordering options please reference literature 25000275 at www.parker.com/veriflo

	1	2	3	4	5	6	7	8	9	10	11
Sample:	QR40	03	S		K	4P	01	40	FS	MMMM	D

Finished Order: **QR4003SK4P0140FSMMMMD**

1 Basic Series
QR40
NPR40

2 Pressure Ranges

QR40 Range	3P Outlet Gauge
00 = 1 - 10 psig	
01 = 1 - 30 psig	V1, 01
02 = 1 - 60 psig	V1, 01
03 = 2 - 100 psig	V1, 01
15 = 5 - 150 psig	2
04 = 3 - 250 psig	
05 = 20 - 500 psig	

NPR40 Range
00 = -26” Hg - 10 psig
01 = -26” Hg - 30 psig
02 = -26” Hg - 60 psig

3 Body Material
S = 316L Stainless Steel

4 Flow Capacity
= *0.06 C_V Standard*
1 = 0.02 C_V
2 = 0.15 C_V

5 Seat Material
K = PCTFE
P = PEEK™
V = Vespel® *Recomended for Nitrous Oxide (N_2O) 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
2 = 0 - 200 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

HP = 4000 psig Max Inlet Pressure
For .15 C_V QR4003 and QR4015 with PCTFE seats only
M = Metal Knob (Black) *Required for temperatures above 150° F*

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

QR4000 & NPR4000 Series

Specifications

Materials of Construction	
Wetted	
Body	316L Stainless Steel
Compression Member	Inconel 625®
Diaphragm	Hastelloy C-22®
Pin	Hastelloy C-22® - *NPR4000 Only*
Poppet	Hastelloy C-276®
Poppet Spring	Inconel X750®
Screen	Hastelloy C-22®
Seat Options	PCTFE (std), PEEK™ or Vespel®
Carrier	316L Stainless Steel
Washer Back-up	316 Stainless Steel
Non-wetted	
Cap	Nickel Plated Brass
Nut	316L Stainless Steel
Knob Options	Aluminum (Black)
QR4000	ABS (Black)
NPR4000	ABS (White)

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.
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
PEEK™ is a trademark of Victrex plc.

Functional Performance	
Flow Capacity	
Cv Options	C_V 0.06 (std), C_V 0.02, C_V 0.15
Leak Rate	Inboard Test Method
Internal	< 4 x 10^{-8} scc/sec He
External	< 2 x 10^{-10} scc/sec He
Supply Pressure Effect	*Based upon C_V Option*
QR4000	
0.02 C_V	0.23 psig/100 psig (0.16 barg/7 barg)
0.06 C_V	0.6 psig/100 psig (0.04 barg/7 barg)
0.15 C_V	1.5 psig/100 psig (0.1 barg/7 barg)
Internal Volume	4.0 cc without fittings
Approx. Weight	1.5 lbs. (0.7 kg)
Operating Conditions	
Maximum Inlet	Refer to Range Table for specific information
Outlet Options	
QR4000	1-10 psig (0.07 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)
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)
Temperature	Metal Knob required for temperatures above 150°F
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)

Use mobile device to scan this QR Code.

LitPN: 25000117 Rev: E Date of Issue 04/2013

Parker Veriflo

ENGINEERING YOUR SUCCESS.