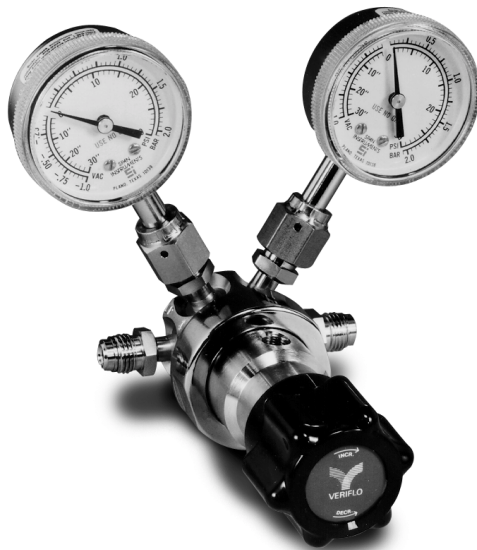


# NPR400 Series

# Negative Pressure Regulator



The NPR400 is especially suited for applications involving negative delivery pressures with low pressure gas sources. It is specifically designed to regulate negative pressures down to -26 in Hg vacuum (100 Torr). Typical applications include the delivery of low pressure gases from liquid sources such as  $WF_6$ ,  $BCL_3$ .



## features

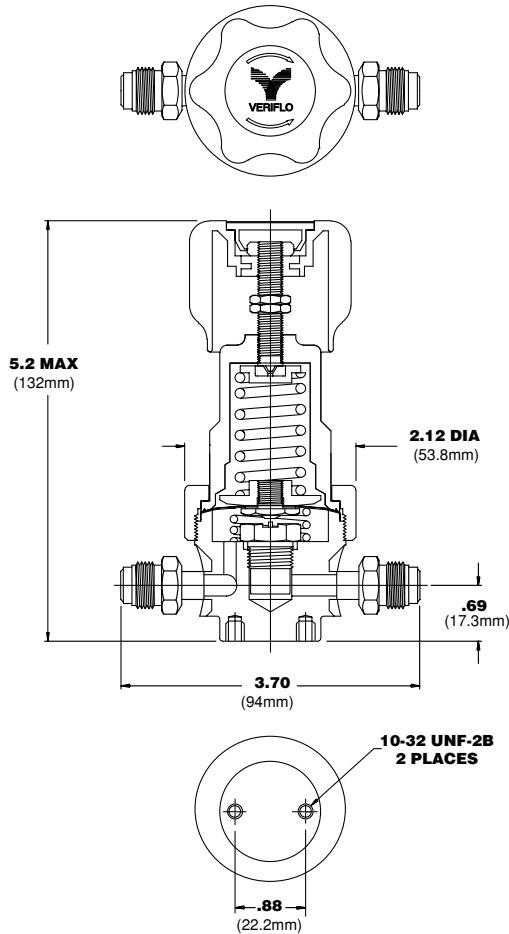
- ▶ "VeriClean," Veriflo's custom low sulfur high purity 316L VAR Stainless Steel, which enhances electropolishing, welding, and corrosion resistance.
- ▶ Tall spring provides sensitivity.
- ▶ Consistently maintains outlet set point.
- ▶ Fluid media: corrosive and non-corrosive gases.
- ▶ Self-contained valve seat assembly.
- ▶ Over 20 years of proven reliability.

- ▶ **materials of construction**
  - Wetted**
    - Body . . . . . "VeriClean," Veriflo's high purity type 316L Stainless Steel or Brass Bar Stock
    - Poppet . . . . . 316L Stainless Steel or Brass
    - Poppet Spring . . . . . Inconel® 625
    - Nozzle Assy . . . . . 316L Stainless Steel or Brass
    - Nozzle Assy Seal . . . . . Teflon®
    - Seat . . . . . PCTFE (formerly Kel-F81®)
    - Diaphragm . . . . . 316L Stainless Steel, Teflon® lined
  - Non-Wetted**
    - Spring housing . . . . . Nickel plated Brass
    - Nut clamp . . . . . Nickel plated Brass
    - Knob (black) . . . . . ABS Plastic
- ▶ **operating conditions**
  - Maximum inlet . . . . . 150 psig (10 barg)
  - Outlet . . . . . -26 in Hg vacuum to 2 psig (.1 barg)
  - Temperature . . . . . -40°F to 150°F (-40°C to 66°C)
- ▶ **functional performance**
  - Flow capacity . . . . .  $C_v = .13$  (ANSI/ISA S 75.02 1988 Using Water)
  - Design Proof Pressure . . . . . 225 psig (15.5 barg)
  - Design Burst Pressure . . . . . 450 psig (31 barg)
  
  - Design Leak Rate:
    - Outboard . . . . .  $2 \times 10^{-8}$  scc/sec He
    - Inboard . . . . .  $2 \times 10^{-9}$  scc/sec He
    - Across seat . . . . .  $2 \times 10^{-6}$  scc/sec He
- ▶ **standard configurations**
  - 1/4 inch female pipe threads inlet and outlet
  - End to end length . . . . . 1.88 in. (47.7 mm)
  
  - Any configuration of 1/4 inch FS male and/or female fittings
  - Gland to gland length . . . . . 3.70 in. (94.0 mm)
- ▶ **internal volume**
  - 10 cc
- ▶ **surface finishes**
  - Standard Ra . . . . . 15-20 micro inch (.38 to .5 micro meter)
- ▶ **approximate weight**
  - 1.5 lbs. (.7 kg)

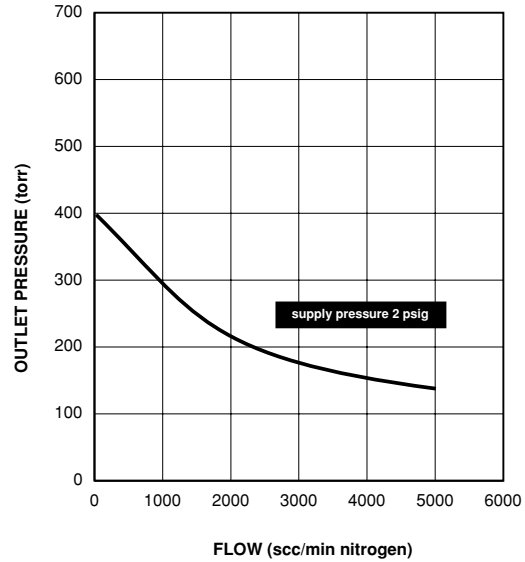


# NPR400 Series

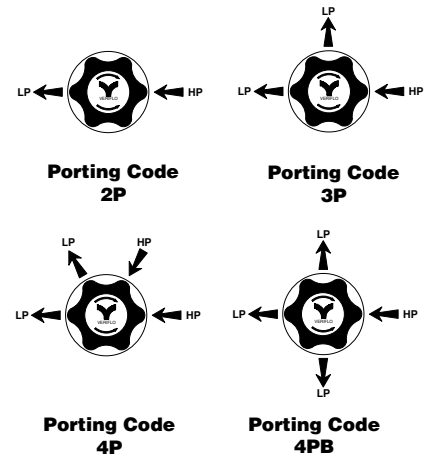
## Cross Sectional Drawing



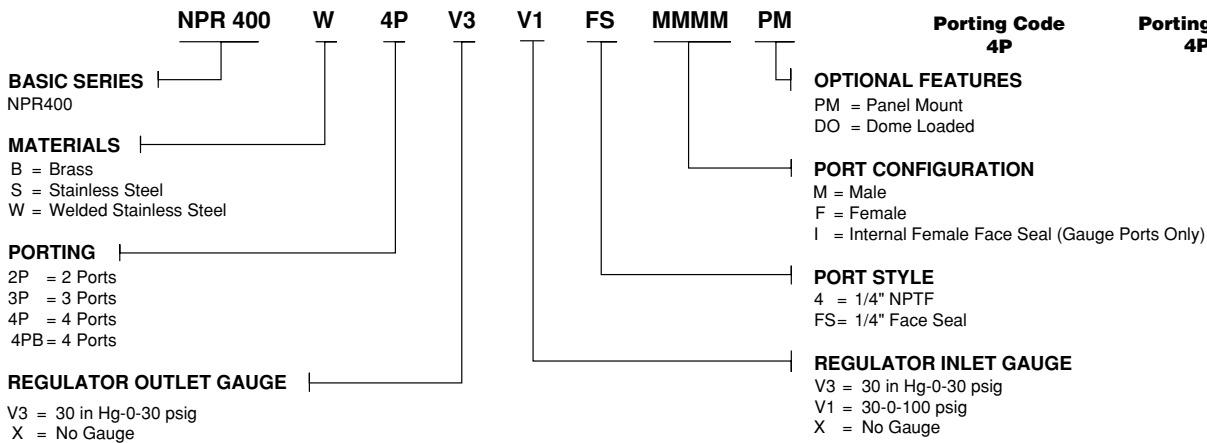
## Flow Curve



## Porting Configurations



## Ordering Information



Teflon® is a registered trademark of DuPont Company.  
 Kel-F 81® is a registered trademark of 3M Company.  
 Inconel® is a registered trademark of Inco Alloys International

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