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### *Nova Series Diaphragm Valve*

The Nova Series Valve is an on/off device with no packing, springs, O-rings, bellows or lubricants in the flow path. Seals to environment are metal to metal, ideal to help eliminate fugitive emissions in instrument systems. Available actuation includes multiple-turn (handwheel), indicating handwheel, quarter turn lever and air-operated actuators.

The Nova Series Valve is an economical, general purpose diaphragm valve combining an uncomplicated design with precise fabrication from the leading manufacturer of precision pressure control products. The result is an accurate diaphragm valve with a wide range of applications.

#### applications

- ▶ Pressure regulator outlet valve
- ▶ Laboratory shut-off valve
- ▶ Gas control panels
- ▶ Sampling systems
- ▶ Gas analyzers
- ▶ Research facilities



#### features

- ▶ Low internal volume
- ▶ No packing or O-rings in wetted areas
- ▶ Clean for O<sub>2</sub> service
- ▶ Compact size
- ▶ High cycle life
- ▶ Positive, consistent shut off
- ▶ Low actuation torque
- ▶ Metal to metal seal to environment
- ▶ Closed position does not vary with the life of the product

#### ▶ materials of construction

##### **Wetted**

Body . . . . . 316L Stainless Steel or Brass  
 Seat . . . . . PCTFE  
 (formerly known as Kel-F81®)  
 Diaphragms . . . . . Elgiloy® or Equivalent  
 Seals . . . . . Metal to metal with  
 Viton® O-ring backup

##### **Non Wetted**

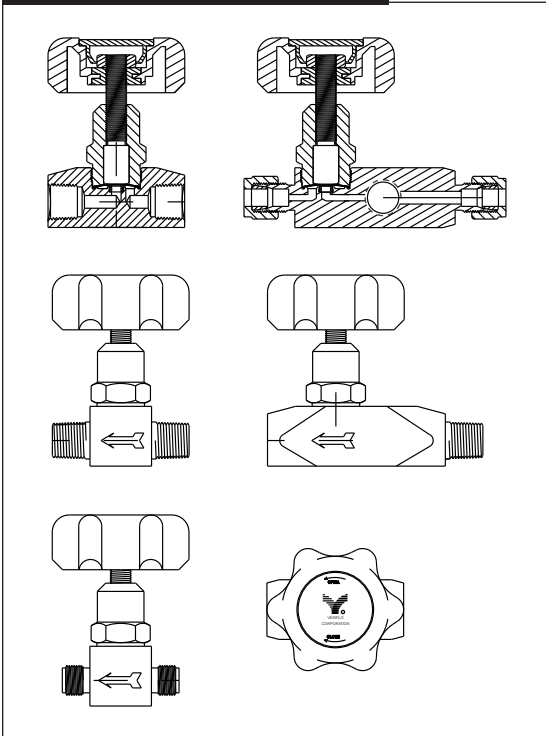
Nut . . . . . 316L Stainless Steel or Brass  
 Stem . . . . . 416 Stainless Steel  
 Cap . . . . . 316 L Stainless Steel or Brass

# Nova Series

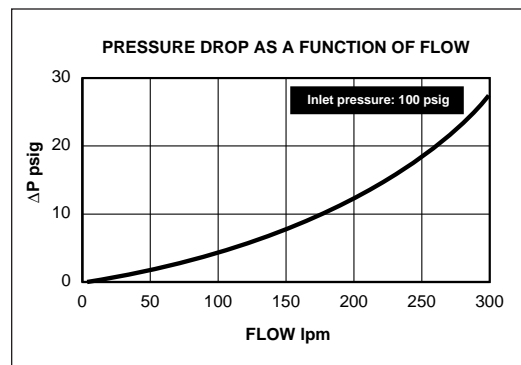
## Valve Selection Guide

### Nova Series - Handwheel

#### Cross Sectional Drawings



- ▶ **operating conditions**  
Operating pressure . . . . . Vacuum  
to 3000 psig  
Proof Pressure . . . . . 4500 psig  
Burst Pressure . . . . . 9000 psig  
Temperature . . . . . -40°F to +400°F  
(-40°C to +204°C)  
Indicator . . . . . -40°F to +150°F
- ▶ **functional performance**  
**Leakage**  
Outboard . . . . . Less than  $1 \times 10^{-8}$  scc/sec  
Inboard . . . . . Less than  $1 \times 10^{-8}$  scc/sec  
Inline . . . . . Less than  $1 \times 10^{-8}$  scc/sec
- ▶ **flow capacity**  
 $C_v = 0.17$

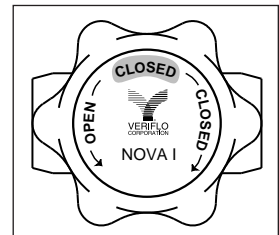


Flow Curve



### Nova I - Indicating Handwheel

The Nova I features an open/close indicator on 3/4 turn, 1.5 " diameter handwheel for accurate valve position identification.



### Nova L - 1/4 Turn, Lever-Actuated



Responding to the industry needs for visual identification of valves in the open or closed position, Veriflo introduced the NOVA L, a 1/4 turn, lever actuated diaphragm valve, to compliment its time-proven NOVA multi-turn handwheel.

The NOVA L offers fast operation in a simple reliable design. 1/4 turn provides fully open to fully closed actuation. The NOVA L is closed by turning the lever to actuate the piston which is compressed against the diaphragm, causing it to move downward and seal against the seat. The NOVA L has a minimum number of parts in the wetted area. The only wetted moving part is the lower diaphragm.

**operating conditions**  
Operating conditions . . . . . Vacuum  
to 3000 psig (207 bar)  
Proof Pressure . . . . . 4500 psig (301 bar)  
Burst Pressure . . . . . 9000 psig (612 bar)  
Temperature . . . . . -40°F to +400°F  
(-40°C to +204°C)

**design leakage**  
Outboard . . . . . Less than  $1 \times 10^{-8}$  scc/sec  
Inboard . . . . . Less than  $1 \times 10^{-8}$  scc/sec  
Inline . . . . . Less than  $1 \times 10^{-8}$  scc/sec

**flow capacity**  
 $C_v = .15$

This compact new design provides a space-saving module allowing faster system assembly with the benefits of low internal volume.

[illegible]

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graph TD
    Root[ ] --- NOVAL[NOVA L]
    Root --- B[B]
    Root --- 44FF[44FF]
    Root --- PM[PM]

    NOVAL --- BASIC[BASIC SERIES]
    NOVAL --- MATERIAL1[MATERIAL]
    BASIC --- NOVAL_L["NOVA L (multi-turn handwheel)"]
    BASIC --- NOVAL_LL["NOVA L (1/4 turn lever)"]
    BASIC --- NOVA_I["NOVA I (indicator)"]
    BASIC --- NOVA_LL_L["NOVA LL (lever lock)"]
    MATERIAL1 --- B1["B = Brass"]
    MATERIAL1 --- S1["S = Stainless Steel"]

    B --- MATERIAL2[MATERIAL]
    B --- CONNECTION1[CONNECTION (INLET & OUTLET)]

    44FF --- CONNECTION2[CONNECTION (INLET & OUTLET)]

    PM --- OPTIONS[OPTIONS]
    OPTIONS --- PM1["PM = Panel Mount"]
    OPTIONS --- MH["MH = Mounting Holes"]
    OPTIONS --- NP["NP = Nickel Plating (Brass Only)"]
    OPTIONS --- V["V = Vespel® Seat"]
  
```

**NOVA L**

**BASIC SERIES**

NOVA L (multi-turn handwheel)

NOVA L (1/4 turn lever)

NOVA I (indicator)

NOVA LL (lever lock)

**MATERIAL**

B = Brass

S = Stainless Steel

**B**

**44FF**

**PM**

**OPTIONS**

PM = Panel Mount

MH = Mounting Holes

NP = Nickel Plating (Brass Only)

V = Vespel® Seat

**CONNECTION (INLET & OUTLET)**

44FF = 1/4" NPT Female In x 1/4" NPT Female Out

44MM = 1/4" NPT Male In x 1/4" NPT Male Out

44MF = 1/4" NPT Male In x 1/4" NPT Female Out

44TT = 1/4" Compression fitting x 1/4" Compression fitting

- ▶ Designed to allow the user to shut off the valve section of the module before changing the in line "T" filter section.
- ▶ Module with a diaphragm valve design has high leak integrity to help eliminate fugitive emissions in instrument systems (bypass is also an optional feature for filter section).
- ▶ Compact product which reduces fitting requirements.
- ▶ High outboard leak integrity eliminates fugitive emissions.
- ▶ Optional gauge port feature allows operator to verify that pressure has been shut off before removing the element.
- ▶ Filter bypass available.
- ▶ Meets NACE standard MR-01-75.

**NOVA-ACF S 2 44MM G**

**BASIC SERIES**

**MATERIALS**  
 S = 316L Stainless Steel  
 B = Brass

**MICRON RANGE**  
 1 = 0.5 micron  
 2 = 5 micron  
 3 = 10 micron  
 4 = 40 micron  
 5 = 100 micron

**OPTIONS**  
 B = Bypass Port  
 G = Gauge Port  
 HT = Machine Knob and Vespel® Seat  
 NP = Nickel Plating

**CONNECTIONS**  
 44TM = 1/4" Compression In and 1/4" NPT Male Out  
 44TT = 1/4" Compression In and Out  
 44FF = 1/4" Female NPT In and 1/4" Female NPT Out  
 44MM = 1/4" Male NPT In and 1/4" Male NPT Out