



# D-Series

## Diaphragm Manifold V-Valve



### Features

#### Body Design

Fully customizable configuration, offering wide range of use.  
Various fitting configuration with standard Moduline dimensions.

Metal / metal sealing between diaphragm and valve' body.

All tube connections are TIG orbital welded.

Low internal volume and wetted area.

#### Materials

Body..... 316L Stainless Steel

Q+ Process..... electropolished, Ra $\leq$ 0.15  $\mu$ m (6  $\mu$ in)

Diaphragm..... NiCo Alloy (Elgiloy<sup>®</sup>)

Seat..... PCTFE (Volutef<sup>®</sup>)

Weight..... < 300g (0.66 lbs)

#### Options :

Body..... 316L VAR

Seat..... Vespel<sup>®</sup> for "Middle Temperature" (MT)

#### Actuator Design

Interchangeable actuators : manual 1/4 turn or toggle, pneumatic NO or NC.

Permanent color identification for NO or NC.

Black anodized actuator in aluminum.

Actuator O-ring in Viton<sup>®</sup>.

#### Verification & Packaging

100% inspection with boroscope.

Warranty and leak test certificate.

Vacuum sealed double packaging with N<sub>2</sub> purge.

#### Options & Accessories

Middle Temperature (MT) option.

Position indicators for pneumatic operators, two positions.

Position indicators for 1/4 turn operators, two positions.

### Ratings

#### Specifications

Dead volume..... 1.2 cm<sup>3</sup> (0.073 in<sup>3</sup>)  
for body only, with configuration 20, between port 1 & 2

Flow coefficient..... Cv = 0.24

Orifice size..... 4.5 mm (0.177in)

#### Temperature

Operating..... -10°C to 60°C (14°F to 140°F)

MT option..... -10°C to 180°C (14°F to 356°F)  
not available for configuration 38 & 39

#### Pressure Ratings

Valve..... Vacuum to 10 bar (145 psi)

Pneumatic operator..... 5-7 bar (72-100 psi)

#### FLOW DATA

##### Max flow / $\Delta$ P

$\Delta$ P ( bars )	N <sub>2</sub> flow (L/mn) at 21°C
0.1	30
0.5	100
1	170
2	220

#### Valve Life Expectancy

Standard..... > 2,000,000 cycles with non-corrosive gas

MT option..... > 200.000 cycles

#### Helium Leak Rate

External :

Standard..... < 5.10<sup>-10</sup> atm cm<sup>3</sup>/s

MT option..... < 2.10<sup>-9</sup> atm cm<sup>3</sup>/s

Across seat :

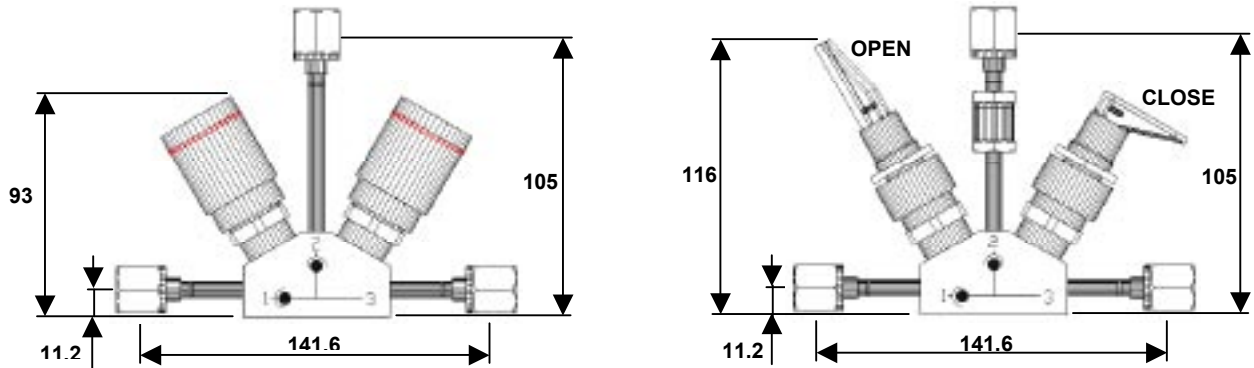
Standard..... < 2.10<sup>-9</sup> atm cm<sup>3</sup>/s

MT option..... < 1.10<sup>-8</sup> atm cm<sup>3</sup>/s

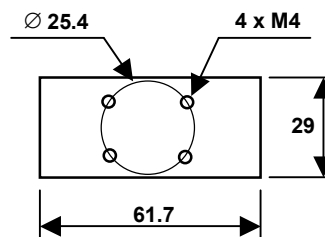
# Dimensions

## VERTICAL CONFIGURATION

SIDE VIEW

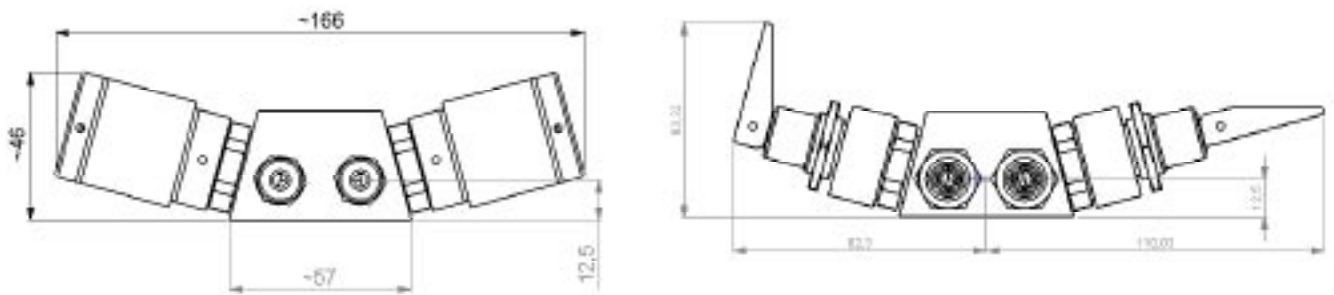


BOTTOM VIEW

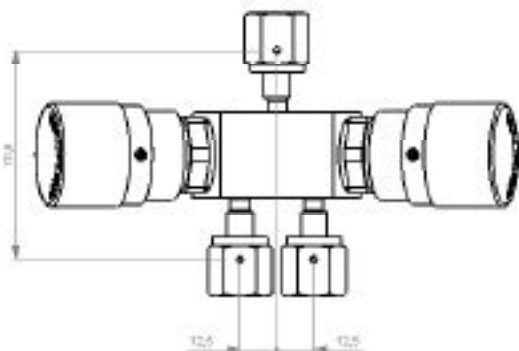


## HORIZONTAL CONFIGURATION

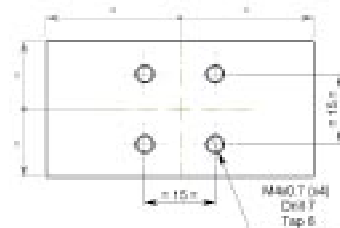
SIDE VIEW



TOP VIEW



BOTTOM VIEW





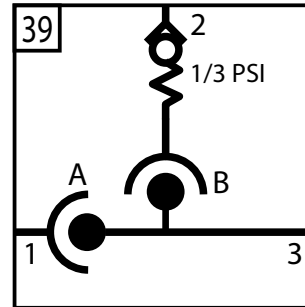
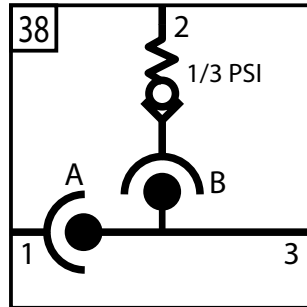
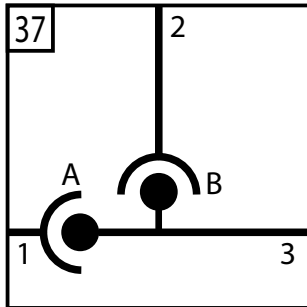
# D-Series Diaphragm Manifold V-Valve

## Part Number Description

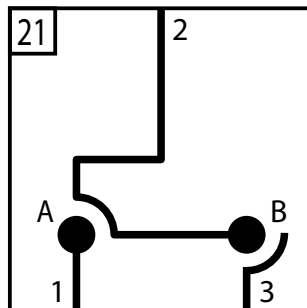
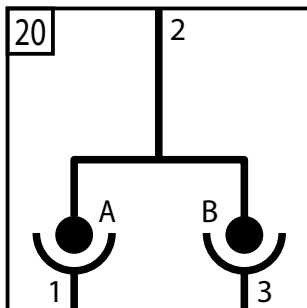
MD [ b ] [ r ] [ s ] [ A , B ] - [ 1 , 2 , 3 ]

[ b ] - Body Configuration Number

Vertical configurations (side view)



Horizontal configurations (top view)



Special configurations upon request

[ r ] - Process Configuration

- [ S ] Standard
- [ T ] Middle Temperature (180°C)

[ s ] - Surface Finish

- [ Q ] Q+ Electropolished (Ra 0.15 μm)

[ A,B ] - Actuator Type

- [ Q ] Manual ¼ Turn
- [ T ] Manual Toggle
- [ O ] Pneumatic Normally Open
- [ C ] Pneumatic Normally Closed

[ 1,2,3 ] - Fitting Type

- [ F ] ¼" VCR Female
- [ M ] ¼" VCR Male
- [ C ] Swagelok ¼"
- [ G ] Swagelok 6mm
- [ W ] Welded butt ends