

# Мембранные клапаны DV5

## Технические характеристики

### По вопросам продаж и поддержки обращайтесь:

Алматы (7273)495-231  
Архангельск (8182)63-90-72  
Астрахань (8512)99-46-04  
Барнаул (3852)73-04-60  
Белгород (4722)40-23-64  
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Иваново (4932)77-34-06  
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Казань (843)206-01-48  
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Кемерово (3842)65-04-62  
Киров (8332)68-02-04  
Краснодар (861)203-40-90  
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Новосибирск (383)227-86-73  
Омск (3812)21-46-40  
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Оренбург (3532)37-68-04  
Пенза (8412)22-31-16  
Пермь (342)205-81-47  
Ростов-на-Дону (863)308-18-15  
Рязань (4912)46-61-64  
Самара (846)206-03-16  
Санкт-Петербург (812)309-46-40  
Саратов (845)249-38-78  
Севастополь (8692)22-31-93  
Симферополь (3652)67-13-56  
Казахстан (7172)727-132

Смоленск (4812)29-41-54  
Сочи (862)225-72-31  
Ставрополь (8652)20-65-13  
Сургут (3462)77-98-35  
Тверь (4822)63-31-35  
Томск (3822)98-41-53  
Тула (4872)74-02-29  
Тюмень (3452)66-21-18  
Ульяновск (8422)24-23-59  
Уфа (347)229-48-12  
Хабаровск (4212)92-98-04  
Челябинск (351)202-03-61  
Череповец (8202)49-02-64  
Ярославль (4852)69-52-93

## Features

- ❖ 316L VIM-VAR stainless steel body is available
- ❖ Suitable for ultrahigh-purity applications
- ❖ Elgiloy material for strength and corrosion resistance for long cycle life
- ❖ Fully contained PCTFE seat design provides excellent resistance to swelling and contamination
- ❖ Wetted Surface Electropolished, Roughness Ra finished to an average of Ra5 µin.(0.13 µm)
- ❖ Helium leak tested, maximum leak rate of 1x10<sup>-9</sup> std cm<sup>3</sup>/s
- ❖ Low-pressure and high-pressure models
- ❖ Manual or pneumatic actuation
- ❖ Aluminum piston accelerated open/close speed
- ❖ Different handle types are available
- ❖ Can be used in vacuum applications

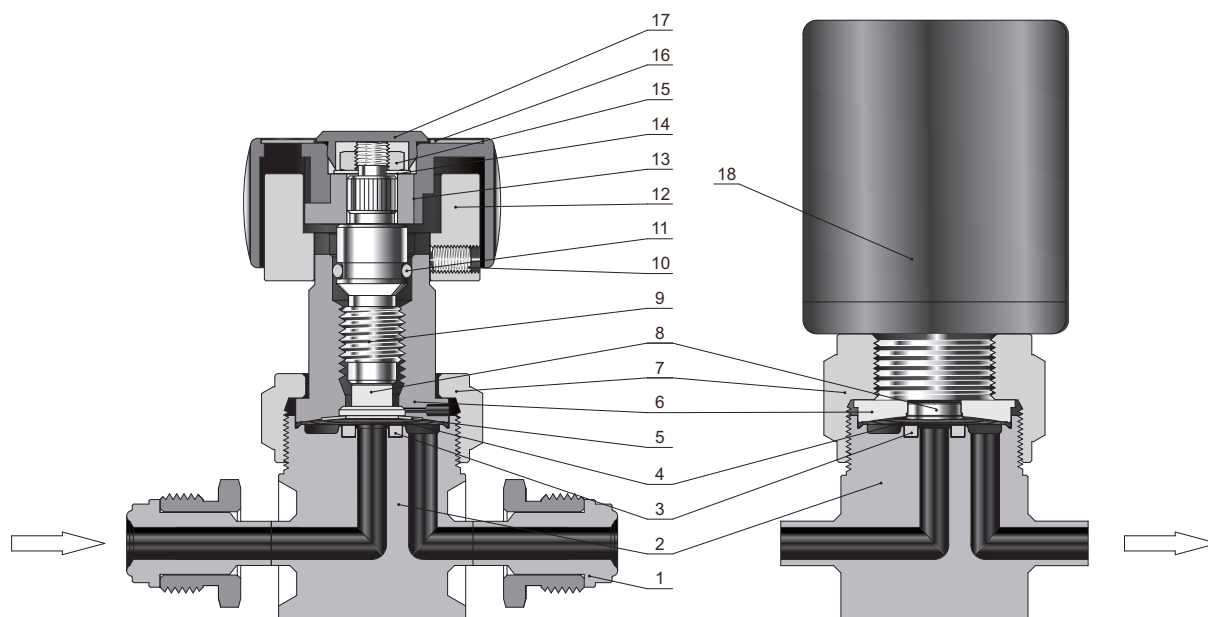
## Technical Data

| Sort          | Max. Working Pressure<br>psig (bar) | Working Temperature Range<br>°F (°C) | Flow Coefficient<br>(Cv) | Orifice in.(mm) | Pneumatic Actuator Operating Pressure<br>psig (bar) |
|---------------|-------------------------------------|--------------------------------------|--------------------------|-----------------|-----------------------------------------------------|
| Low-pressure  | 250 (17.2)                          | -10 to 150<br>(-23 to 65)            | 0.27                     | 0.16<br>(4.1)   | 60 to 120<br>(4.2 to 8.2)                           |
| High-pressure | 3000 (207)                          |                                      | 0.20                     |                 | 70 to 120<br>(4.9 to 8.2)                           |

## Flow Data

| Pressure Drop to Atmosphere<br>bar | Low-Pressure Models<br>Cv=0.27 |                | High-Pressure Models<br>Cv=0.20 |                |
|------------------------------------|--------------------------------|----------------|---------------------------------|----------------|
|                                    | Air<br>std L/min               | Water<br>L/min | Air<br>std L/min                | Water<br>L/min |
| 0.68                               | 86                             | 3.2            | 64                              | 2.4            |
| 3.4                                | 230                            | 7.2            | 170                             | 5.4            |
| 6.8                                | 410                            | 10.2           | 300                             | 7.6            |

## Materials of Construction



| Item | Component              | Material Grade/ASTM Specification                             |                                           |
|------|------------------------|---------------------------------------------------------------|-------------------------------------------|
|      |                        | Low-Pressure                                                  | High-Pressure                             |
| 1    | Welded end connections | 316 S.S./A479 or 316L S.S./A479 or 316L VIM-VAR S.S./SEMI F20 |                                           |
| 2    | Body                   | 316 S.S./A479 or 316L S.S./A479 or 316L VIM-VAR S.S./SEMI F20 |                                           |
| 3    | Seat                   | PCTFE/D1430                                                   |                                           |
| 4    | Diaphragm (2)          | Elgiloy /AMS 5876                                             |                                           |
| 5    | Washer                 | —                                                             | S17700/A693                               |
| 6    | Bonnet                 | S17400/A564                                                   |                                           |
| 7    | Bonnet nut             | 316 S.S./A479                                                 |                                           |
| 8    | Button                 | 316 S.S./A479                                                 |                                           |
| 9    | Stem                   | 316 S.S./A479                                                 |                                           |
| 10   | Hexagon socket set     | 304 S.S.                                                      |                                           |
| 11   | O-rings                | NBR                                                           |                                           |
| 12   | Actuator               | 316 SS/A276                                                   |                                           |
| 13   | Manual Actuator        | Round handle                                                  | ABS with stainless steel insert           |
|      |                        | Directional handle                                            | Nylon with stainless steel insert         |
|      |                        | Integral lockout handle                                       | Aluminum with anodic oxidation of surface |
|      |                        | Toggle handle                                                 | 316 S.S. with epoxy coating               |
| 14   | Gasket                 | 65 Mn                                                         |                                           |
| 15   | Nut                    | 304 S.S.                                                      |                                           |
| 16   | Label                  | PVC                                                           |                                           |
| 17   | Cap                    | ABS                                                           |                                           |
| 18   | Pneumatic Actuator     | Aluminum                                                      |                                           |

## Product technology grade

| Grade                    | General purpose                                                                              | Special Cleaning and Packaging                      | Ultrahigh-purity                                                                                     |
|--------------------------|----------------------------------------------------------------------------------------------|-----------------------------------------------------|------------------------------------------------------------------------------------------------------|
| Material                 | 316 S.S. or 316L S.S. or 316L VIM-VAR S.S./SEMI F 20                                         |                                                     |                                                                                                      |
| Wetted Surface Roughness | Ra 10 µin. (0.25 µm)                                                                         | Ra 5 µin. (0.13 µm)                                 |                                                                                                      |
| Process                  | Machine finished                                                                             | Electropolished                                     |                                                                                                      |
| Process Specification    | FC-01 Standard Cleaning and Packaging                                                        | FC-02 Special Cleaning and Packaging                | FC-03 Ultrahigh-Purity Process Specification                                                         |
| Cleaning                 | Thrice degreasinga ultrasonic cleaning                                                       | Special cleaning with non-ozone-depleting chemicals | Ultrahigh-purity cleaning with a continuously monitored, deionized water, ultrasonic cleaning system |
| Assembly                 | At atmosphere                                                                                | Performed in specially cleaned areas                | Performed in ISO Class 4 work areas                                                                  |
| Testing                  | Inboard helium leak tested to maximum leak rate of $1 \times 10^{-9}$ std cm <sup>3</sup> /s |                                                     |                                                                                                      |
| Packing                  | Individually bagged                                                                          | Individually bagged                                 | Valves are double bagged and vacuum sealed in cleanroom bags                                         |

## Manual Actuators

### Round

- ❖ Quick, quarter-turn actuation
- ❖ Handle with window provides visual indication of open and closed positions

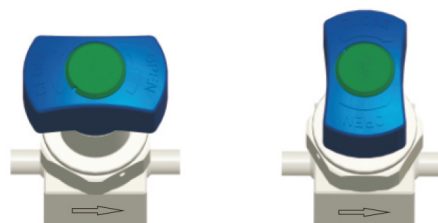


OPEN

CLOSED

### Directional

- ❖ Quick, quarter-turn actuation
- ❖ Handle shape provides visual indication of open and closed position



OPEN

CLOSED

### Integral Lockout

- ❖ Quick, quarter-turn actuation
- ❖ Lockable in the CLOSED position for safety
- ❖ Handle shape and window indicator provides visual indication of OPEN and CLOSED position

### Toggle

- ❖ Spring-loaded toggle design quick actuation
- ❖ Lockable in the CLOSED position for safety
- ❖ Handle position provides visual indication of OPEN and CLOSED positions
- ❖ Narrow handle profile allows close parallel mounting of valves
- ❖ Only for low-pressure models

## Pneumatic Actuators

### High-Pressure Pneumatic Actuator

- ❖ Normally open, " N.O." marked on the top of the cylinder
- ❖ Normally close, " N.C." marked on the top of the cylinder



### Low-Pressure Pneumatic Actuator

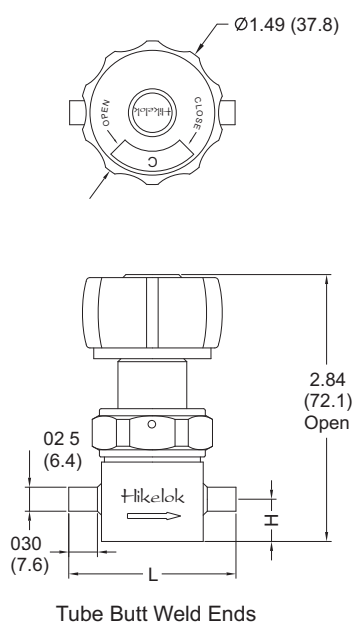
- ❖ Normally open, " N.O." marked on the top of the cylinder
- ❖ Normally close, " N.C." marked on the top of the cylinder



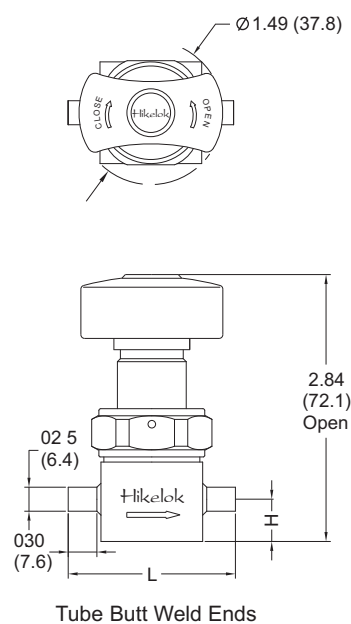
## Dimension

### Low-Pressure Valves

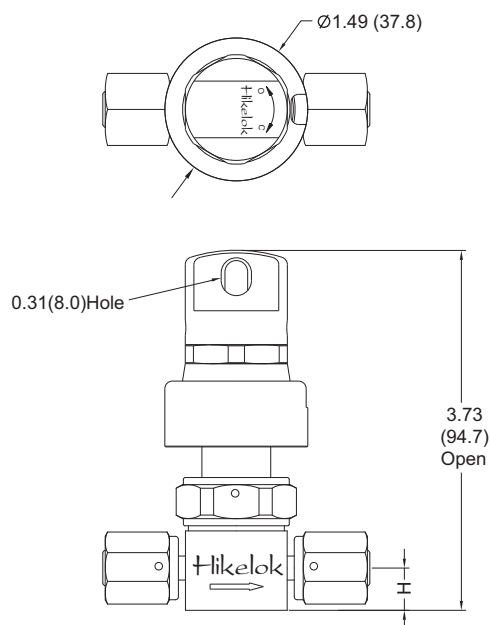
#### Round Handle



#### Directional Handle

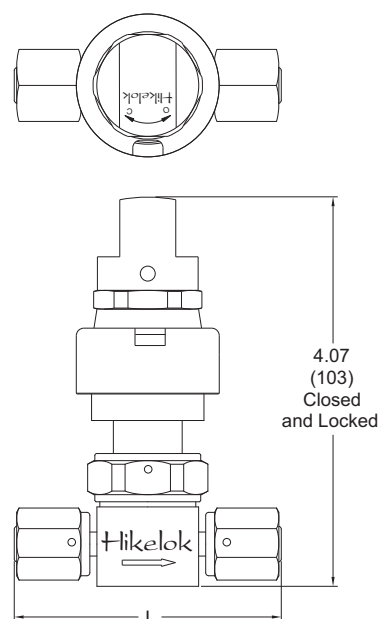


### Integral Lockout



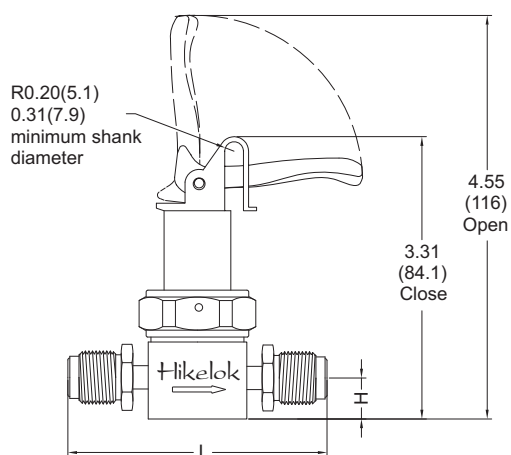
Female GFS Fittings

### Handle



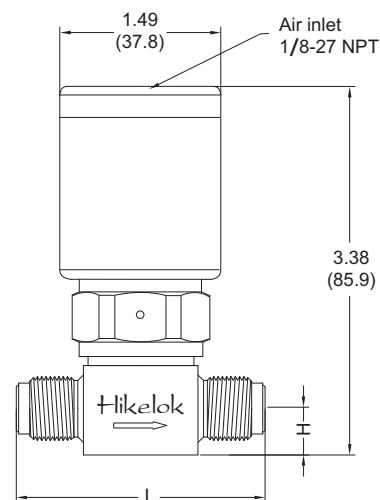
Female GFS Fittings

### Toggle Handle



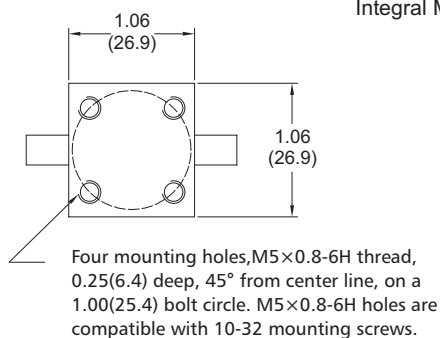
Rotatable Male GFS Fittings

### Pneumatic Actuator



Integral Male GFS Fittings

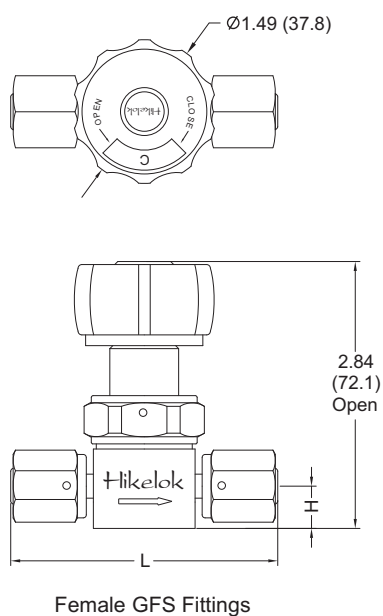
### Bottom



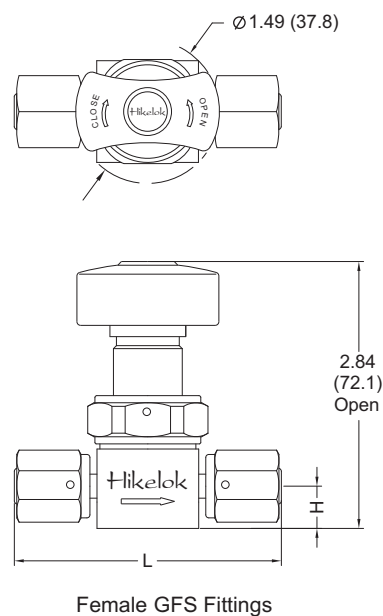
| Basic Ordering Number | Connection Type and Size                                           | Dimension, in.(mm) |             |
|-----------------------|--------------------------------------------------------------------|--------------------|-------------|
|                       |                                                                    | L                  | H           |
| DV5-FBW4-L-           | 1/4" tube butt weld 0.30"(7.6 mm) tube stub, 0.035"(0.89 mm) wall  | 1.74 (44.2)        | 0.44(11.2)  |
| DV5-FBW4S-L-          | 1/4" tube butt weld 0.26"(6.6 mm) tube stub, 0.035" (0.89 mm) wall | 1.61 (40.9)        | 0.44 (11.2) |
| DV5-MBW6-L-           | 6 mm tube butt weld, 1 mm wall                                     | 1.74 (44.2)        | 0.44 (11.2) |
| DV5-FGFS4-L-          | 1/4" female GFS fitting                                            | 2.78 (70.6)        | 0.44 (11.2) |
| DV5-RGFS4-L-          | 1/4" rotatable male GFS fitting                                    |                    |             |
| DV5-GFS4-L-           | 1/4" integral male GFS fitting                                     | 2.30 (58.4)        | 0.44 (11.2) |
| DV5-F4-L-             | 1/4" Hikelok tube fittings                                         | 2.46 (62.5)        | 0.44 (11.2) |
| DV5-M6-L-             | 6 mm Hikelok tube fittings                                         | 2.45 (62.2)        | 0.44 (11.2) |

## High-Pressure Valves

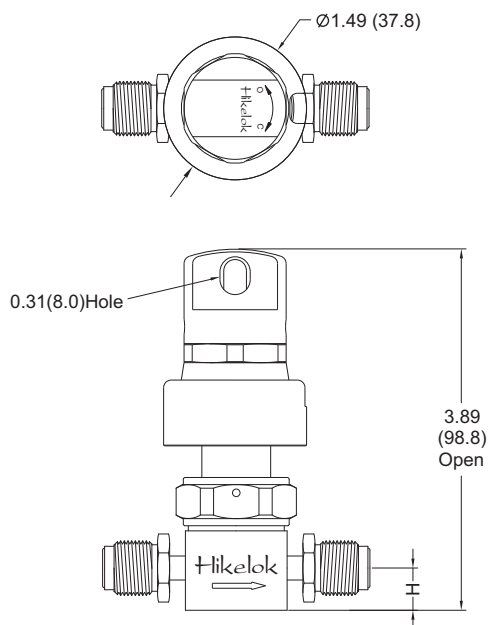
**Round Handle**



**Directional Handle**

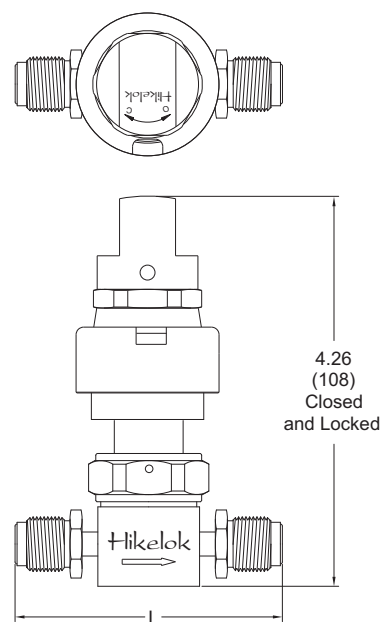


### Integral Lockout



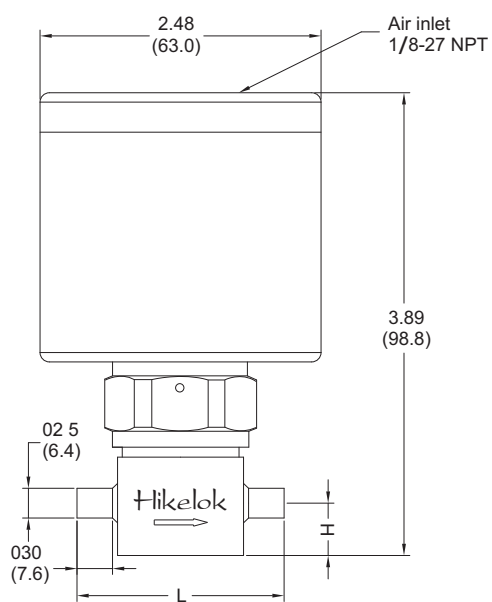
Rotatable Male GFS Fittings

### Handle



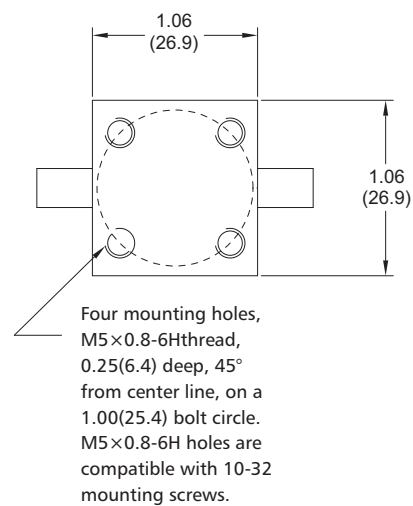
Rotatable Male GFS Fittings

### Pneumatic Actuator



Tube Butt Weld Ends

### Bottom



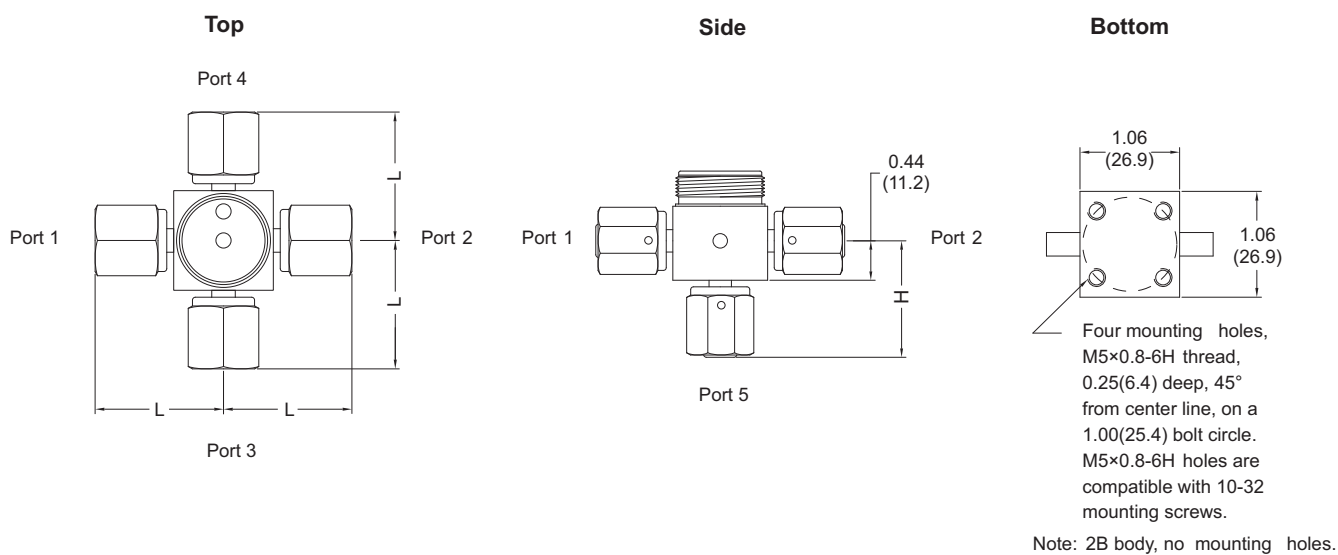
| Basic Ordering Number | Connection Type and Size                                           | Dimension, in. (mm) |             |
|-----------------------|--------------------------------------------------------------------|---------------------|-------------|
|                       |                                                                    | L                   | H           |
| DV5-FBW4-H-           | 1/4" tube butt weld 0.30"(7.6 mm) tube stub, 0.035" (0.89 mm) wall | 1.74 (44.2)         | 0.44 (11.2) |
| DV5-FBW4S-H-          | 1/4" tube butt weld 0.26"(6.6 mm) tube stub, 0.035" (0.89 mm) wall | 1.61 (40.9)         | 0.44 (11.2) |
| DV5-MBW6-H-           | 6 mm tube butt weld, 1 mm wall                                     | 1.74 (44.2)         | 0.44 (11.2) |
| DV5-FGFS4-H-          | 1/4" female GFS fitting                                            | 2.78 (70.6)         | 0.44 (11.2) |
| DV5-RGFS4-H-          | 1/4" rotatable holes are male GFS fitting                          |                     |             |
| DV5-GFS4-H-           | 1/4" integral male GFS fitting                                     | 2.30 (58.4)         | 0.44 (11.2) |
| DV5-F4-H-             | 1/4" Hikelok tube fittings                                         | 2.46 (62.5)         | 0.44 (11.2) |
| DV5-M6-H-             | 6 mm Hikelok tube fittings                                         | 2.45 (62.2)         | 0.44 (11.2) |

## Multiport and Elbow Valves

- ❖ Select a flow path as viewed from the top of the valve
- ❖ A a next to the port number indicates inlet of the valve
- ❖ A b next to the port number indicates outlet of the valve

| Designator | Schematic | Flow Path |      | Designator | Schematic | Flow Path |      |
|------------|-----------|-----------|------|------------|-----------|-----------|------|
|            |           | Closed    | Open |            |           | Closed    | Open |
| 2A         |           |           |      | 3D         |           |           |      |
| 2B         |           |           |      | 3E         |           |           |      |
| 2C         |           |           |      | 3F         |           |           |      |
| 4M         |           |           |      | 3G         |           |           |      |
| 4N         |           |           |      | 3K         |           |           |      |

## End Connections and Dimentions



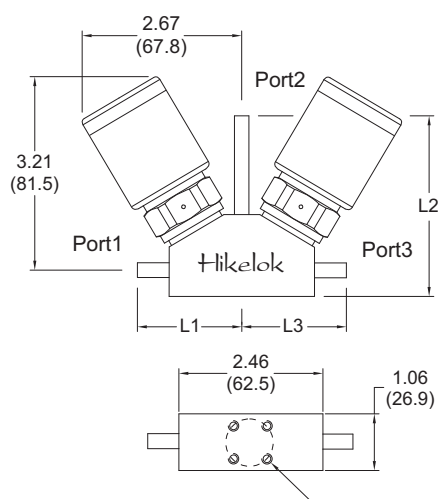
| Designator | End Connection                                                     |  | Dimension, in. (mm) |             |
|------------|--------------------------------------------------------------------|--|---------------------|-------------|
|            |                                                                    |  | L                   | H           |
| FBW4       | 1/4" tube butt weld 0.30"(7.6 mm) tube stub, 0.035"(0.89 mm) wall  |  | 0.87 (22.1)         | 0.76 (19.3) |
| FBW4S      | 1/4" tube butt weld 0.26"(6.6 mm) tube stub, 0.035" (0.89 mm) wall |  | 0.81 (20.6)         | 0.70 (17.8) |
| MBW6       | 6mm tube butt weld , 1 mm wall                                     |  | 0.87 (22.1)         | 0.76 (19.3) |
| FGFS4      | 1/4" female GFS fitting                                            |  | 1.39 (35.3)         | 1.28 (32.5) |
| RGFS4      | 1/4" rotatable male GFS fitting                                    |  | 1.39 (35.3)         | 1.63 (41.4) |

## Multivalve Manifolds

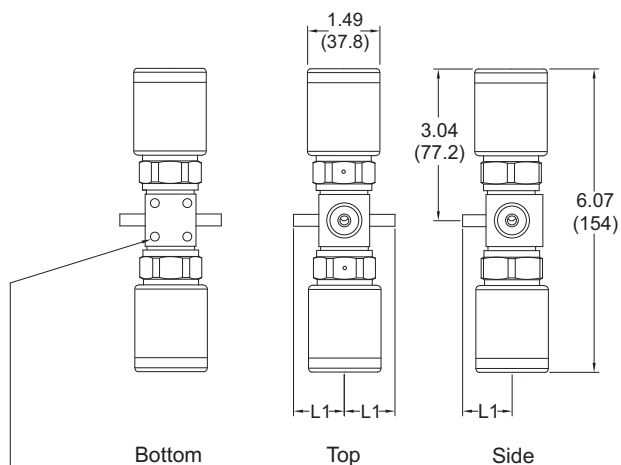
| Designator | Schematic | Flow Path |
|------------|-----------|-----------|
| V          |           |           |
| W          |           |           |
| D          |           |           |

## End Connections and Dimentions

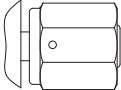
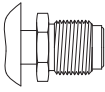
### V and W Multivalve Manifolds



### D Multivalve Manifold

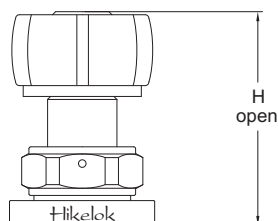


Four bottom mounting holes, M5 × 0.8-6H thread, 0.25 (6.4) deep, located 45° from center line, on a 1.00 (25.4) bolt circle. M5×0.8-6H holes are compatible with 10-32 mounting screws.

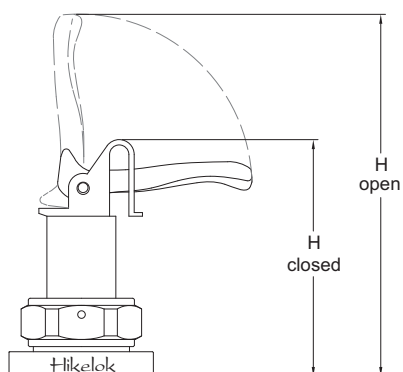
| Designator | End Connection                                                          |                                                                                   | Dimentions, in. (mm)         |              |               |             |                       |
|------------|-------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------|--------------|---------------|-------------|-----------------------|
|            |                                                                         |                                                                                   | V and W Multivalve Manifolds |              |               |             | D Multivalve Manifold |
|            |                                                                         |                                                                                   | L1                           | L2           |               | L3          | L1                    |
|            |                                                                         |                                                                                   |                              | Low-pressure | High-pressure |             |                       |
| FBW4       | 1/4" tube butt weld<br>0.30"(7.6 mm) tube stub,<br>0.035"(0.89 mm) wall |  | 1.81 (46.0)                  | 2.79 (70.9)  | 4.04 (103)    | 1.81 (46.0) | 0.87 (22.1)           |
| FGFS4      | 1/4" female GFS fitting                                                 |  | 2.03 (51.6)                  | 2.66 (67.6)  | 3.91 (99.3)   | 2.03 (51.6) | 1.39 (35.3)           |
| RGFS4      | 1/4" rotatable male GFS fitting                                         |  | 2.39 (60.7)                  | 3.35 (85.1)  | 4.60 (117)    | 2.39 (60.7) |                       |

## IGS Modular Surface-Mount Valves

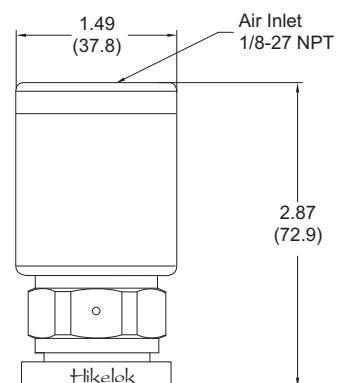
### Directional and Roud Handles



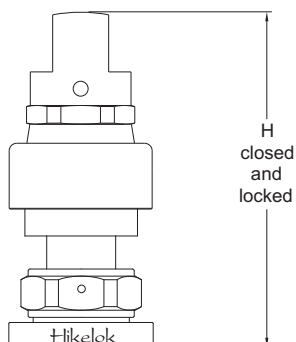
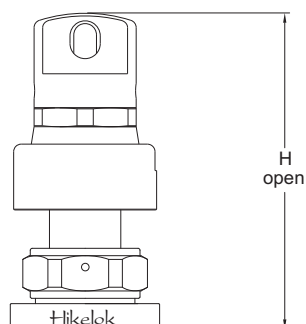
### Toggle Handle



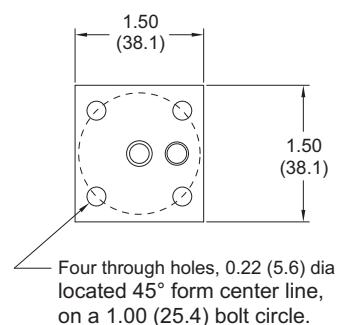
### Pneumatic Actuator



### Integral Lockout Handle



### Bottom



| Handle Type           | Dimensions, in.(mm) |            |               |            |
|-----------------------|---------------------|------------|---------------|------------|
|                       | Low-Pressure        |            | High-Pressure |            |
|                       | H Open              | H Closed   | H Open        | H Closed   |
| Directional and Round | 2.36(59.9)          | 2.34(59.4) | 2.36(59.9)    | 2.34(59.4) |
| Integral Lockout      | 3.25(82.6)          | 3.59(91.2) | 3.41(86.6)    | 3.78(96.0) |
| Toggle                | 2.83(71.9)          | 4.04(103)  |               |            |

Notice: Toggle Handle and Pneumatic Actuator are not used for high pressure system.

## How to Order

|     |   |      |   |      |   |   |   |     |   |    |   |        |
|-----|---|------|---|------|---|---|---|-----|---|----|---|--------|
| DV5 | — | FBW6 | — | FBW4 | — | H | — | R3A | — | NO | — | 316LVV |
|-----|---|------|---|------|---|---|---|-----|---|----|---|--------|

| Series | Port 1 Type | Port 1 Size | Port 2/3/4/5 Type                                                            | Port 2/3/4/5 Size | Pressure Type | Colour | Flow Path | Actuator/Handle | Body Material           |              |
|--------|-------------|-------------|------------------------------------------------------------------------------|-------------------|---------------|--------|-----------|-----------------|-------------------------|--------------|
| DV5    | F           | 2 1/8"      | Same as port 1<br><br>Specify in the same way as port 1 type and port 1 size |                   | H             | Blue   | Straight  | Round Handle    | 316                     |              |
|        | M           | 4 1/4"      |                                                                              |                   | L             | Black  | 2L        | DH              | Directional Handle      | 316L S.S.    |
|        | FBW         | 6 6 mm      |                                                                              |                   |               | White  | 2N        | IH              | Integral Lockout Handle | 316 VAR S.S. |
|        | MBW         |             |                                                                              |                   | Yellow        | 3A     | TH        | Toggle Handle   | 316L VIM-VARS           |              |
|        | GFS         |             |                                                                              |                   | Green         | 3B     |           |                 |                         |              |
|        |             |             |                                                                              |                   | Red           | 3C     |           |                 |                         |              |
|        | FGFS        |             |                                                                              |                   |               | 3F     |           |                 |                         |              |
|        |             |             |                                                                              |                   |               | 3G     |           |                 |                         |              |
|        |             |             |                                                                              |                   |               | 4D     |           |                 |                         |              |
|        |             |             |                                                                              |                   |               | 4E     |           |                 |                         |              |
|        |             |             | M1V                                                                          |                   |               |        |           |                 |                         |              |
|        |             |             | M2V                                                                          |                   |               |        |           |                 |                         |              |
|        |             |             | M1D                                                                          |                   |               |        |           |                 |                         |              |

**По вопросам продаж и поддержки обращайтесь:**

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Брянск (4832)59-03-52  
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Вологда (8172)26-41-59  
Воронеж (473)204-51-73  
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Ижевск (3412)26-03-58  
Иркутск (395)279-98-46  
Россия (495)268-04-70

Казань (843)206-01-48  
Калининград (4012)72-03-81  
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Набережные Челны (8552)20-53-41  
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Тула (4872)74-02-29  
Тюмень (3452)66-21-18  
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Челябинск (351)202-03-61  
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