

Hy-Lok DV Series

Diaphragm Valves

Catalog No. H-DV100
Oct, 2004



Design & Engineering

- 316L VIM/VAR Stainless Steel Body
- Low Pressure Model
- ZCR, Tube Butt Weld, and Hy-Lok Tube Fitting
- Manual Handle or Pneumatic Actuator
- 100% Helium Leak Tested

Application

- Semiconductor
- Biotech
- Pharmaceutical



HY-LOK CORPORATION

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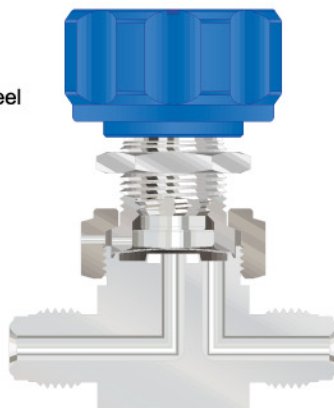
Features

Body

- Double Vacuum Melt 316L Stainless Steel
- minimum dead space
- maximum flow capacity
- electro polishing processing capacity

Diaphragm

- Elgiloy® material
- excellent corrosion resistance
- electro polishing processing
- long cycle life



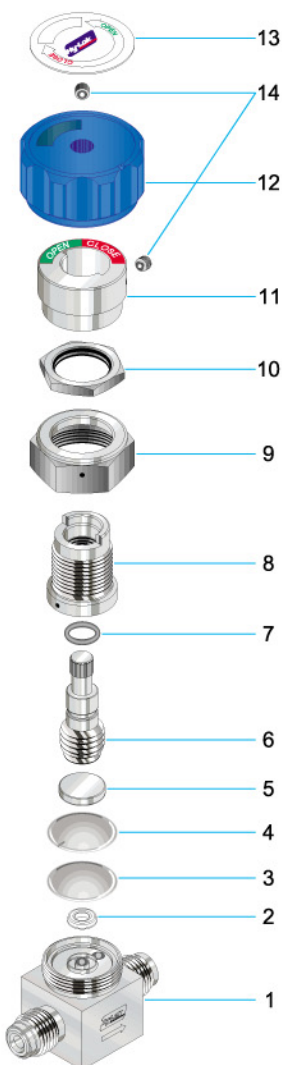
Seat

- excellent chemical resistance
- low coefficient for thermal expansion
- minimum particle of contamination
- long cycle life

Handle

- quick, quarter-turn operation
- OPEN/CLOSE position indicator

Materials of Construction



No.	Description	Material / ASTM Specification
* 1	Body	Double Vacuum Melt 316L / A479
* 2	Seat	PCTFE
* 3	Diaphragm	Elgiloy®
4	Support Diaphragm	Elgiloy®
5	Stem Button	Type 316 / A479
6	Stem	Type 316 / A479
7	O-Ring	VITON
8	Bonnet	Type 316 / A479
9	Bonnet Nut	Type 316 / A479
10	Pannel Nut	Type 316 / A479
11	Indicator	Type 316 / A479
12	Handle	Aluminum
13	Handle Cap	NYLON
14	Set Screw (2)	Stainless Steel

"*" marked are wetted parts

Specification

Size	Pressure Rating psig (bar)	Temp. Rating °F (°C)	Flow Coefficient Cv	Orifice in. (mm)
1/4"	250 (17)	-10 ~ 150	0.27	0.16 (4.0)
1/2"		(-23 ~ 65)	0.7	0.25 (6.4)

Internal Surface Grade

Grade	Designator	Roughness Average Ra. (E.P)	Packing Standard Class 10
High	H	0.13 μ m (5 μ in)	Double
Super	S	0.1 μ m (4 μ in)	Triple

Grade "High" is standard.

Cleaning & Testing

Passivation is done at Nitrogen environment.

Fine cleaning is done by Ultra-sonic cleansing with resistivity over 18M Ω . D.I water after finishing the passivation. Inboard helium leak tested to a rate of 1 x 10⁻⁹ cm³/s.

Assembly & Packaging

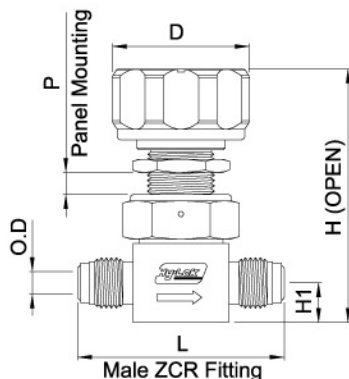
Assembly and Packaging is performed in the clean room of Class 10.

Valves are packed with anti-static polyethylene bag that is pressured into the high purity nitrogen gas.

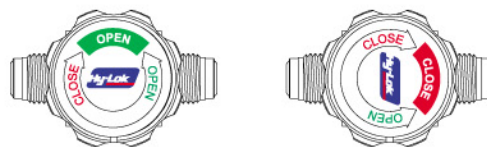
Dimensions

All Dimensions are in millimeters, except for the O.D size.
In case of the end connection for Hy-Lok tube fitting,
dimensions shown with Hy-Lok nuts in finger-tight position, where applicable.

Manual Handle

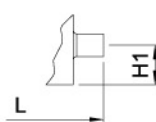


Upper (Handle Operating)

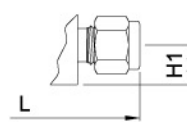


Open Position

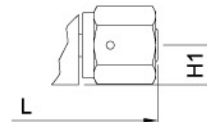
Close Position



Tube Butt Weld



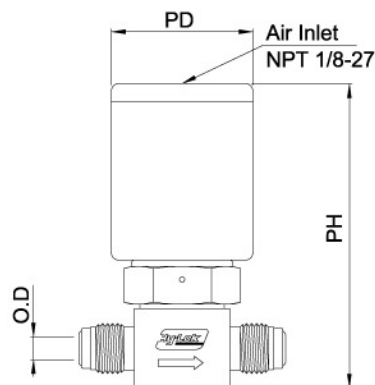
Hy-Lok Tube Fitting



Female ZCR Fitting

End Connection	Ordering No.	O.D	L	H1	H	D	P
Male ZCR Fitting	DVVM-4	1/4"	58.4	11.2	72.1	40.0	6.0
	DVVM-8	1/2"	76.0	16.0	80.2	40.0	5.0
Tube Butt Weld	DVBW-4	1/4"	44.2	11.2	72.1	40.0	6.0
	DVBW-8	1/2"	68.0	16.0	80.2	40.0	5.0
Hy-Lok Tube Fitting	DVH-4	1/4"	62.2	11.2	72.1	40.0	6.0
	DVH-8	1/2"	79.8	16.0	80.2	40.0	5.0
Female ZCR Fitting	DVVF-4	1/4"	71.6	11.2	72.1	40.0	6.0
	DVVF-8	1/2"	83.0	16.0	80.2	40.0	5.0

Pneumatic Actuator



Ordering No.	Description	O.D	PH	PD
DVVM-4-PO	Normally Open	1/4"	86.0	40.0
DVVM-4-PC	Normally Close			

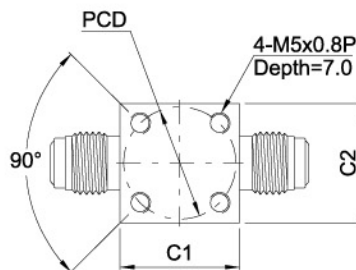
Ordering No.	Description	O.D	PH	PD
DVVM-8-PO	Normally Open	1/2"	84.0	55.0
DVVM-8-PC	Normally Close			

For other dimensions, see dimensions of manual handle on page 3.
For other end connection type, see Ordering Information on page 4.

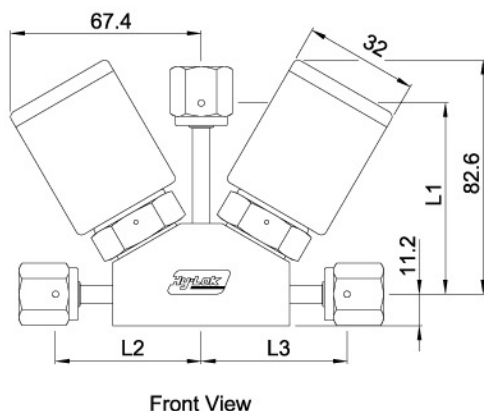
Bottom (Mounting)

O.D Size	C1	C2	PCD
1/4"	27.0	27.0	25.4
1/2"	36.0	33.5	28.0

All end connections for each O.D size
is same bottom mounting.

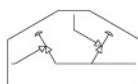


Manifolds (2 Valves & 3 Ports)

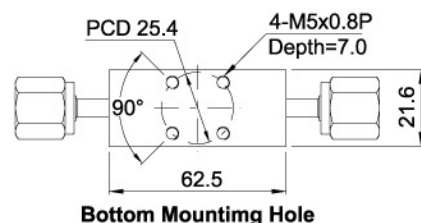


Ordering No.	DVM1VF-4-PO	DVM1BW-4-PO
End Connection	Female ZCR Fitting	Tube Butt Weld
O.D	1/4"	1/4"
L1	67.6	71.0
L2	51.6	46.0
L3	51.6	46.0

All dimension are in millimeters, except for the O.D size.
O.D size is only 1/4".



Back Marking & Flow Path



Maintenance Kits

Diaphragm Kits



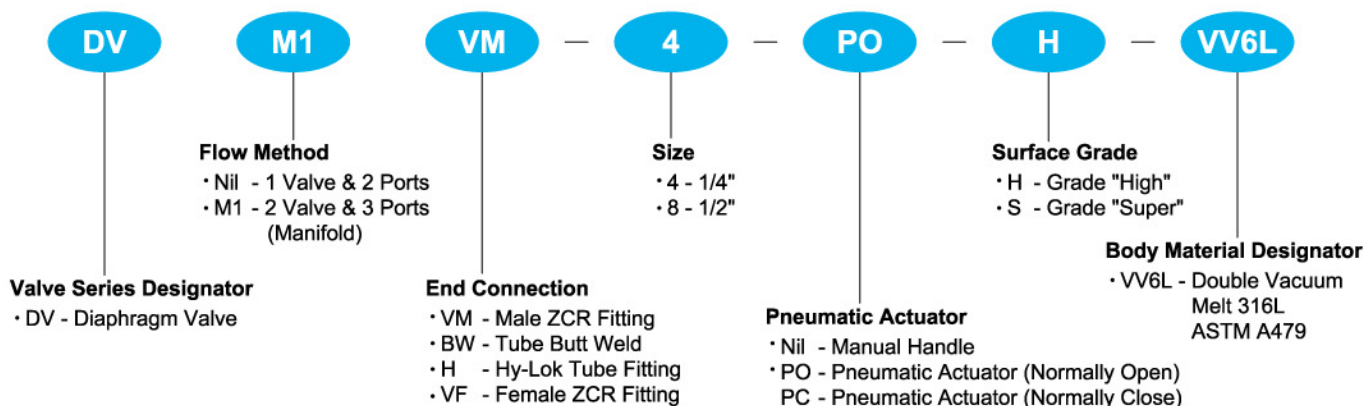
- Two diaphragms are maintenance kits.
- Ordering number is **DVDM-4-KITS** (1/4" size)
DVDM-8-KITS (1/2" size)

Pneumatic Actuator Kits

Ordering number is the following.

Ordering No.	O.D Size	Description
DV-4-PO	1/4"	Normally Open
DV-4-PC		Normally Close
DV-8-PO	1/2"	Normally Open
DV-8-PC		Normally Close

Ordering Information



QUALITY SYSTEM CERTIFICATES



ISO 9001
CERTIFICATE NO.GQC 212

ASME SECT III (MO)
CERTIFICATE NO. QSC 584

TYPE APPROVALS (for Hy-Lok Tube Fittings)



American Bureau Shipping
CERTIFICATE NO.00-BK50288-X



Lloyd's Register
CERTIFICATE NO.01/10075



GERMANISCHER LLOYD
CERTIFICATE NO.57798-91 HH



DET NORSKE VERITAS
CERTIFICATE NO.P-9100

SAFETY in VALVE SELECTION

Proper installation, material compatibility, operation and maintenance of these valves are the responsibility of the user. The total system design must be taken into consideration to ensure optimal performance and safety.



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