



www.hy-lok.com

Catalog No. H-DV100
Jan. 2023



Diaphragm Valves

DV Series



Design & Engineering

- 316L Stainless Steel (Single & Double Melt)
- Low and High Pressure Model
- ZCR, Tube Butt Weld, and Hy-Lok Tube End Connections
- Manual Handle or Pneumatic Actuator
- 100% Helium Leak Tested

Application

- Ultrahigh Purity Process
- Semiconductor
- Biotech
- Pharmaceutical

HY-LOK CORPORATION

© 2004-2023 HY-LOK CORPORATION All rights reserved



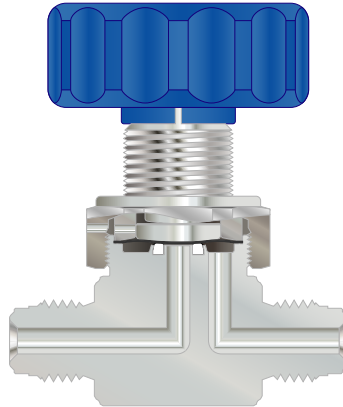
Features

Body

- 316L Stainless Steel (Single & Double Melt)
- Minimum dead space
- Maximum flow capacity
- Electro polishing processing

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

Manual Handle and Pneumatic Actuators

Manual Handle

- 1/4" Aluminum type handle rotates 90°.
- Otherwise 3/4" Aluminum type and all different size of ABS(100) type handle rotate 180°.
- Low pressure model are applicable blue color handle
- High pressure model are applicable white color handle
- Visually OPEN and CLOSE positions confirm by handle window
- This handle are available on low and high pressure model



Round Handle



Directional Handle



Locking Handle

Pneumatic Actuator

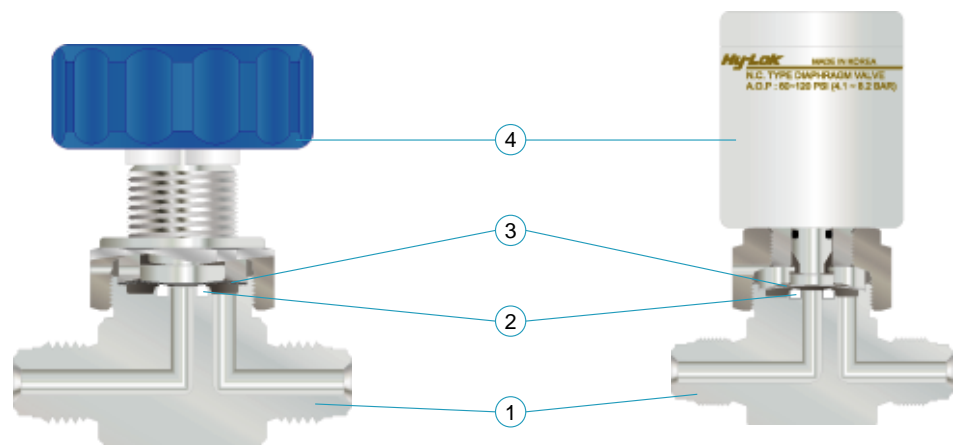
- Low pressure model
- Max. working pressure: 250 psig (17.2 barg)
- Flow coefficient : 0.3
- Actuation pressure : 60~120psig(4.2~8.2barg)



- High pressure model
- Max. working pressure: 3,000 psig (207 barg)
- Flow coefficient : 0.1
- Actuation pressure : 70~120psig(4.9~8.2barg)



Materials of Construction



No.	Parts	Material /ASTM Specification	
		DV Series	
		Manual	Pneumatic
1*	Body	A182 Type F316L (Single & Double Melt) / A479 Type 316L (Single & Double Melt)	
2*	Seat	PCTFE (D1430)	
3*	Diaphragm	Elgiloy® (F1058, AMS5876)	
4	Actuation	ABS(100) / Aluminum	Aluminum

"*" marked are wetted parts.
ABS(100) Handle are manual actuation and Low pressure only.

Specification

Model	Size	Pressure Rating (psig)	Temp. Rating C° (F°)	Flow Coefficient Cv	Orifice (mm)
Low Pressure	1/4"	250 (17.2barg)	-23 ~ 65 (-10 ~ 150)	0.3	4.1
	3/8"			0.7	7.0
	1/2"				
	3/4"				
High Pressure	1/4"	3000 (203barg)		0.1	2.5

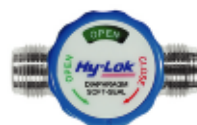
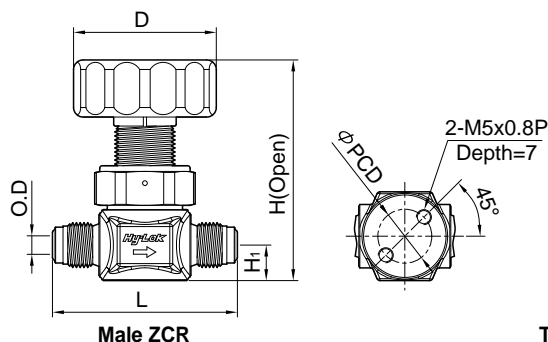
Dimensions

All dimensions are in millimeters and for reference only. In case of the end connection for Hy-Lok tube fitting, dimensions shown with Hy-Lok nuts in finger-tight position, where applicable.

Low Pressure Models

Manual Round Handle

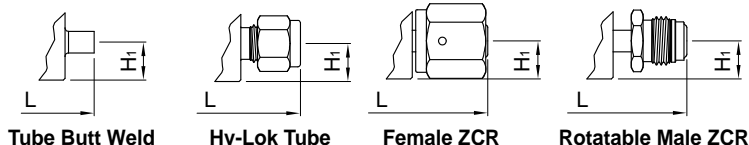
Upper (Handle Operating)



Open Position



Close Position

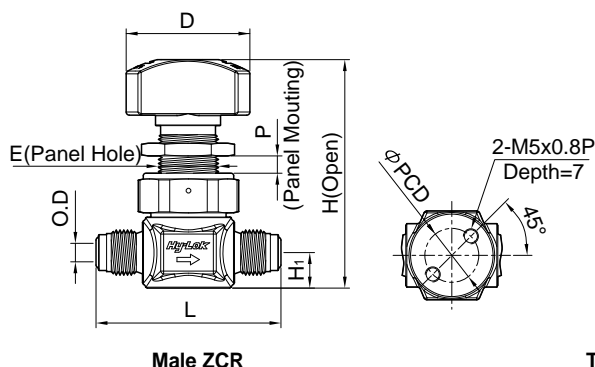


End Connection	Ordering No.	O.D	L	H ₁	H	D	PCD
Male ZCR Fitting	DVVM-4-AH	1/4"	58.4	11.2	70.6	40.0	17.0
	DVVM-8-AH	1/2"	76.0	16.0	78.2		28.0
	DVVM-12-AH	3/4"	88.0	22.0	91.7		
Rotatable Male ZCR Fitting	DVRM-4-AH	1/4"	89.2	11.2	70.6	40.0	17.0
	DVRM-8-AH	1/2"	107.4	16.0	78.2		28.0
	DVRM-12-AH	3/4"	140.0	22.0	91.7		
Female ZCR Fitting	DVVF-4-AH	1/4"	70.6	11.2	70.6	40.0	17.0
	DVVF-8-AH	1/2"	83.0	16.0	78.2		28.0
	DVVF-12-AH	3/4"	106.0	22.0	91.7		
Hy-Lok Tube Fitting	DVH-4-AH	1/4"	64.4	11.2	70.6	40.0	17.0
	DVH-8-AH	1/2"	81.8	16.0	78.2		28.0
	DVH-12-AH	3/4"	80.8	22.0	91.7		
Tube Butt Weld	DVBW-4-AH	1/4"	44.2	11.2	70.6	40.0	17.0
	DVBW-8-AH	1/2"	68.0	16.0	78.2		28.0
	DVBW-12-AH	3/4"	73.6	22.0	91.7		

Handle color for Low pressure model is Blue.

Manual Directional Handle

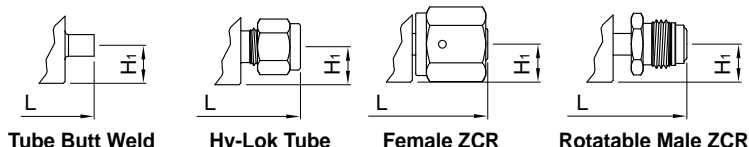
Upper (Handle Operating)



Open Position



Close Position



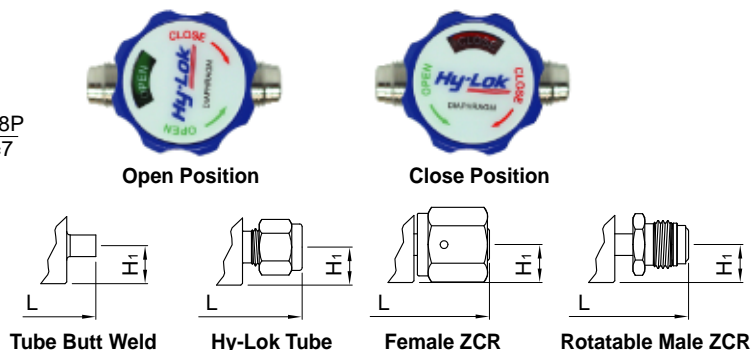
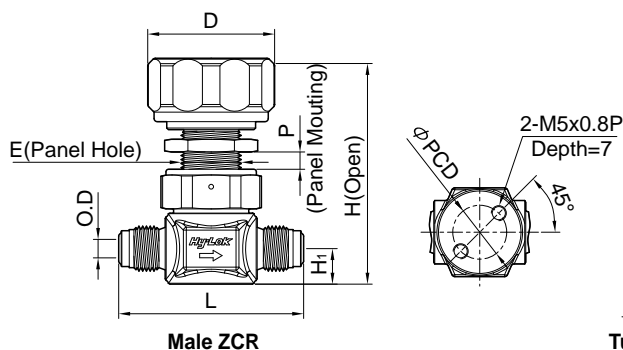
End Connection	Ordering No.	O.D	L	H ₁	H	D	E	P	PCD
Male ZCR Fitting	DVVM-4-DR	1/4"	58.4	11.2	73.0	39.0	20.0	6.0	17.0
Rotatable Male ZCR Fitting	DVRM-4-DR		89.2						
Female ZCR Fitting	DVVF-4-DR		70.6						
Hy-Lok Tube Fitting	DVH-4-DR		64.4						
Tube Butt Weld	DVBW-4-DR		44.2						

Handle color for low pressure model is Blue.

Low Pressure Models

Manual Round Handle

Upper (Handle Operating)

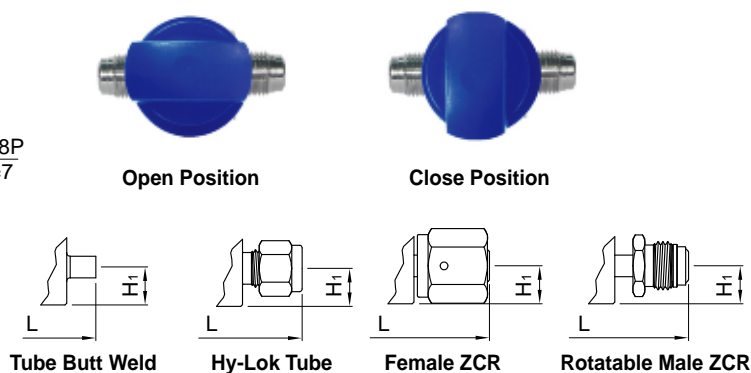
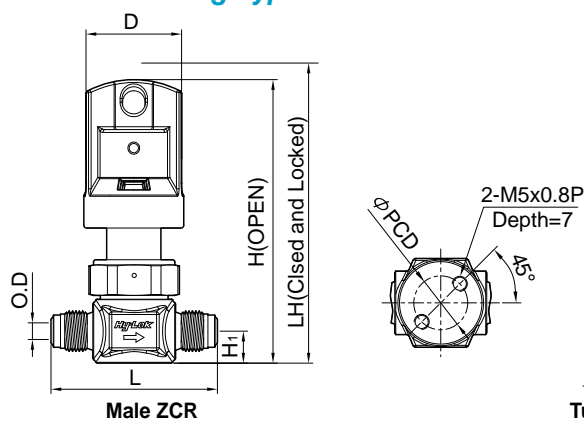


End Connection	Ordering No.	O.D	L	H ₁	H	D	E	P	PCD
Male ZCR Fitting	DVVM-4	1/4"	58.4	11.2	72.1	40.0	20.0	6.0	17.0
	DVVM-8	1/2"	76.0	16.0	80.2		23.1	7.0	28.0
	DVVM-12	3/4"	88.0	22.0	93.1				
Rotatable Male ZCR Fitting	DVRM-4	1/4"	89.2	11.2	72.1	40.0	20.0	6.0	17.0
	DVRM-8	1/2"	107.4	16.0	80.2		23.1	7.0	28.0
	DVRM-12	3/4"	140.0	22.0	93.1				
Female ZCR Fitting	DVVF-4	1/4"	70.6	11.2	72.1	40.0	20.0	6.0	17.0
	DVVF-8	1/2"	83.0	16.0	80.2		23.1	7.0	28.0
	DVVF-12	3/4"	106.0	22.0	93.1				
Hy-Lok Tube Fitting	DVH-4	1/4"	64.4	11.2	72.1	40.0	20.0	6.0	17.0
	DVH-8	1/2"	81.8	16.0	80.2		23.1	7.0	28.0
	DVH-12	3/4"	80.8	22.0	93.1				
Tube Butt Weld	DVBW-4	1/4"	44.2	11.2	72.1	40.0	20.0	6.0	17.0
	DVBW-8	1/2"	68.0	16.0	80.2		23.1	7.0	28.0
	DVBW-12	3/4"	73.6	22.0	93.1				

Handle color for Low pressure model is Blue.

Manual Locking Type Handle

Upper (Handle Operating)



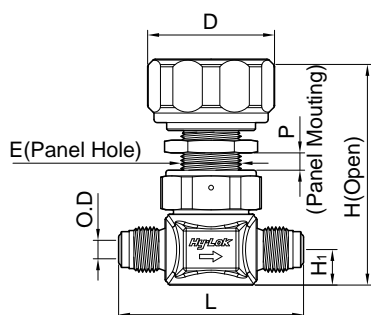
End Connection	Ordering No.	O.D	L	H ₁	H	D	PCD
Male ZCR Fitting	DVVM-4-LK	1/4"	58.4	11.2	73.0	39.0	17.0
Rotatable Male ZCR Fitting	DVRM-4-LK		89.2				
Female ZCR Fitting	DVVF-4-LK		70.6				
Hy-Lok Tube Fitting	DVH-4-LK		64.4				
Tube Butt Weld	DVBW-4-LK		44.2				

Handle color for low pressure model is Blue.

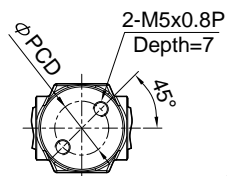
High Pressure Models

Manual Round Handle

Upper (Handle Operating)



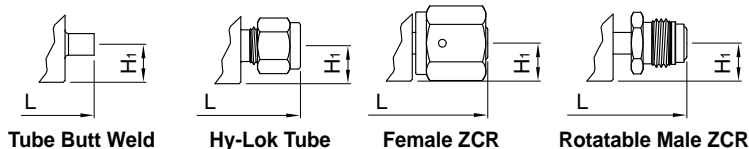
Male ZCR



Open Position



Close Position



Tube Butt Weld

Hy-Lok Tube

Female ZCR

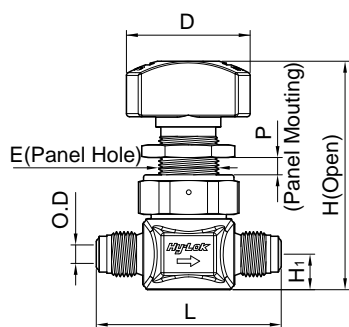
Rotatable Male ZCR

End Connection	Ordering No.	O.D	L	H ₁	H	D	E	P	PCD
Male ZCR Fitting	DVHPVM-4	1/4"	58.4	11.2	72.1	45.0	20.0	6.0	17.0
Rotatable Male ZCR Fitting	DVHPRM-4		89.2						
Female ZCR Fitting	DVHPVF-4		70.6						
Hy-Lok Tube Fitting	DVHPH-4		64.4						
Tube Butt Weld	DVHPBW-4		44.2						

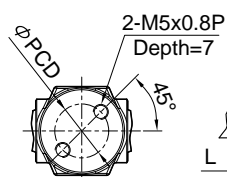
Handle cap color for high pressure model is Gold.

Manual Directional Handle

Upper (Handle Operating)



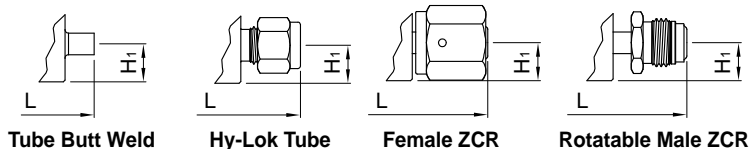
Male ZCR



Open Position



Close Position



Tube Butt Weld

Hy-Lok Tube

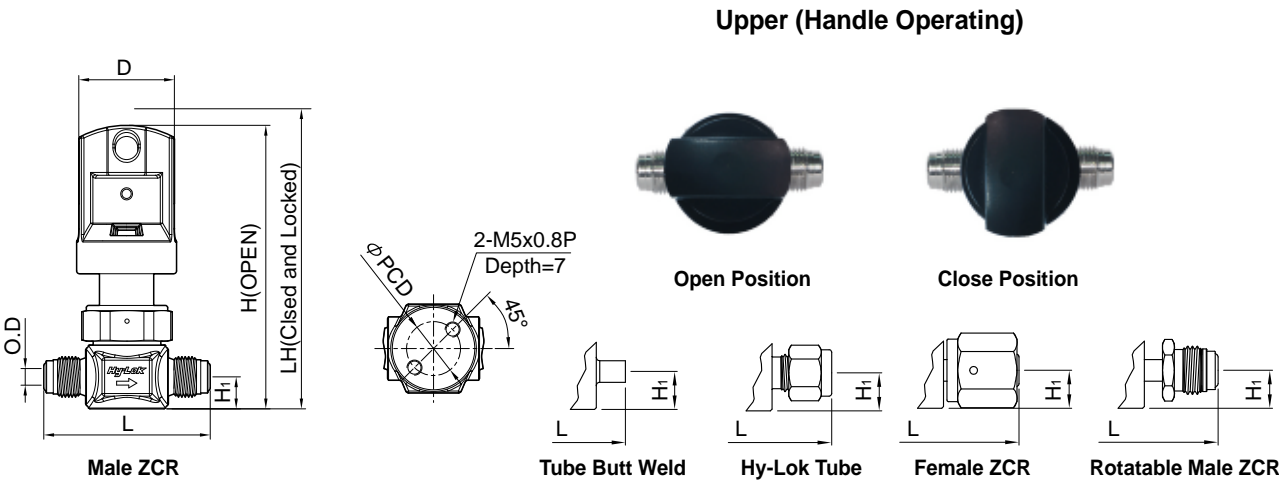
Female ZCR

Rotatable Male ZCR

End Connection	Ordering No.	O.D	L	H ₁	H	D	E	P	PCD
Male ZCR Fitting	DVHPVM-4-DR	1/4"	58.4	11.2	73.0	39.0	20.0	6.0	17.0
Rotatable Male ZCR Fitting	DVHPRM-4-DR		89.2						
Female ZCR Fitting	DVHPVF-4-DR		70.6						
Hy-Lok Tube Fitting	DVHPH-4-DR		64.4						
Tube Butt Weld	DVHPBW-4-DR		44.2						

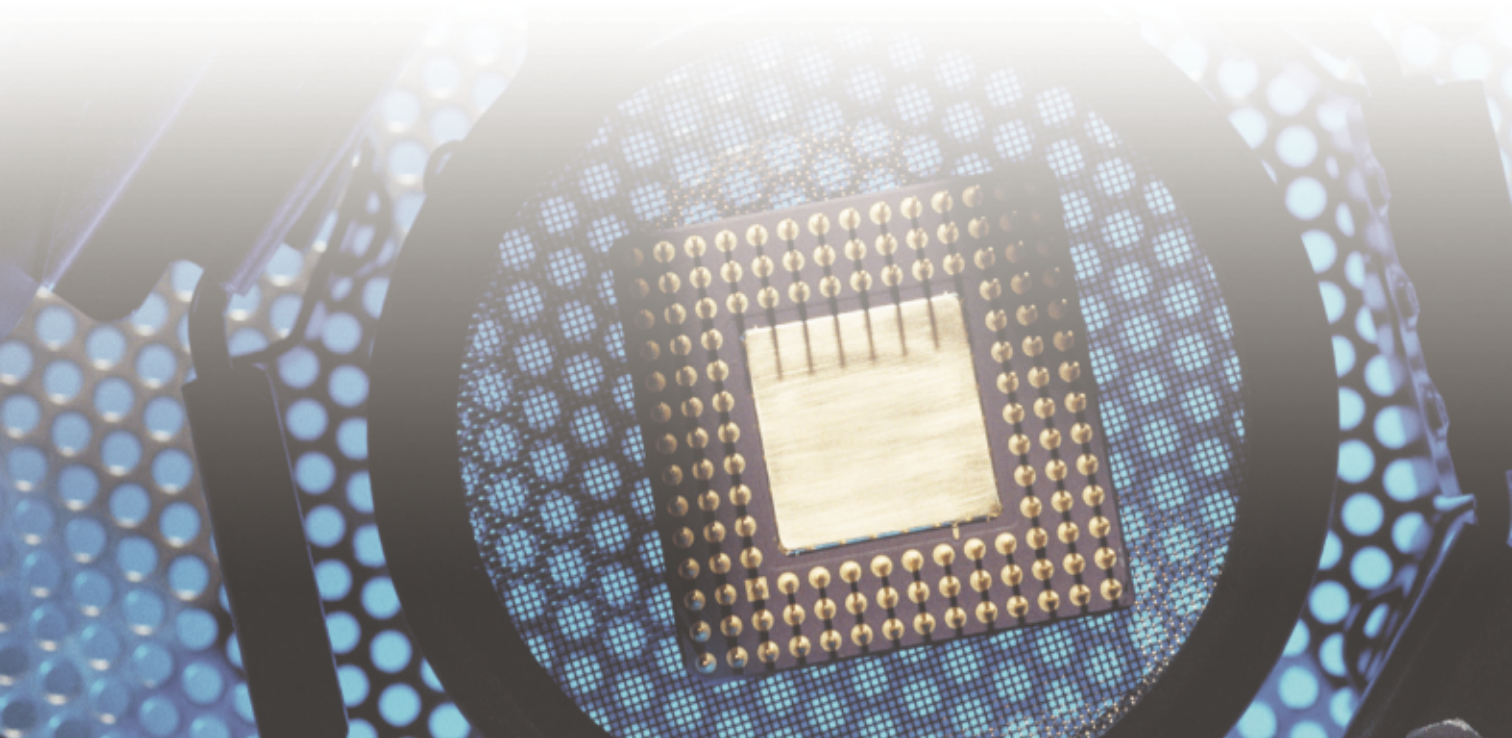
Handle cap color for high pressure model is Gold.

Manual Locking Type Handle



End Connection	Ordering No.	O.D	L	H ₁	H	D	PCD
Male ZCR Fitting	DVHPVM-4-LK	1/4"	58.4	11.2	99.5	39.0	17.0
Rotatable Male ZCR Fitting	DVHPRM-4-LK		89.2				
Female ZCR Fitting	DVHPVF-4-LK		70.6				
Hy-Lok Tube Fitting	DVHPH-4-LK		64.4				
Tube Butt Weld	DVHPBW-4-LK		44.2				

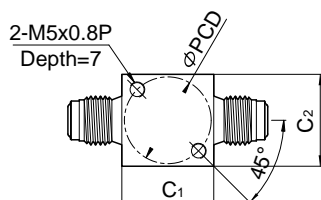
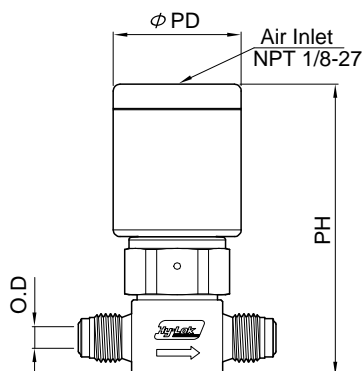
Handle cap color for high pressure model is Gold.



Dimensions

All dimensions are in millimeters and for reference only. In case of the end connection for Hy-Lok tube fitting, dimensions shown with Hy-Lok nuts in finger-tight position, where applicable.

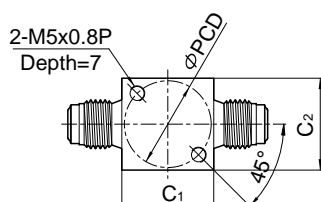
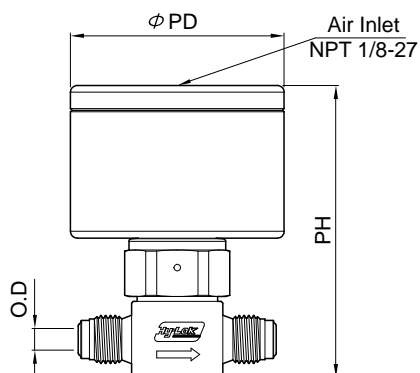
Low Pressure Models Pneumatic Actuator



Ordering No.	O.D	Description	PH	PD
DVVM - 4 - PC	1/4"	Normally Close	86	38
DVVM - 8 - PC	1/2"		94	45
DVVM - 12 - PC	3/4"		104	
DVVM - 4 - PO	1/4"	Normally Open	86	38
DVVM - 8 - PO	1/2"		94	45
DVVM - 12 - PO	3/4"		104	

For end connection types and dimensions are same as manual Handle.

High Pressure Models Pneumatic Actuator



Ordering No.	O.D	Description	PH	PD
DVHPVM - 4 - PC	1/4"	Normally Close	98.8	63
DVHPVM - 4 - PO		Normally Open		

For end connection types and dimensions are same as manual Handle.

Multiport Diaphragm Valves

To customize this model to meet your system requirements, select designators for :

- multiport flow path
- end connector for each port
- internal surface grade
- manual handle or pneumatic actuator

Multiport Flow Path

Ports No.	Designator	Schematic	Flow Path	
			Close	Open
4	L			
	N			
3	C			
	E			
	R			
	T			
	Y			
	J			
2	Q			
	U			

- The flow path is shown as viewed from the top of the valve body.
- The "a" next to the port number indicate that a port is above the valve seat.
- The "b" next to the port number indicate that a port is below the valve seat.

Example Ordering Information

Ordering No.	DVLMFMF-4-H	DVHPCFWF-4-H	DVJWW-4-PC-H
Material	316L Stainless Steel (Single & Double Melt)		
Model Series	Low Pressure, 1/4"	High Pressure, 1/4"	Low Pressure, 1/4"
Flow Path	4 ports, L	3 ports, C	2 ports, J
Port No. 1 End Connection	Rotatable Male ZCR Fitting	Female ZCR Fitting	Tube Butt Weld
Port No. 2 End Connection	Female ZCR Fitting	Tube Butt Weld	-
Port No. 3 End Connection	Rotatable Male ZCR Fitting	Female ZCR Fitting	-
Port No. 4 End Connection	Female ZCR Fitting	-	Tube Butt Weld
Actuation Method	Manual Handle, Color Blue	Manual Handle, Color White	Normally Close

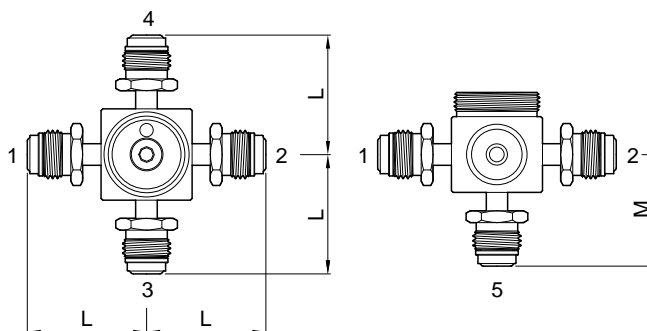
Handle cap color for low pressure model is Blue.



Dimension

All dimensions are in millimeters and for reference only.

In case of the end connection for Hy-Lok tube fitting, dimensions shown with Hy-Lok nuts in finger-tight position, where applicable.



End Connection	O.D	L	M
Tube Butt Weld (Tube wall, 0.035 in.)	1/4"	22.1	19.3
Female ZCR Fitting		36.5	34.2
Rotatable Male ZCR Fitting		36.5	34.2

The end connection designators are reference on page 8.
The dimension of four bottom mounting holes are same as standard 2 port valve body on page 4.
The flow path designator "Q" is no mounting holes.

Manifolds Diaphragm Valves

To customize this model to meet your system requirements, select designators for :
manifold flow path end connector for each port
internal surface grade manual handle or pneumatic actuator

Manifold Flow Path

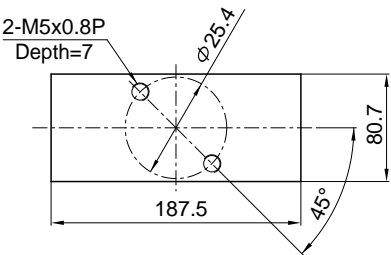
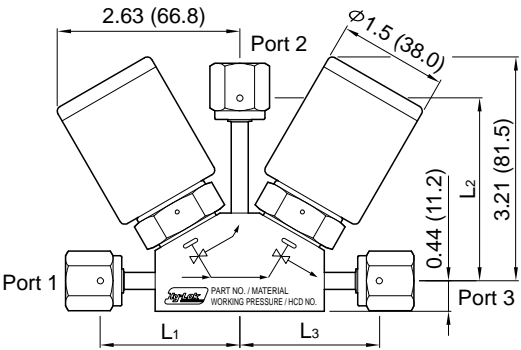
Manifold	Designator	Schematic	Flow Path
2 Valve & 3 Port Mono Block	M1		
	M2		
2 Valve & 3 Port Double Pattern	M3		



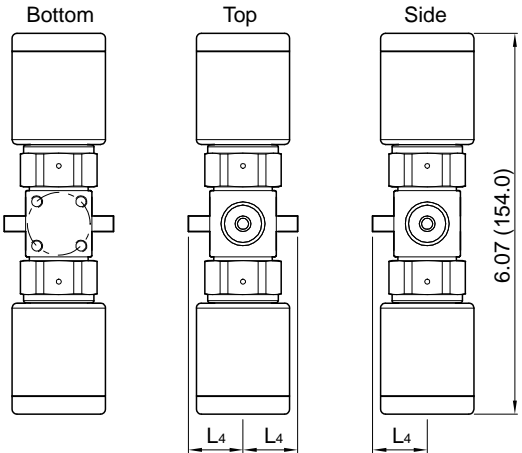
Dimension

All dimensions are in inches(millimeters) and for reference only. In case of the end connection for Hy-Lok tube fitting, dimensions shown with Hy-Lok nuts in finger-tight position, where applicable.

2 Valve & 3 Port Monoblock



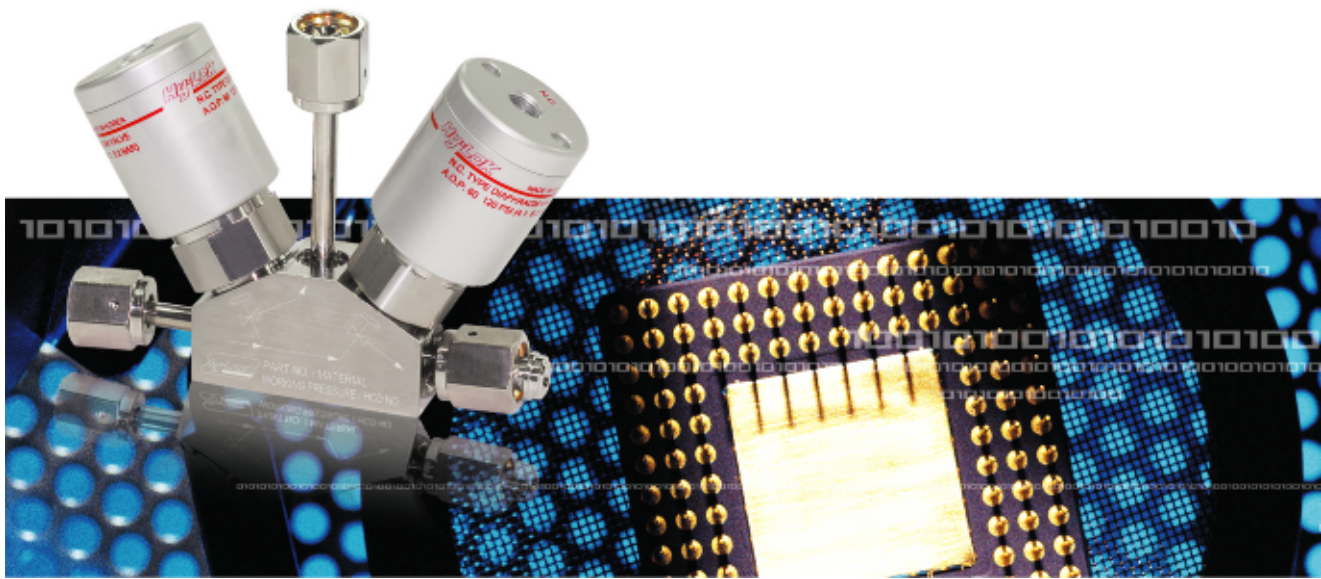
2 Valve & 3 Port Double Pattern



End Connection	O.D	2 Valve & 3 Port Mono Block			2 Valve & 3 Port Double Pattern
		L ₁	L ₂	L ₃	L ₄
Tube Butt Weld (Tube wall, 0.035 in.)	1/4"	46.0	70.9	46.0	22.1
Female ZCR Fitting		51.6	67.6	51.6	35.3
Rotatable Male ZCR Fitting		61.2	85.1	61.2	35.3

The end connection designators are reference on next page.

Ordering No.	DVM1FMF-4-PCO-H	DVHPM2WWW-4-H	DVM3MFF-4-H
Material	316L VIM / VAR Stainless Steel		
Model Series	Low Pressure, 1/4"	High Pressure, 1/4"	Low Pressure, 1/4"
Flow Path	2 Valve & 3 port Monoblock, M1	2 Valve & 3 port Monoblock, M2	2 Valve & 3 port Double Pattern, M3
Port No. 1 End Connection	Female ZCR Fitting	Tube Butt Weld	Rotatable Male ZCR Fitting
Port No. 2 End Connection	Rotatable Male ZCR Fitting	Tube Butt Weld	Female ZCR Fitting
Port No. 3 End Connection	Female ZCR Fitting	Tube Butt Weld	Female ZCR Fitting
Valve 1 Actuation Method	Normally Close	Manual Handle, Color White	Manual Handle, Color Blue
Valve 2 Actuation Method	Normally Open	Manual Handle, Color White	Manual Handle, Color Blue



Distributed by :