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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

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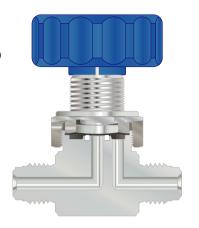
Features

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

- ABS(100) type handle rotate 180°
- 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

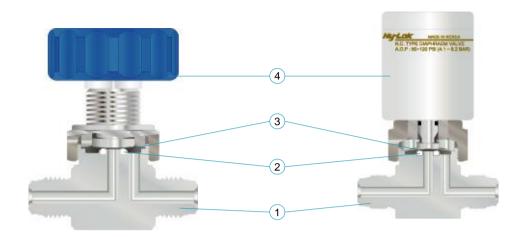
- Low pressure model
- Max. working pressure: 250 psig (17.2 barg)
- Flow coefficient: 0.3
- Actuation pressure : 60~120psig(4.2~8.2barg)



- 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



		Material /ASTM Specification					
No.	eries						
		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					

"*" 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)	
	1/4"			0.3	4.1	
Low Pressure	3/8"	250 (17.2barg)	-23 ~ 65 (-10 ~ 150)	0.7		
LOW Flessure	1/2"	250 (17.2baig)			7.0	
	3/4"					
High Pressure	1/4"	3000 (203barg)		0.1	2.5	

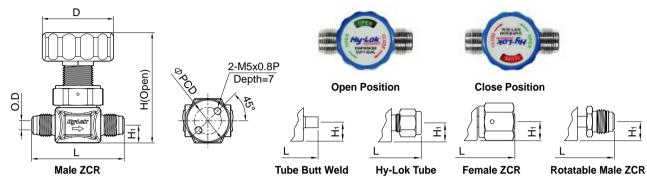
Dimensions

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)

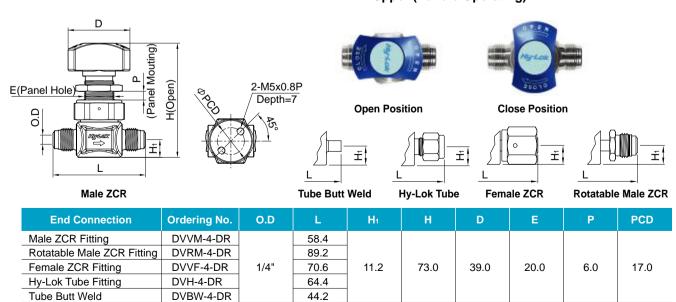


				•			
End Connection	Ordering No.	O.D	L	H₁	н	D	PCD
	DVVM-4-AH	1/4"	58.4	11.2	70.6		17.0
Male ZCR Fitting	DVVM-8-AH	1/2"	76.0	16.0	78.2	40.0	28.0
	DVVM-12-AH	3/4"	88.0	22.0	91.7		20.0
Rotatable Male	DVRM-4-AH	1/4"	89.2	11.2	70.6		17.0
ZCR Fitting	DVRM-8-AH	1/2"	107.4	16.0	78.2	40.0	28.0
ZCK Fitting	DVRM-12-AH	3/4"	140.0	22.0	91.7		20.0
	DVVF-4-AH	1/4"	70.6	11.2	70.6		17.0
Female ZCR Fitting	DVVF-8-AH	1/2"	83.0	16.0	78.2	40.0	28.0
	DVVF-12-AH	3/4"	106.0	22.0	91.7		20.0
	DVH-4-AH	1/4"	64.4	11.2	70.6		17.0
Hy-Lok Tube Fitting	DVH-8-AH	1/2"	81.8	16.0	78.2	40.0	28.0
	DVH-12-AH	3/4"	80.8	22.0	91.7		20.0
	DVBW-4-AH	1/4"	44.2	11.2	70.6		17.0
Tube Butt Weld	DVBW-8-AH	1/2"	68.0	16.0	78.2	40.0	28.0
	DVBW-12-AH	3/4"	73.6	22.0	91.7		20.0

Handle color for Low pressure model is Blue.

Manual Directional Handle

Upper (Handle Operating)

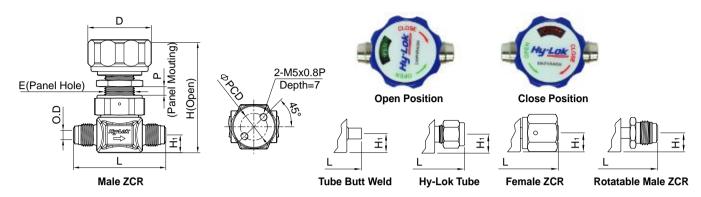


Handle color for low pressure model is Blue.

Low Pressure Models

Manual Round Handle

Upper (Handle Operating)

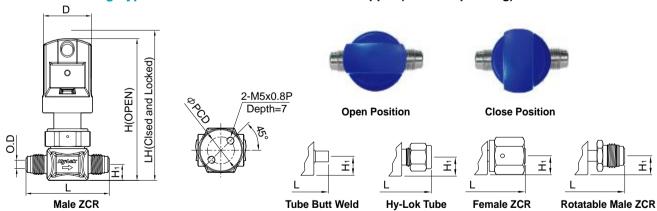


End Connection	Ordering No.	O.D	L	Ηı	н	D	E	Р	PCD				
	DVVM-4	1/4"	58.4	11.2	72.1		20.0	6.0	17.0				
Male ZCR Fitting	DVVM-8	1/2"	76.0	16.0	80.2	40.0	23.1	7.0	28.0				
	DVVM-12	3/4"	88.0	22.0	93.1		20.1	7.0	20.0				
Dotatable Male	DVRM-4	1/4"	89.2	11.2	72.1		20.0	6.0	17.0				
Rotatable Male ZCR Fitting	DVRM-8	1/2"	107.4	16.0	80.2	40.0	40.0	40.0	40.0	40.0	23.1	7.0	28.0
ZON Fitting	DVRM-12	3/4"	140.0	22.0	93.1		20.1	7.0	20.0				
	DVVF-4	1/4"	70.6	11.2	72.1	40.0	20.0	6.0	17.0				
Female ZCR Fitting	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		20.1	7.0	20.0				
	DVH-4	1/4"	64.4	11.2	72.1		20.0	6.0	17.0				
Hy-Lok Tube Fitting	DVH-8	1/2"	81.8	16.0	80.2	40.0	23.1	7.0	28.0				
	DVH-12	3/4"	80.8	22.0	93.1		20.1	7.0	20.0				
	DVBW-4	1/4"	44.2	11.2	72.1		20.0	6.0	17.0				
Tube Butt Weld	DVBW-8	1/2"	68.0	16.0	80.2	40.0	23.1	7.0	28.0				
	DVBW-12	3/4"	73.6	22.0	93.1	1	23.1	7.0	20.0				

Handle color for Low pressure model is Blue.

Manual Locking Type Handle

Upper (Handle Operating)



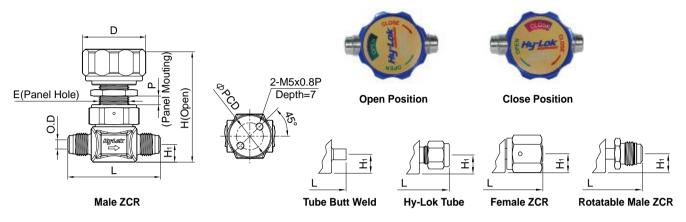
End Connection	Ordering No.	O.D	L	Hi	H	D	PCD
Male ZCR Fitting	DVVM-4-LK		58.4				
Rotatable Male ZCR Fitting	DVRM-4-LK		89.2				
Female ZCR Fitting	DVVF-4-LK	1/4"	70.6	11.2	73.0	39.0	17.0
Hy-Lok Tube Fitting	DVH-4-LK		64.4				
Tube Butt Weld	DVBW-4-LK		44.2				

Handle color for low pressure model is Blue.

High Pressure Models

Manual Round Handle

Upper (Handle Operating)

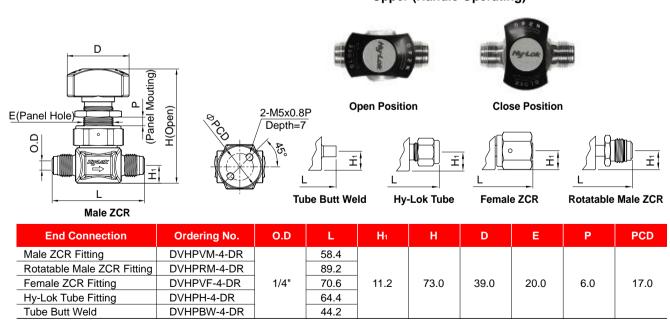


End Connection	Ordering No.	O.D	L	Ηı	н	D	E	Р	PCD
Male ZCR Fitting	DVHPVM-4		58.4						
Rotatable Male ZCR Fitting	DVHPRM-4		89.2						
Female ZCR Fitting	DVHPVF-4	1/4"	70.6	11.2	72.1	45.0	20.0	6.0	17.0
Hy-Lok Tube Fitting	DVHPH-4		64.4						
Tube Butt Weld	DVHPBW-4		44.2						

Handle cap color for high pressure model is Gold.

Manual Directional Handle

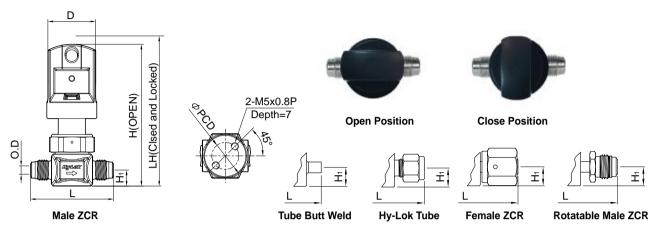
Upper (Handle Operating)



Handle cap color for high pressure model is Gold.

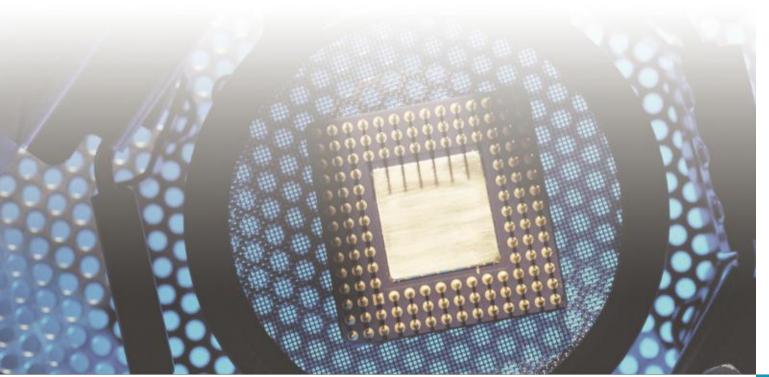
Manual Locking Type Handle

Upper (Handle Operating)



End Connection	Ordering No.	O.D	L	H₁	н	D	PCD
Male ZCR Fitting	DVHPVM-4-LK		58.4				
Rotatable Male ZCR Fitting	DVHPRM-4-LK		89.2				
Female ZCR Fitting	DVHPVF-4-LK	1/4"	70.6	11.2	99.5	39.0	17.0
Hy-Lok Tube Fitting	DVHPH-4-LK		64.4				
Tube Butt Weld	DVHPBW-4-LK		44.2				

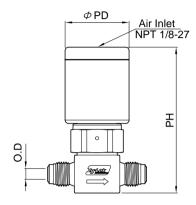
Handle cap color for high pressure model is Gold.



Dimensions

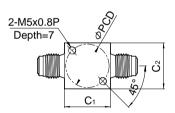
All dimensions are in millimeters and for reference only. In case of the end connection for Hy-Lok tube fitting, dimensions shown with Hy-Lok nuts in finger-tight position, where applicable.

Low Pressure Models Pneumatic Actuator

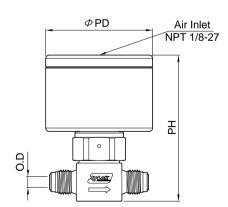


Ordering No.	O.D	Description	PH	PD	
DVVM - 4 - PC	1/4"		86	38	
DVVM - 8 - PC	1/2"	Normally Close	94	45	
DVVM - 12 - PC	3/4"		104	45	
DVVM - 4 - PO	1/4"		86	38	
DVVM - 8 - PO	1/2"	Normally Open	94	45	
DVVM - 12 - PO	3/4"		104	45	

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

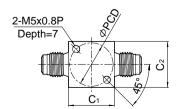


High Pressure Models Pneumatic Actuator



Ordering No.	O.D	Description	PH	PD
DVHPVM - 4 - PC	4/4"	Normally Close	00.0	60
DVHPVM - 4 - PO	1/4"	Normally Open	98.8	63

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

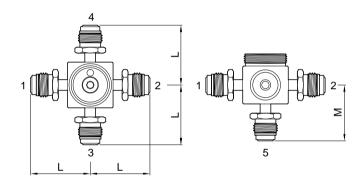
Multiport Flow Path

Ports	Designator	Cahamatia	Flow	Path
No.	Designator	Schematic	Close	Open
4	L	1 2	1b 2b 3a	1b 2b 3a
	N	1 2	1b 2b 3b	1b 2b 3b
	С	1 2	1b2b	1b 2b 3b
3	E	1 2	1b2a	1b 2a
	R	1 2	1b 2b 3a	1b 2b 3a
	Т	1 2	1a2a	1a 2a 3b
	Y	1 2	1b 2a 3a	1b 2a 3a
	J	1	1b 4a	4a 1b
2	Q	. O-M-12 . 5	2a 5b	2a 5b
	U	1	1b 3a	1b 3a



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.)		22.1	19.3
Female ZCR Fitting	1/4"	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.

- 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 I	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.

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

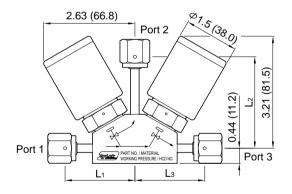
Manifold	Designator	Schematic	Flow Path
2 Valve & 3 Port Mono Block	M1	P1 V1 XV2 P3	V1 P2 V2
	M2	P1 V1 V2 P3	V1 P2 V2 P3
2 Valve & 3 Port Double Pattern	М3	P1 V2 P2 P2 P2 P3 P2	P1 P2 P3 V1 V2 P3 V2 Front Side

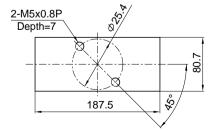


Dimension

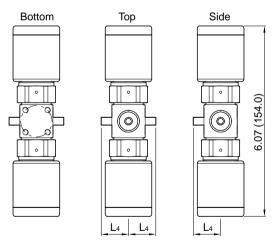
All dimensions are in inches(millimeters) and for reference only. In case of the end connection for Hy-Lok tube fitting, dimensions shown with Hy-Lok nuts in finger-tight position, where applicable.

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.)		46.0	70.9	46.0	22.1
Female ZCR Fitting	1/4"	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.

Example Ordering Information

Ordering No.	DVM1FMF-4-PCO-H	DVHPM2WWW-4-H	DVM3MFF-4-H
Material	316L Stainless Steel(Single & Double Melt)		
Model Series	Low Pressure, 1/4"	High Pressure, 1/4"	Low Pressure, 1/4"
Flow Path	2 Valve & 3 port	2 Valve & 3 port	2 Valve & 3 port
Flow Faul	Monoblock, M1	Monoblock, M2	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

Maintenance Kits

To disassemble or assemble the maintenance kits, refer to the Hy-Lok Corporation document no. H-DV100-IM.

Diaphragm Kits



- Two diaphragms are maintenance kits.
- Ordering number is DVDM-4-KIT(1/4" size) DVDM-8-KIT(1/2" and 3/4" size) DVHPDM-4-KIT(1/4" High Pressure)

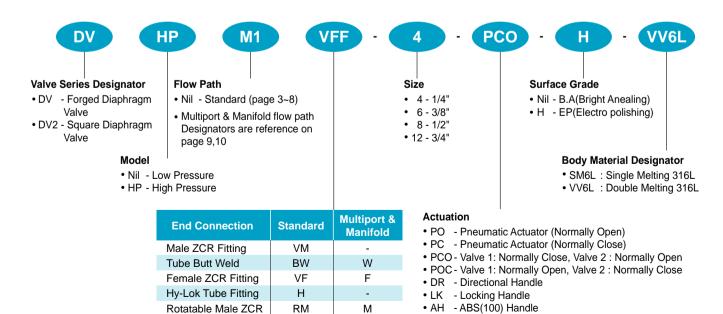
Pneumatic Actuator Kits

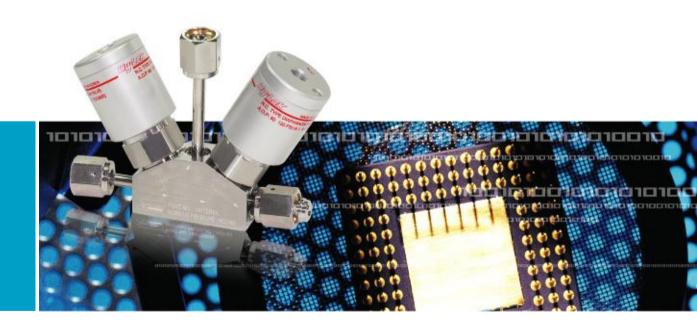
Ordering number is the following.

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Model	Ordering No.	O.D Size	Description
	DV-4-PO	4 / 4 !!	Normally Open
Low	DV-4-PC	1/4"	Normally Close
Pressure	DV-8-PO	4/01 0/41	Normally Open
	DV-8-PC	1/2", 3/4"	Normally Close
High	DVH-4-PO	4 / 4 !!	Normally Open
Pressure	DVH-4-PC	1/4"	Normally Close

⚠ Do not interchange high pressure actuator and low pressure actuator.

Ordering Information





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