

# VLD

## Diaphragm Valves

The VLD series embodies the pursuit of simplicity and utility found in the KD series. The VLD series achieves simplification through the minimization of the number of critical parts.

### Features

- While maintaining the same degree of basic performance, material, and cleaning, the VLD series realizes security and low cost through overall reduction of the number of parts and changes to the review and processing methodology.
- Because the cleaning and inspection processes are the same as our conventional model, there is no change in reliability and durability.
- Achieves maximum particle performance for high-purity gases used in semiconductor by the highest-level manufacturing environment and polishing process.

### Specifications

Size	VLD4 (1/4")	VLD8 (1/2")
Cv	0.27	0.7
Maximum Operating Pressure	0.98MPa (G)	
Wetted Area Volume	1.2cm <sup>3</sup>	6.6cm <sup>3</sup>
Fluid Temperature	PCTFE	-10°C~80°C
	PFA(Manual)	-10°C~150°C
	PI(Manual)	-10°C~150°C
Leak Rates	Across the Seat He Leak Test Rates	≤ 1×10 <sup>-10</sup> Pa·m <sup>3</sup> /sec
	Inboard He Leak Test Rates	≤ 1×10 <sup>-10</sup> Pa·m <sup>3</sup> /sec
Atmospheric Temperature	-10°C~60°C	
Actuation Pressure (Pneumatic)	0.4~0.7MPa (G)	
Cycle Life (N2 Charged, In-house Test)	Manual Valve	100,000 cycles
	Pneumatic Valve	4 million cycles

※ Test Condition / Seat material : PCTFE Gas : N2 Pressure : 0.98MPa

### Product Grade

Grade	STD	EP	SEP
Body Materials	SUS316L		SUS316LE (Double Melt Material)
Surface Roughness	≤ Rz 3.2 μm		≤ Rz 0.7 μm
Polish	Mechanical Polish		Electro Polish
Cleaning	Degreasing + Precision Cleaning		
Clean Room Environment	Class 10 (Some Products, Class 100)		
Packing	Single Bagged Package	Double Bagged Package	

※ PFA, PI Seats only available with Manual Valves

### Wetted Area Material

Body	SUS316L, SUS316LE (Double Melt Material)
Seat ※	PCTFE, PFA, PI
Diaphragm	Cobalt Alloy

※ PFA, PI Seats only available with Manual Valves

### Precautions

- The valves are designed to be used under atmospheric pressure. Usage such as under vacuum vessels are not guaranteed.
- For high temperature applications, please select appropriate material for air-fittings and tubes to assure proper performance.



### Product Code Table

Model	Size	Operation	Valve Shape	Connection	Seat Material	Handle Color	Grade + Body Material
VLD	4	M	S	VF	C	RD	EP-316L
<p>VLD-Type Diaphragm Valve</p> <p>4: 1/4" 6: 3/8" 8: 1/2"</p> <p>M: 270° Manual</p> <p>S: Straight B: Branch *1</p> <p>V: CVC Male VF: CVC Female S: Compression</p> <p>C: PCTFE A: PFA P: PI</p> <p>Options: Not Shown: Blue (Standard) RD: Red GR: Green SL: Silver BK: Black YE: Yellow BR: Brown</p> <p>STD-316L : Mechanical Polish + SUS316L EP-316L : Electro Polish + SUS316L SEP-316LE : Electro Polish + SUS316LE</p>							

\*1 For details, please speak with a sales representative.

### VLD Dimensions

Unit: inch (mm)

Model	Type	Connection	L	L <sup>*</sup>	H	H <sub>1</sub>	A	B	C	M	M <sub>1</sub>
	VLD4MS-VC	1/4" CVC Male	2.24 (57.0)	-	2.46 (62.4)	0.43 (11.0)	1.65 (42.0)	1.02 (26.0)	0.98 (25.0)	1.00 (25.4)	2-M5 Depth 0.20 (5.0)
	VLD8MS-VC	1/2" CVC Male	3.03 (77.0)	-	2.99 (76.0)	0.63 (16.0)	1.65 (42.0)	1.42 (36.0)	1.42 (36.0)	1.10 (28.0)	2-M5 Depth 0.20 (5.0)
	VLD4MS-VFC	1/4" CVC Male	2.78 (70.6)	-	2.46 (62.4)	0.43 (11.0)	1.65 (42.0)	1.02 (26.0)	0.98 (25.0)	1.00 (25.4)	2-M5 Depth 0.20 (5.0)
	VLD8MS-VFC	1/2" CVC Male	3.27 (83.0)	-	2.99 (76.0)	0.63 (16.0)	1.65 (42.0)	1.42 (36.0)	1.42 (36.0)	1.10 (28.0)	2-M5 Depth 0.20 (5.0)
	VLD4MS-SC	1/4" Compression	1.89 (48.0)	0.31 (7.9)	2.46 (62.4)	0.43 (11.0)	1.65 (42.0)	1.02 (26.0)	0.98 (25.0)	1.00 (25.4)	2-M5 Depth 0.20 (5.0)
	VLD6MS-SC	3/8" Compression	2.52 (64.0)	0.37 (9.5)	2.99 (76.0)	0.63 (16.0)	1.65 (42.0)	1.42 (36.0)	1.42 (36.0)	1.10 (28.0)	2-M5 Depth 0.20 (5.0)
	VLD8MS-SC	1/2" Compression	2.52 (64.0)	0.50 (12.7)	2.99 (76.0)	0.63 (16.0)	1.65 (42.0)	1.42 (36.0)	1.42 (36.0)	1.10 (28.0)	2-M5 Depth 0.20 (5.0)

\* L<sub>1</sub> dimension for compression fitting is the dimension of how far tube is inserted from the end of the body.



**Product Code Table**

<b>Model</b> VLD	<b>Size</b> 4	<b>Operation</b> C	<b>Valve Shape</b> S	<b>Connection</b> VF	<b>Seat Material</b> C	<b>Grade + Body Material</b> EP-316L
VLD-type Diaphragm Valve	4:1/4" 6:3/8" 8:1/2"	C: Normally Closed	S: Straight	V: CVC Male VF: CVC Female S: Compression	C: PCTFE	STD-316L : Mechanical Polish + SUS316L EP-316L : Electro Polish + SUS316L

**VLD Dimensions**

Unit: inch (mm)

Model	Type	End connection	L	L <sub>1</sub> *	H	H <sub>1</sub>	A	B	C	P	M	M <sub>1</sub>
	VLD4CS-VC	1/4" CVC Male	2.24 (57.0)	-	2.58 (65.5)	0.43 (11.0)	1.56 (39.7)	1.02 (26.0)	0.98 (25.0)	Rc1/8	1.00 (25.4)	2-M5 Depth 0.20 (5.0)
	VLD8CS-VC	1/2" CVC Male	3.03 (77.0)	-	3.31 (84.0)	0.63 (16.0)	2.17 (55.0)	1.42 (36.0)	1.42 (36.0)	Rc1/8	1.10 (28.0)	2-M5 Depth 0.20 (5.0)
	VLD4CS-VFC	1/4" CVC Female	2.78 (70.6)	-	2.58 (65.5)	0.43 (11.0)	1.56 (39.7)	1.02 (26.0)	0.98 (25.0)	Rc1/8	1.00 (25.4)	2-M5 Depth 0.20 (5.0)
	VLD8CS-VFC	1/2" CVC Female	3.27 (83.0)	-	3.31 (84.0)	0.63 (16.0)	2.17 (55.0)	1.42 (36.0)	1.42 (36.0)	Rc1/8	1.10 (28.0)	2-M5 Depth 0.20 (5.0)
	VLD4CS-SC	1/4" Compression	1.89 (48.0)	0.31 (7.9)	2.58 (65.5)	0.43 (11.0)	1.56 (39.7)	1.02 (26.0)	0.98 (25.0)	Rc1/8	1.00 (25.4)	2-M5 Depth 0.20 (5.0)
	VLD6CS-SC	3/8" Compression	2.52 (64.0)	0.37 (9.5)	3.31 (84.0)	0.63 (16.0)	2.17 (55.0)	1.42 (36.0)	1.42 (36.0)	Rc1/8	1.10 (28.0)	2-M5 Depth 0.20 (5.0)
	VLD8CS-SC	1/2" Compression	2.52 (64.0)	0.50 (12.7)	3.31 (84.0)	0.63 (16.0)	2.17 (55.0)	1.42 (36.0)	1.42 (36.0)	Rc1/8	1.10 (28.0)	2-M5 Depth 0.20 (5.0)

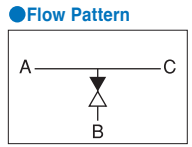
\* L<sub>1</sub> dimension for compression fitting is the dimension of how far tube is inserted from the end of the body.



**Product Code Table**

<b>Model</b> VLD	<b>Size</b> 4	<b>Operation</b> M	<b>Valve Shape</b> B	<b>Main Pipe Connection</b> W	<b>Main Pipe Size</b> 15A	<b>B-Port Connection</b> V	<b>Seat Material</b> C	<b>Handle Color</b> RD	<b>Grade + Body Material</b> EP-316L
VLD-type Diaphragm Valve	4:1/4" 6:3/8" 8:1/2"	270° Manual	Branch	Butt Weld	15A,20A 25A,32A 40A,50A 65A	V: CVC Male S: Compression *1	C: PCTFE A: PFA P: PI	Not shown: Blue (Standard) RD: Red GR: Green SL: Silver BK: Black YE: Yellow BR: Brown	STD-316L : Mechanical Polish + SUS316L EP-316L : Electro Polish + SUS316L SEP-316LE : Electro Polish + SUS316LE *2

\*1 For B-port fitting types other than shown, please consult a sales representative.  
\*2 Regardless of body material, the T-shape section of ports A-C will be SUS316L.



**VLD Branch Dimensions**

Unit: inch (mm)

Model	Type	B port End Connection	L	H	H <sub>1</sub>	D	T	A	F
	VLD4MB-W15AVC	1/4" CVC Male	4.33 (110.0)	3.62 (92.0)	1.22 (31.0)	0.85 (21.7)	0.06 (1.65)	1.65 (42.0)	1.85 (47.0)
	VLD4MB-W25AVC		4.72 (120.0)	4.13 (105.0)	1.49 (37.8)	1.34 (34.0)	0.06 (1.65)	1.65 (42.0)	1.85 (47.0)
	VLD4MB-W32AVC		5.51 (140.0)	4.74 (120.5)	1.91 (48.5)	1.68 (42.7)	0.06 (1.65)	1.65 (42.0)	2.32 (59.0)
	VLD4MB-W40AVC		5.51 (140.0)	5.00 (127.0)	2.05 (52.0)	1.91 (48.6)	0.06 (1.65)	1.65 (42.0)	2.32 (59.0)
	VLD4MB-W50AVC		5.51 (140.0)	5.49 (139.5)	2.30 (58.5)	2.38 (60.5)	0.06 (1.65)	1.65 (42.0)	2.32 (59.0)
	VLD4MB-W65AVC		5.91 (150.0)	6.10 (155.0)	2.62 (66.5)	3.00 (76.3)	0.08 (2.1)	1.65 (42.0)	2.32 (59.0)
	VLD8MB-W15AVC	1/2" CVC Male	4.33 (110.0)	4.29 (109.0)	1.54 (39.0)	0.85 (21.7)	0.06 (1.65)	1.65 (42.0)	2.58 (65.5)
	VLD8MB-W25AVC		4.72 (120.0)	4.80 (122.0)	1.81 (46.1)	1.34 (34.0)	0.06 (1.65)	1.65 (42.0)	2.58 (65.5)
	VLD8MB-W32AVC		5.51 (140.0)	5.18 (131.5)	2.01 (51.0)	1.68 (42.7)	0.06 (1.65)	1.65 (42.0)	2.58 (65.5)
	VLD8MB-W40AVC		6.30 (160.0)	5.45 (138.5)	2.17 (55.0)	1.91 (48.6)	0.06 (1.65)	1.65 (42.0)	2.58 (65.5)
	VLD8MB-W50AVC		6.30 (160.0)	6.00 (152.5)	2.48 (63.0)	2.38 (60.5)	0.06 (1.65)	1.65 (42.0)	2.58 (65.5)
	VLD8MB-W65AVC		7.09 (180.0)	6.59 (167.5)	2.76 (70.0)	3.00 (76.3)	0.08 (2.1)	1.65 (42.0)	2.58 (65.5)

For dimensions other than the model dimensions, header production is possible by special order. Please consult a sales representative.