Ultra High Purity Valves

VALVE

Essential in semiconductor fabrication processes KITZ SCT's series of valves

Higher purity and high reliability are essential in the gas supply systems used in semiconductor fabrication processes

KITZ SCT's superclean valves (SCVs) are products that boast high reliability and high durability to meet the exact needs of our customers. The excellent features of the SCVs include improved gas exchange characteristics because of minimal internal capacity, better degassing characteristics due to the smaller surface area of the seat that comes into contact with gas, prevention of plastic expansion, and improved valve operation speed due to the use of aluminum in the piston.

KITZ-SCT supplies the high-grade model "KD series" and other products suited for a variety of uses with a high level of technological capabilities and abundant know-how.

KD (diaphragm valves)
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KD
Diaphragm Valve

The KD series realizes a high Cv value for compactly designed direct diaphragm valves. These valves are of the quality that they can handle the high-purity gases used in semiconductor production facilities, and they also have high durability and high corrosion resistance performance.

■ Features

◎ Excellent purge characteristic is realized by minimizing the internal volume to 1.2cm³ (1/4" Male CVC, Open) through reduction of vertical flow paths.
◎ Original wetted area seal mechanism enables highest sealing performance, durability, purge performance, and corrosion resistance.
◎ High corrosion resistance performance by carefully selected diaphragm materials and ultimately smallest individual differences based on KITZ SCT's original molding method realized high durability performance.
◎ Handles high-purity gases used with semiconductors and pursues particle performance to the ultimate degree by means of the highest-level production environment and polished inner surfaces.

■ Specifications

Size			KD2 (1/8")	KD4 (1/4")	KD8 (1/2")	KD12 (3/4")
Cv			0.04	0.27	0.7	1.7
Maximum Operating Pressure			142psig (0.98MPa(G))			
Wetted Area Volume			0.013in³ (0.22cm³)	0.083in³ (1.36cm³)	0.447in³ (7.3cm³)	2.11in³ (34.6cm³)
			Straight flow, CVC male, OPEN state			
Fluid Temperature	PCTFE		-10ºC~80ºC			
	PFA	Manual Valve	-10ºC~150ºC			
		Pneumatic Valve	-10ºC~120ºC (150ºC actual results 500,000 cycles)			
	PI		-10ºC~150ºC			
	Metal (body material)		-10ºC~200ºC		N/A	
Atmospheric Temperature			-10ºC~60ºC			
Leak Rates	Across the Seat He Leak Test Rates	PCTFE,PI,PFA	≤ 1×10^{-9} sccs (≤ 1×10^{-10}Pa·m³/sec)			
		Metal	≤ 1×10^{-9} sccs (≤ 1×10^{-10}Pa·m³/sec)		N/A	
	Inbord He Leak Test Rates		≤ 1×10^{-9} sccs (≤ 1×10^{-10}Pa·m³/sec)			
Actuation Pressure			58~101psig (0.4~0.7MPa(G))			
Cycle Life (N2 Charged, Own Test)	Manual Valve		100,000 cycles			30,000 cycles
	Pneumatic Valve		2 million cycles	4 million cycles		-

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

■ Product grade

Grade	STD	EP	SEP
Body Material	SUS316L		SUS316LE (Double melt material)
Surface Roughness	≤ Rz 3.2 μm	≤ Rz 0.7 μm	
Polish	Mechanical Polished	Electro Polished	
Cleaning	Degreasing + Precision cleaning		
Clean Room Environment	Class 10 (some products, Class 100)		
Packaging	Single bagged package	Double bagged package	

*SEP-316LE:1/8",1/4",3/8", 1/2" are available

■ Wetted area material

Body	SUS316L, SUS316LE (Double melt material)
Seat	PCTFE, PFA, PI, metal (body material)
Diaphragm	Cobalt alloy (3/4" size is SUS316L)

■ Precautions

① The valves are designed to be used under atmospheric pressure. Usage such as under vacuum vessels are not guranteed.
② For high temperature applications, please select appropriate material for air-fittings and tubes to assure proper performance.

Straight Type



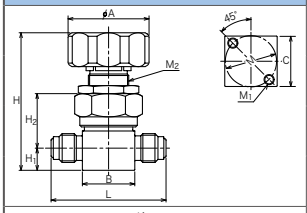
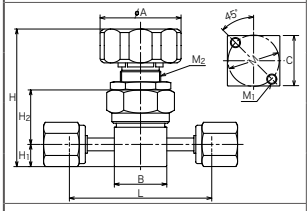
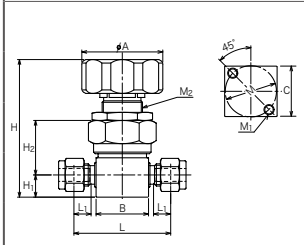
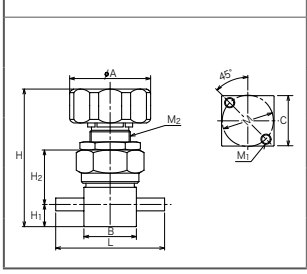
Product Code Table

Model	Size	Operation	Valve Shape		Connection	Seat Material		Handle Color (Options)		Grade + Body Material
KD	4	M	S	-	VF	C	-	RD	-	EP-316L
KD-type diaphragm valve	2:1/8" 4:1/4" 6:3/8" 8:1/2" 12:3/4"	270° manual	S: Straight A: Angle L: L-shape		V: CVC male VF: CVC female S: Compression W: Butt weld	C:PCTFE A:PFA P:PI M:Metal (body material) *1		Not shown: Blue (standard) RD: Red WH: White GR: Green PK: Pink SL: Silver YG: Yellow-green YE: Yellow OR: Orange BR: Brown PU: Purple BK: Black		STD-316L : Mechanical Polished+SUS316L EP-316L : Electro Polished+316L SEP-316L : Electro Polished+316LE *2

*1 For a metal seat, we can handle only 1/8" and 1/4" sizes. For details please ask to the sales representative.
*2 SEP-316LE: 1/8" , 1/4", 3/8", 1/2" are available

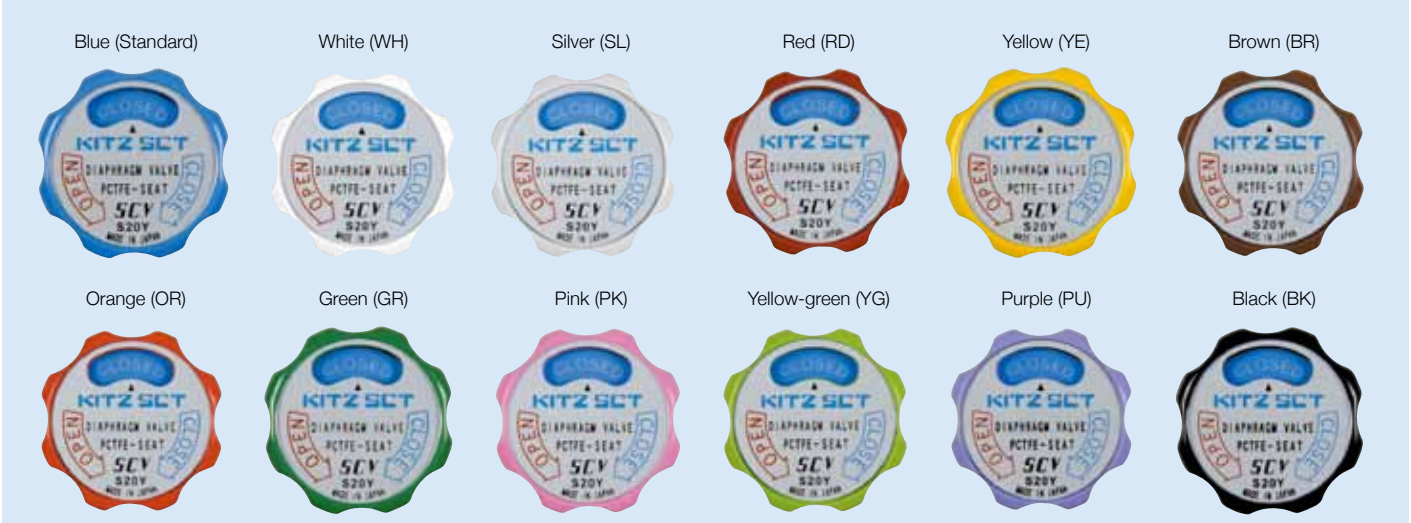
Dimensions

Unit: inch (mm)

Model	Type	Connection	L	L1*	H	H1	H2	A	B	C	M	M1	M2
	KD2MS-VC	1/8" CVC Male	1.61 (41.0)	-	2.24 (57.0)	0.28 (7.0)	0.85 (21.5)	0.94 (24.0)	0.75 (19.0)	0.75 (19.0)	0.67 (17.0)	2-M4 Depth 0.20 (5.0)	M14×1.0
	KD4MS-VC	1/4" CVC Male	2.24 (57.0)	-	2.68 (68.0)	0.43 (11.0)	1.06 (27.0)	1.65 (42.0)	1.02 (26.0)	0.98 (25.0)	1.00 (25.4)	2-M5 Depth 0.20 (5.0)	M20×1.0
	KD8MS-VC	1/2" CVC Male	3.03 (77.0)	-	3.19 (81.0)	0.63 (16.0)	1.42 (36.0)	1.65 (42.0)	1.42 (36.0)	1.42 (36.0)	1.10 (28.0)	2-M5 Depth 0.20 (5.0)	M20×1.0
	KD12MS-VC	3/4" CVC Male	4.21 (107.0)	-	3.86 (98.0)	0.91 (23.0)	-	1.65 (42.0)	1.89 (48.0)	1.81 (46.0)	1.38 (35.0)	2-M5 Depth 0.31 (8.0)	-
	KD2MS-VFC	1/8" CVC Female	2.20 (56.0)	-	2.24 (57.0)	0.28 (7.0)	0.85 (21.5)	0.94 (24.0)	0.75 (19.0)	0.75 (19.0)	0.67 (17.0)	2-M4 Depth 0.20 (5.0)	M14×1.0
	KD4MS-VFC	1/4" CVC Female	2.78 (70.6)	-	2.68 (68.0)	0.43 (11.0)	1.06 (27.0)	1.65 (42.0)	1.02 (26.0)	0.98 (25.0)	1.00 (25.4)	2-M5 Depth 0.20 (5.0)	M20×1.0
	KD8MS-VFC	1/2" CVC Female	3.27 (83.0)	-	3.19 (81.0)	0.63 (16.0)	1.42 (36.0)	1.65 (42.0)	1.42 (36.0)	1.42 (36.0)	1.10 (28.0)	2-M5 Depth 0.20 (5.0)	M20×1.0
	KD12MS-VFC	3/4" CVC Female	7.06 (179.2)	-	3.86 (98.0)	0.91 (23.0)	-	1.65 (42.0)	1.89 (48.0)	1.81 (46.0)	1.38 (35.0)	2-M5 Depth 0.31 (8.0)	-
	KD2MS-SC	1/8" Compression Fitting	3.06 (77.8)	0.24 (6.1)	2.24 (57.0)	0.28 (7.0)	0.85 (21.5)	0.94 (24.0)	0.75 (19.0)	0.75 (19.0)	0.67 (17.0)	2-M4 Depth 0.20 (5.0)	M14×1.0
	KD4MS-SC	1/4" Compression Fitting	1.89 (48.0)	0.31 (7.9)	2.68 (68.0)	0.43 (11.0)	1.06 (27.0)	1.65 (42.0)	1.02 (26.0)	0.98 (25.0)	1.00 (25.4)	2-M5 Depth 0.20 (5.0)	M20×1.0
	KD6MS-SC	3/8" Compression Fitting	2.52 (64.0)	0.37 (9.5)	3.19 (81.0)	0.63 (16.0)	1.42 (36.0)	1.65 (42.0)	1.42 (36.0)	1.42 (36.0)	1.10 (28.0)	2-M5 Depth 5 0.20 (5.0)	M20×1.0
	KD8MS-SC	1/2" Compression Fitting	2.52 (64.0)	0.50 (12.7)	3.19 (81.0)	0.63 (16.0)	1.42 (36.0)	1.65 (42.0)	1.42 (36.0)	1.42 (36.0)	1.10 (28.0)	2-M5 Depth 0.20 (5.0)	M20×1.0
	KD12MS-SC	3/4" Compression Fitting	4.96 (126.0)	0.56 (14.3)	3.86 (98.0)	0.91 (23.0)	-	1.65 (42.0)	1.89 (48.0)	1.81 (46.0)	1.38 (35.0)	2-M5 Depth 0.31 (8.0)	-
	KD2MS-WC	1/8" Butt Weld	1.65 (42.0)	-	2.24 (57.0)	0.28 (7.0)	0.85 (21.5)	0.94 (24.0)	0.75 (19.0)	0.75 (19.0)	0.67 (17.0)	2-M4 Depth 0.20 (5.0)	M14×1.0
	KD4MS-WC	1/4" Butt Weld	2.13 (54.0)	-	2.68 (68.0)	0.43 (11.0)	1.06 (27.0)	1.65 (42.0)	1.02 (26.0)	0.98 (25.0)	1.0 (25.4)	2-M5 Depth 0.20 (5.0)	M20×1.0
	KD6MS-WC	3/8" Butt Weld	2.72 (69.0)	-	3.19 (81.0)	0.63 (16.0)	1.42 (36.0)	1.65 (42.0)	1.42 (36.0)	1.42 (36.0)	1.10 (28.0)	2-M5 Depth 0.20 (5.0)	M20×1.0
	KD8MS-WC	1/2" Butt Weld	2.72 (69.0)	-	3.19 (81.0)	0.63 (16.0)	1.42 (36.0)	1.65 (42.0)	1.42 (36.0)	1.42 (36.0)	1.10 (28.0)	2-M5 Depth 0.20 (5.0)	M20×1.0
	KD12MS-WC	3/4" Butt Weld	6.14 (156.0)	-	3.86 (98.0)	0.91 (23.0)	-	1.65 (42.0)	1.89 (48.0)	1.81 (46.0)	1.38 (35.0)	2-M5 Depth 0.31 (8.0)	-

* L1 dimension for compression fitting is the dimension of how far tube inserted from end of body.

Handle Color





Product Code Table

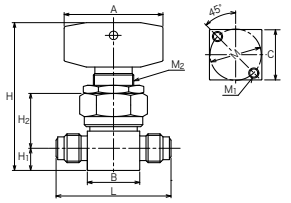
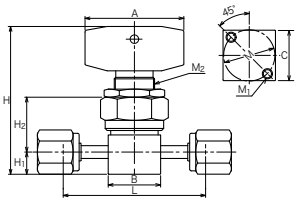
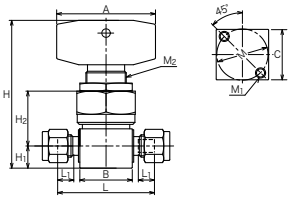
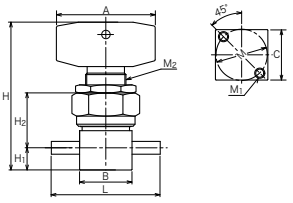
Options

Model	Size	Operation	Valve shape	Connection	Seat material	Handle type	Handle color	Grade + Body material
KD	4	Q	S	VF	C	□	RD	EP-316L
KD-type diaphragm valve	2:1/8" 4:1/4" 6:3/8" 8:1/2"	90° manual	S: Straight A: Angle L: L-shape	V: CVC male VF: CVC female S: Compression W.: Butt weld	C:PCTFE A:PFA P:PI M.: Metal (body material) *1	Not shown: Standard POC: Push-lock type	Not shown: Blue (standard) BK: Black GR: Green RD: Red SL: Silver WH: White YE: Yellow	STD-316L: Mechanical Polished +SUS316L EP-316L : Electro Polished + SUS316L SEP-316LE : Electro Polished +SUS316LE

*1 For a metal seat, we can handle only 1/8" and 1/4" sizes. For details please ask the sales and service representative.

Dimensions

Unit: inch (mm)

Model	Type	Connection	L	L_1*	H	H_1	H_2	A	B	C	M	M_1	M_2
	KD2QS-VC	1/8" CVC Male	1.61 (41.0)	-	2.28 (58.0)	0.28 (7.0)	0.85 (21.5)	1.46 (37.0)	0.75 (19.0)	0.75 (19.0)	0.67 (17.0)	2-M4 Depth 0.20 (5.0)	M14×1.0
	KD4QS-VC	1/4" CVC Male	2.24 (57.0)	-	2.87 (73.0)	0.43 (11.0)	1.06 (27.0)	1.93 (49.0)	1.02 (26.0)	0.98 (25.0)	1.00 (25.4)	2-M5 Depth 0.20 (5.0)	M20×1.0
	KD8QS-VC	1/2" CVC Male	3.03 (77.0)	-	3.39 (86.0)	0.63 (16.0)	1.32 (33.5)	1.93 (49.0)	1.42 (36.0)	1.42 (36.0)	1.10 (28.0)	2-M5 Depth 0.20 (5.0)	M20×1.0
	KD2QS-VFC	1/8" CVC Female	2.20 (56.0)	-	2.28 (58.0)	0.28 (7.0)	0.85 (21.5)	1.46 (37.0)	0.75 (19.0)	0.75 (19.0)	0.67 (17.0)	2-M4 Depth 0.20 (5.0)	M14×1.0
	KD4QS-VFC	1/4" CVC Female	2.78 (70.6)	-	2.87 (73.0)	0.43 (11.0)	1.06 (27.0)	1.93 (49.0)	1.02 (26.0)	0.98 (25.0)	1.00 (25.4)	2-M5 Depth 0.20 (5.0)	M20×1.0
	KD8QS-VFC	1/2" CVC Female	3.27 (83.0)	-	3.39 (86.0)	0.63 (16.0)	1.32 (33.5)	1.93 (49.0)	1.42 (36.0)	1.42 (36.0)	1.10 (28.0)	2-M5 Depth 0.20 (5.0)	M20×1.0
	KD2QS-SC	1/8" compression	3.06 (77.8)	0.24 (6.1)	2.28 (58.0)	0.28 (7.0)	0.85 (21.5)	1.46 (37.0)	0.75 (19.0)	0.75 (19.0)	0.67 (17.0)	2-M4 Depth 0.20 (5.0)	M14×1.0
	KD4QS-SC	1/4" compression	1.89 (48.0)	0.31 (7.9)	2.87 (73.0)	0.43 (11.0)	1.06 (27.0)	1.93 (49.0)	1.02 (26.0)	0.98 (25.0)	1.00 (25.4)	2-M5 Depth 0.20 (5.0)	M20×1.0
	KD6QS-SC	3/8" compression	2.52 (64.0)	0.37 (9.5)	3.39 (86.0)	0.63 (16.0)	1.32 (33.5)	1.93 (49.0)	1.42 (36.0)	1.42 (36.0)	1.10 (28.0)	2-M5 Depth 0.20 (5.0)	M20×1.0
	KD8QS-SC	1/2" compression	2.52 (64.0)	0.50 (12.7)	3.39 (86.0)	0.63 (16.0)	1.32 (33.5)	1.93 (49.0)	1.42 (36.0)	1.42 (36.0)	1.10 (28.0)	2-M5 Depth 0.20 (5.0)	M20×1.0
	KD2QS-WC	1/8" Butt Weld	1.65 (42.0)	-	2.28 (58.0)	0.28 (7.0)	0.85 (21.5)	1.46 (37.0)	0.75 (19.0)	0.75 (19.0)	0.67 (17.0)	2-M4 Depth 0.20 (5.0)	M14×1.0
	KD4QS-WC	1/4" Butt Weld	2.13 (54.0)	-	2.87 (73.0)	0.43 (11.0)	1.06 (27.0)	1.93 (49.0)	1.02 (26.0)	0.98 (25.0)	1.00 (25.4)	2-M5 Depth 0.20 (5.0)	M20×1.0
	KD6QS-WC	3/8" Butt Weld	2.72 (69.0)	-	3.39 (86.0)	0.63 (16.0)	1.32 (33.5)	1.93 (49.0)	1.42 (36.0)	1.42 (36.0)	1.10 (28.0)	2-M5 Depth 0.20 (5.0)	M20×1.0
	KD8QS-WC	1/2" Butt Weld	2.72 (69.0)	-	3.39 (86.0)	0.63 (16.0)	1.32 (33.5)	1.93 (49.0)	1.42 (36.0)	1.42 (36.0)	1.10 (28.0)	2-M5 Depth 0.20 (5.0)	M20×1.0

* L_1 dimension for compression fitting is the dimension of how far tube inserted from end of body.



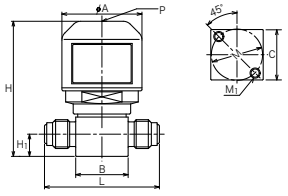
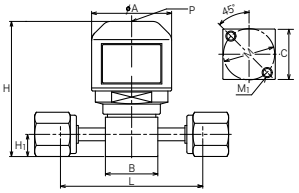
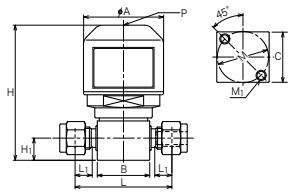
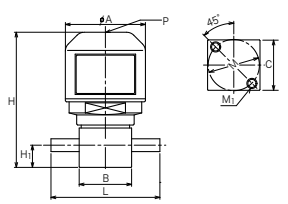
Product Code Table

Model	Size	Operation	Valve shape		Connection	Seat material	Options		Grade + Body material
KD	4	C	S	-	VF	C	□	-	EP-316L
KD-type diaphragm valve	2:1/8" 4:1/4" 6:3/8" 8:1/2" 12:3/4"	C: Normally closed O: Normally open	S: Straight A: Angle L: L-shape		V: CVC male VF: CVC female S: Compression W.: Butt weld	C:PCTFE A:PFA P:PI M.: Metal (body material) *1	Not shown: Standard S: With open/close sensor		STD-316L: Mechanical Polished + SUS316L EP-316L : Electro Polished + SUS316L SEP-316LE : Electro Polished +SUS316LE *2

*1 For a metal seat, we can handle only 1/8" and 1/4" sizes. For details please ask to the sales representative.
*2 SEP-316LE: 1/8" , 1/4", 3/8", 1/2" are available

Dimensions

Unit: inch (mm)

Model	Type	Connection	L	L1*	H	H1	A	B	C	P	M	M1
	KD2□S-VC	1/8" CVC Male	1.61 (41.0)	-	2.09 (53.0)	0.28 (7.0)	1.10 (28.0)	0.75 (19.0)	0.75 (19.0)	Rc1/8	0.67 (17.0)	2-M4 Depth 0.20 (5.0)
	KD4□S-VC	1/4" CVC Male	2.24 (57.0)	-	2.64 (67.0)	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)
	KD8CS-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)
	KD8OS-VC		3.03 (77.0)	-	3.03 (77.0)	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)
	KD12CS-VC	3/4" CVC Male	4.21 (107.0)	-	5.83 (148.0)	0.91 (23.0)	3.35 (85.0)	1.89 (48.0)	1.81 (46.0)	Rc1/8	1.38 (35.0)	2-M5 Depth 0.31 (8.0)
	KD12OS-VC		4.21 (107.0)	-	5.63 (143.0)	0.91 (23.0)	3.35 (85.0)	1.89 (48.0)	1.81 (46.0)	Rc1/8	1.38 (35.0)	2-M5 Depth 0.31 (8.0)
	KD2□S-VFC	1/8" CVC Female	2.20 (56.0)	-	2.09 (53.0)	0.28 (7.0)	1.10 (28.0)	0.75 (19.0)	0.75 (19.0)	Rc1/8	0.67 (17.0)	2-M4 Depth 0.20 (5.0)
	KD4□S-VFC	1/4" CVC Female	2.78 (70.6)	-	2.64 (67.0)	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)
	KD8CS-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)
	KD8OS-VFC		3.27 (83.0)	-	3.03 (77.0)	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)
	KD12CS-VFC	3/4" CVC Female	7.06 (179.2)	-	5.83 (148.0)	0.91 (23.0)	3.35 (85.0)	1.89 (48.0)	1.81 (46.0)	Rc1/8	1.38 (35.0)	2-M5 Depth 0.31 (8.0)
	KD12OS-VFC		7.06 (179.2)	-	5.63 (143.0)	0.91 (23.0)	3.35 (85.0)	1.89 (48.0)	1.81 (46.0)	Rc1/8	1.38 (35.0)	2-M5 Depth 0.31 (8.0)
	KD2□S-SC	1/8" compression	3.06 (77.8)	0.24 (6.1)	2.09 (53.0)	0.28 (7.0)	1.10 (28.0)	0.75 (19.0)	0.75 (19.0)	Rc1/8	0.67 (17.0)	2-M4 Depth 0.20 (5.0)
	KD4□S-SC	1/4" compression	1.89 (48.0)	0.31 (7.9)	2.64 (67.0)	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)
	KD6CS-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)
	KD6OS-SC		2.52 (64.0)	0.37 (9.5)	3.03 (77.0)	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)
	KD8CS-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)
	KD8OS-SC		2.52 (64.0)	0.50 (12.7)	3.03 (77.0)	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)
	KD12CS-SC	3/4" compression	4.96 (126.0)	0.56 (14.3)	5.83 (148.0)	0.91 (23.0)	3.35 (85.0)	1.89 (48.0)	1.81 (46.0)	Rc1/8	1.38 (35.0)	2-M5 Depth 0.31 (8.0)
	KD12OS-SC		4.96 (126.0)	0.56 (14.3)	5.63 (143.0)	0.91 (23.0)	3.35 (85.0)	1.89 (48.0)	1.81 (46.0)	Rc1/8	1.38 (35.0)	2-M5 Depth 0.31 (8.0)
	KD2□S-WC	1/8" Butt Weld	1.65 (42.0)	-	2.09 (53.0)	0.28 (7.0)	1.10 (28.0)	0.75 (19.0)	0.75 (19.0)	Rc1/8	0.67 (17.0)	2-M4 Depth 0.20 (5.0)
	KD4□S-WC	1/4" Butt Weld	2.13 (54.0)	-	2.64 (67.0)	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)
	KD6CS-WC	3/8" Butt Weld	2.72 (69.0)	-	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)
	KD6OS-WC		2.72 (69.0)	-	3.03 (77.0)	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)
	KD8CS-WC	1/2" Butt Weld	2.72 (69.0)	-	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)
	KD8OS-WC		2.72 (69.0)	-	3.03 (77.0)	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)
	KD12CS-WC	3/4" Butt Weld	6.14 (156.0)	-	5.83 (148.0)	0.91 (23.0)	3.35 (85.0)	1.89 (48.0)	1.81 (46.0)	Rc1/8	1.38 (35.0)	2-M5 Depth 0.31 (8.0)
	KD12OS-WC		6.14 (156.0)	-	5.63 (143.0)	0.91 (23.0)	3.35 (85.0)	1.89 (48.0)	1.81 (46.0)	Rc1/8	1.38 (35.0)	2-M5 Depth 0.31 (8.0)

* L1 dimension for compression fitting is the dimension of how far tube inserted from end of body.

Branch



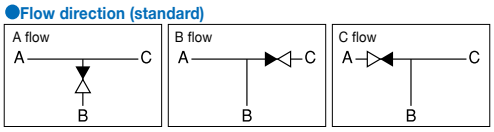
Product Code Table

Options

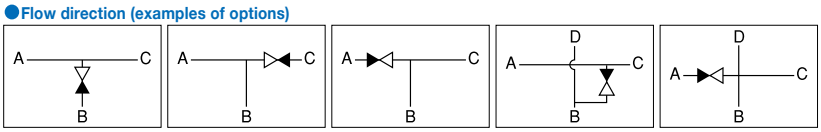
Model	Size	Operation	Valve shape	Connection	Seat material	Flow	Handle color	Grade + Body material
KD	4	M	B	VF	C	A	RD	EP-316L
KD-type diaphragm valve	2:1/8" 4:1/4" 6:3/8" 8:1/2"	270°manual	B: Branch *4	V: CVC male VF: CVC female W.: Butt weld *3	C:PCTFE A:PFA P:PI M.: Metal (body material) *1	A: A flow B: B flow C: C flow *2	Not shown: Blue (standard) RD: Red WH: White GR: Green PK: Pink SL: Silver YG: Yellow-green BK: Black OR: Orange YE: Yellow PU: Purple BR: Brown	STD-316L : Mechanical Polished+SUS316L EP-316L : Electro Polished + SUS316L SEP-316LE : Electro Polished +SUS316LE

*1 For a metal seat, we can handle only the 1/8" and 1/4" sizes. For details please speak with the sales representative.
*2 The branched flow type is to the right of the diagram.
*3 In cases where there are different types of fittings, please note them in the order of Port A, B, and C of the internal flow in the diagram to the right.
Example) In the case where A port = CVC female, B port = CVC female, C port = CVC male, the model will be "VFVFV."
*4 We also can produce non-standard branched flow and four-way valves as options.

Flow direction (standard)

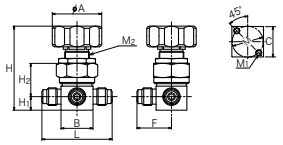
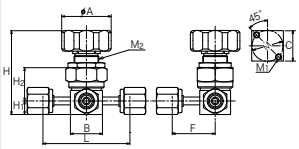
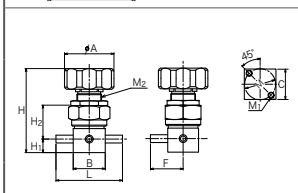


Flow direction (examples of options)



Dimension

Unit: inch (mm)

Model	Type	Connection	L	H	H_1	H_2	A	B	C	F	M	M_1	M_2
	KD2MB-VC	1/8" CVC Male	1.61 (41.0)	2.24 (57.0)	0.28 (7.0)	0.85 (21.5)	0.94 (24.0)	0.75 (19.0)	0.75 (19.0)	0.81 (20.5)	0.67 (17.0)	2-M4 Depth 0.20 (5.0)	M14×1.0
	KD4MB-VC	1/4" CVC Male	2.24 (57.0)	2.68 (68.0)	0.43 (11.0)	1.06 (27.0)	1.65 (42.0)	1.02 (26.0)	0.98 (25.0)	1.10 (28.0)	1.00 (25.4)	2-M5 Depth 0.20 (5.0)	M20×1.0
	KD8MB-VC	1/2" CVC Male	3.03 (77.0)	3.19 (81.0)	0.63 (16.0)	1.42 (36.0)	1.65 (42.0)	1.42 (36.0)	1.42 (36.0)	1.52 (38.5)	1.10 (28.0)	2-M5 Depth 0.20 (5.0)	M20×1.0
	KD2MB-VFC	1/8" CVC Female	2.20 (56.0)	2.24 (57.0)	0.28 (7.0)	0.85 (21.5)	0.94 (24.0)	0.75 (19.0)	0.75 (19.0)	1.10 (28.0)	0.67 (17.0)	2-M4 Depth 0.20 (5.0)	M14×1.0
	KD4MB-VFC	1/4" CVC Female	2.78 (70.6)	2.68 (68.0)	0.43 (11.0)	1.06 (27.0)	1.65 (42.0)	1.02 (26.0)	0.98 (25.0)	1.37 (34.8)	1.00 (25.4)	2-M5 Depth 0.20 (5.0)	M20×1.0
	KD8MB-VFC	1/2" CVC Female	3.27 (83.0)	3.19 (81.0)	0.63 (16.0)	1.42 (36.0)	1.65 (42.0)	1.42 (36.0)	1.42 (36.0)	1.63 (41.5)	1.10 (28.0)	2-M5 Depth 0.20 (5.0)	M20×1.0
	KD2MB-WC	1/8" Butt Weld	1.65 (42.0)	2.24 (57.0)	0.28 (7.0)	0.85 (21.5)	0.94 (24.0)	0.75 (19.0)	0.75 (19.0)	0.83 (21.0)	0.67 (17.0)	2-M4 Depth 0.20 (5.0)	M14×1.0
	KD4MB-WC	1/4" Butt Weld	2.13 (54.0)	2.68 (68.0)	0.43 (11.0)	1.06 (27.0)	1.65 (42.0)	1.02 (26.0)	0.98 (25.0)	1.04 (26.5)	1.00 (25.4)	2-M5 Depth 0.20 (5.0)	M20×1.0
	KD6MB-WC	3/8" Butt Weld	2.72 (69.0)	3.19 (81.0)	0.63 (16.0)	1.42 (36.0)	1.65 (42.0)	1.42 (36.0)	1.42 (36.0)	1.36 (34.5)	1.10 (28.0)	2-M5 Depth 0.20 (5.0)	M20×1.0
	KD8MB-WC	1/2" Butt Weld	2.72 (69.0)	3.19 (81.0)	0.63 (16.0)	1.42 (36.0)	1.65 (42.0)	1.42 (36.0)	1.42 (36.0)	1.36 (34.5)	1.10 (28.0)	2-M5 Depth 0.20 (5.0)	M20×1.0



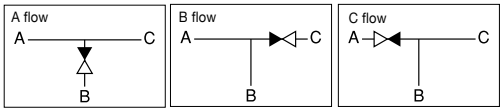
Product Code Table

Options

Model	Size	Operation	Valve shape	Connection	Seat material	Flow	Handle type	Handle color	Grade + Body material
KD	4	Q	B	VF	C	A	□	RD	EP-316L
KD-type diaphragm valve	2:1/8" 4:1/4" 6:3/8" 8:1/2"	90° manual	B: Branch	V: CVC male VF: CVC female W.: Butt weld *3	C:PCTFE A:PFA P:PI M.: Metal (body material) *1	A: A flow B: B flow C: C flow *2	Not shown: Standard POC: Push-lock type	Not shown: Blue (standard) BK: Black SL: Silver GR: Green WH: White RD: Red YE: Yellow	STD-316L : Mechanical Polished+SUS316L EP-316L : Electro Polished + SUS316L SEP-316LE : Electro Polished + SUS316LE

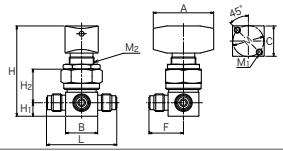
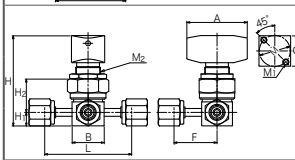
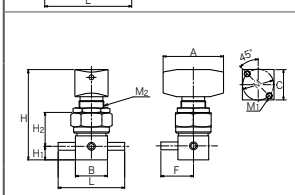
*1 For a metal seat, we can handle only the 1/4" size. For details please ask to the sales representative.
*2 The branched flow type is to the right of the diagram.
*3 In cases where there are different types of fittings, please note them in the order of Port A, B, and C of the internal flow in the diagram to the right.
Example) In the case where A port = CVC female, B port = CVC female, C port = CVC male, the model will be "VFVFV."

Flow direction



Dimensions

Unit: inch (mm)

Model	Type	Connection	L	H	H_1	H_2	A	B	C	F	M	M_1	M_2
	KD2QB-VC	1/8" CVC Male	1.61 (41.0)	2.28 (58.0)	0.28 (7.0)	0.85 (21.5)	1.46 (37.0)	0.75 (19.0)	0.75 (19.0)	0.81 (20.5)	0.67 (17.0)	2-M4 Depth 0.20 (5.0)	M14×1.0
	KD4QB-VC	1/4" CVC Male	2.24 (57.0)	2.87 (73.0)	0.43 (11.0)	1.06 (27.0)	1.93 (49.0)	1.02 (26.0)	0.98 (25.0)	1.10 (28.0)	1.00 (25.4)	2-M5 Depth 0.20 (5.0)	M20×1.0
	KD8QB-VC	1/2" CVC Male	3.03 (77.0)	3.39 (86.0)	0.63 (16.0)	1.32 (33.5)	1.93 (49.0)	1.42 (36.0)	1.42 (36.0)	1.52 (38.5)	1.10 (28.0)	2-M5 Depth 0.20 (5.0)	M20×1.0
	KD2QB-VFC	1/8" CVC Female	2.20 (56.0)	2.28 (58.0)	0.28 (7.0)	0.85 (21.5)	1.46 (37.0)	0.75 (19.0)	0.75 (19.0)	1.10 (28.0)	0.67 (17.0)	2-M4 Depth 0.20 (5.0)	M14×1.0
	KD4QB-VFC	1/4" CVC Female	2.78 (70.6)	2.87 (73.0)	0.43 (11.0)	1.06 (27.0)	1.93 (49.0)	1.02 (26.0)	0.98 (25.0)	1.37 (34.8)	1.00 (25.4)	2-M5 Depth 0.20 (5.0)	M20×1.0
	KD8QB-VFC	1/2" CVC Female	3.27 (83.0)	3.39 (86.0)	0.63 (16.0)	1.32 (33.5)	1.93 (49.0)	1.42 (36.0)	1.42 (36.0)	1.63 (41.5)	1.10 (28.0)	2-M5 Depth 0.20 (5.0)	M20×1.0
	KD2QB-WC	1/8" Butt Weld	1.65 (42.0)	2.28 (58.0)	0.28 (7.0)	0.85 (21.5)	1.46 (37.0)	0.75 (19.0)	0.75 (19.0)	0.83 (21.0)	0.67 (17.0)	2-M4 Depth 0.20 (5.0)	M14×1.0
	KD4QB-WC	1/4" Butt Weld	2.13 (54.0)	2.87 (73.0)	0.43 (11.0)	1.06 (27.0)	1.93 (49.0)	1.02 (26.0)	0.98 (25.0)	1.06 (27.0)	1.00 (25.4)	2-M5 Depth 0.20 (5.0)	M20×1.0
	KD6QB-WC	3/8" Butt Weld	2.72 (69.0)	3.39 (86.0)	0.63 (16.0)	1.32 (33.5)	1.93 (49.0)	1.42 (36.0)	1.42 (36.0)	1.36 (34.5)	1.10 (28.0)	2-M5 Depth 0.20 (5.0)	M20×1.0
	KD8QB-WC	1/2" Butt Weld	2.72 (69.0)	3.39 (86.0)	0.63 (16.0)	1.32 (33.5)	1.93 (49.0)	1.42 (36.0)	1.42 (36.0)	1.36 (34.5)	1.10 (28.0)	2-M5 Depth 0.20 (5.0)	M20×1.0



Product Code Table

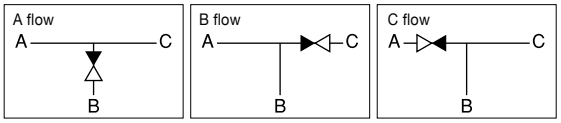
Model	Size	Operation	Valve shape	Connection	Seat material	Flow	Options	Grade + Body material
KD	4	C	B	VF	C	A	□	EP-316L
KD-type diaphragm valve	2:1/8" 4:1/4" 6:3/8" 8:1/2"	C: Normally closed O: Normally open	B: Branched flow	V: CVC male VF: CVC female W.: Butt weld *3	C:PCTFE A:PFA P:PI M.: Metal (body material) *1	A: A flow B: B flow C: C flow *2	Not shown: Standard S: With open/close sensor	STD-316L : Mechanical Polished + SUS316L EP-316L : Electro Polished + SUS316L SEP-316LE : Electro Polished + SUS316LE

*1 For a metal seat, we can handle only the 1/8"and the 1/4" size. For details please speak with the sales representative.

*2 The branched flow type is to the right of the diagram.

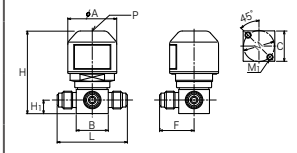
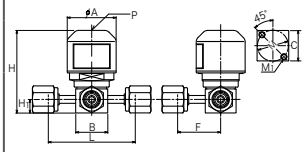
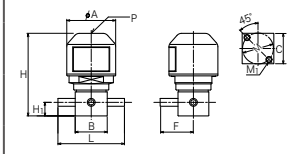
*3 In cases where there are different types of fittings, please note them in the order of Port A, B, and C of the internal flow in the diagram to the right.
Example) In the case where A port = CVC female, B port = CVC female, C port = CVC male, the model will be "VFVFV."

Flow direction



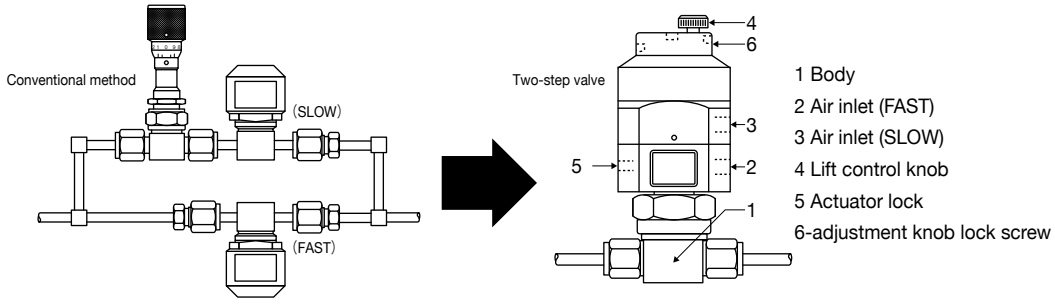
Dimentions

Unit: inch (mm)

Model	Type	Connection	L	H	H_1	A	B	C	F	P	M	M_1
	KD2□B-VC	1/8" CVC Male	1.61 (41.0)	2.09 (53.0)	0.28 (7.0)	1.10 (28.0)	0.75 (19.0)	0.75 (19.0)	0.81 (20.5)	Rc1/8	0.67 (17.0)	2-M4 Depth 0.20 (5.0)
	KD4□B-VC	1/4" CVC Male	2.24 (57.0)	2.64 (67.0)	0.43 (11.0)	1.56 (39.7)	1.02 (26.0)	0.98 (25.0)	1.10 (28.0)	Rc1/8	1.00 (25.4)	2-M5 Depth 0.20 (5.0)
	KD8CB-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)	1.52 (38.5)	Rc1/8	1.10 (28.0)	2-M5 Depth 0.20 (5.0)
	KD8OB-VC		3.03 (77.0)	3.03 (77.0)	0.63 (16.0)	2.17 (55.0)	1.42 (36.0)	1.42 (36.0)	1.52 (38.5)	Rc1/8	1.10 (28.0)	2-M5 Depth 0.20 (5.0)
	KD2□B-VFC	1/8" CVC Female	2.20 (56.0)	2.09 (53.0)	0.28 (7.0)	1.10 (28.0)	0.75 (19.0)	0.75 (19.0)	1.10 (28.0)	Rc1/8	0.67 (17.0)	2-M4 Depth 0.20 (5.0)
	KD4□B-VFC	1/4" CVC Female	2.78 (70.6)	2.64 (67.0)	0.43 (11.0)	1.56 (39.7)	1.02 (26.0)	0.98 (25.0)	1.37 (34.8)	Rc1/8	1.00 (25.4)	2-M5 Depth 0.20 (5.0)
	KD8CB-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)	1.63 (41.5)	Rc1/8	1.10 (28.0)	2-M5 Depth 0.20 (5.0)
	KD8OB-VFC		3.27 (83.0)	3.03 (77.0)	0.63 (16.0)	2.17 (55.0)	1.42 (36.0)	1.42 (36.0)	1.63 (41.5)	Rc1/8	1.10 (28.0)	2-M5 Depth 0.20 (5.0)
	KD2□B-WC	1/8" Butt Weld	1.65 (42.0)	2.09 (53.0)	0.28 (7.0)	1.10 (28.0)	0.75 (19.0)	0.75 (19.0)	0.83 (21.0)	Rc1/8	0.67 (17.0)	2-M4 Depth 0.20 (5.0)
	KD4□B-WC	1/4" Butt Weld	2.13 (54.0)	2.64 (67.0)	0.43 (11.0)	1.56 (39.7)	1.02 (26.0)	0.98 (25.0)	1.06 (27.0)	Rc1/8	1.00 (25.4)	2-M5 Depth 0.20 (5.0)
	KD6CB-WC	3/8" Butt Weld	2.72 (69.0)	3.31 (84.0)	0.63 (16.0)	2.17 (55.0)	1.42 (36.0)	1.42 (36.0)	1.36 (34.5)	Rc1/8	1.10 (28.0)	2-M5 Depth 0.20 (5.0)
	KD6OB-WC		2.72 (69.0)	3.03 (77.0)	0.63 (16.0)	2.17 (55.0)	1.42 (36.0)	1.42 (36.0)	1.36 (34.5)	Rc1/8	1.10 (28.0)	2-M5 Depth 0.20 (5.0)
	KD8CB-WC	1/2" Butt Weld	2.72 (69.0)	3.31 (84.0)	0.63 (16.0)	2.17 (55.0)	1.42 (36.0)	1.42 (36.0)	1.36 (34.5)	Rc1/8	1.10 (28.0)	2-M5 Depth 0.20 (5.0)
	KD8OB-WC		2.72 (69.0)	3.03 (77.0)	0.63 (16.0)	2.17 (55.0)	1.42 (36.0)	1.42 (36.0)	1.36 (34.5)	Rc1/8	1.10 (28.0)	2-M5 Depth 0.20 (5.0)

Two-step Valve

■ Comparison with conventional methods



6-adjustment knob lock screw
(Recommended tightening torque: 0.3N·m)

■ Features

◎ An epoch-making combination valve that enables manual flow control and fully on/fully off two-stage control by means of an air actuator.
◎ The control of the fluid by means of a diaphragm rather than a needle realizes a particle free valve and speedy gas supply.
◎ Significant cost savings and space savings are possible by eliminating bypass pipings and control instrumentation required for conventional systems.
◎ The optimal Cv value for the usage objectives can be set arbitrarily.

■ Precautions

① In cases where the pressure inside the valve is lower than atmospheric pressure, micro-adjustments of the Cv value may be difficult. Set the Cv value under the same conditions as those of actual usage.
② Flow rates outside the adjustment range will not be reproducible.
③ The valves are designed to be used under atmospheric pressure. Usage such as under vacuum vessels are not guranteed.
④ For high temperature applications, please select appropriate material for air-fittings and tubes to assure proper performance.

■ Specifications

Size		KD4T (1/4")	KD8T (1/2")
Cv		Adjustment range: 0.02-0.12, when fully open: 0.27	Adjustment range: 0.05-0.26, when fully open: 0.7
Maximum Operating Pressure		0.98MPa (G)	
Wetted Area Volume		0.083in³ (1.36cm³)	0.447in³ (7.3cm³)
		Straight flow, CVC male, OPEN state	
Fluid Temperature	PCTFE	-10ºC~80ºC (when open)	
	PFA	-10°C~120°C (150°C actual results 500,000 cycles)	
	PI	-10ºC~150ºC	
Atmospheric Temperature		-10ºC~60ºC	
Leak Rates	Across the Seat He Leak Test Rates	≤ 1×10^{-9} sccs (≤ 1×10^{-10}Pa·m³/sec)	
	Inbord He Leak Test Rates	≤ 1×10^{-9} sccs (≤ 1×10^{-10}Pa·m³/sec)	
Actuation Pressure		0.4~0.7MPa (G)	
Cycle Life (N2 Charged, Own Test)		2 million cycles	

■ Product Grade

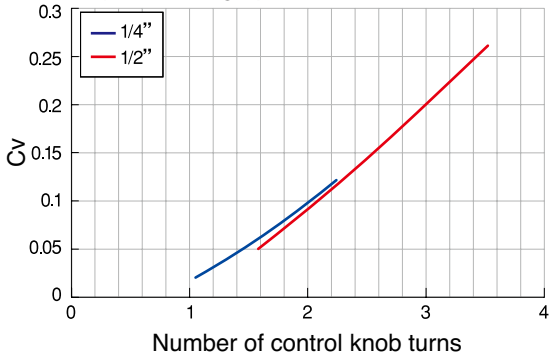
Grade	STD	EP	SEP
Body Material	SUS316L		SUS316LE (Double melt material)
Surface Roughness	≤ Rz 3.2 μm	≤ Rz 0.7 μm	
Polish	Mechanical Polished	Electro Polished	
Cleaning	Degreasing + Precision cleaning		
Clear Room Environment	Class 10 (some products, Class 100)		
Packaging	Single bagged package	Double bagged package	

■ Wetted Area Material

Body	SUS316L, SUS316LE (Vacuum double melt material)
Seat	PCTFE, PFA, PI
Diaphragm	Cobalt alloy

Precautions:
Two-step valves have a structure that controls the flow by adjusting the lift amount of the on/off valve of the diaphragm so that the usage conditions may cause the pre-set flow to change.

Two-step valve Cv graph (reference values)



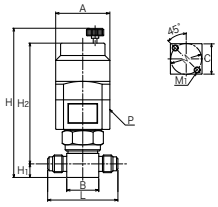
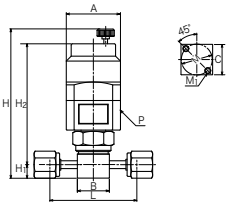


Product Code Table

Model	Size	Operation	Valve shape	Connection	Seat material		Grade + Body material
KD	4	T	S	V	C	-	EP-316L
KD-type diaphragm valve	4:1/4" 8:1/2"	Two-step	S: Straight A: Angle (Option) B: Branch (Option)	V: CVC male VF: CVC female	C:PCTFE A:PFA P:PI		STD-316L : Mechanical Polished + SUS316L EP-316L : Electro Polished + SUS316L SEP-316LE : Electro Polished + SUS316LE

Dimentions

Unit: inch (mm)

Model	Type	Connection	L	H	H_1	H_2	A	B	C	P	M	M_1
	KD4TS-VC	1/4" CVC Male	2.24 (57.0)	4.76 (121.0)	0.43 (11.0)	3.86 (98.0)	1.73 (44.0)	1.02 (26.0)	0.98 (25.0)	2-Rc1/8	1.00 (25.4)	2-M5 Depth 0.20 (5.0)
	KD8TS-VC	1/2" CVC Male	3.03 (77.0)	5.57 (141.5)	0.63 (16.0)	4.47 (113.5)	2.28 (58.0)	1.42 (36.0)	1.42 (36.0)	2-Rc1/8	1.10 (28.0)	2-M5 Depth 0.20 (5.0)
	KD4TS-VFC	1/4" CVC Female	2.78 (70.6)	4.76 (121.0)	0.43 (11.0)	3.86 (98.0)	1.73 (44.0)	1.02 (26.0)	0.98 (25.0)	2-Rc1/8	1.00 (25.4)	2-M5 Depth 0.20 (5.0)
	KD8TS-VFC	1/2" CVC Female	3.27 (83.0)	5.57 (141.5)	0.63 (16.0)	4.47 (113.5)	2.28 (58.0)	1.42 (36.0)	1.42 (36.0)	2-Rc1/8	1.10 (28.0)	2-M5 Depth 0.20 (5.0)

* The air supply inlet is on the backside of the illustration.

High-temperature Valve (250°)

■ Features

◎ All metal components of the valve enable use at 250°C.
◎ KITZ SCT's design minimizes sharp drops in the Cv value in a high temperature environment and realizes high performance, a compact size, and a low price.
◎ Because all of the component parts of the valve, including the actuator, and not just the parts that come into contact with the gas, can be used in a high-temperature environment, the valves can be used optimally in metal-organic processes where thermal uniformity is essential.

■ Specifications

Size		KD4K (1/4")	KD8K (1/2")
Cv	Room Temperature	0.25	0.7
	250°C (Reference Value)	0.23	0.5
	250°C Internal Vacuum (Reference Value)	0.2	0.35
Maximum Operationg Pressure		142psig (0.98MPa(G))	
Wetted Area Volume		0.073in³ (1.2cm³)	0.458in³ (7.5cm³)
		Straight flow, CVC male, OPEN state	
Fluid Temperature		20ºC~250ºC	
Leak Rates	Across the Seat He Leak Test Rates	≤ 3×10^{-9} sccs (≤ 3×10^{-10}Pa·m³/sec)	
	Inbord He Leak Test Rates	≤ 3×10^{-9} sccs (≤ 3×10^{-10}Pa·m³/sec)	
Actuation Pressure		58~101psig (0.5~0.7MPa(G))	
Cycle Life (N2 Charged, Own Test)		50,000 cycles	

■ Product Grade

Grade	EP
Body Material	SUS316L
Surface Roughness	≤ Rz 0.7 μm
Polish	Electro Polished
Cleaning	Degreasing + Precision cleaning
Clean Room Environment	Class 10 (some products, Class 100)
Packaging	Double bagged package

■ Wetted Area Material

Body	SUS316L
Seat	Metal (body material)
Diaphragm	Cobalt alloy

■ Precautions

① The valves are designed to be used under atmospheric pressure. Usage such as under vacuum vessels are not guranteed.
② For high temperature applications, please select appropriate material for air-fittings and tubes to assure proper performance.



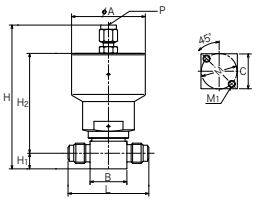
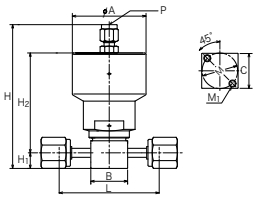
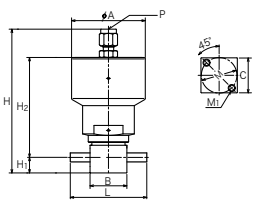
■ Product Code Table

Model	Size		Operation	Valve shape		Connection	Seat material		Grade + Body material
KD	4	K	C	S	-	V	M	-	EP-316L
KD-type diaphragm valve	4:1/4" 6:3/8" 8:1/2"	High-temperature type	C: Normally closed O: Normally open	S: Straight A: Angle (Option) B: Branch (Option)		V: CVC male VF: CVC female W: Butt weld	M: Metal		EP-316L : Electro Polished + SUS316L *1

*1 For the grade and material, we handle EP-316L only.

■ Dimensions

Unit: inch (mm)

Model	Type	Connection	L	H	H_1	H_2	A	B	C	P	M	M_1
	KD4KCS-VM	1/4" CVC Male	2.24 (57.0)	4.00 (101.5)	0.43 (11.0)	2.78 (70.5)	2.05 (52.0)	1.02 (26.0)	0.98 (25.0)	1/8" Compression fittings	1.00 (25.4)	2-M5 Depth 0.20 (5.0)
	KD4KOS-VM-66		2.24 (57.0)	3.72 (94.5)	0.43 (11.0)	2.50 (63.5)	2.44 (62.0)	1.02 (26.0)	0.98 (25.0)	1/8" Compression fittings	1.00 (25.4)	2-M5 Depth 0.20 (5.0)
	KD8KCS-VM	1/2" CVC Male	3.03 (77.0)	5.12 (130.0)	0.63 (16.0)	3.70 (94.0)	2.44 (62.0)	1.42 (36.0)	1.42 (36.0)	1/8" Compression fittings	1.10 (28.0)	2-M5 Depth 0.20 (5.0)
	KD8KOS-VM-18		3.03 (77.0)	4.80 (122.0)	0.63 (16.0)	3.39 (86.0)	2.68 (68.0)	1.42 (36.0)	1.42 (36.0)	1/8" Compression fittings	1.10 (28.0)	2-M5 Depth 0.20 (5.0)
	KD4KCS-VFM	1/4" CVC Female	2.78 (70.6)	4.00 (101.5)	0.43 (11.0)	2.78 (70.5)	2.05 (52.0)	1.02 (26.0)	0.98 (25.0)	1/8" Compression fittings	1.00 (25.4)	2-M5 Depth 0.20 (5.0)
	KD4KOS-VFM		2.78 (70.6)	3.72 (94.5)	0.43 (11.0)	2.50 (63.5)	2.44 (62.0)	1.02 (26.0)	0.98 (25.0)	1/8" Compression fittings	1.00 (25.4)	2-M5 Depth 0.20 (5.0)
	KD8KCS-VFM	1/2" CVC Female	3.27 (83.0)	5.12 (130.0)	0.63 (16.0)	3.70 (94.0)	2.44 (62.0)	1.42 (36.0)	1.42 (36.0)	1/8" Compression fittings	1.10 (28.0)	2-M5 Depth 0.20 (5.0)
	KD8KOS-VFM		3.27 (83.0)	4.80 (122.0)	0.63 (16.0)	3.39 (86.0)	2.68 (68.0)	1.42 (36.0)	1.42 (36.0)	1/8" Compression fittings	1.10 (28.0)	2-M5 Depth 0.20 (5.0)
	KD4KCS-WM	1/4" Butt Weld	2.13 (54.0)	4.00 (101.5)	0.43 (11.0)	2.78 (70.5)	2.05 (52.0)	1.02 (26.0)	0.98 (25.0)	1/8" Compression fittings	1.00 (25.4)	2-M5 Depth 0.20 (5.0)
	KD4KOS-WM		2.13 (54.0)	3.72 (94.5)	0.43 (11.0)	2.50 (63.5)	2.44 (62.0)	1.02 (26.0)	0.98 (25.0)	1/8" Compression fittings	1.00 (25.4)	2-M5 Depth 0.20 (5.0)
	KD6KCS-WM	3/8" Butt Weld	2.72 (69.0)	5.12 (130.0)	0.63 (16.0)	3.70 (94.0)	2.44 (62.0)	1.42 (36.0)	1.42 (36.0)	1/8" Compression fittings	1.10 (28.0)	2-M5 Depth 0.20 (5.0)
	KD6KOS-WM		2.72 (69.0)	4.80 (122.0)	0.63 (16.0)	3.39 (86.0)	2.68 (68.0)	1.42 (36.0)	1.42 (36.0)	1/8" Compression fittings	1.10 (28.0)	2-M5 Depth 0.20 (5.0)
	KD8KCS-WM	1/2" Butt Weld	2.72 (69.0)	5.12 (130.0)	0.63 (16.0)	3.70 (94.0)	2.44 (62.0)	1.42 (36.0)	1.42 (36.0)	1/8" Compression fittings	1.10 (28.0)	2-M5 Depth 0.20 (5.0)
	KD8KOS-WM		2.72 (69.0)	4.80 (122.0)	0.63 (16.0)	3.39 (86.0)	2.68 (68.0)	1.42 (36.0)	1.42 (36.0)	1/8" Compression fittings	1.10 (28.0)	2-M5 Depth 0.20 (5.0)

KCD
Compact Diaphragm Valves

The KCD series consists of KD series-based direct diaphragm valves that have been made more compact.
The basic performance is that of high-spec valves that inherited everything from the KD series, our high-end model.

■ Features

◎ With the KCD series, KITZ SCT succeeded in reducing the internal volume to 0.97 cm^3, versus the 1.2 cm^3 (1/4" CVC male, open position).
◎ While keeping the same design as KD series, it achieved 20% reduction in external size, and the weight is also reduced. (Avaliable only in 1/4")
◎ The durability performance was not compromised, and achieved 2 million cycles (actual value) for the Pneumaticvalve and 100,000 cycles (actual value) for the manual valve.
◎ The highest level production environment and polish quality makes them suitable for use with high purity gases and achieves ultimate particle performance.

■ Specifications

Size			KCD4 (1/4")
Cv			0.1
Maximum Operating Pressure			142psig (0.98MPa(G))
Wetted area Valume			0.059in^3 (0.97cm^3)
			Straight flow, CVC male, OPEN state
Fluid Temperature Range	PCTFE		-10ºC~80ºC
	PFA	Manual Valve	-10ºC~150ºC
		Pneumatic Valve	-10°C~120°C (150°C actual results 500,000 cycles)
	PI		-10ºC~150ºC
Atmospheric Temperature			-10ºC~60ºC
Leak Rates	Across the Seat He Leak Test Rates		≤ 1×10^{-9} sccs (≤ 1×10^{-10}Pa·m^3/sec)
	Inbord He Leak Test Rates		≤ 1×10^{-9} sccs (≤ 1×10^{-10}Pa·m^3/sec)
Actuation Pressure			58~101psig (0.4~0.7MPa(G))
Cycle Life (N2 charged, own test)	Manual Valve		100,000 cycles
	Automatic Valve		4 million cycles

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

■ Product Grade

Grade	STD	EP	SEP
Body Material	SUS316L		SUS316LE (Double melt material)
Surface Roughness	≤ Rz 3.2 μm	≤ Rz 0.7 μm	
Polish	Mechanical Polished	Electro Polished	
Cleaning	Degreasing + Precision cleaning		
Clean Room Environment	Class 10 (some products, Class 100)		
Packaging	Single bagged package	Double bagged package	

■ Wetted Area Material

Body	SUS316L, SUS316LE (Double melt material)
Seat	PCTFE, PFA, PI
Diaphragm	Cobalt alloy

■ Precautions

① The valves are designed to be used under atmospheric pressure. Usage such as under vacuum vessels are not guranteed.
② For high temperature applications, please select appropriate material for air-fittings and tubes to assure proper performance.



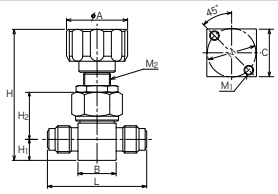
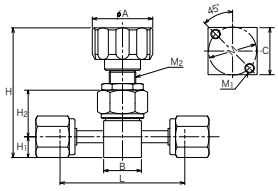
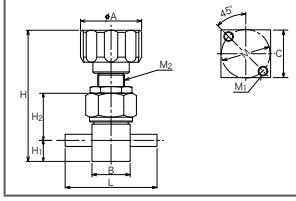
Product Code Table

Model	Size	Operation	Valve Shape		Connection	Seat Material		Handle Color (Options)		Grade + Body Material
KCD	4	M	S	-	VF	C	-	RD	-	EP-316L
KCD-type Diaphragm Valve	1/4"	M: 180° Manual Q: 90° Manual	S: Straight A: Angle L: L-shape B: Branch *1		V: CVC Male VF: CVC Female W: Butt Weld	C: PCTFE A: PFA P: PI		Not Shown: Blue (Standard) RD: Red GR: Green SL: Silver WH: White BK: Black YE: Yellow		STD-316L: Mechanical Polished + SUS316L EP-316L : Electro Polished + SUS316L SEP-316LE : Electro Polished + SUS316LE

*1 For branch type, etc., please ask the sales and service representative.

Dimensions

Unit: inch (mm)

Model	Type	Connection	L	H	H_1	H_2	A	B	C	M	M_1	M_2
	KCD4MS-VC	1/4" CVC Male	2.05 (52.0)	2.70 (68.5)	0.43 (11.0)	0.96 (24.5)	1.26 (32.0)	0.79 (20.0)	0.79 (20.0)	0.67 (17.0)	2-M5 Depth 0.20 (5.0)	M14×1.0
	KCD4MS-VFC	1/4" CVC Female	2.60 (66.0)	2.70 (68.5)	0.43 (11.0)	0.96 (24.5)	1.26 (32.0)	0.79 (20.0)	0.79 (20.0)	0.67 (17.0)	2-M5 Depth 0.20 (5.0)	M14×1.0
	KCD4MS-WC	1/4" Butt Weld	1.97 (50.0)	2.70 (68.5)	0.43 (11.0)	0.96 (24.5)	1.26 (32.0)	0.79 (20.0)	0.79 (20.0)	0.67 (17.0)	2-M5 Depth 0.20 (5.0)	M14×1.0



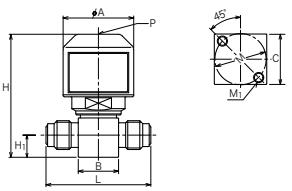
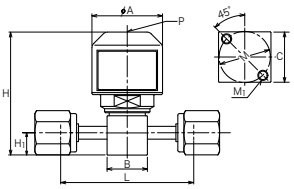
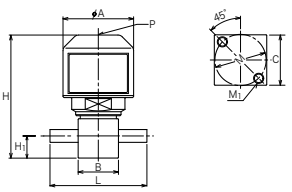
Product Code Table

Model	Size	Operation	Valve shape		Connection	Seat material		Grade + body material
KCD	4	C	S	-	VF	C	-	EP-316L
KCD-type diaphragm valve	1/4"	C: Normally closed O: Normally open	S: Straight A: Angle L: L-shape B: Branch *1		V: CVC male VF: CVC female W: Butt weld	C:PCTFE A:PFA P:PI		STD-316L: Mechanical Polished +SUS316L EP-316L : Electro Polished+ SUS316L SEP-316LE : Electro Polished + SUS316LE

*1 For branched flow type, etc., please ask the sales representative.

Dimensions

Unit: inch (mm)

Model	Type	Connection	L	H	H_1	A	B	C	P	M	M_1
	KCD4□S-VC	1/4" CVC Male	2.05 (52.0)	2.40 (61.0)	0.43 (11.0)	1.38 (35.0)	0.79 (20.0)	0.79 (20.0)	Rc1/8	0.67 (17.0)	2-M5 Depth 0.20 (5.0)
	KCD4□S-VFC	1/4" CVC Female	2.60 (66.0)	2.40 (61.0)	0.43 (11.0)	1.38 (35.0)	0.79 (20.0)	0.79 (20.0)	Rc1/8	0.67 (17.0)	2-M5 Depth 0.20 (5.0)
	KCD4□S-WC	1/4" Butt Weld	1.97 (50.0)	2.40 (61.0)	0.43 (11.0)	1.38 (35.0)	0.79 (20.0)	0.79 (20.0)	Rc1/8	0.67 (17.0)	2-M5 Depth 0.20 (5.0)

VLCD

Compact Diaphragm Valves

The VLCD series achieves commonization of parts and utilizes a forged body while maintaining the performance of the conventional KD series.

Features

◎ Achieves 20% reduction in external size as compared to the conventional KD series. (Available only in 1/4")
◎ Achieves low cost pricing through commonization of parts and utilization of a forged body.
◎ Because the cleaning and inspection processes are the same as our conventional products, the VLCD series can be used in the manufacturing of Semiconductor, FPD, and LED production devices.

Specifications

Size		VLCD4 (1/4")
Cv		0.1
Maximum Operating Pressure		0.98MPa (G)
Wetted Area Volume		0.85cm³
Fluid Temperature		-10℃~80℃
Leak Rates	Across the Seat He Leak Test Rates	≤ 1×10^{-10}Pa·m³/sec
	Inboard He Leak Test Rates	≤ 1×10^{-10}Pa·m³/sec
Atmospheric Temperature		-10℃~60℃
Actuation Pressure (Pneumatic)		0.4~0.6MPa (G)
Cycle Life (N2 Charged, In-house Test)		4 million cycles

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

Product Grade

Grade	STD	EP
Body Material	SUS316L	
Surface Roughness	≤ Rz 3.2 μm	≤ Rz 0.7 μm
Polish	Mechanical Polished	Electro Polished
Cleaning	Degreasing + Precision Cleaning	
Clean Room Environment	Class 10 (Some products, Class 100)	
Packaging	Single bagged package	Double bagged package

Wetted Area Material

Body	SUS316L
Seat	PCTFE
Diaphragm	Cobalt Alloy

Precautions

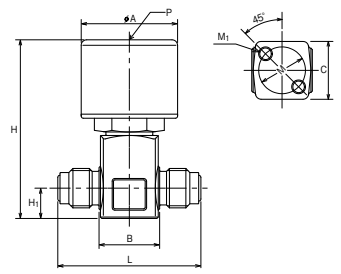
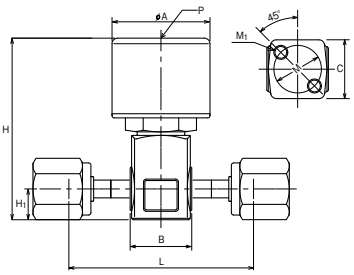
① The valves are designed to be used under atmospheric pressure. Usage such as under vacuum vessels are not guranteed.
② For high temperature applications, please select appropriate material for air-fittings and tubes to assure proper performance.

Product Code Table

Model	Size	Operation	Valve Shape		Connection	Seat Material		Grade + Body Material
VLCD	4	C	S	-	VF	C	-	EP-316L
VLCD-type Diaphragm Valve	4:1/4"	C: Normally Closed O: Normally Open	S: Straight		V: CVC Male VF: CVC Female	C:PCTFE		STD-316L : Mechanical Polished +SUS316L EP-316L : Electro Polished + SUS316L

VLCD Dimensions

Unit: inch (mm)

Model	Type	Connection	L	H	H1	A	B	C	P	M	M1
	VLCD4CS-VC-2734	1/4" CVC Male	2.05 (52.0)	2.56 (65.0)	0.43 (11.0)	1.38 (35.0)	0.87 (22.0)	0.87 (22.0)	Rc1/8	0.67 (17.0)	2-M5 Depth 0.20 (5.0)
	VLCD4CS-VFC-2735	1/4" CVC Female	2.60 (66.0)	2.56 (65.0)	0.43 (11.0)	1.38 (35.0)	0.87 (22.0)	0.87 (22.0)	Rc1/8	0.67 (17.0)	2-M5 Depth 0.20 (5.0)

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		1.2cm³	6.6cm³
Fluid Temperature	PCTFE	-10ºC~80ºC	
	PFA(Manual)	-10ºC~150ºC	
	PI(Manual)	-10ºC~150ºC	
Leak Rates	Across the Seat He Leak Test Rates	≤ 1×10^{-10}Pa·m³/sec	
	Inboard He Leak Test Rates	≤ 1×10^{-10}Pa·m³/sec	
Atmospheric Temperature		-10ºC~60ºC	
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

① The valves are designed to be used under atmospheric pressure. Usage such as under vacuum vessels are not guranteed.
② For high temperature applications, please select appropriate material for air-fittings and tubes to assure proper performance.



Product Code Table

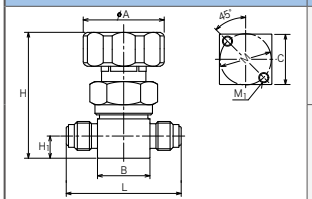
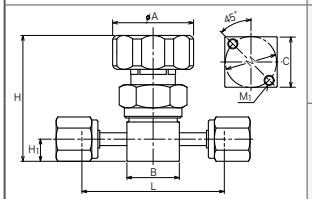
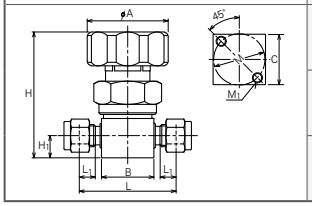
Options

Model	Size	Operation	Valve Shape	Connection	Seat Material	Handle Color	Grade + Body Material
VLD	4	M	S	VF	C	RD	EP-316L
VLD-Type Diaphragm Valve	4:1/4" 6:3/8" 8:1/2"	270° Manual	S: Straight B: Branch *1	V: CVC Male VF: CVC Female S: Compression	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

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

VLD Dimensions

Unit: inch (mm)

Model	Type	Connection	L	L_1*	H	H_1	A	B	C	M	M_1
	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_1 dimension for compression fitting is the dimension of how far tube is inserted from the end of the body.

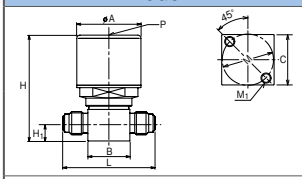
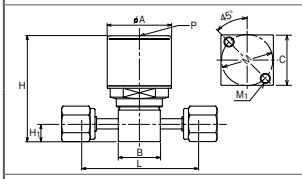
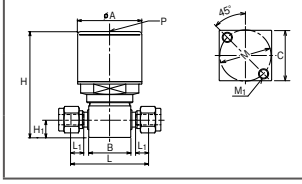


Product Code Table

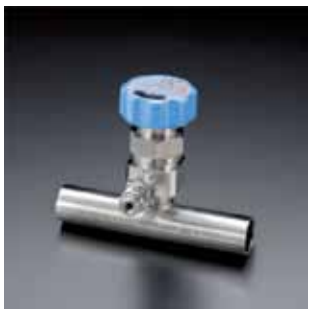
Model	Size	Operation	Valve Shape		Connection	Seat Material		Grade + Body Material
VLD	4	C	S	-	VF	C	-	EP-316L
VLD-type Diaphragm Valve	4:1/4" 6:3/8" 8:1/2"	C: Normally Closed	S: Straight		V: CVC Male VF: CVC Female S: Compression	C:PCTFE		STD-316L : Mechanical Polish + SUS316L EP-316L : Electro Polish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

VLD Dimensions

Unit: inch (mm)

Model	Type	End connection	L	L_1*	H	H_1	A	B	C	P	M	M_1
	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_1 dimension for compression fitting is the dimension of how far tube is inserted from the end of the body.

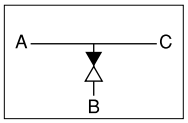


Product Code Table

Model	Size	Operation	Valve Shape		Main Pipe Connection	Main Pipe Size	B-Port Connection	Seat Material		Handle Color (Options)	Grade + Body Material
VLD	4	M	B	-	W	15A	V	C	-	RD	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

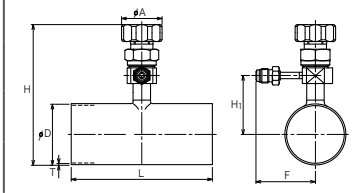
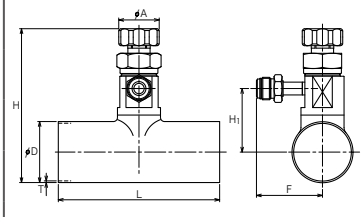
*1 For B-port fitting types other than shown, please consult a sales representative.
*2 Regardless of body material, the T-shape section of ports A-C will be SUS316L.

Flow Pattern



VLD Branch Dimensions

Unit: inch (mm)

Model	Type	B port End Connection	L	H	H_1	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 dimemsions other than the model dimensions, header production is possible bu special order. Please consult a sales representative.

WD

Diaphragm Valves for Liquid Gas Delivery

The WD series valves are high performance diaphragm valves suitable for liquid materials.

■ Features

◎ Capable of using high purity liquid materials such as TEOS used for semiconductor and liquid-crystal production.
◎ Seat assembly can be replaced on the user side while maintaining the valve's basic properties, particle performance, and purge characteristics.
◎ Effective in improving ease of maintenance and reducing running costs for chemical canisters that require periodic cleaning.
◎ Seat assembly replacement tool is the same for both manual and pneumatic operation.
◎ With an actuator diameter of ϕ39.7mm, it is possible to suport a 40mm line pitch.

■ Specifications

Size		WD4 (1/4")
Cv		0.3
Wetted Area Volume		3.2cm³ (Straight flow, CVC Male, OPEN state)
Maximum Operating Pressure	Manual Valve	2.94MPa (G)
	Pneumatic Valve	0.98MPa (G)
Fluid Temperature	PCTFE	-10℃~80℃
	PFA(Manual)	-10℃~150℃
	PI(Manual)	-10℃~150℃
Atmospheric Temperature		-10℃~60℃
Leak Rates	Across the Seat He Leak Test Rates	≤ 1×10^{-10}Pa·m³/sec
	Inboard He Leak Test Rates	≤ 1×10^{-10}Pa·m³/sec
Operation Pressure (Pneumatic Valve Only)		0.5~0.74MPa (G)
Cycle Life (N2 Charged, In-house Test)		30,000 cycles

■ Product Grade

Grade	STD	EP
Body Material	SUS316L	
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)	
Packaging	Single Bagged Package	Double Bagged Package

■ Wetted Area Material

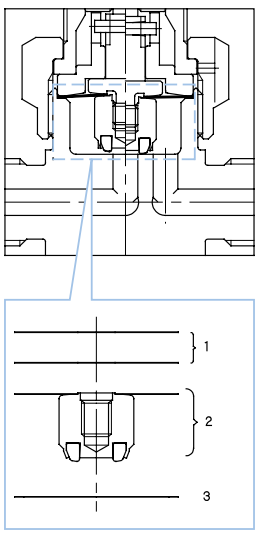
Body	SUS316L
Seat	PCTFE, PFA, PI
Diaphragm	SUS316L

※ For a PFA or PI seat, we can handle only the Manual valve.

■ Precautions

① The valves are designed to be used under atmospheric pressure. Usage such as under vacuum vessels are not guranteed.

■ Maintenance Parts



No	Part Name		Type	Quantity
1	Backup Diaphragm		WD4-D4M0241-06	2
2	Diaphragm sub-ASSY	PCTFE	WD4-D4M0321-01	1
		PFA	WD4-D4M0809-A10	1
		PI	WD4-DX4M0651-A10	1
3	Gasket		WD4-D4M0241-11	1

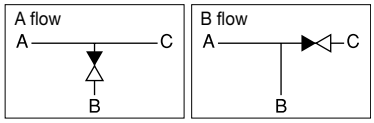


Product Code Table

Model	Size	Operation	Valve shape		Connection	Seat material	Nut		Flow	Options: Handle color	Grade + Body material
WD	4	M	S	-	VF	C	□	-	A	RD	EP-316L
WG-type diaphragm valve	4 :1/4"	M: Manual	S: Straight B: Branch		V: CVC male VF: CVC female W: 1/4" butt weld W6: 3/8" butt weld W8: 1/2" butt weld	C:PCTFE A:PFA P:PI	Not shown:standard N:Panel Nut mounted		A: A flow B: B flow *1	Not shown: blue (standard) RD: Red GR: Green SL: Silver WH: White BK: Black YE: Yellow	STD-316L : Mechanical Polished+ SUS316L EP-316L : Electro Polished + SUS316L

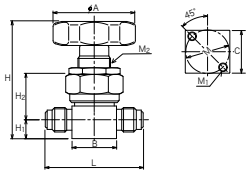
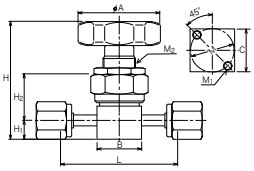
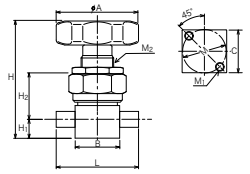
*1 Branched flow valves are shown in the diagram to the right.

Flow direction



Dimensions

Unit: inch (mm)

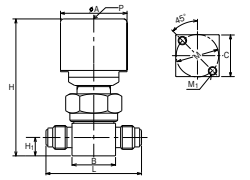
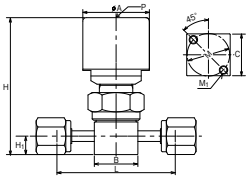
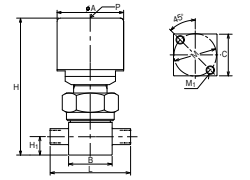
Model	Type	Connection	L	H	H_1	H_2	A	B	C	M	M_1	M_2
	WD4MS-VC-N-588	1/4" CVC Male	2.24 (57.0)	2.72 (69.0)	0.43 (11.0)	1.06 (27.0)	1.89 (48.0)	1.02 (26.0)	0.98 (25.0)	1.00 (25.4)	2-M5 Depth 0.20 (5.0)	M20×1.0
	WD4MS-VFC-N-589	1/4" CVC Female	2.78 (70.6)	2.72 (69.0)	0.43 (11.0)	1.06 (27.0)	1.89 (48.0)	1.02 (26.0)	0.98 (25.0)	1.00 (25.4)	2-M5 Depth 0.20 (5.0)	M20×1.0
	WD4MS-W6C-N-544	3/8" Butt Weld	1.89 (48.0)	2.72 (69.0)	0.43 (11.0)	1.06 (27.0)	1.89 (48.0)	1.02 (26.0)	0.98 (25.0)	1.00 (25.4)	2-M5 Depth 0.20 (5.0)	M20×1.0

Product Code Table

Model	Size	Operation	Valve Shape		Connection	Material		Grade + Body Material
WD	4	C	S	-	V	C	-	EP-316L
WD-type Diaphragm Valve	4:1/4"	C: Normally Closed	Straight		V: CVC Male VF: CVC Female W: Butt Weld	C:PCTFE		STD-316L : Mechanical Polish +SUS316L EP-316L : Electro Polish + SUS316L

Dimensions

Unit: inch (mm)

Model	Type	Connection	L	H	H_1	A	B	C	P	M	M_1
	WD4CS-VC	1/4" CVC Male	2.24 (57.0)	3.23 (82.0)	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)
	WD4CS-VFC	1/4" CVC Female	2.78 (70.6)	3.23 (82.0)	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)
	WD4CS-W6C-2970	3/8" Butt Weld	1.89 (48.0)	3.23 (82.0)	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)

RD

High Pressure Diaphragm Valves

The RD series diaphragm valves are high pressure valves with compact body and lower operation torque.

■ Features

Manual Valve

◎ Large diameter wheel handle provides smooth operation feel.
◎ The valves employ a large window and easy-to-see OPEN/CLOSE display so that the state of the valve can be confirmed at a glance.

Pneumatic Valve

◎ The new type vertical cylindrical actuator accommodates a minimal line pitch, so there is no need to worry about the orientation after installation.
◎ A compact, high-durability actuator is realized as a result of adopting KITZ SCT's patented wedge-type force booster.
◎ The rigidity of the joint between the actuator and the body is further increased for improved reliability.
◎ Stable opening and closing operation is ensured even at the lower limits of operating pressure, 0.4-0.7 MPa (G).

■ Specifications

Size		RD2 (1/8")	RD4 (1/4")	RD8 (1/2")
Cv		0.04	0.1	0.25
Maximum Operating Pressure		2350psig (16.2MPa (G))	2350psig (16.2MPa (G)) 3000psig (20.6MPa (G))	3000psig (20.6MPa (G))
Wetted area Valume		0.007in³ (0.12cm³)	0.061in³ (1.0cm³)	0.397in³ (6.5cm³)
		Straight flow, CVC male, OPEN state		
Fluid Temperature Range	PCTFE	-10ºC~42ºC		
	PI*1	-10ºC~150ºC		
Atmospheric Temperature	PCTFE	-10ºC~40ºC		
	PI	-10ºC~60ºC		
Leak Rates	Across the Seat He Leak Test Rates	≤ 1×10^{-9} sccs (≤ 1×10^{-10}Pa·m³/sec)		
	Inboard He Leak Test Rates	≤ 1×10^{-9} sccs (≤ 1×10^{-10}Pa·m³/sec)		
Cycle Life (N2 Charged, Own Test)	Manual Valve	30,000 cycles		
	Pneumatic Valve	100,000 cycles		

※ 1 In case ends connection are Female CVC, please reter to pp 43 for fluid temperature Range

■ Product Grade

Grade	STD	EP	SEP
Body Material	SUS316L		SUS316LE (Double melt material)
Surface Roughness	≤ Rz 3.2 μm	≤ Rz 0.7 μm	
Polish	Mechanical Polished	Electro Polished	
Cleaning	Degreasing + Precision cleaning		
Clean Room Environment	Class 10 (some products, Class 100)		
Packaging	Single bagged package	Double bagged package	

■ Wetted Area Material

Body	SUS316L, SUS316LE (Double melt material)
Seat	PCTFE, PI
Diaphragm	Cobalt alloy

■ Precautions

① The valves are designed to be used under atmospheric pressure. Usage such as under vacuum vessels are not guranteed.
② For high temperature applications, please select appropriate material for air-fittings and tubes to assure proper performance.



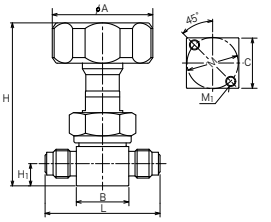
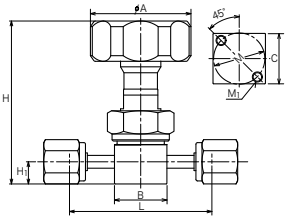
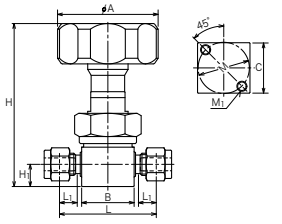
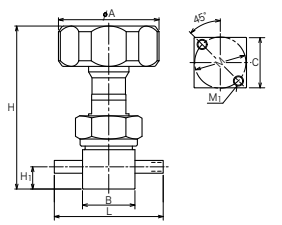
Product Code Table

Model	Size	Operation	Valve shape	Pressure		Connection	Seat material		Options: Handle color		Grade + Body material
RD	4	M	S	H	-	V	C	-	□	-	EP-316L
RD-type diaphragm valve	2:1/8" 4:1/4" 8:1/2"	270° manual *1	Straight	H:16.2MPa(G) I:20.6MPa(G)		V:CVC male VF:CVC female S: Compression W:Butt weld	C:PCTFE P:PI		Not shown: Blue (standard) RD: Red GR: Green SL: Silver BK: Black YE: Yellow BR: Brown WH: White		STD-316L : Mechanical Polished + SUS316L EP-316L : Electro Polished + SUS316L SEP-316LE : Electro Polished+ SUS316LE

* 1 1/8" size is 180° manual.

Dimensions

Unit: inch (mm)

Model	Type	Connection	L	L_1*	H	H_1	A	B	C	M	M_1
	RD2MSH-VC	1/8" CVC Male	1.61 (41.0)	-	2.36 (60.0)	0.28 (7.0)	1.34 (34.0)	0.75 (19.0)	0.75 (19.0)	0.67 (17.0)	2-M4 Depth 0.20 (5.0)
	RD4MSH-VC	1/4" CVC Male	2.24 (57.0)	-	3.19 (81.0)	0.43 (11.0)	2.05 (52.0)	1.02 (26.0)	0.98 (25.0)	1.00 (25.4)	2-M5 Depth 0.20 (5.0)
	RD4MSI-VC		2.24 (57.0)	-	3.19 (81.0)	0.43 (11.0)	2.05 (52.0)	1.02 (26.0)	0.98 (25.0)	1.00 (25.4)	2-M5 Depth 0.20 (5.0)
	RD8MSI-VC	1/2" CVC Male	3.03 (77.0)	-	3.90 (99.0)	0.63 (16.0)	2.36 (60.0)	1.42 (36.0)	1.42 (36.0)	1.10 (28.0)	2-M5 Depth 0.20 (5.0)
	RD2MSH-VFC	1/8" CVC Female	2.20 (56.0)	-	2.36 (60.0)	0.28 (7.0)	1.34 (34.0)	0.75 (19.0)	0.75 (19.0)	0.67 (17.0)	2-M4 Depth 0.20 (5.0)
	RD4MSH-VFC	1/4" CVC Female	2.78 (70.6)	-	3.19 (81.0)	0.43 (11.0)	2.05 (52.0)	1.02 (26.0)	0.98 (25.0)	1.00 (25.4)	2-M5 Depth 0.20 (5.0)
	RD4MSI-VFC		2.78 (70.6)	-	3.19 (81.0)	0.43 (11.0)	2.05 (52.0)	1.02 (26.0)	0.98 (25.0)	1.00 (25.4)	2-M5 Depth 0.20 (5.0)
	RD8MSI-VFC	1/2" CVC Female	3.27 (83.0)	-	3.90 (99.0)	0.63 (16.0)	2.36 (60.0)	1.42 (36.0)	1.42 (36.0)	1.10 (28.0)	2-M5 Depth 0.20 (5.0)
	RD2MSH-SC	1/8" Compression Fittings	3.06 (77.8)	0.24 (6.1)	2.36 (60.0)	0.28 (7.0)	1.34 (34.0)	0.75 (19.0)	0.75 (19.0)	0.67 (17.0)	2-M4 Depth 0.20 (5.0)
	RD4MSH-SC	1/4" Compression Fittings	1.89 (48.0)	0.31 (7.9)	3.19 (81.0)	0.43 (11.0)	2.05 (52.0)	1.02 (26.0)	0.98 (25.0)	1.00 (25.4)	2-M5 Depth 0.20 (5.0)
	RD4MSI-SC		1.89 (48.0)	0.31 (7.9)	3.19 (81.0)	0.43 (11.0)	2.05 (52.0)	1.02 (26.0)	0.98 (25.0)	1.00 (25.4)	2-M5 Depth 0.20 (5.0)
	RD8MSI-SC	1/2" Compression Fittings	2.52 (64.0)	0.50 (12.7)	3.90 (99.0)	0.63 (16.0)	2.36 (60.0)	1.42 (36.0)	1.42 (36.0)	1.10 (28.0)	2-M5 Depth 0.20 (5.0)
	RD2MSH-WC	1/8" Butt Weld	1.65 (42.0)	-	2.36 (60.0)	0.28 (7.0)	1.34 (34.0)	0.75 (19.0)	0.75 (19.0)	0.67 (17.0)	2-M4 Depth 0.20 (5.0)
	RD4MSH-WC	1/4" Butt Weld	2.13 (54.0)	-	3.19 (81.0)	0.43 (11.0)	2.05 (52.0)	1.02 (26.0)	0.98 (25.0)	1.00 (25.4)	2-M5 Depth 0.20 (5.0)
	RD4MSI-WC		2.13 (54.0)	-	3.19 (81.0)	0.43 (11.0)	2.05 (52.0)	1.02 (26.0)	0.98 (25.0)	1.00 (25.4)	2-M5 Depth 0.20 (5.0)
	RD8MSI-WC	1/2" Butt Weld	2.72 (69.0)	-	3.90 (99.0)	0.63 (16.0)	2.36 (60.0)	1.42 (36.0)	1.42 (36.0)	1.10 (28.0)	2-M5 Depth 0.20 (5.0)

* L_1 dimension for compression fitting is the dimension of how far tube inserted from end of body.

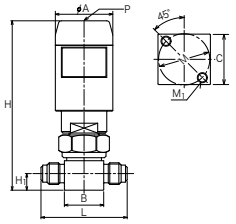
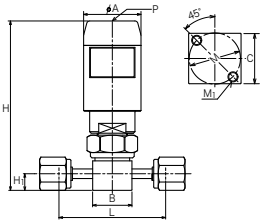
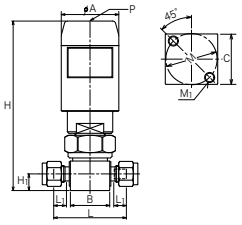
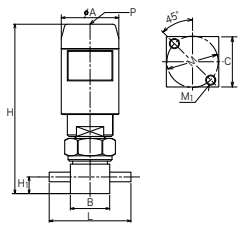


Product Code Table

Model	Size	Operation	Valve shape	Pressure		Connection	Seat material		Grade + Body material
RD	4	C	S	H	-	V	C	-	EP-316L
RD-type diaphragm valve	2:1/8" 4:1/4" 6:3/8" 8:1/2"	Normally closed	Straight	H:16.2MPa(G) I :20.6MPa(G)		V: CVC male VF: CVC female S: Compression W.: Butt weld	C:PCTFE P:PI		STD-316L: +SUS316L EP-316L: + SUS316L SEP-316LE : +SUS316LE

Dimensions

Unit: inch (mm)

Model	Type	Connection	L	L_1*	H	H_1	A	B	C	P	M	M_1
	RD2CSH-VC	1/8" CVC Male	1.61 (41.0)	-	3.52 (89.5)	0.28 (7.0)	1.26 (32.0)	0.75 (19.0)	0.75 (19.0)	Rc1/8	0.67 (17.0)	2-M4 Depth 0.20 (5.0)
	RD4CSH-VC-971	1/4" CVC Male	2.24 (57.0)	-	3.90 (99.0)	0.43 (11.0)	1.50 (38.0)	1.02 (26.0)	0.98 (25.0)	Rc1/8	1.00 (25.4)	2-M5 Depth 0.20 (5.0)
	RD4CSI-VC-972		2.24 (57.0)	-	3.90 (99.0)	0.43 (11.0)	1.50 (38.0)	1.02 (26.0)	0.98 (25.0)	Rc1/8	1.00 (25.4)	2-M5 Depth 0.20 (5.0)
	RD8CSI-VC	1/2" CVC Male	3.03 (77.0)	-	7.38 (187.5)	0.63 (16.0)	2.20 (56.0)	1.42 (36.0)	1.42 (36.0)	Rc1/4	1.10 (28.0)	2-M5 Depth 0.20 (5.0)
	RD2CSH-VFC	1/8" CVC Female	2.20 (56.0)	-	3.52 (89.5)	0.28 (7.0)	1.26 (32.0)	0.75 (19.0)	0.75 (19.0)	Rc1/8	0.67 (17.0)	2-M4 Depth 0.20 (5.0)
	RD4CSH-VFC-1371	1/4" CVC Female	2.78 (70.6)	-	3.90 (99.0)	0.43 (11.0)	1.50 (38.0)	1.02 (26.0)	0.98 (25.0)	Rc1/8	1.00 (25.4)	2-M5 Depth 0.20 (5.0)
	RD4CSI-VFC-1295		2.78 (70.6)	-	3.90 (99.0)	0.43 (11.0)	1.50 (38.0)	1.02 (26.0)	0.98 (25.0)	Rc1/8	1.00 (25.4)	2-M5 Depth 0.20 (5.0)
	RD8CSI-VFC	1/2" CVC Female	3.27 (83.0)	-	7.38 (187.5)	0.63 (16.0)	2.20 (56.0)	1.42 (36.0)	1.42 (36.0)	Rc1/4	1.10 (28.0)	2-M5 Depth 0.20 (5.0)
	RD2CSH-SC	1/8" Compression Fittings	3.06 (77.8)	0.24 (6.1)	3.52 (89.5)	0.28 (7.0)	1.26 (32.0)	0.75 (19.0)	0.75 (19.0)	Rc1/8	0.67 (17.0)	2-M4 Depth 0.20 (5.0)
	RD4CSH-SC-1484	1/4" Compression Fittings	1.89 (48.0)	0.31 (7.9)	3.90 (99.0)	0.43 (11.0)	1.50 (38.0)	1.02 (26.0)	0.98 (25.0)	Rc1/8	1.00 (25.4)	2-M5 Depth 0.20 (5.0)
	RD4CSI-SC		1.89 (48.0)	0.31 (7.9)	3.90 (99.0)	0.43 (11.0)	1.50 (38.0)	1.02 (26.0)	0.98 (25.0)	Rc1/8	1.00 (25.4)	2-M5 Depth 0.20 (5.0)
	RD8CSI-SC	1/2" Compression Fittings	2.52 (64.0)	0.50 (12.7)	7.38 (187.5)	0.63 (16.0)	2.20 (56.0)	1.42 (36.0)	1.42 (36.0)	Rc1/4	1.10 (28.0)	2-M5 Depth 0.20 (5.0)
	RD2CSH-WC	1/8" Butt Weld	1.65 (42.0)	-	3.52 (89.5)	0.28 (7.0)	1.26 (32.0)	0.75 (19.0)	0.75 (19.0)	Rc1/8	0.67 (17.0)	2-M4 Depth 0.20 (5.0)
	RD4CSH-WC-1408	1/4" Butt Weld	2.13 (54.0)	-	3.90 (99.0)	0.43 (11.0)	1.50 (38.0)	1.02 (26.0)	0.98 (25.0)	Rc1/8	1.00 (25.4)	2-M5 Depth 0.20 (5.0)
	RD4CSI-WC-1571		2.13 (54.0)	-	3.90 (99.0)	0.43 (11.0)	1.50 (38.0)	1.02 (26.0)	0.98 (25.0)	Rc1/8	1.00 (25.4)	2-M5 Depth 0.20 (5.0)
	RD8CSI-WC	1/2" Butt Weld	2.72 (69.0)	-	7.38 (187.5)	0.63 (16.0)	2.20 (56.0)	1.42 (36.0)	1.42 (36.0)	Rc1/4	1.10 (28.0)	2-M5 Depth 0.20 (5.0)

* L_1 dimension for compression fitting is the dimension of how far tube inserted from end of body.

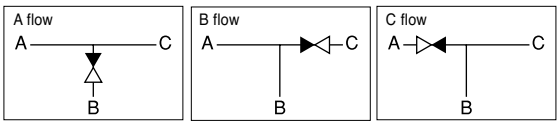


Product Code Table

Model	Size	Operation	Valve shape	Pressure	Connection	Seat material	Flow	Options: Handle color	Grade + Body material
RD	4	M	B	H	V	C	A	□	EP-316L
RD-type diaphragm valve	2:1/8" 4:1/4" 8:1/2"	240° manual *2	Branch	H:16.2MPa(G) I :20.6MPa(G)	V: CVC male VF: CVC female W: Butt weld	C:PCTFE P:PI	A: A flow B: B flow C: C flow *1	Not shown: Blue (standard) RD: Red GR: Green SL: Silver BK: Black YE: Yellow BR: Brown WH: White	STD-316L : Mechanical Polished+SUS316L EP-316L : Electro Polished+SUS316L SEP-316LE : Electro Polished+SUS316LE

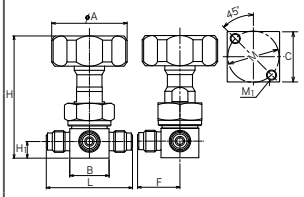
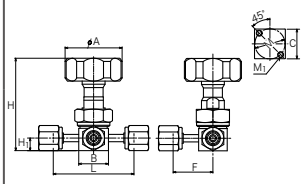
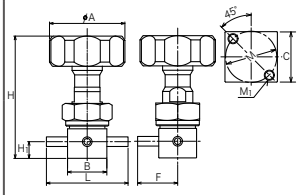
* 1 Branched flow are shown in the diagram to the right.
* 2 1/8" size is 180° manual.

Flow direction



Dimensions

Unit: inch (mm)

Model	Type	Connection	L	H	H_1	A	B	C	F	M	M_1
	RD2MBH-VC	1/8" CVC Male	1.61 (41.0)	2.36 (60.0)	0.28 (7.0)	1.34 (34.0)	0.75 (19.0)	0.75 (19.0)	0.81 (20.5)	0.67 (17.0)	2-M4 Depth 0.20 (5.0)
	RD4MBH-VC	1/4" CVC Male	2.24 (57.0)	3.19 (81.0)	0.43 (11.0)	2.05 (52.0)	1.02 (26.0)	0.98 (25.0)	1.10 (28.0)	1.00 (25.4)	2-M5 Depth 0.20 (5.0)
	RD4MBI-VC		2.24 (57.0)	3.19 (81.0)	0.43 (11.0)	2.05 (52.0)	1.02 (26.0)	0.98 (25.0)	1.10 (28.0)	1.00 (25.4)	2-M5 Depth 0.20 (5.0)
	RD8MBI-VC	1/2" CVC Male	3.03 (77.0)	3.90 (99.0)	0.63 (16.0)	2.36 (60.0)	1.42 (36.0)	1.42 (36.0)	1.52 (38.5)	1.10 (28.0)	2-M5 Depth 0.20 (5.0)
	RD2MBH-VFC	1/8" CVC Female	2.20 (56.0)	2.36 (60.0)	0.28 (7.0)	1.34 (34.0)	0.75 (19.0)	0.75 (19.0)	1.10 (28.0)	0.67 (17.0)	2-M4 Depth 0.20 (5.0)
	RD4MBH-VFC	1/4" CVC Female	2.78 (70.6)	3.19 (81.0)	0.43 (11.0)	2.05 (52.0)	1.02 (26.0)	0.98 (25.0)	1.37 (34.8)	1.00 (25.4)	2-M5 Depth 0.20 (5.0)
	RD4MBI-VFC		2.78 (70.6)	3.19 (81.0)	0.43 (11.0)	2.05 (52.0)	1.02 (26.0)	0.98 (25.0)	1.37 (34.8)	1.00 (25.4)	2-M5 Depth 0.20 (5.0)
	RD8MBI-VFC	1/2" CVC Female	3.27 (83.0)	3.90 (99.0)	0.63 (16.0)	2.36 (60.0)	1.42 (36.0)	1.42 (36.0)	1.63 (41.5)	1.10 (28.0)	2-M5 Depth 0.20 (5.0)
	RD2MBH-WC	1/8" Butt Weld	1.65 (42.0)	2.36 (60.0)	0.28 (7.0)	1.34 (34.0)	0.75 (19.0)	0.75 (19.0)	0.83 (21.0)	0.67 (17.0)	2-M4 Depth 0.20 (5.0)
	RD4MBH-WC	1/4" Butt Weld	2.13 (54.0)	3.19 (81.0)	0.43 (11.0)	2.05 (52.0)	1.02 (26.0)	0.98 (25.0)	1.04 (26.5)	1.00 (25.4)	2-M5 Depth 0.20 (5.0)
	RD4MBI-WC		2.13 (54.0)	3.19 (81.0)	0.43 (11.0)	2.05 (52.0)	1.02 (26.0)	0.98 (25.0)	1.04 (26.5)	1.00 (25.4)	2-M5 Depth 0.20 (5.0)
	RD8MBI-WC	1/2" Butt Weld	2.72 (69.0)	3.90 (99.0)	0.63 (16.0)	2.36 (60.0)	1.42 (36.0)	1.42 (36.0)	1.36 (34.5)	1.10 (28.0)	2-M5 Depth 0.20 (5.0)

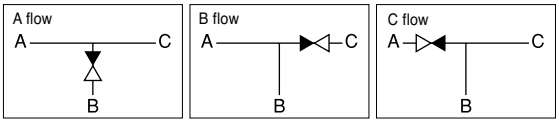


Product Code Table

Model	Size	Operation	Valve shape	Pressure	-	Connection	Seat material	-	Flow	-	Grade + Body material
RD	4	C	B	H		V	C		A		EP-316L
RD-type diaphragm valve	2:1/8" 4:1/4" 8:1/2"	Normally closed	Branch	H: 16.2MPa(G) I: 20.6MPa(G)		V: CVC male VF: CVC female W: Butt weld	C: PCTFE P: PI		A: A flow B: B flow C: C flow *1		STD-316L : Mechanical Polished + SUS316L EP-316L : Electro Polished + SUS316L SEP-316LE : Electro Polished +SUS316LE

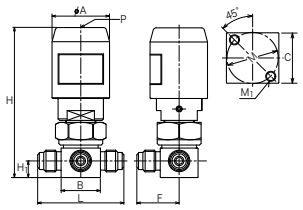
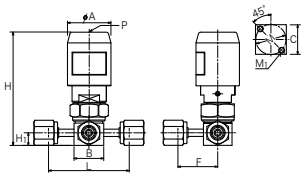
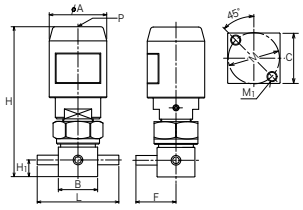
* 1 Branched flow are shown in the diagram to the right.

Flow direction



Dimensions

Unit: inch (mm)

Model	Type	Connection	L	H	H_1	A	B	C	F	P	M	M_1
	RD2CBH-VC	1/8" CVC Male	1.61 (41.0)	3.52 (89.5)	0.28 (7.0)	1.26 (32.0)	0.75 (19.0)	0.75 (19.0)	0.81 (20.5)	Rc1/8	0.67 (17.0)	2-M4 Depth 0.20 (5.0)
	RD4CBH-VC	1/4" CVC Male	2.24 (57.0)	3.90 (99.0)	0.43 (11.0)	1.50 (38.0)	1.02 (26.0)	0.98 (25.0)	1.10 (28.0)	Rc1/8	1.00 (25.4)	2-M5 Depth 0.20 (5.0)
	RD4CBI-VC		2.24 (57.0)	3.90 (99.0)	0.43 (11.0)	1.50 (38.0)	1.02 (26.0)	0.98 (25.0)	1.10 (28.0)	Rc1/8	1.00 (25.4)	2-M5 Depth 0.20 (5.0)
	RD8CBI-VC	1/2" CVC Male	3.03 (77.0)	7.38 (187.5)	0.63 (16.0)	2.20 (56.0)	1.42 (36.0)	1.42 (36.0)	1.52 (38.5)	Rc1/4	1.10 (28.0)	2-M5 Depth 0.20 (5.0)
	RD2CBH-VFC	1/8" CVC Female	2.20 (56.0)	3.52 (89.5)	0.28 (7.0)	1.26 (32.0)	0.75 (19.0)	0.75 (19.0)	1.10 (28.0)	Rc1/8	0.67 (17.0)	2-M4 Depth 0.20 (5.0)
	RD4CBH-VFC	1/4" CVC Female	2.78 (70.6)	3.90 (99.0)	0.43 (11.0)	1.50 (38.0)	1.02 (26.0)	0.98 (25.0)	1.37 (34.8)	Rc1/8	1.00 (25.4)	2-M5 Depth 0.20 (5.0)
	RD4CBI-VFC		2.78 (70.6)	3.90 (99.0)	0.43 (11.0)	1.50 (38.0)	1.02 (26.0)	0.98 (25.0)	1.37 (34.8)	Rc1/8	1.00 (25.4)	2-M5 Depth 0.20 (5.0)
	RD8CBI-VFC	1/2" CVC Female	3.27 (83.0)	7.38 (187.5)	0.63 (16.0)	2.20 (56.0)	1.42 (36.0)	1.42 (36.0)	1.63 (41.5)	Rc1/4	1.10 (28.0)	2-M5 Depth 0.20 (5.0)
	RD2CBH-WC	1/8" Butt Weld	1.65 (42.0)	3.52 (89.5)	0.28 (7.0)	1.26 (32.0)	0.75 (19.0)	0.75 (19.0)	0.83 (21.0)	Rc1/8	0.67 (17.0)	2-M4 Depth 0.20 (5.0)
	RD4CBH-WC	1/4" Butt Weld	2.13 (54.0)	3.90 (99.0)	0.43 (11.0)	1.50 (38.0)	1.02 (26.0)	0.98 (25.0)	1.04 (26.5)	Rc1/8	1.00 (25.4)	2-M5 Depth 0.20 (5.0)
	RD4CBI-WC		2.13 (54.0)	3.90 (99.0)	0.43 (11.0)	1.50 (38.0)	1.02 (26.0)	0.98 (25.0)	1.04 (26.5)	Rc1/8	1.00 (25.4)	2-M5 Depth 0.20 (5.0)
	RD8CBI-WC	1/2" Butt Weld	2.72 (69.0)	7.38 (187.5)	0.63 (16.0)	2.20 (56.0)	1.42 (36.0)	1.42 (36.0)	1.36 (34.5)	Rc1/4	1.10 (28.0)	2-M5 Depth 0.20 (5.0)

VRD
Diaphragm Valves

The "VRD" series is a 1/4" high pressure direct diaphragm valve for 20.6 Mpa enclosed gas pressure.
Perfect for machines with internal plumbing and gas lines which must completely prevent leaks relating to high pressure, high temperature, and high vacuum (Cylinder Cabinet, BSGS).

Features

◎ Takes the same perfomance as the existing RD series and achieves lower cost through the reduction of the number of parts.
◎ Operation torque reduced compared to RD seris.
◎ Compact size compared to conventional products by reducing height by 6mm.
◎ More simple, compact, and with lower cost compared to previous designs.

Specifications

Size		VRD4 (1/4")
Cv		0.1≤
Maximum Operating Pressure		20.6MPa (G)
Wetted Area Volume		1.0cm^3
Fluid Temperature		-10ºC~42ºC
Atmospheric Temperature		-10ºC~42ºC
Leak Rates	Across the Seat He Leak Test Rates	≤ 1×10^{-10}Pa·m^3/sec
	Inboard He Leak Test Rates	≤ 1×10^{-10}Pa·m^3/sec
Cycle Life (N2 Charged, In-house Test)		50,000 cycles

Product Grade

Grade	STD	EP	SEP
Body Material	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)		
Packaging	Single Bagged Package	Double Bagged Package	

Wetted Area Material

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

Precautions

① The valves are designed to be used under atmospheric pressure. Usage such as under vacuum vessels are not guranteed.

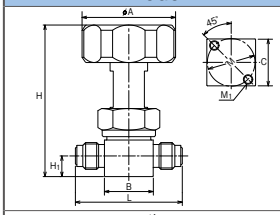
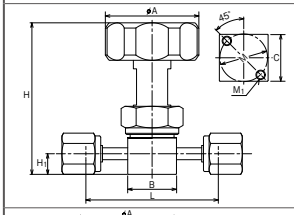
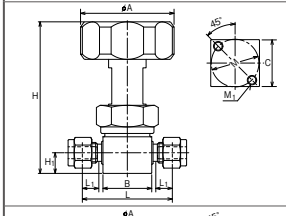
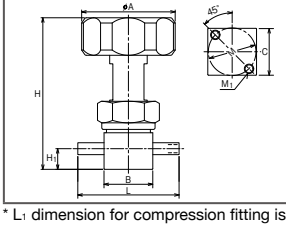


Product Code Table

Model	Size	Operation	Valve shape	Pressure		Connection	Seat material		Grade + Body material
VRD	4	M	S	I	-	VF	C	-	EP-316L
VRD-type Diaphragm Valve	4:1/4"	240° manual	S: Straight B: Branch	I :20.6MPa		V: CVC Male VF: CVC Female S: Compression W.: Butt Weld	C:PCTFE		STD-316L : Mechanical Polish + SUS316L EP-316L : Electro Polish + SUS316L SEP-316LE : Electro Polish + SUS316LE

VRD Dimensions

Unit: inch (mm)

Model	Type	Connection	L	L$_1$*	H	H$_1$	A	B	C	M	M$_1$
	VRD4MSI-VC	1/4" CVC Male	2.24 (57.0)	-	2.95 (75.0)	0.43 (11.0)	2.05 (52.0)	1.02 (26.0)	0.98 (25.0)	1.00 (25.4)	2-M5 Depth 0.20 (5.0)
	VRD4MSI-VFC	1/4" CVC Female	2.78 (70.6)	-	2.95 (75.0)	0.43 (11.0)	2.05 (52.0)	1.02 (26.0)	0.98 (25.0)	1.00 (25.4)	2-M5 Depth 0.20 (5.0)
	VRD4MSI-SC	1/4" Compression	1.89 (48.0)	0.31 (7.9)	2.95 (75.0)	0.43 (11.0)	2.05 (52.0)	1.02 (26.0)	0.98 (25.0)	1.00 (25.4)	2-M5 Depth 0.20 (5.0)
	VRD4MSI-WC	1/2" Butt Weld	2.13 (54.0)	-	2.95 (75.0)	0.43 (11.0)	2.05 (52.0)	1.02 (26.0)	0.98 (25.0)	1.00 (25.4)	2-M5 Depth 0.20 (5.0)

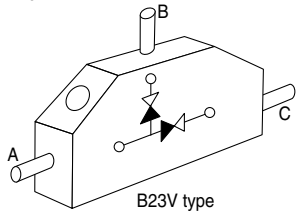
* L$_1$ dimension for compression fitting is the dimension of how far the tube is inserted from the end of the body.

Mono Block Valves

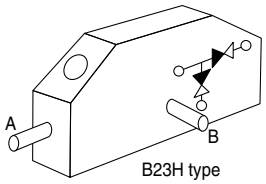
Block-type

■ Flow Direction

A flow

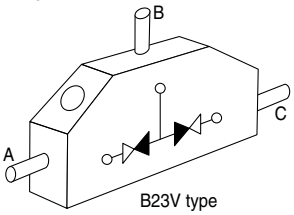


B23V type

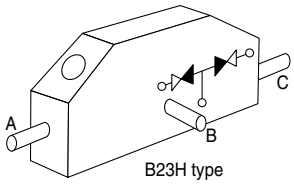


B23H type

B flow



B23V type



B23H type

■ Features

◎ Excellent degassing characteristics is achieved through minimized flow paths by combining 2 of the KD, KCD, or RD valves together in one valve body.
◎ The basic performance is inherited from the performance of the base valves, and an extremely compact panel design can be achieved by combining the actuators of choice in one valve body.
◎ The optimal flow layout can be made through selection of various flow systems, pipe routing, and fittings.
◎ A series of three or more actuator block valves can also be produced for special applications.

■ Specifications

Size	KD2 (1/8")	KD4 (1/4")	KD8 (1/2")
Cv	0.04	0.22	0.7
Wetted Area Volume	0.034in³ (0.56cm³)	0.195in³ (3.2cm³)	1.208in³ (19.8cm³)
Other specifications and product grades conform to the valves on which the series is based.			

■ Precautions

① The valves are designed to be used under atmospheric pressure. Usage such as under vacuum vessels are not guranteed.
② For high temperature applications, please select appropriate material for air-fittings and tubes to assure proper performance.



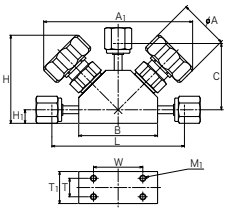
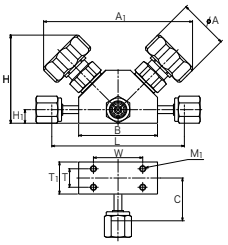
■ Product Code Table

											Options			Options	
B	2	3	H	KD	4	M	Q	-	VF	C	- □	- □	- A	- L	- EP-316L
Block valve	Number of valves	Number of ports	Port direction	Model	Size	V1	V2		Connection method	Seat material	Handle type	Handle color	Flow	Port direction	Grade + Body material
			V: Vertical H: Horizontal *1	KD: KD-type diaphragm valve KCD: KCD-type diaphragm valve RD: High-pressure diaphragm valve	2:1/8" 4:1/4" 8:1/2"	M: Manual Q: 90° manual *2			V: CVC male VF: CVC female W: Butt weld *3	C:PCTFE A:PFA P:PI	Not shown: Standard POC: Push-lock type	Not shown: Blue (standard) BK: Black GR: Green RD: Red SL: Silver WH: White YE: Yellow	A: A flow B: B flow *1	Not shown: Standard L: Reversed	STD-316L: Mechanical Polished + SUS316L EP-316L: Electro Polished + SUS316L SEP-316LE: Electro Polished + SUS316LE

*1 For the port direction and flow, please refer to the Flow direction noted above.
*2 In the case where the actuators are the same, there will be one symbol.
*3 In the case where the types of fittings differ, please note them in the above order of Flow direction Ports A, B, and C.
Example) For the case of Port A = CVC female, Port B = CVC female, Port C = CVC male, the model will be "VFVFV."

■ Dimensions

Unit: inch (mm)

Model	Type	Connection	L	H	H1	A	A1	B	T1	C	W	T	M1
	B23VK-D2M-VFC	1/8" CVC Female	3.50 (89.0)	2.05 (52.0)	0.28 (7.0)	0.94 (24.0)	3.54 (90.0)	2.05 (52.0)	0.83 (21.0)	1.79 (45.5)	1.34 (34.0)	0.47 (12.0)	2-M5 Depth 0.20 (5.0)
	B23VK-D4M-VFC	1/4" CVC Female	4.24 (107.6)	2.83 (72.0)	0.43 (11.0)	1.65 (42.0)	4.80 (122.0)	2.52 (64.0)	1.02 (26.0)	2.12 (53.8)	1.57 (40.0)	0.59 (15.0)	4-M5 Depth 0.20 (5.0)
	B23VK-D8M-VFC	1/2" CVC Female	5.63 (143.0)	3.43 (87.0)	0.63 (16.0)	1.65 (42.0)	5.59 (142.0)	3.82 (97.0)	1.42 (36.0)	2.81 (71.5)	2.36 (60.0)	0.79 (20.0)	4-M5 Depth 0.20 (5.0)
	B23HK-D2M-VFC	1/8" CVC Female	3.50 (89.0)	2.05 (52.0)	0.28 (7.0)	0.94 (24.0)	3.54 (90.0)	2.05 (52.0)	0.83 (21.0)	1.14 (29.0)	1.34 (34.0)	0.47 (12.0)	2-M5 Depth 0.20 (5.0)
	B23HK-D4M-VFC	1/4" CVC Female	4.24 (107.6)	2.83 (72.0)	0.43 (11.0)	1.65 (42.0)	4.80 (122.0)	2.52 (64.0)	1.02 (26.0)	1.37 (34.8)	1.57 (40.0)	0.59 (15.0)	4-M5 Depth 0.20 (5.0)
	B23HK-D8M-VFC	1/2" CVC Female	5.63 (143.0)	3.43 (87.0)	0.63 (16.0)	1.65 (42.0)	5.59 (142.0)	3.82 (97.0)	1.42 (36.0)	1.61 (41.0)	2.36 (60.0)	0.79 (20.0)	4-M5 Depth 0.20 (5.0)



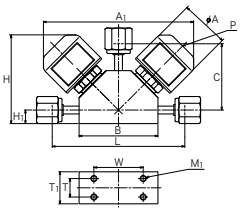
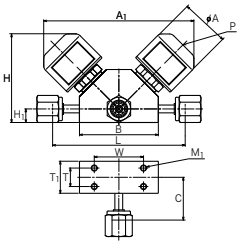
Product Code Table

													Options	
B	2	3	H	KD	4	C	O	- VF	C	- A	- L	- EP-316L
Block valve	Number of valves	Number of ports	Port direction	Model	Size	V1	V2	Connection	Seat material	Flow	Port direction	Grade + Body material
			V: Vertical H: Horizontal *1	KD: KD-type diaphragm valve KCD: KCD-type diaphragm valve RD: High-pressure diaphragm valve	2:1/8" 4:1/4" 8:1/2"	C: Normally closed O: Normally open *2		V: CVC male VF: CVC female W: Butt weld *3	C: PCTFE A: PFA P: PI *1	A: flow B: flow *1	Not shown: Standard L: Reversed	STD-316L Mechanical Polished + SUS316L EP-316L Electro Polished + SUS316L SEP-316LE: Electro Polished + SUS316LE

*1 For the port direction and flow, please refer to Flow direction on P. 22.
*2 In the case where the actuators are the same, there will be one symbol.
*3 In the case where the types of fittings differ, please note them as on P. 22 in the order of Flow direction Ports A, B, and C.
Example) For the case of Port A = CVC female, Port B = CVC female, Port C = CVC male, the model will be "VFVFV."

Dimensions

Unit: inch (mm)

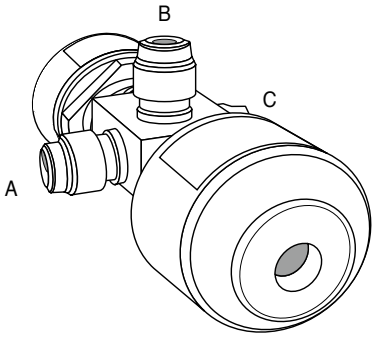
Model	Type	Connection	L	H	H_1	A	A_1	B	T_1	C	W	T	M_1	P
	B23VKD2 ☐☐-VFC	1/8" CVC Female	3.50 (89.0)	2.20 (56.0)	0.28 (7.0)	1.10 (28.0)	3.86 (98.0)	2.05 (52.0)	0.83 (21.0)	1.79 (45.5)	1.34 (34.0)	0.47 (12.0)	2-M5 Depth 0.20 (5.0)	2-Rc1/8
	B23VKD4 ☐☐-VFC	1/4" CVC Female	4.24 (107.6)	2.78 (70.5)	0.43 (11.0)	1.56 (39.7)	4.72 (120.0)	2.52 (64.0)	1.02 (26.0)	2.12 (53.8)	1.57 (40.0)	0.59 (15.0)	4-M5 Depth 0.20 (5.0)	2-Rc1/8
	B23VKD8 ☐☐-VFC	1/2" CVC Female	5.63 (143.0)	3.88 [3.70] (98.5 [94.0]) *4	0.63 (16.0)	2.17 (55.0)	6.50 [6.14] (165.0 [156.0]) *4	3.82 (97.0)	1.42 (36.0)	2.81 (71.5)	2.36 (60.0)	0.79 (20.0)	4-M5 Depth 0.20 (5.0)	2-Rc1/8
	B23HKD2 ☐☐-VFC	1/8" CVC Female	3.50 (89.0)	2.20 (56.0)	0.28 (7.0)	1.10 (28.0)	3.86 (98.0)	2.05 (52.0)	0.83 (21.0)	1.14 (29.0)	1.34 (34.0)	0.47 (12.0)	2-M5 Depth 0.20 (5.0)	2-Rc1/8
	B23HKD4 ☐☐-VFC	1/4" CVC Female	4.24 (107.6)	2.78 (70.5)	0.43 (11.0)	1.56 (39.7)	4.72 (120.0)	2.52 (64.0)	1.02 (26.0)	1.37 (34.8)	1.57 (40.0)	0.59 (15.0)	4-M5 Depth 0.20 (5.0)	2-Rc1/8
	B23HKD8 ☐☐-VFC	1/2" CVC Female	5.63 (143.0)	3.88 [3.70] (98.5 [94.0]) *4	0.63 (16.0)	2.17 (55.0)	6.50 [6.14] (165.0 [156.0]) *4	3.82 (97.0)	1.42 (36.0)	1.61 (41.0)	2.36 (60.0)	0.79 (20.0)	4-M5 Depth 0.20 (5.0)	2-Rc1/8

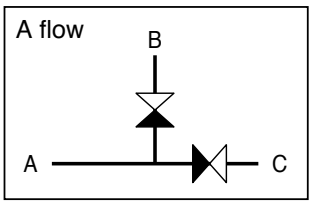
*4 Dimensions given in parentheses are for the 'normally open' configuration.

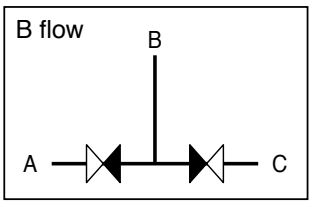
Mono Block Valve

Flicker-type

■ Flow Direction







■ Features

◎ Flicker valves minimize the dead space by making the valve body of KITZ SCT's dual actuator three-way block valves even more compact. The two valve actuators are laid out in horizontally opposed position with the valve body between them.
◎ The compact design of the valve makes design of the layout inside a valve box easier, and helps reduce the volume of the valve box itself.
◎ The simple valve body makes compact design because of easy designing when insulator or heater jacket is required.
◎ Flicker valves can be provided with standard KD, compact KCD, or high pressure RD series actuators.

■ Specifications

Size	KD2 (1/8")	KD4 (1/4")	KD8 (1/2")
Cv	0.04	0.22	0.7
Wetted Area Volume	0.019in³ (0.31cm³)	0.140in³ (2.3cm³)	0.720in³ (11.8cm³)
Other specifications and product grades conform to the valves on which the series is based.			

■ Precautions

① The valves are designed to be used under atmospheric pressure. Usage such as under vacuum vessels are not guranteed.
② For high temperature applications, please select appropriate material for air-fittings and tubes to assure proper performance.



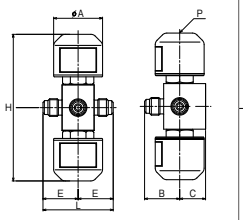
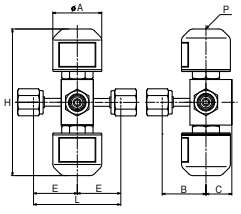
■ Product Code Table

										Options				
B	2	3	F	KD	4	C	O	VF	C	□	□	A	EP-316L	
Block valve	Number of valves	Number of ports	Port direction: Flicker type *1	Model: KD: KD-type diaphragm valve KCD: KCD-type diaphragm valve RD: High-pressure diaphragm valve	Size: 2:1/8" 4:1/4" 8:1/2"	V1: C: Normally closed O: Normally open M: Manual valves Q: 90° manual valves *2	V2	Connection method: V: CVC male VF: CVC female W: butt weld *3	Seat material: C:PCTFE A:PFA P:PI	Handle type: Not shown: standarad POC: Push-lock type	Handle color: Not shown: Blue (standard) BK: Black GR: Green RD: Red SL: Silver WH: White YE: Yellow	Flow: A: A flow B: B flow *1	Grade + body material: STD-316L: Mechanical Polished + SUS316L EP-316L: Electro Polished + SUS316L SEP-316LE: Electro Polished + SUS316LE	

*1 For the port direction and flow, please refer to the Flow direction noted above.
*2 In the case where the actuators are the same, there will be one symbol.
*3 In the case where the types of fittings differ, please note them in the above order of Flow direction Ports A, B, and C.
Example) For the case of Port A = CVC female, Port B = CVC male, Port C = CVC male, the model will be "VFVFV."

■ Dimensions

Unit: inch (mm)

Model		Type	Connection	L	E	H	A	B	C	P	M	M₁
		B23FKD2□□-VC	1/8" CVC Male	1.61 (41.0)	0.81 (20.5)	3.62 (92.0)	1.10 (28.0)	0.81 (20.5)	0.59 (15.0)	Rc1/8	0.51 (13.0)	2-M4 Depth 0.20 (5.0)
		B23FKD4□□-VC	1/4" CVC Male	2.24 (57.0)	1.12 (28.5)	4.69 (119.0)	1.56 (39.7)	1.12 (28.5)	0.83 (21.0)	Rc1/8	1.00 (25.4)	2-M5 Depth 0.20 (5.0)
		B23FKD2□□-VFC	1/8" CVC Female	2.20 (56.0)	1.10 (28.0)	3.62 (92.0)	1.10 (28.0)	1.10 (28.0)	0.59 (15.0)	Rc1/8	0.51 (13.0)	2-M4 Depth 0.20 (5.0)
		B23FKD2□□-VFC	1/8" CVC Female	2.74 (69.6)	1.37 (34.8)	4.69 (119.0)	1.56 (39.7)	1.37 (34.8)	0.83 (21.0)	Rc1/8	1.00 (25.4)	2-M4 Depth 0.20 (5.0)
		B23FKD8□□-VFC	1/2" CVC Female	3.27 (83.0)	1.63 (41.5)	5.35 (136.0)	2.17 (55.0)	1.63 (41.5)	1.57 (40.0)	Rc1/8	0.79 (20.0)	2-M5 Depth 0.20 (5.0)

IC
Check Valves

The IC series valves are poppet sliding check valves that have smooth closing and opening operation due to their precision fitting finish.In addition, because of their specially designed elastomer, the valves can retain a seal from low pressure to high pressure, and they have been perfected into designs that minimize gas accumulation due to their compact design.

Features

◎ Made out of SUS316L, these valves have improved corrosion resistance.
◎ These valves have a mechanism such that when there is strong back pressure, the poppet and body contact at each metal part, and the force of the pressing of the poppet and molded gasket and the stress are always constant, so a long life will be obtained.
◎ The specially designed molded gasket employs elastomer, instead of a conventional O-ring to minimize the dead space. In addition, special processing prevents blowouts.
◎ The component parts have simpler structures. In addition, excellent external air-tightness is obtained by the use of metal seat.
◎ Precision fit between the two bodies and the design of the sealing surface provides excellent seal performance.
◎ KITZ SCT has taken advantage of the elasticity of the elastomer during the assembly to achieve highest sealing performance for both external and internal leak.

Specifications

Size		IC4 (1/4")				IC6 (3/8")	IC8 (1/2")
Cv		0.35				1.1	1.1
Maximum Operating Pressure		2350psig (16.2MPa(G))					
Fluid Temperature Range		-10ºC~80ºC					
Atmospheric Temperature		-10ºC~60ºC					
Leak Rates	Inboard He Leak Test Rates	≤ 1×10^{-9} sccs (≤ 1×10^{-10}Pa·m3/sec)					
Cracking Pressure (kPa)		1/3:2.26	1:6.86	10:68.6	25:171.6	1/3:2.26	
Back Pressure Seal (kPa)		4.26psi (29.4kpa)		0.71psi (4.9kpa)		4.26psi (29.4kpa)	

Product Grade

Grade	STD	EP
Body Material	SUS316L	
Surface Roughness	≤ Rz 3.2 μm	≤ Rz 0.7 μm
Polish	Mechanical Polished	Electro Polished
Cleaning	Degreasing + Precision cleaning	
Clear Room Environment	Class 10 (some products, Class 100)	
Packaging	Single bagged package	Double bagged package

Precautions

① For these valve seals, the appropriate differential pressure for each value of cracking pressure will be needed.
② In cases where the differential pressure is small due to the operating state, variations in seal performance may occur.
③ During initial operation or when operated after long inactivity, the initial cracking pressure may be slightly higher than the cracking pressure specified.
④ The cracking pressure rated on the valve is a pressure for the valve to be fully open, but the valve starts opening at lower than rated pressure.
⑤ Back Pressure Seal is subject to change depending on seat material.
⑥ The valves are designed to be used under atmospheric pressure. Usage such as under vacuum vessels are not guranteed.
⑦ Back Pressure Seal is 69 (KPa) when the seat material is Kalrez.



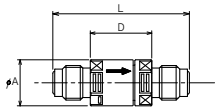
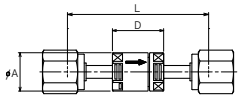
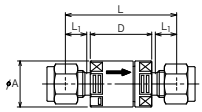
Product Code Table

Model	Size		Cracking pressure		Connection	Seat material		Grade + Body material
IC	4	-	1/3H	-	VF	F	-	EP-316L
Check valve	4:1/4" 6:3/8" 8:1/2"		1/3H:2.26kPa 1H:6.86kPa 10H:68.6kPa 25H:171.6kPa		V: CVC male VF: CVC female S: Compression	F: Fluorine rubber N: Nitrile rubber NE: Neoprene rubber KL: KALREZ® *1		STD-316L : Mechanical Polished + SUS316L EP-316L : Electro Polished + SUS316L

*1 KL=KALREZ® is a trademark of DuPont Performance Elastomers
Only those sizes that accommodate a 1/4" cracking pressure of 1H or less.

Dimensions

Unit: inch (mm)

Model	Type	Connection	A	L	D	L_1*
	IC4□-V□	1/4" CVC Male	0.75 (19.0)	2.22 (56.4)	1.00 (25.4)	-
	IC8□-V□	1/2" CVC Male	0.94 (24.0)	2.72 (69.0)	1.26 (32.0)	-
	IC4□-VF□	1/4" CVC Female	0.75 (19.0)	2.76 (70.0)	1.00 (25.4)	-
	IC8□-VF□	1/2" CVC Female	0.94 (24.0)	3.11 (79.0)	1.26 (32.0)	-
	IC4□-S□	1/4" Compression Fittings	0.75 (19.0)	1.81 (46.0)	1.00 (25.4)	0.31 (7.9)
	IC6□-S□	3/8" Compression Fittings	0.94 (24.0)	2.20 (55.9)	1.26 (32.0)	0.37 (9.5)
	IC8□-S□	1/2" Compression Fittings	0.94 (24.0)	2.28 (57.8)	1.26 (32.0)	0.50 (12.7)

* L_1 dimension for compression fitting is the dimension of how far tube inserted from end of body.

TD/TCD

B-SEAL IGS Valves

TD/TCD Series is a group of compact valves for the accumulated gas system (BIS/BISF) that is developed by KITZ SCT.





Valve Features

◎ KITZ-SCT's unique B-SEAL structure: Speedy and sure installation is made possible due to its center-lock mechanism. Reduction of assembly process and time required for the maintenance by user is expected to contribute to an overall cost reduction.

◎ Using KITZ-SCT's unique snap mechanism incorporated in manual valves extensively facilitates the operation even in a limited working space. In addition, the valve can be operated by one-touch, which helps avoid insufficient or excessive torque when turning the handle to either end, and thus increases an operational reliability. Considering safety, a miss-operation protective mechanism (fixing screw) is newly adopted.

◎ The valve is equipped with a mechanism to avoid miss-insertion and miss-installation by means of notch located on the base.

◎ The seal type use 1/8"CVC fitting that has been proven in a conventional gas system.

Major Specifications

Type (Size)	TCD	TD
Cv Value	0.15	0.3
Max. Working Pressure	0.98Mpa (142psi)	
Max. Fluid Temp	PCTFE –10~80°C(14~176F) PFA –10~120 °C(14~248F)	
Operating Pressure	0.4~0.7Mpa (60~100psi)	
Internal Leakage Allowance	3×10^{-9}atm·cc/sec (3×10^{-10} Pa·m³/sec)	
External Leakage Allowance	3×10^{-11}atm·cc/sec (3×10^{-12} Pa·m³/sec)	
Cycle Life	Pneumatic 1,000,000	
	Manual 50,000	

Product Grade

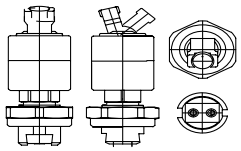
Grade	EP
Material	316L
Inner Surface Roughness	Rz0.7μm(Ra5μinch)
Polishing	Electropolishing finish
Cleaning	Degreasing + Precision cleaning
After Cleaning	class 10 Clean circumstances
Packing	W-Packing with clean pack. N2-charge

Precautions

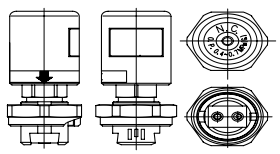
① The valves are designed to be used under atmospheric pressure. Usage such as under vacuum vessels are not guranteed.

② For high temperature applications, please select appropriate material for air-fittings and tubes to assure proper performance.

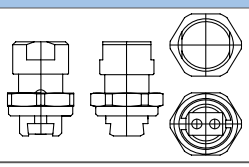
Manual Valves

Model	Type	Cv Value
	TCD4MS-GC-546-EP	0.15
	TD4MS-GC-548-EP	0.30

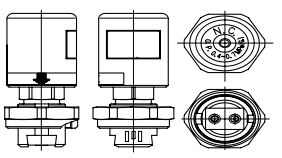
Pneumatic Valves (N.C.)

Model	Type	Cv Value
	TCD4CS-GC-386-EP	0.15
	TD4CS-GC-509-EP	0.30

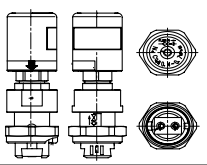
Check Valves

Model	Type	Cracking Pressure	Packing
	IC4-1/3-GF-75-EP	1/3psi	FKM
	IC4-1-GF-82-EP	1psi	
	IC4-10-GF-84-EP	10psi	

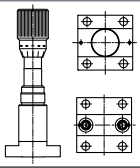
Pneumatic Valves (N.O.)

Model	Type	Cv Value
	TCD4OS-GC-□-EP	0.15
	TD4OS-GO-□-EP	0.30

Composite Valves

Model	Type	Operation
	TCD4CI-1/3-GCF-□-EP	NO
	TCD4OI-1/3-GCF-□-EP	NC

Flow Control Valves

Model	Type
	TCD4FS-GM-04

TD/TCD

C-SEAL IGS Valves

TD/TCD Series is a group of compact valves for 1.125inch-C-SEAL.



Valve Features

◎ These valves are diaphragm valves of Surface Mount type, and are compatible with 1.125" C-SEAL. Both manual and pneumatic valves in this series incorporate a compact actuator, which allows the valve to suit to fine line pitches.
◎ The manual valves are 90° open/close types, and capable to equip a lock key for preventing miss-operations.
◎ TD Series has achieved 0.3 for Cv value that is still higher than that of our KD Series.
◎ The surface that comes in contact with gases are made rich in chrome, and achieved Cr/Fe >2.0.(SEP specification)
◎ Achieving Hv300 on the sealing surface, repeated detachability is further improved.

Major Specifications

The standard model is TD Series.

Type (Size)	TCD	TD
Cv Value	0.1	0.3
Max. Working Pressure	0.98MPa(142psi)	
Max. Fluid Temp	PCTFE –10~80°C(14~176F) PFA –10~120°C(14~248F)	
Operating Pressure	0.4~0.7MPa(60~100psi)	
Internal Leakage Allowance	3×10^{-9}atm·cc/sec (3×10^{-10}Pa·m³/sec)	
Externa Leakage Allowance	3×10^{-11}atm·cc/sec (3×10^{-12}Pa·m³/sec)	
Cycle Life	Pneumatic 1,000,000	
	Manual 50,000	

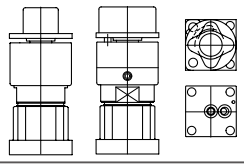
Product Grade

Grade	SEP
Material	316LE
Inner Surface Roughness	Rz0.7µm(Ra5µinch)
Polishing	Electropolishing finish
Cleaning	Degreasing + Precision cleaning
After Cleaning	class10 Clean circumstances
Packing	W-Packing with clean pack. N2-charge

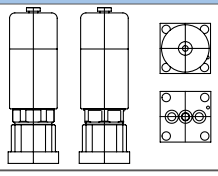
Precautions

① The valves are designed to be used under atmospheric pressure. Usage such as under vacuum vessels are not guranteed.
② For high temperature applications, please select appropriate material for air-fittings and tubes to assure proper performance.

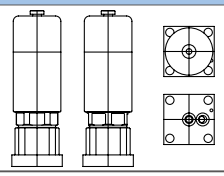
Manual Valves

Model	Type	Cv Value
	TCD4QS-GC-□	0.1
	TD4OS-GC-□	0.3

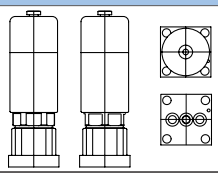
Pneumatic Valves 3 Port (N.C.)

Model	Type	Cv Value
	TCD4CB-GC-□	0.1
	TD4CB-GC-1003	0.3

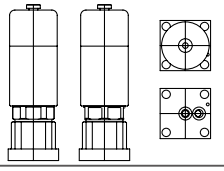
Pneumatic Valves 2 Port (N.C.)

Model	Type	Cv Value
	TCD4CS-GC-□	0.1
	TD4CS-GC-985	0.3

Pneumatic Valves 3 Port (N.O.)

Model	Type	Cv Value
	TCD4OB-GC-□	0.15
	TD4CB-GC-□	0.30

Pneumatic Valves 2 Port (N.O.)

Model	Type	Cv Value
	TCD4OS-GC-□	0.1
	TD4OS-GC-□	0.3

IB
Bellows Valves

A higher Cv value IB series has is more advantageous than diaphragm valves in use where large flows are required, such as facility supply lines.

■ Features

◎ The proprietary seat shape serves to reduce particle generation from the disk and improves durability.
◎ Smaller dead space enables shorter purge time.
◎ The IB series can be used not only in gas supply systems but also in exhaust systems. Unique specifications such as high temperature, high corrosion resistance, and variable flow rate can also be accommodated.

■ Specifications

Size			IB4 (1/4")	IB6 (3/8")·IB8 (1/2")
Cv			0.3	0.85
Wetted Area Volume			0.185in³ (3.03cm³)	0.359in³ (5.88cm³)
			CVC male, OPEN state	
Maximum Operating Pressure			142psig (0.98MPa(G))	
Fluid Temperature Range	Manual Valve		-10~100℃	
	Pneumatic Valve	PCTFE	-10~100℃	
		PFA	-10~150℃*	
		Flurine rubber	-10~180℃*	
Atomospheric Temperature			-10~60℃	
Actuation Pressure			58~101psig (0.4~0.7MPa(G))	
Leak Rates	Across the Seat He Leak Rates		≤ 1×10^{-9} sccs (≤ 1×10^{-10} Pa·m³/sec)	
	Inboard He Leak Rates		≤ 1×10^{-9} sccs (≤ 1×10^{-10} Pa·m³/sec)	
Cycle Life (N2 charged, own test)			Pneumatic valve 1 million cycles , manual valve 100,000 cycles	

*Bonnet Gasket Material is"M:SUS316S(PFA coating)"only

■ Product Grade

Grade		STD	EP
Material		SUS316L	
Surface Roughness	Only Body's Internal Roughness	≤ Rz3.2 μm	≤ Rz0.7 μm
		No bead cut in wetted area	
Cleaning		Degreasing + Precision cleaning	
Clean Room Environment		Class 10 (some products, Class 100)	
Packaging		Single bagged package	Double bagged package

■ Standard Materials

Body	SUS316L
Bellows	SUS316L
Bellows Flange	SUS316L
Bonnet	SUS304

■ Precautions

① Depending on the customer's usage conditions, the IB series may have a lower bellows life cycle due to accumulation of buildup material or corrosion.
② The valves are designed to be used under atmospheric pressure. Usage such as under vacuum vessels are not guranteed.
③ For high temperature applications, please select appropriate material for air-fittings and tubes to assure proper performance.

Straight Type



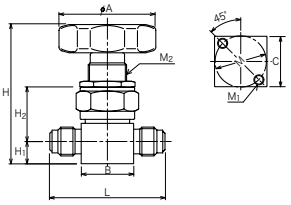
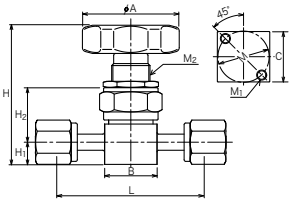
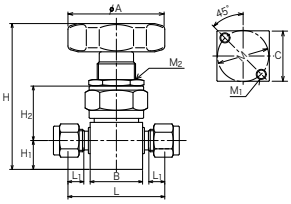
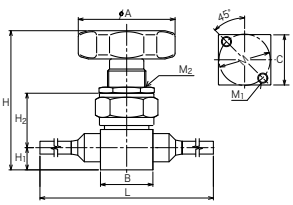
Product Code Table

Model	Size	Operation	Valve shape		Connection	Bonnet Gasket material	Disk material		Handle shape	Grade + Body material
IB	4	M	S	-	V	C	C	-	JH	EP-316L
IB-type bellows Seal valve	4:1/4" 6:3/8" 8:1/2"	Manual	Straight		V: CVC male VF: CVC female S: Compression W: Butt weld	C:PCTFE M:SUS316L (PFA coating)	C:PCTFE F: Fluorine rubber A:PFA		Not displayed: Standard JH: Open/Close display	STD-316L : Mechanical Polished + SUS316L EP-316L : Electro Polished + SUS316L

Please ask the sales representative about handle colors.

Dimensions

Unit: inch (mm)

Model	Type	Connection	L	L_1	H	H_1	H_2	A	B	C	M	M_1	M_2
	IB4MS-V□□	1/4" CVC Male	2.25 (57.1)	-	2.72 (69.0)	0.43 (11.0)	1.06 (27.0)	1.89 (48.0)	1.02 (26.0)	0.98 (25.0)	1.00 (25.4)	2-M5 Depth 0.31 (8.0)	M19×1.0
	IB8MS-V□□	1/2" CVC Male	2.56 (65.1)	-	3.19 (81.0)	0.63 (16.0)	1.34 (34.0)	1.89 (48.0)	1.02 (26.0)	0.98 (25.0)	1.00 (25.4)	2-M5 Depth 0.31 (8.0)	M19×1.0
	IB4MS-VF□□	1/4" CVC Female	2.78 (70.6)	-	2.72 (69.0)	0.43 (11.0)	1.06 (27.0)	1.89 (48.0)	1.02 (26.0)	0.98 (25.0)	1.00 (25.4)	2-M5 Depth 0.31 (8.0)	M19×1.0
	IB8MS-VF□□	1/2" CVC Female	3.27 (83.0)	-	3.19 (81.0)	0.63 (16.0)	1.34 (34.0)	1.89 (48.0)	1.02 (26.0)	0.98 (25.0)	1.00 (25.4)	2-M5 Depth 0.31 (8.0)	M19×1.0
	IB4MS-S□□	1/4" Compression Fittings	1.89 (48.0)	0.31 (7.9)	2.85 (72.3)	0.56 (14.3)	1.06 (27.0)	1.89 (48.0)	1.02 (26.0)	0.98 (25.0)	1.00 (25.4)	2-M5 Depth 0.31 (8.0)	M19×1.0
	IB6MS-S□□	3/8" Compression Fittings	2.52 (64.0)	0.37 (9.5)	3.06 (77.7)	0.50 (12.7)	1.34 (34.0)	1.89 (48.0)	1.02 (26.0)	0.98 (25.0)	1.00 (25.4)	2-M5 Depth 0.31 (8.0)	M19×1.0
	IB8MS-S□□	1/2" Compression Fittings	2.52 (64.0)	0.50 (12.7)	3.06 (77.7)	0.50 (12.7)	1.34 (34.0)	1.89 (48.0)	1.02 (26.0)	0.98 (25.0)	1.00 (25.4)	2-M5 Depth 0.31 (8.0)	M19×1.0
	IB4MS-W□□	1/4" Butt Weld	5.91 (150.0)	-	2.72 (69.0)	0.43 (11.0)	1.06 (27.0)	1.89 (48.0)	1.02 (26.0)	0.98 (25.0)	1.00 (25.4)	2-M5 Depth 0.31 (8.0)	M19×1.0
	IB6MS-W□□	3/8" Butt Weld	5.91 (150.0)	-	3.19 (81.0)	0.63 (16.0)	1.34 (34.0)	1.89 (48.0)	1.02 (26.0)	0.98 (25.0)	1.00 (25.4)	2-M5 Depth 0.31 (8.0)	M19×1.0
	IB8MS-W□□	1/2" Butt Weld	5.91 (150.0)	-	3.19 (81.0)	0.63 (16.0)	1.34 (34.0)	1.89 (48.0)	1.02 (26.0)	0.98 (25.0)	1.00 (25.4)	2-M5 Depth 0.31 (8.0)	M19×1.0



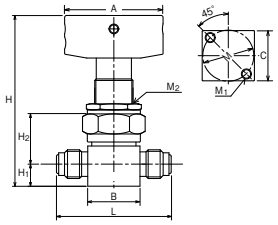
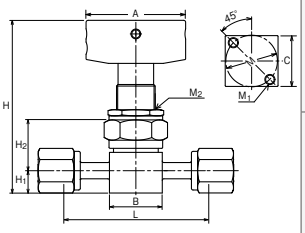
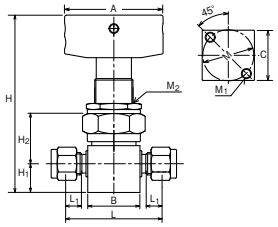
Product Code Table

Model	Size	Operation	Valve shape		Connection	Bonnet Gasket material	Disk material		Grade + Body material
IB	4	Q	S	-	V	C	C	-	EP-316L
IB-type bellows Seal valve	4:1/4" 6:3/8" 8:1/2"	Q: 90° ~ Handle rotation Manual Valves	Straight		V: CVC male VF: CVC female S: Conpression W: Butt weld	C:PCTFE M:SUS316L (PFA coating)	C:PCTFE F: Fluorine rubber A:PFA		STD-316L : Mechanical polished + SUS316L EP-316L : Electro polished + SUS316L

Please ask the sales representative about handle colors.

Dimensions

Unit: inch (mm)

Model	Type	Connection	L	L_1	H	H_1	H_2	A	B	C	M	M_1	M_2
	IB4QS-V□□	1/4" CVC Male	2.25 (57.1)	-	3.35 (85.0)	0.43 (11.0)	1.06 (27.0)	1.93 (49.0)	1.02 (26.0)	0.98 (25.0)	1.00 (25.4)	2-M5 Depth 0.31 (8.0)	M19×1.0
	IB8QS-V□□	1/2" CVC Male	2.56 (65.1)	-	3.87 (98.2)	0.63 (16.0)	1.34 (34.0)	1.93 (49.0)	1.02 (26.0)	0.98 (25.0)	1.00 (25.4)	2-M5 Depth 0.31 (8.0)	M19×1.0
	IB4QS-VF□□	1/4" CVC Female	2.78 (70.6)	-	3.35 (85.0)	0.43 (11.0)	1.06 (27.0)	1.93 (49.0)	1.02 (26.0)	0.98 (25.0)	1.00 (25.4)	2-M5 Depth 0.31 (8.0)	M19×1.0
	IB8QS-VF□□	1/2" CVC Female	3.27 (83.0)	-	3.87 (98.2)	0.63 (16.0)	1.34 (34.0)	1.93 (49.0)	1.02 (26.0)	0.98 (25.0)	1.00 (25.4)	2-M5 Depth 0.31 (8.0)	M19×1.0
	IB4QS-S□□	1/4" Compression Fittings	1.89 (48.0)	0.31 (7.9)	3.46 (88.0)	0.56 (14.3)	1.06 (27.0)	1.93 (49.0)	1.02 (26.0)	0.98 (25.0)	1.00 (25.4)	2-M5 Depth 0.31 (8.0)	M19×1.0
	IB6QS-S□□	3/8" Compression Fittings	2.52 (64.0)	0.37 (9.5)	3.74 (95.0)	0.50 (12.7)	1.34 (34.0)	1.93 (49.0)	1.02 (26.0)	0.98 (25.0)	1.00 (25.4)	2-M5 Depth 0.31 (8.0)	M19×1.0
	IB8QS-S□□	1/2" Compression Fittings	2.52 (64.0)	0.50 (12.7)	3.74 (95.0)	0.50 (12.7)	1.34 (34.0)	1.93 (49.0)	1.02 (26.0)	0.98 (25.0)	1.00 (25.4)	2-M5 Depth 0.31 (8.0)	M19×1.0



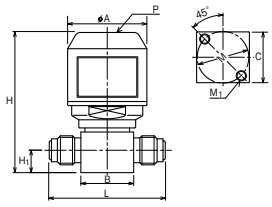
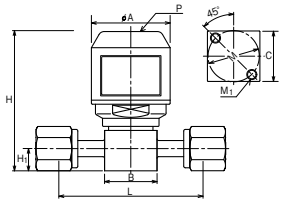
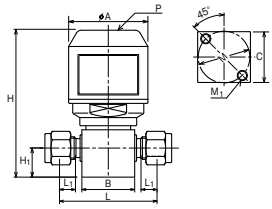
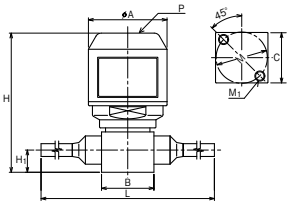
Product Code Table

Model	Size	Operation	Valve shape		Connection	Bonnet Gasket material	Disk material		Grade + Body material
IB	4	C	S	-	V	C	C	-	EP-316L
IB-type bellows Seal valve	4:1/4" 6:3/8" 8:1/2"	C: Normally closed O: Normally open	Straight		V: CVC male VF: CVC female S: Compression W: Butt weld	C:PCTFE M:SUS316L (PFA coating)	C:PCTFE F: Fluorine rubber A:PFA		STD-316L : Mechanical Polished + SUS316L EP-316L : Electro Polished + SUS316L

*In the automatic valves that have a maximum usage temperature of 180°C, the disk material is fluorine rubber and the bonnet gasket material is SUS316L (PFA coated).
The actuator dimension ϕA in that case will be ϕ39 for ¼" to ½" . We also offer a hot seal for a special-purpose heater.

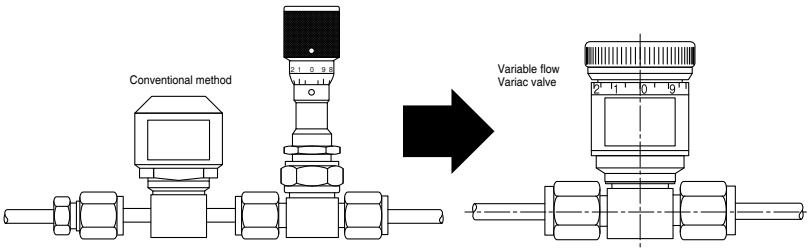
Dimensions

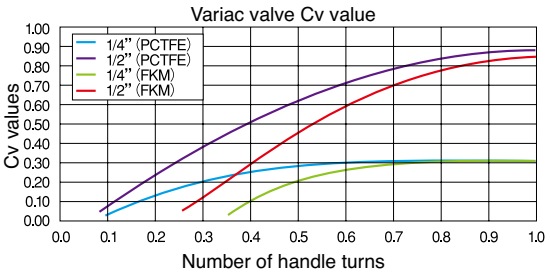
Unit: inch (mm)

Model	Type	Connection	L	L_1	H	H_1	A	B	C	P	M	M_1
	IB4□S-V□□	1/4" CVC Male	2.25 (57.1)	-	2.72 (69.0)	0.43 (11.0)	1.54 (39.0)	1.02 (26.0)	0.98 (25.0)	Rc1/8	1.00 (25.4)	2-M5 Depth 0.31 (8.0)
	IB8□S-V□□	1/2" CVC Male	2.56 (65.1)	-	3.27 (83.0)	0.63 (16.0)	1.89 (48.0)	1.02 (26.0)	0.98 (25.0)	Rc1/8	1.00 (25.4)	2-M5 Depth 0.31 (8.0)
	IB4□S-VF□□	1/4" CVC Female	2.78 (70.6)	-	2.72 (69.0)	0.43 (11.0)	1.54 (39.0)	1.02 (26.0)	0.98 (25.0)	Rc1/8	1.00 (25.4)	2-M5 Depth 0.31 (8.0)
	IB8□S-VF□□	1/2" CVC Female	3.27 (83.0)	-	3.27 (83.0)	0.63 (16.0)	1.89 (48.0)	1.02 (26.0)	0.98 (25.0)	Rc1/8	1.00 (25.4)	2-M5 Depth 0.31 (8.0)
	IB4□S-S□□	1/4" Compression Fittings	1.89 (48.0)	0.31 (7.9)	2.85 (72.3)	0.56 (14.3)	1.54 (39.0)	1.02 (26.0)	0.98 (25.0)	Rc1/8	1.00 (25.4)	2-M5 Depth 0.31 (8.0)
	IB6□S-S□□	3/8" Compression Fittings	2.52 (64.0)	0.37 (9.5)	3.14 (79.7)	0.50 (12.7)	1.89 (48.0)	1.02 (26.0)	0.98 (25.0)	Rc1/8	1.00 (25.4)	2-M5 Depth 0.31 (8.0)
	IB8□S-S□□	1/2" Compression Fittings	2.52 (64.0)	0.50 (12.7)	3.14 (79.7)	0.50 (12.7)	1.89 (48.0)	1.02 (26.0)	0.98 (25.0)	Rc1/8	1.00 (25.4)	2-M5 Depth 8
	IB4□S-W□□	1/4" Butt Weld	5.91 (150.0)	-	2.72 (69.0)	0.43 (11.0)	1.54 (39.0)	1.02 (26.0)	0.98 (25.0)	Rc1/8	1.00 (25.4)	2-M5 Depth 0.31 (8.0)
	IB6□S-W□□	3/8" Butt Weld	5.91 (150.0)	-	3.27 (83.0)	0.63 (16.0)	1.89 (48.0)	1.02 (26.0)	0.98 (25.0)	Rc1/8	1.00 (25.4)	2-M5 Depth 0.31 (8.0)
	IB8□S-W□□	1/2" Butt Weld	5.91 (150.0)	-	3.27 (83.0)	0.63 (16.0)	1.89 (48.0)	1.02 (26.0)	0.98 (25.0)	Rc1/8	1.00 (25.4)	2-M5 Depth 0.31 (8.0)

"Variac" Variable Flow Valve

Comparison with conventional methods





Features

◎ The flow can be controlled by rotating the black handle on top of the actuator. One valve can act as two valves -- a pneumatic valve and a needle valve. This enables a simpler piping layout, space conservation, and cost reduction.

◎ High temperature Variac valves (maximum operating temperature 180°C) are also available upon request. A dedicated hot shell heater is also available as a separate part.

Specifications

Size		IB4V (1/4")	IB6V (3/8")·IB8V (1/2")
Disk Material		PCTFE, O-ring (fluorine rubber)	
Cv		Adjustment range: 0.03~0.28	Adjustment range: 0.05~0.74
Wetted Area Volume		0.185in³ (3.03cm³)	0.359in³ (5.88cm³)
		CVC male, OPEN state	
Maximum Operating Pressure		142psig (0.98MPa(G))	
Fluid Temperature Range		Standard -10~100°C	
		High-temperature specifications -10~180°C	
Atmospheric Temperature		-10°C~60°C	
Actuation Pressure		0.4~0.7MPa (G)	
Leak Rates	Across the Seat He Leak Rates	≤ 1×10^{-9} sccs (≤ 1×10^{-10} Pa·m³/sec)	
	Inboard He Leak Rates	≤ 1×10^{-9} sccs (≤ 1×10^{-10} Pa·m³/sec)	
Cycle Life (N2 Charged, Own Test)		1 million cycles	

Product Grade

Grade		STD	EP
Material		SUS316L	
Surface Roughness	Only Body's Internal Surface	≤ Rz3.2 μm	≤ Rz0.7 μm
		No bead cut in welded area	
Cleaning		Degreasing + Precision cleaning	
Post-cleaning Environment		Class 10 (some products, Class 100)	
Packaging		Single bagged package	Double bagged package

Precautions

① The set amount of flow may vary depending on the usage conditions.

② The valves are designed to be used under atmospheric pressure. Usage such as under vacuum vessels are not guranteed.

③ For high temperature applications, please select appropriate material for air-fittings and tubes to assure proper performance.



Product Code Table

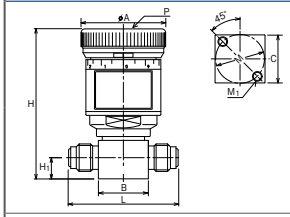
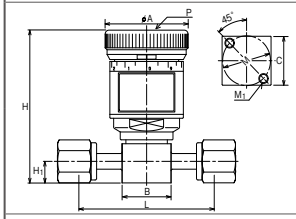
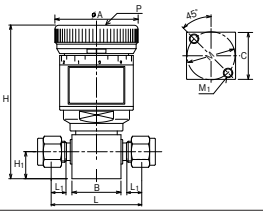
Model	Size	Type	Operation	Valve shape		Connection	Bonnet Gasket material	Disk material		Grade + Body material
IB	4	V	C	S	-	V	C	C	-	EP-316L
IB-type bellows Seal valve	4:1/4" 6:3/8" 8:1/2"	Variac	C: Normally closed O: Normally open	Straight		V: CVC male VF: CVC female S: Compression	C:PCTFE M:SUS316L (PFA coating)	C:PCTFE F: Fluorine rubber		STD-316L: Mechanical Polished + SUS316L EP-316L : Electro Polished + SUS316L

* In the products that have a maximum usage temperature of 180°C, the disk material is fluorine rubber, and the bonnet gasket material is SUS316L (PFA coated). The actuator dimension ϕA in that case will be ϕ44 from 1/4" to1/2". We also offer a hot seal for a special-purpose heater.

* All of the parts that come in contact with gas are made of SUS316L.

Dimensions

Unit: inch (mm)

Model	Type	Connection	L	L_1	H	H_1	A	B	C	P	M	M_1
	IB4V□S-V□□	1/4" CVC Male	2.25 (57.1)	-	3.07 (78.0)	0.43 (11.0)	1.73 (44.0)	1.02 (26.0)	0.98 (25.0)	Rc1/8	1.00 (25.4)	2-M5 Depth 0.31 (8.0)
	IB8V□S-V□□	1/2" CVC Male	2.56 (65.1)	-	3.58 (91.0)	0.63 (16.0)	2.13 (54.0)	1.02 (26.0)	0.98 (25.0)	Rc1/8	1.00 (25.4)	2-M5 Depth 0.31 (8.0)
	IB4V□S-VF□□	1/4" CVC Female	2.78 (70.6)	-	3.07 (78.0)	0.43 (11.0)	1.73 (44.0)	1.02 (26.0)	0.98 (25.0)	Rc1/8	1.00 (25.4)	2-M5 Depth 0.31 (8.0)
	IB8V□S-VF□□	1/2" CVC Female	3.27 (83.0)	-	3.58 (91.0)	0.63 (16.0)	2.13 (54.0)	1.02 (26.0)	0.98 (25.0)	Rc1/8	1.00 (25.4)	2-M5 Depth 0.31 (8.0)
	IB4V□S-S□□	1/4" Compression Fittings	1.89 (48.0)	0.31 (7.9)	3.20 (81.3)	0.56 (14.3)	1.73 (44.0)	1.02 (26.0)	0.98 (25.0)	Rc1/8	1.00 (25.4)	2-M5 Depth 0.31 (8.0)
	IB6V□S-S□□	3/8" Compression Fittings	2.52 (64.0)	0.37 (9.5)	3.45 (87.7)	0.50 (12.7)	2.13 (54.0)	1.02 (26.0)	0.98 (25.0)	Rc1/8	1.00 (25.4)	2-M5 Depth 0.31 (8.0)
	IB8V□S-S□□	1/2" Compression Fittings	2.52 (64.0)	0.50 (12.7)	3.45 (87.7)	0.50 (12.7)	2.13 (54.0)	1.02 (26.0)	0.98 (25.0)	Rc1/8	1.00 (25.4)	2-M5 Depth 0.31 (8.0)

Flow-control Needle Valve

■ Features

◎ Because of the ultra-precision processing of the needle part and a structure with no backrush, *1 desired flow rate can be set precisely.
◎ A metal gasket is standard and provides excellent heat resistance.

*1 Backrush: Flowback or the space formed at the rear of the engagement of gears or screws.

■ Specifications

Size		IB4BN (1/4")	
Orifice diameter		ϕ0.055in (1.4mm)	ϕ0.157in (4.0mm)
Cv		Adjustment range: 0.001~0.0136	Adjustment range: 0.06~0.28
Wetted Area Volume		0.185in³ (3.03cm³)	
		CVC male, OPEN state	
Maximum Operating Pressure		0.98MPa (G)	
Fluide Temperature Range		-10~150℃	
Atmospheric Temperature		-10℃~60℃	
Leak Rates	Across the He leak rates	-	
	Inboard He Leak Rates	≤ 3×10^{-9} sccs (≤ 1×10^{-10} Pa·m³/sec)	

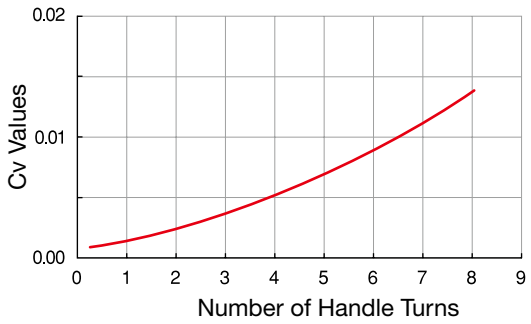
■ Product Grade

Grade		STD	EP
Material		SUS316L	
Surface Roughness	Only Body's Internal Surface	≤ Rz3.2 μm	≤ Rz0.7 μm
		No bead cut in welded area	
Cleaning		Degreasing + Precision cleaning	
Clean Room Environment		Class 10 (some products, Class 100)	
Packaging		Single bagged package	Double bagged package

■ Precautions

① Because the needle valves employ a precision handle, please do not apply excessive torque beyond the zero point.
② The valves are designed to be used under atmospheric pressure. Usage such as under vacuum vessels are not guranteed.

Orifice Diameter ϕ1.4



Orifice Diameter ϕ4.0



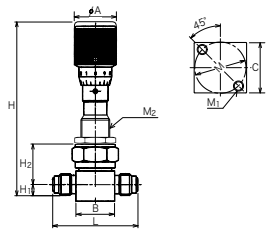
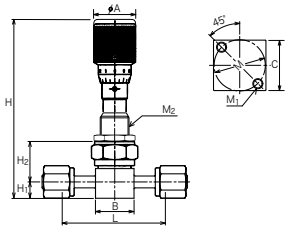


■ Product Code Table

Model	Size	Type	Valve shape	Orifice diameter	Valve shape		Connection method	Seat material		Grade + Body material
IB	4	B	N	1.4	S	-	V	M	-	EP-316L
IB-type bellows Seal valve	1/4"	Backrushless	Needle	1.4:1.4mm 4.0:4.0mm	Straight		V: CVC male VF: CVC female	M:SUS316L (PFA coating)		STD-316L: Mechanical Polished + SUS316L EP-316L : Electro Polished + SUS316L

■ Dimensions

Unit: inch (mm)

Model	Type	Connection	L	H	H_1	H_2	A	B	C	M	M_1	M_2
	IB4BN1.4S-VM	1/4" CVC Male	2.25 (57.1)	4.72 (120.0)	0.43 (11.0)	1.06 (27.0)	1.10 (28.0)	1.02 (26.0)	0.98 (25.0)	1.00 (25.4)	2-M5 Depth 0.31 (8.0)	M19×1.0
	IB4BN4.0S-VM	1/4" CVC Male	2.25 (57.1)	4.72 (120.0)	0.43 (11.0)	1.06 (27.0)	1.10 (28.0)	1.02 (26.0)	0.98 (25.0)	1.00 (25.4)	2-M5 Depth 0.31 (8.0)	M19×1.0
	IB4BN1.4S-VFM	1/4" CVC Female	2.80 (71.0)	4.72 (120.0)	0.43 (11.0)	1.06 (27.0)	1.10 (28.0)	1.02 (26.0)	0.98 (25.0)	1.00 (25.4)	2-M5 Depth 0.31 (8.0)	M19×1.0
	IB4BN4.0S-VFM	1/4" CVC Female	2.80 (71.0)	4.72 (120.0)	0.43 (11.0)	1.06 (27.0)	1.10 (28.0)	1.02 (26.0)	0.98 (25.0)	1.00 (25.4)	2-M5 Depth 0.31 (8.0)	M19×1.0

SBB
Bellows Valves
Straight-type

The SBB series of pipe size bellows valves have a compact design and are intended for use in high Cv and high durability supply lines.

Features

◎ We offer not only all purpose butt weld connection but also flange connections and union connecitons.
◎ Achieving reduced weight with forged valve body.
◎ Adopted a seat structure to reduce gas pooling and particle shedding.
◎ By setting the air supply inlet on the top of the actuator, there is no concern over piping direction.
◎ Purge port options available for the Inlet, Outlet, or Both.

Specifications

Size		SBB10 (10A)	SBB15 (15A)	SBB20 (20A)	SBB25 (25A)
Cv		2.1	3.3	4.5	8.0
Wetted Area Volume		2.319in³ (38cm³)	3.234in³ (53cm³)	5.248in³ (86cm³)	3.726in³ (143cm³)
		Butt weld, OPEN state			
Maximum Operating Pressure		142psig (0.98MPa(G))			
Fluide Temperature Range	Manual	-10~100℃			
	Pneumatic	-	-10~80℃		
Atmospheric Temperature		-10℃~60℃			
Leak Rates	Across the Seat He Leak Rates	≤ 1×10⁻⁹sccs (≤ 1×10⁻¹⁰ Pa·m³/sec)			
	Inboard He Leak Rates	≤ 1×10⁻⁹sccs (≤ 1×10⁻¹⁰ Pa·m³/sec)			
Actuation Pressure		-	N・C：72~101psig (0.5~0.7MPa(G))/N・O：72~87psig (0.5~0.7MPa(G))		
Cycle Life (N2 Charged, Own Test)	Manual	100,000 cycles			50,000 cycles
	Pneumatic	-	10,000 cycles		

Product Grade

Grade		STD	EP
Material		SUS316L	
Surface Roughness	Only Body's Internal Surface	≤ Rz 3.2 μm	≤ Rz 0.7 μm
		No bead cut in wetted area	
Cleaning		Degreasing + Precision cleaning	
Clean Room Environment		Class 100 clean environment	
Packaging		Single bagged package	Double bagged package

Precautions

① SBB series may experience shortened bellows life cycle under certain corrosive environment. Also, SBB series is not compatible with liquid use.
② These valves are designed to be used under atmospheric pressure. Usage such as under vacuum vessels is not guaranteed.



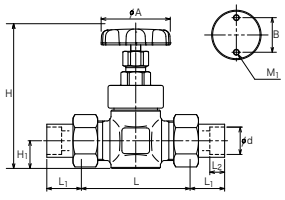
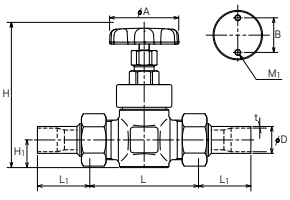
Product Code Table

Model	Size	Operation	Valve shape		Connection	Bonnet Gasket material	Disk material		Purge port		Grade + Body material
SBB	15	M	S	-	W	C	T	-	IP	-	EP-316L
SBB-type bellows Seal valve	10:10A 15:15A 20:20A 25:25A	M: Manual	Straight		W.: Butt weld U: Union*1 RF: RF flange	PCTFE	PTFE		No cover sheet: No purge port: IP: 1st OP: 2nd PP: Both		STD-316L : Mechanical Polished + SUS316L EP-316L : Electro Polished + SUS316L

* 1 The union type consists of interlock and butt weld types. Please ask to the sales representative about handle color.
* Inch size butt weld also available.

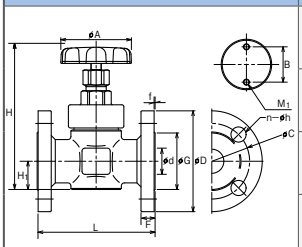
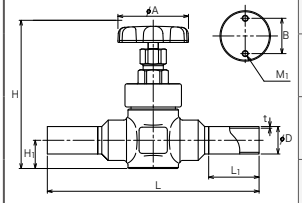
Dimensions

Unit: inch (mm)

Model	Type	Connec-tion	L	L₁	L₂	H	H₁	A	D	t	C	G	d	F	f	n-ϕh	B	M₁
	SBB10MS-UCT	10A union (insertion-type)	3.54 (90.0)	1.18 (30.0)	0.39 (10.0)	4.78 (121.5)	0.79 (20.0)	2.76 (70.0)	-	-	-	-	0.70 (17.8)	-	-	-	1.18 (30.0)	2-M6 Depth 0.39 (10.0)
	SBB15MS-UCT	15A union (insertion-type)	3.94 (100.0)	1.38 (35.0)	0.59 (15.0)	4.94 (125.5)	0.94 (24.0)	2.76 (70.0)	-	-	-	-	0.87 (22.2)	-	-	-	1.18 (30.0)	2-M6 Depth 0.39 (10.0)
	SBB20MS-UCT	20A union (insertion-type)	4.33 (110.0)	1.38 (35.0)	0.59 (15.0)	5.79 (147.0)	1.10 (28.0)	2.76 (70.0)	-	-	-	-	1.09 (27.7)	-	-	-	1.38 (35.0)	2-M6 Depth 0.39 (10.0)
	SBB25MS-UCT	25A union (insertion-type)	4.72 (120.0)	1.38 (35.0)	0.59 (15.0)	6.79 (172.5)	1.30 (33.0)	3.35 (85.0)	-	-	-	-	1.36 (34.5)	-	-	-	1.57 (40.0)	2-M6 Depth 0.39 (10.0)
	SBB10MS-UCT-24	10A union (Butt Weld)	3.54 (90.0)	1.97 (50.0)	-	4.78 (121.5)	0.79 (20.0)	2.76 (70.0)	0.68 (17.3)	-	-	-	-	-	-	-	1.18 (30.0)	2-M6 Depth 0.39 (10.0)
	SBB15MS-UCT-128	15A union (Butt Weld)	3.94 (100.0)	2.05 (52.0)	-	4.94 (125.5)	0.94 (24.0)	2.76 (70.0)	0.85 (21.7)	0.06 (1.65)	-	-	-	-	-	-	1.18 (30.0)	2-M6 Depth 0.39 (10.0)
	SBB20MS-UCT-90	20A union (Butt Weld)	4.33 (110.0)	2.09 (53.0)	-	5.79 (147.0)	1.10 (28.0)	2.76 (70.0)	1.07 (27.2)	0.06 (1.65)	-	-	-	-	-	-	1.38 (35.0)	2-M6 Depth 0.39 (10.0)
	SBB25MS-UCT-99	25A union (Butt Weld)	4.72 (120.0)	2.09 (53.0)	-	6.79 (172.5)	1.30 (33.0)	3.35 (85.0)	1.34 (34.0)	0.06 (1.65)	-	-	-	-	-	-	1.57 (40.0)	2-M6 Depth 0.39 (10.0)

Dimensions

Unit: inch (mm)

Model	Type	Connection	L	L_1	L_2	H	H_1	A	D	t	C	G	d	F	f	n-ϕh	B	M_1
	SBB10MS-RFCT	10ARF Flange	3.94 (100.0)	-	-	4.78 (121.5)	0.79 (20.0)	2.76 (70.0)	3.54 (90.0)	-	2.56 (65.0)	1.81 (46.0)	0.47 (12.0)	0.47 (12.0)	0.04 (1.0)	4-15	1.18 (30.0)	2-M6 Depth 0.39 (10.0)
	SBB15MS-RFCT-133	15ARF Flange	4.25 (108.0)	-	-	4.94 (125.5)	0.94 (24.0)	2.76 (70.0)	3.74 (95.0)	-	2.76 (70.0)	2.01 (51.0)	0.72 (18.4)	0.47 (12.0	0.04 (1.0)	4-15	1.18 (30.0)	2-M6 Depth 0.39 (10.0)
	SBB20MS-RFCT-94	20ARF Flange	4.61 (117.0)	-	-	5.79 (147.0)	1.10 (28.0)	2.76 (70.0)	3.94 (100.0)	-	2.95 (75.0)	2.20 (56.0)	0.94 (23.9)	0.55 (14.0)	0.04 (1.0)	4-15	1.38 (35.0)	2-M6 Depth 0.39 (10.0)
	SBB25MS-RFCT-96	25ARF Flange	5.00 (127.0)	-	-	6.79 (172.5)	1.30 (33.0)	3.35 (85.0)	4.92 (125.0)	-	3.54 (90.0)	2.64 (67.0)	1.21 (30.7)	0.55 (14.0)	0.04 (1.0)	4-19	1.57 (40.0)	2-M6 Depth 0.39 (10.0)
	SBB10MS-WCT	10A Butt weld	7.48 (190.0)	1.97 (50.0)	-	4.78 (121.5)	0.79 (20.0)	2.76 (70.0)	0.68 (17.3)	0.05 (1.2)	-	-	-	-	-	-	1.18 (30.0)	2-M6 Depth 0.39 (10.0)
	SBB15MS-WCT	15A Butt weld	7.87 (200.0)	1.97 (50.0)	-	4.94 (125.5)	0.94 (24.0)	2.76 (70.0)	0.85 (21.7)	0.06 (1.65)	-	-	-	-	-	-	1.18 (30.0)	2-M6 Depth 0.39 (10.0)
	SBB20MS-WCT	20A Butt weld	8.27 (210.0)	1.97 (50.0)	-	5.79 (147.0)	1.10 (28.0)	2.76 (70.0)	1.07 (27.2)	0.06 (1.65)	-	-	-	-	-	-	1.38 (35.0)	2-M6 Depth 0.39 (10.0)
	SBB25MS-WCT	25A Butt weld	8.66 (220.0)	1.97 (50.0)	-	6.79 (172.5)	1.30 (33.0)	3.35 (85.0)	1.34 (34.0)	0.06 (1.65)	-	-	-	-	-	-	1.57 (40.0)	2-M6 Depth 0.39 (10.0)

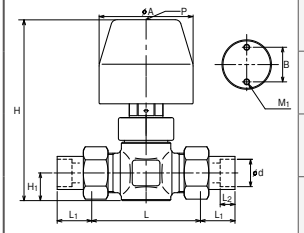
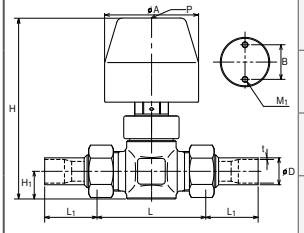
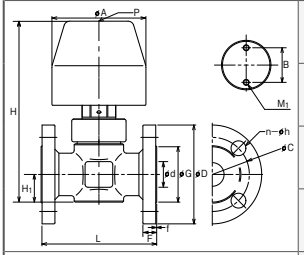
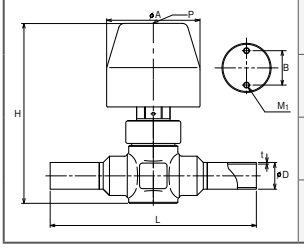
Product Code Table

Model	Size	Operation	Valve shape		Connection	Bonnet Gasket material	Disk material		Purge port		Grade + Body material
SBB	15	C	S	-	W	C	T	-	IP	-	EP-316L
IBC-type bellows seal valve	15:15A 20:20A 25:25A	C: Normally closed O: Normally open*1	Straight		W.: Butt Weld U: Union*2 RF: RF Flange	PCTFE	PTFE		No cover sheet: No purge port: IP: 1st OP: 2nd PP: Both		STD-316L : Mechanical Polish + SUS316L EP-316L : Electro Polish + SUS316L

* 1 Normallly open：25A are available.
* 2 The union type consists of interlock and butt weld types.

Dimensions

Unit: inch (mm)

Model	Type	Connection	L	L_1	L_2	H	H_1	A	D	t	C	G	d	F	f	n-ϕh	P	B	M_1
	SBB15CS-UCT	15A union (insertion-type)	3.94 (100.0)	1.38 (35.0)	0.59 (15.0)	6.61 (168.0)	0.94 (24.0)	3.74 (95.0)	-	-	-	-	0.87 (22.2)	-	-	-	Rc1/4	1.18 (30.0)	2-M6 Depth 0.39 (10.0)
	SBB20CS-UCT	20A union (insertion-type)	4.33 (110.0)	1.38 (35.0)	0.59 (15.0)	7.17 (182.0)	1.10 (28.0)	3.74 (95.0)	-	-	-	-	1.09 (27.7)	-	-	-	Rc1/4	1.38 (35.0)	2-M6 Depth 0.39 (10.0)
	SBB25CS-UCT	25A union (insertion-type)	4.72 (120.0)	1.38 (35.0)	0.59 (15.0)	8.35 (212.0)	1.30 (33.0)	4.13 (105.0)	-	-	-	-	1.36 (34.5)	-	-	-	Rc1/4	1.57 (40.0)	2-M6 Depth 0.39 (10.0)
	SBB25OS-UCT	25A union (insertion-type)	4.72 (120.0)	1.38 (35.0)	0.59 (15.0)	7.17 (182.0)	1.30 (33.0)	4.13 (105.0)	-	-	-	-	1.36 (34.5)	-	-	-	Rc1/4	1.57 (40.0)	2-M6 Depth 0.39 (10.0)
	SBB15CS-UCT-18	15A union (Butt Weld)	3.94 (100.0)	2.05 (52.0)	-	6.61 (168.0)	0.94 (24.0)	3.74 (95.0)	0.85 (21.7)	0.06 (1.65)	-	-	-	-	-	-	Rc1/4	1.18 (30.0)	2-M6 Depth 0.39 (10.0)
	SBB20CS-UCT-21	20A union (Butt Weld)	4.33 (110.0)	2.09 (53.0)	-	7.17 (182.0)	1.10 (28.0)	3.74 (95.0)	1.07 (27.2)	0.06 (1.65)	-	-	-	-	-	-	Rc1/4	1.38 (35.0)	2-M6 Depth 0.39 (10.0)
	SBB25CS-UCT-14	25A union (Butt Weld)	4.72 (120.0)	2.09 (53.0)	-	8.35 (212.0)	1.30 (33.0)	4.13 (105.0)	1.34 (34.0)	0.06 (1.65)	-	-	-	-	-	-	Rc1/4	1.57 (40.0)	2-M6 Depth 0.39 (10.0)
	SBB25OS-UCT-04	25A union (Butt Weld)	4.72 (120.0)	2.09 (53.0)	-	7.17 (182.0)	1.30 (33.0)	4.13 (105.0)	1.34 (34.0)	0.06 (1.65)	-	-	-	-	-	-	Rc1/4	1.57 (40.0)	2-M6 Depth 0.39 (10.0)
	SBB15CS-RFCT	15A RF Flange	4.25 (108.0)	-	-	6.61 (168.0)	0.94 (24.0)	3.74 (95.0)	3.74 (95.0)	-	2.76 (70.0)	2.01 (51.0)	0.72 (18.4)	0.47 (12.0)	0.04 (1.0)	4-15	Rc1/4	1.18 (30.0)	2-M6 Depth 0.39 (10.0)
	SBB20CS-RFCT	20A RF Flange	4.61 (117.0)	-	-	7.17 (182.0)	1.10 (28.0)	3.74 (95.0)	3.94 (100.0)	-	2.95 (75.0)	2.20 (56.0)	0.94 (23.9)	0.55 (14.0)	0.04 (1.0)	4-15	Rc1/4	1.38 (35.0)	2-M6 Depth 0.39 (10.0)
	SBB25CS-RFCT	25A RF Flange	5.00 (127.0)	-	-	8.35 (212.0)	1.30 (33.0)	4.13 (105.0)	4.92 (125.0)	-	3.54 (90.0)	2.64 (67.0)	1.21 (30.7)	0.55 (14.0)	0.04 (1.0)	4-19	Rc1/4	1.57 (40.0)	2-M6 Depth 0.39 (10.0)
	SBB25OS-RFCT	25A RF Flange	5.00 (127.0)	-	-	7.17 (182.0)	1.30 (33.0)	4.13 (105.0)	4.92 (125.0)	-	3.54 (90.0)	2.64 (67.0)	1.21 (30.7)	0.55 (14.0)	0.04 (1.0)	4-19	Rc1/4	1.57 (40.0)	2-M6 Depth 0.39 (10.0)
	SBB15CS-WCT	15A Butt weld	7.87 (200.0)	1.97 (50.0)	-	6.61 (168.0)	0.94 (24.0)	3.74 (95.0)	0.85 (21.7)	0.06 (1.65)	-	-	-	-	-	-	Rc1/4	1.18 (30.0)	2-M6 Depth 0.39 (10.0)
	SBB20CS-WCT	20A Butt weld	8.3 (210.0)	1.97 (50.0)	-	7.17 (182.0)	1.10 (28.0)	3.74 (95.0)	1.07 (27.2)	0.06 (1.65)	-	-	-	-	-	-	Rc1/4	1.38 (35.0)	2-M6 Depth 0.39 (10.0)
	SBB25CS-WCT	25A Butt weld	8.66 (220.0)	1.97 (50.0)	-	8.35 (212.0)	1.30 (33.0)	4.13 (105.0)	1.34 (34.0)	0.06 (1.65)	-	-	-	-	-	-	Rc1/4	1.57 (40.0)	2-M6 Depth 0.39 (10.0)
	SBB25OS-WCT	25A Butt weld	8.66 (220.0)	1.97 (50.0)	-	7.17 (182.0)	1.30 (33.0)	4.13 (105.0)	1.34 (34.0)	0.06 (1.65)	-	-	-	-	-	-	Rc1/4	1.57 (40.0)	2-M6 Depth 0.39 (10.0)

IBC/IBD/IBE

Bellows Valves

Large-size Straight Type

The IBC/IBD/IBE series, like the SBB series, consist of larger pipe size bellows valves that, while having a compact design, high Cv value, and high durability, are premised on use in supply lines.

■ Features

◎ KITZ SCT's Y shape structure yields higher Cv than conventional S shape structure.
◎ The inner surfaces of the IBC/IBD valves are uniformly polished whole-surface cylindrical grinding.
◎ Because of their screw-sleeve structure with built-in bearing, the IBE valves require less torque on the handle for easy operation.
◎ Adopted a seat structure to reduce gas pooling and particle shedding.
◎ By setting the air supply inlet on the top of the actuator, there is no concern over piping direction.
◎ Realization of more compact design through positioning the actuator on the side.
◎ Purge port options available for the Inlet, Outlet, or Both.

■ Specifications

Model		IBC		IBD				IBE				
Model (size)		32A	40A	50A	65A	80A	100A	125A	150A	200A	250A	300A
Cv		21.0	30.0	51.0	89.0	127.0	205.0	329.0	473.0	1117.0	1739.0	2608.0
Wetted Area Volume		368cm³	440cm³	980cm³	1710cm³	2910cm³	5890cm³	11310cm³	19290cm³	45700cm³	71100cm³	131260cm³
		Butt Weld, OPEN State										
Maximum Operating Pressure		0.98MPa(G)										
Fluid Temperature Range	Manual	-10~100℃										
	Pneumatic	-10℃~80℃			-							
Atmospheric Temperature		-10℃~60℃										
Leak Rates	Across the Seat He Leak Rates	≤ 1×10^{-10} Pa·m³/sec										
	Inboard He Leak Rates	≤ 1×10^{-10} Pa·m³/sec										
Operation Pressure of Pneumatic Actuator		0.5~0.7MPa (G)			-							
Cycle Life		10,000 cycles (N2 charged, In-house Test)										

■ Product Grade

Specifications		IBC Series		IBD Series		IBE Series	
Grade		STD	EP (electro polished)	STD	EP (electro polished)	STD	EP (electro polished)
Material		SCS16A				SCS16A (125A~150A)	
						SUS316L (200A~300A)	
Surface Roughness	Body Inner Only	Rz 6.0 μm	Rz 0.7 μm	Rz 6.0 μm	Rz 0.7 μm	Rz 6.0 μm (125A~150A)	≤ Rz 0.7 μm
						Rz 12.0 μm (200A~300A)	
		After welding, No Bead Cut		After Welding, No Bead Cut		After Welding, No Bead Cut	
Cleaning		Degreasing + Precision Cleaning					
Clean Room Environment		Class 100 Clean Room Environment					
Packaging		Single Bagged Package	Double Bagged Package	Single Bagged Package	Double Bagged Package	Single Bagged Package	Double Bagged Package

■ Precautions

① IBC/IBD/IBE Series cannot be used with reactive or corrosive gases, nor with any liquids.
② These valves are designed to be used under atmospheric pressure. Usage such as under vacuum vessels is not guaranteed.



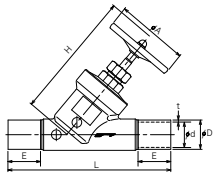
■ Product Code Table

Model	Size	Operation Method	Valve Shape		Connection Method	Bonnet Gasket material	Disk Material		Purge Port		Grade + Body Material
IBC	32	M	Y3	-	W	C	T	-	IP	-	EP-316L
IBC-type bellows Seal valve	32: 32A 40: 40A	Manual	Y-type Mold		W: Butt Weld RF: RF Flange	C: PCTFE	PTFE		Not Displayed: Without Purge Port IP: 1st OP: 2nd PP: Both		STD-316L : Mechanical polish + SUS316L EP-316L : Electro polish + SUS316L

*1 Please ask to the sales representative about handle color.
*2 Inch size butt weld also available.

■ IBC 32A·40A Dimensions

Unit: inch (mm)

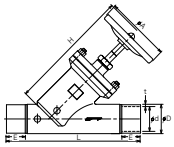
Model	Type	Connection	L	E	H	A	D	d	t
	IBC32MY3-WCT	32A Butt Weld	10.63 (270.0)	2.17 (55.0)	7.87 (200.0)	4.72 (120.0)	1.68 (42.7)	1.55 (39.4)	0.06 (1.65)
	IBC40MY3-WCT	40A Butt Weld	10.63 (270.0)	2.17 (55.0)	7.87 (200.0)	4.72 (120.0)	1.91 (48.6)	1.78 (45.3)	0.06 (1.65)

Product Code Table

Model	Size	Operation	Valve Shape		Connection	Bonnet Gasket Material	Disk Material		Purge Port		Grade + Body Material
IBD	50	M	Y3	-	W	C	T	-	IP	-	EP-316L
IBD-type bellows Seal valve	50:50A 65:65A 80:80A 100:100A	M: Manual	Y-type Mold		W:Butt Weld RF:RF Flange	C:PC TFE	PTFE		Not Displayed: Without Purge Port IP:1st OP:2nd PP:Both		STD-316L : Mechanical Polish + SUS316L EP-316L : Electro Polish + SUS316L

Dimensions

Unit: inch (mm)

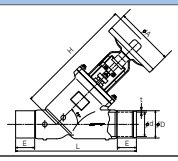
Model	Type	Connection	L	E	H	A	D	d	t
	IBD50MY3-WCT	50A Butt Weld	13.39 (340.0)	2.36 (60.0)	10.47 (266.0)	5.51 (140.0)	2.38 (60.5)	2.25 (57.2)	0.06 (1.65)
	IBD65MY3-WCT	65A Butt Weld	14.96 (380.0)	2.36 (60.0)	11.69 (297.0)	6.30 (160.0)	3.00 (76.3)	2.84 (72.1)	0.08 (2.10)
	IBD80MY3-WCT	80A Butt Weld	16.54 (420.0)	2.36 (60.0)	14.80 (376.0)	7.87 (200.0)	3.51 (89.1)	3.34 (84.9)	0.08 (2.10)
	IBD100MY3-WCT	100A Butt Weld	20.47 (520.0)	3.15 (80.0)	16.18 (411.0)	8.86 (225.0)	4.50 (114.3)	4.33 (110.1)	0.08 (2.10)

Product Code Table

Model	Size	Operation Method	Valve Shape	Connection Method	Bonnet Gasket Material	Disk Material	Purge Port	Grade + Body Material
IBE	125	M	Y3	W	C	T	IP	EP-316L
IBE-type bellows Seal valve	125:125A 150:150A	M: Manual	Y-type Mold	W: Butt Weld RF: RF Flange	C: PCTFE	PTFE	Not Displayed: Without Purge Port IP: 1st OP: 2nd PP: Both	STD-316L : Mechanical Polish + SUS316L EP-316L : Electro Polish + SUS316L

Dimensions

Unit: inch (mm)

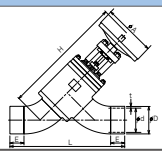
Model	Type	Connection	L	E	H	A	D	d	t
	IBE125MY3-WCT	125A Butt Weld	24.41 (620.0)	3.94 (100.0)	23.39 (594.0)	11.81 (300.0)	5.50 (139.8)	5.28 (134.2)	0.11 (2.8)
	IBE150MY3-WCT	150A Butt Weld	28.35 (720.0)	4.33 (110.0)	26.89 (683.0)	13.78 (350.0)	6.50 (165.2)	6.28 (159.6)	0.11 (2.8)

Product Code Table

Model	Size	Operation	Valve Shape		Connection	Bonnet Gasket Material	Disk Material		Purge Port		Grade + Body Material
IBE	200	M	Y2	-	W	C	T	-	IP	-	EP-316L
IBE-type bellows Seal valve	200:200A 250:250A 300:300A	M: Manual	Y-type Steel Pipe Weld		W: Butt Weld RF: RF Flange	C: PCTFE	PTFE		Not Displayed: Without Purge Port IP: 1st OP: 2nd PP: Both		STD-316L : Mechanical Polish + SUS316L EP-316L : Electro Polish + SUS316L

IBE 200A·250A·300A Dimensions

Unit: inch (mm)

Model	Type	Connection Joint	L	E	H	A	D	d	t
	IBE200MY2-WCT	200A Butt Weld	35.43 (900.0)	4.33 (110.0)	36.51 (927.3)	15.75 (400.0)	8.52 (216.3)	8.20 (208.3)	0.16 (4.0)
	IBE250MY2-WCT	250A Butt Weld	43.31 (1100.0)	5.31 (135.0)	42.09 (1069.0)	17.72 (450.0)	10.53 (267.4)	10.21 (259.4)	0.16 (4.0)
	IBE300MY2-WCT	300A Butt Weld	52.76 (1340.0)	6.93 (176.0)	49.65 (1261.0)	19.69 (500.0)	12.54 (318.5)	12.19 (309.5)	0.18 (4.5)

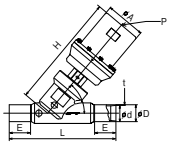


Product Code Table

Model	Size	Operation	Valve Shape		Connection	Gasket Material	Disk Material		Purge Port		Grade + Body Material
IBD	32	C	Y3	-	W	C	T	-	IP	-	EP-316L
IBC-type bellows Seal valve	32:32A 40:40A	C: Normally Closed	Y-type Mold		W:Butt Weld RF:RF Flange	C:PCTFE	PTFE		Not Displayed: Without Purge Port IP:Inlet OP:Outlet PP:Both		STD-316L : Mechanical Polish + SUS316L EP-316L : Electro Polish + SUS316L

Dimensions

Unit: inch (mm)

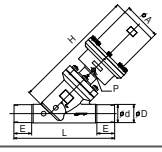
Model	Type	Connection	L	E	H	A	D	P	d	t
	IBC32CY3-WCT	32A Butt Weld	10.63 (270.0)	2.17 (55.0)	11.46 (291.0)	3.94 (100.0)	1.68 (42.7)	Rc1/4	1.55 (39.4)	0.06 (1.65)
	IBC40CY3-WCT	40A Butt Weld	10.63 (270.0)	2.17 (55.0)	11.46 (291.0)	3.94 (100.0)	1.91 (48.6)	Rc1/4	1.78 (45.3)	0.06 (1.65)

Product Code Table

Model	Size	Operation	Valve Shape		Connection	Gasket Material	Disk Material		Purge Port		Grade + Body Material
IBD	50	C	Y3	-	W	C	T	-	IP	-	EP-316L
IBC-type bellows Seal valve	50:50A	C: Normally Closed	Y-type Mold		W:Butt Weld RF:RF Flange	C:PCTFE	PTFE		Not Displayed: Without Purge Port IP:Inlet OP:Outlet PP:Both		STD-316L : Mechanical Polish + SUS316L EP-316L : Electro Polish + SUS316L

Dimensions

Unit: inch (mm)

Model	Type	Connection	L	E	H	A	D	P	d	t
	IBD50CY3-WCT	50A Butt Weld	13.39 (340.0)	2.36 (60.0)	16.65 (423.0)	4.96 (126.0)	2.38 (60.5)	Rc1/4	2.25 (57.2)	0.06 (1.65)

BZD
Clean Butterfly Valves

The BZD series valves are semiconductor-grade butterfly valves that are based on conventional industrial butterfly valves but were perfected by applying KITZ SCT's original cleaning technology.

■ Features

◎ The valve body and the parts in the wetted area are a wafer-shaped industrial butterfly valve made of stainless steel. The parts in the wetted area are polished and undergo oil-free processing in order to minimize particle accumulation and adhesion.
◎ Because the valves adopt a double eccentric structure in which the stem's center of rotation deviates slightly from the disk seal surface as well as the center of the disk (pipe), there is no contact between the disk and seat ring when the valve is fully open, which prevents deformation of the seat and excessive abrasion to ensure a high level of sealing capability.
◎ Giving more width to the disk and seat ring seal surfaces improves the sealing capability, and the valves can be operated with a small opening/closing torque because excess swaging is not necessary.
◎ The seat material is durable PTFE. In addition, cracking, peeling, or excessive abrasion will not occur in the seat ring because it has a double eccentric structure with fully uniform seal contact pressure, appropriate swaging force, etc., forming a structure that will withstand long-term use.
◎ Use of the gears in the actuation mechanism requires only small amount of force. It also takes up less footprint than conventional lever operated valves.
◎ A pneumatic actuator can be mounted by using a bracket and connector.

■ Specifications

Size		50A	65A	80A	100A	125A	150A	200A	250A	300A	350A	400A
Cv Value	90° Open	83	175	255	460	722	1180	2240	3660	5640	7060	9390
	60° Open	54	112	164	295	462	756	1140	2350	3610	4520	6010
	45° Open	33	69	101	182	285	465	883	1450	2230	2790	3700
	30° Open	17	36	52	94	147	240	455	743	1150	1440	1910
Maximum Operating Pressure		142psig (0.98MPa(G))										
Fluid Temperature Range		-10~80℃										
Atmospheric Temperature		-10℃~60℃										
Fluid Used		Inert gas (Not compatible with active gas or corrosive gas.)										
Cycle Life		10,000 cycles										

■ Product Grade

Grade	STD
Material	SCS13A, SCS14A, SCS16A
Surface Roughness	≤ 150 A: ≤ Rz 6.0 μm ≤ 200 A: ≤ Rz 12.0 μm
Cleaning	Degreasing + Precision cleaning
Clean Room Environment	Class 1000 or under
Packaging	Double bagged packge

■ Standard Materials

Body	SCS13A (SCS14A,SCS16A)*1

*1 SCS13A: equivalent to SUS304, SCS14A: SUS316L equivalent
SCS16A: SUS316L equivalent

■ Precautions

① The valves ar e used with reactive or corrosive gases, nor with any liquids.

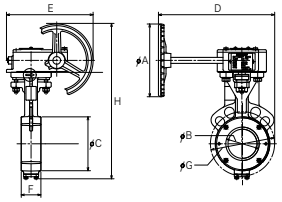


■ Product Code Table

Model	Size	Operation	Valve shape		Connection	Body Gasket material	Seat material		Custom specifications	Grade + Body material
BZD	50	M	S	-	RF	X	T	-	Technical number	STD-304
Clean Butterfly valve	50:50A 65:65A 80:80A 100:100A 125:125A 150:150A 200:200A 250:250A 300:300A 350:350A 400:400A	M: Manual	Straight		RF: RF flange	X: not provided (During RF)	PTFE		Blank: Standard Product	STD-304 : 304-equivalent (SCS 13A) STD-316 : 316-equivalent (SCS 14A) STD-316L : 316-equivalent (SCS 16A)

■ Dimensions

Unit: inch (mm)



Model	Type	Connection	D	H	E	F	A	C	B	G
	BZD65MS-RFXT	JIS 10K-65ARF Flange	8.54 (217.0)	12.48 (317.0)	6.22 (158.0)	1.81 (46.0)	5.51 (140.0)	4.53 (115.0)	2.56 (65.0)	5.51 (140.0)
	BZD80MS-RFXT	JIS 10K-80ARF Flange	10.63 (270.0)	14.21 (361.0)	7.95 (202.0)	1.81 (46.0)	6.69 (170.0)	4.96 (126.0)	3.07 (78.0)	5.91 (150.0)
	BZD100MS-RFXT	JIS 10K-100ARF Flange	10.65 (270.5)	15.20 (386.0)	7.99 (203.0)	2.05 (52.0)	6.69 (170.0)	5.75 (146.0)	3.86 (98.0)	6.89 (175.0)
	BZD125MS-RFXT	JIS 10K-125ARF Flange	11.57 (294.0)	17.50 (444.5)	8.66 (220.0)	2.20 (56.0)	7.87 (200.0)	7.13 (181.0)	4.84 (123.0)	8.86 (225.0)
	BZD150MS-RFXT	JIS 10K-150ARF Flange	12.32 (313.0)	18.84 (478.5)	8.66 (220.0)	2.20 (56.0)	7.87 (200.0)	8.31 (211.0)	5.83 (148.0)	9.45 (240.0)
	BZD200MS-RFXT	JIS 10K-200ARF Flange	16.22 (412.0)	24.76 (629.0)	12.20 (310.0)	2.80 (71.0)	12.20 (310.0)	10.12 (257.0)	7.76 (197.0)	11.42 (290.0)