

UHP Valves, Fittings & System Integrate

**KITZ SCT**

## ZD Series

200°C high-temperature replaceable valves

## ZD-K Series

250°C high-temperature replaceable valves



The ZD series (high-temperature replaceable valves) are valves that can be used in high-temperature environments and the seats of which are structurally detachable and replaceable.

## Specifications

Size	ZD		ZD-K	
	1/4"	1/2"	1/4"	1/2"
Cv Room Temperature (ZD: 200°C / ZD-K: 250°C) *1	0.27 (0.16)	1.3 (1.0)	0.27 (0.10)	1.3 (0.8)
Maximum Operating Pressure	44 psig (0.3 MPa(G))			
Wetted Area Volume *2	0.099in <sup>3</sup> (1.63 cm <sup>3</sup> )	0.718in <sup>3</sup> (11.76 cm <sup>3</sup> )	0.099in <sup>3</sup> (1.63 cm <sup>3</sup> )	0.718in <sup>3</sup> (11.76 cm <sup>3</sup> )
Fluid Temperature   PFA	Room temperature ~ 200°C		Room temperature ~ 250°C	
Atmospheric Temperature	Room temperature ~ 200°C		Room temperature ~ 250°C	
Leak Rates	Across the Seat He Leak Rates Initial value/room temperature $\leq 1 \times 10^{-9}$ SCCS ( $\leq 1 \times 10^{-10}$ Pa·m <sup>3</sup> /s)			
	Across the Seat He Leak Rates ZD: at 200°C / ZD-K: at 250°C $\leq 1 \times 10^{-6}$ SCCS ( $\leq 1 \times 10^{-7}$ Pa·m <sup>3</sup> /s)			
	Inboard He Leak Rates $\leq 1 \times 10^{-9}$ SCCS ( $\leq 1 \times 10^{-10}$ Pa·m <sup>3</sup> /s)			
Actuation Pressure (Pneumatic Valve)	58 - 102 psig (0.4 - 0.7) MPa(G)	73 - 102 psig (0.5 - 0.7) MPa(G)	58 - 87 psig (0.4 - 0.6) MPa(G)	73 - 102 psig (0.5 - 0.7) MPa(G)
Cycle Life *3	Manual Valve	—		5,000 cycles
	Pneumatic Valve	1,000,000 cycles		800,000 cycles

Grade	STD	EP	SEP
Body Material	SUS316L		SUS316LE (Double melt material)
Seat	PFA		
Diaphragm	Cobalt alloy		
Surface Roughness	$\leq R_z 126\mu\text{in}$ (3.2 $\mu\text{m}$ ) $\leq R_a 20\mu\text{in}$ (0.5 $\mu\text{m}$ )		$\leq R_z 28\mu\text{in}$ (0.7 $\mu\text{m}$ ) $\leq R_a 5\mu\text{in}$ (0.13 $\mu\text{m}$ )
Polish	Mechanical polished		Electro polished
Cleaning	Degreasing + Precision cleaning		
Packaging	Single bagged package		Double bagged package

\*1 Measured value with male fitting body and temperature elevated by our in-house facilities (guideline)

\*2 Calculated value from drawing dimensions

\*3 Test condition / Seat material : PFA, Gas : N<sub>2</sub>, Pressure : 44psig (0.3MPa(G))

## Type

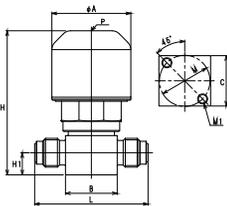
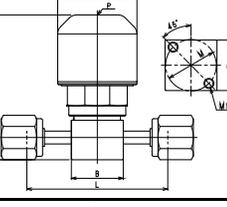
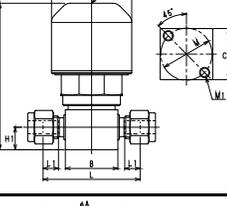
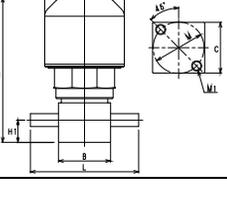
Model	Size	Operating Temperature	Operation	Valve Shape	Connection	Seat Material	Special Spec	Grade
ZD	4		M	S	V	A		EP-316L
ZD: High-temperature replaceable valve	4 : 1/4" 6 : 3/8" 8 : 1/2"	Not shown: 200°C-compatible K: 250°C-compatible	M: 120-degree*1 manual C: Normally closed	S: Straight A: Angle L: L-type B: Branch-type	V: CVC male VF: CVC female S: Compression fitting W: Butt welding	A : PFA	Not shown: Standard product	STD-316L : Mechanical polished + SUS316L EP-316L : Electro polished + SUS316L SEP-316LE : Electro polished + SUS316LE (Double melt material)

\*1 Only the ZD-K is capable of 120-degree manual operation.

## Dimensions [ZD series]

Unit: inch (mm)

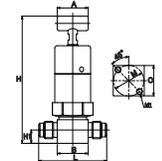
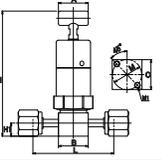
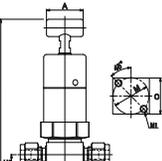
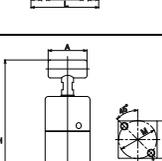
### ZD Pneumatic

Model	Type	Connection	L	L1	H	H1	A	B	C	P	M	M1
	ZD4CS-VA	1/4" CVC Male	2.24 (57.0)	—	2.83 (72)	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 0.2(5)
	ZD8CS-VA	1/2" CVC Male	3.03 (77.0)	—	4.57 (116)	0.63 (16.0)	1.73 (44.0)	1.69 (43.0)	1.69 (43.0)	Rc1/8	1.10 (28.0)	2-M5 Depth 0.2(5)
	ZD4CS-VFA	1/4" CVC Female	2.78 (70.6)	—	2.83 (72)	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 0.2(5)
	ZD8CS-VFA	1/2" CVC Female	3.27 (83.0)	—	4.57 (116)	0.63 (16.0)	1.73 (44.0)	1.69 (43.0)	1.69 (43.0)	Rc1/8	1.10 (28.0)	2-M5 Depth 0.2(5)
	ZD4CS-SA	1/4" Compression fitting	1.89 (48.0)	0.31 (7.9)	2.83 (72)	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 0.2(5)
	ZD6CS-SA	3/8" Compression fitting	2.80 (71.0)	0.37 (9.5)	4.57 (116)	0.63 (16.0)	1.73 (44.0)	1.69 (43.0)	1.69 (43.0)	Rc1/8	1.10 (28.0)	2-M5 Depth 0.2(5)
	ZD8CS-SA	1/2" Compression fitting	2.80 (71.0)	0.50 (12.7)	4.57 (116)	0.63 (16.0)	1.73 (44.0)	1.69 (43.0)	1.69 (43.0)	Rc1/8	1.10 (28.0)	2-M5 Depth 0.2(5)
	ZD4CS-WA	1/4" Butt Welding	2.13 (54.0)	—	2.83 (72)	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 0.2(5)
	ZD6CS-WA	3/8" Butt Welding	2.99 (76.0)	—	4.57 (116)	0.63 (16.0)	1.73 (44.0)	1.69 (43.0)	1.69 (43.0)	Rc1/8	1.10 (28.0)	2-M5 Depth 0.2(5)
	ZD8CS-WA	1/2" Butt Welding	2.99 (76.0)	—	4.57 (116)	0.63 (16.0)	1.73 (44.0)	1.69 (43.0)	1.69 (43.0)	Rc1/8	1.10 (28.0)	2-M5 Depth 0.2(5)

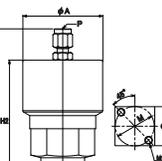
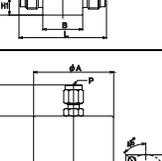
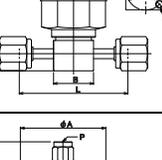
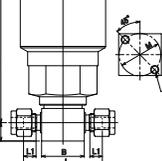
## Dimensions [ZD-K series]

Unit:inch(mm)

### ■ ZD-K Manual

Model	Type	Connection	L	L1	H	H1	A	B	C	M	M1
	ZD4KMS-VA	1/4" CVC Male	2.24 (57.0)	—	4.13 (105)	0.43 (11.0)	1.02 (26.0)	1.02 (26.0)	0.98 (25.0)	1.00 (25.4)	2-M5 Depth 0.2(5)
	ZD8KMS-VA	1/2" CVC Male	3.03 (77.0)	—	4.80 (122)	0.63 (16.0)	1.97 (50.0)	1.69 (43.0)	1.69 (43.0)	1.10 (28.0)	2-M5 Depth 0.2(5)
	ZD4KMS-VFA	1/4" CVC Female	2.78 (70.6)	—	4.13 (105)	0.43 (11.0)	1.02 (26.0)	1.02 (26.0)	0.98 (25.0)	1.00 (25.4)	2-M5 Depth 0.2(5)
	ZD8KMS-VFA	1/2" CVC Female	3.27 (83.0)	—	4.80 (122)	0.63 (16.0)	1.97 (50.0)	1.69 (43.0)	1.69 (43.0)	1.10 (28.0)	2-M5 Depth 0.2(5)
	ZD4KMS-SA	1/4" Compression fitting	1.89 (48.0)	0.31 (7.9)	4.13 (105)	0.43 (11.0)	1.02 (26.0)	1.02 (26.0)	0.98 (25.0)	1.00 (25.4)	2-M5 Depth 0.2(5)
	ZD6KMS-SA	3/8" Compression fitting	2.80 (71.0)	0.37 (9.5)	4.80 (122)	0.63 (16.0)	1.97 (50.0)	1.69 (43.0)	1.69 (43.0)	1.10 (28.0)	2-M5 Depth 0.2(5)
	ZD8KMS-SA	1/2" Compression fitting	2.80 (71.0)	0.50 (12.7)	4.80 (122)	0.63 (16.0)	1.97 (50.0)	1.69 (43.0)	1.69 (43.0)	1.10 (28.0)	2-M5 Depth 0.2(5)
	ZD4KMS-WA	1/4" Butt Welding	2.20 (56.0)	—	4.13 (105)	0.43 (11.0)	1.02 (26.0)	1.02 (26.0)	0.98 (25.0)	1.00 (25.4)	2-M5 Depth 0.2(5)
	ZD6KMS-WA	3/8" Butt Welding	2.99 (76.0)	—	4.80 (122)	0.63 (16.0)	1.97 (50.0)	1.69 (43.0)	1.69 (43.0)	1.10 (28.0)	2-M5 Depth 0.2(5)
	ZD8KMS-WA	1/2" Butt Welding	2.99 (76.0)	—	4.80 (122)	0.63 (16.0)	1.97 (50.0)	1.69 (43.0)	1.69 (43.0)	1.10 (28.0)	2-M5 Depth 0.2(5)

### ■ ZD-K Pneumatic

Model	Type	Connection	L	L1	H	H1	H2	A	B	C	P	M	M1
	ZD4KCS-VA	1/4" CVC Male	2.24 (57.0)	—	4.29 (109)	0.43 (11.0)	3.07 (78)	2.05 (52.0)	1.02 (26.0)	0.98 (25.0)	1/8" Compression fitting	1.00 (25.4)	2-M5 Depth 0.2(5)
	ZD8KCS-VA	1/2" CVC Male	3.03 (77.0)	—	4.96 (126)	0.63 (16.0)	3.54 (90)	2.44 (62.0)	1.69 (43.0)	1.69 (43.0)	1/8" Compression fitting	1.10 (28.0)	2-M5 Depth 0.2(5)
	ZD4KCS-VFA	1/4" CVC Female	2.78 (70.6)	—	4.29 (109)	0.43 (11.0)	3.07 (78)	2.05 (52.0)	1.02 (26.0)	0.98 (25.0)	1/8" Compression fitting	1.00 (25.4)	2-M5 Depth 0.2(5)
	ZD8KCS-VFA	1/2" CVC Female	3.27 (83.0)	—	4.96 (126)	0.63 (16.0)	3.54 (90)	2.44 (62.0)	1.69 (43.0)	1.69 (43.0)	1/8" Compression fitting	1.10 (28.0)	2-M5 Depth 0.2(5)
	ZD4KCS-SA	1/4" Compression fitting	1.89 (48.0)	0.31 (7.9)	4.29 (109)	0.43 (11.0)	3.07 (78)	2.05 (52.0)	1.02 (26.0)	0.98 (25.0)	1/8" Compression fitting	1.00 (25.4)	2-M5 Depth 0.2(5)
	ZD6KCS-SA	3/8" Compression fitting	2.80 (71.0)	0.37 (9.5)	4.96 (126)	0.63 (16.0)	3.54 (90)	2.44 (62.0)	1.69 (43.0)	1.69 (43.0)	1/8" Compression fitting	1.10 (28.0)	2-M5 Depth 0.2(5)
	ZD8KCS-SA	1/2" Compression fitting	2.80 (71.0)	0.50 (12.7)	4.96 (126)	0.63 (16.0)	3.54 (90)	2.44 (62.0)	1.69 (43.0)	1.69 (43.0)	1/8" Compression fitting	1.10 (28.0)	2-M5 Depth 0.2(5)
	ZD4KCS-WA	1/4" Butt Welding	2.20 (56.0)	—	4.29 (109)	0.43 (11.0)	3.07 (78)	2.05 (52.0)	1.02 (26.0)	0.98 (25.0)	1/8" Compression fitting	1.00 (25.4)	2-M5 Depth 0.2(5)
	ZD6KCS-WA	3/8" Butt Welding	2.99 (76.0)	—	4.96 (126)	0.63 (16.0)	3.54 (90)	2.44 (62.0)	1.69 (43.0)	1.69 (43.0)	1/8" Compression fitting	1.10 (28.0)	2-M5 Depth 0.2(5)
	ZD8KCS-WA	1/2" Butt Welding	2.99 (76.0)	—	4.96 (126)	0.63 (16.0)	3.54 (90)	2.44 (62.0)	1.69 (43.0)	1.69 (43.0)	1/8" Compression fitting	1.10 (28.0)	2-M5 Depth 0.2(5)

\* L1 dimension for compression fitting is the dimension of how far tube inserted from end of body.  
\* H and H2 dimensions are references.

■ Global Network

**Tokyo Head Office**

JRE Omorieki Higashiguchi Bldg. 3F, 1-5-1 Omorikita, Ota-ku,  
Tokyo 143-0016, Japan  
TEL. 81-3-6404-2171 FAX. 81-3-6404-2172

**Osaka Sales Office**

MG Amagasaki Ekimae Bldg. 3F, 21 Misono-cho, Amagasaki-shi,  
Hyogo 660-0861, Japan  
TEL. 81-6-6413-4177 FAX. 81-6-6413-4188

**Nagoya Branch Office**

Marunouchi One Bldg. 6F, 1-9-16, Marunouchi, Naka-ku, Nagoya-shi,  
Aichi 460-0002, Japan  
TEL. 81-52-204-1061 FAX. 81-6-6413-4188

**Toyama Satellite Office**

Toyama Denki Bldg. 216, 3-1 Sakurabashidori, Toyama-shi,  
Toyama 930-0004, Japan  
TEL. 81-76-486-8181 FAX. 81-76-486-8101

**Kyushu Sales Office**

Z-S Fukuoka Bldg. 4F, 3-4-2 Higashihie, Hakata-ku, Fukuoka-shi,  
Fukuoka 812-0007, Japan  
TEL. 81-92-483-0185 FAX. 81-92-483-0186

**Kumamoto Branch Office**

A-5, 369 Bldg., 1775-2, Kikoji, Kikuchi-shi,  
Kumamoto 861-1315, Japan  
TEL. 81-968-24-3105 FAX. 81-968-24-3106

**Nitta SC Factory**

150-2 Nittakane-cho, Ota-shi,  
Gunma 370-0352, Japan  
TEL. 81-276-60-9600 FAX. 81-276-60-9330

**KITZ SCT AMERICA CORPORATION**

5201 Great America Parkway, Suite 238,  
Santa Clara, CA 95054, USA  
TEL. 1-408-747-5546 FAX. 1-408-747-5726

**KITZ SCT CORPORATION TAIWAN REPRESENTATIVE OFFICE**

3F-1, No.38 Beida Rd., East Dist.,  
Hsinchu City, 30044, Taiwan (R.O.C.)  
TEL. 886-3-542-0110 FAX. 886-3-542-0551

**KITZ SCT CORPORATION OF KUNSHAN, Shanghai Branch Company**

Room 1610B, Building A, China Overseas Center,  
No. 2, 699 Tongchuan Road, Putuo District, Shanghai, P.R.China, 200333  
TEL. 86-21-5243-5025 FAX. 86-21-6439-1257

**KITZ SCT CORPORATION OF KUNSHAN**

8-3 No.3 Road, Export Processing A Zone,  
Kunshan, Jiangsu 215300, China,  
TEL. 86-512-5735-0700 FAX. 86-512-5735-7500

**KITZ SCT CORPORATION OF KUNSHAN BRANCH FACTORY**

Bldg. 9, No. 68, Taoyuen Rd., Export Processing B Zone,  
Kunshan, Jiangsu 215300, China



**Caution**

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