

KDV Sterile diaphragm valve

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Application

KDV Sterile diaphragm valves produced by King Lai can meet the production process with cleanness and sterilization requirements. The product is widely applied in medicine, food and bio-pharmacy, as well as sectors of semiconductors, microelectronics, personal care, water for injection, and other industries.

Features

- The valves bodies are available in casting and forging, and can meet demands of different customers.
- The specifications are complete, available from DN4 ~ DN80.
- The diaphragm is made of materials with corrosion resistance and in line with the certification of FDA and USP24 class 6.
- The protrusions around the valves body and the prominent part of the diaphragm are closely matched with each other to ensure that the diaphragm can be tightly sealed with the valve body in the open or closed state. Such structure, in line with EHEDG design standards, can achieve zero residual and is easy to clean.
- The normally-closed structure of diaphragm ensures easier manual switching.
- The rotary hand-wheel can achieve protection of excessive closing via the adjustable limit nut, and ensure that the diaphragm has a pre-set closing pressure to optimize the sealing safety and extend the life of the diaphragm.
- The red switching indicator between the hand-wheel and the cover can show the state and degree of openness/closing of the valves.
- The solenoid valves, position feedback or position regulator can be installed on the pneumatic valves at consumer's request to realize automatic control or flow control of the valves.

Technical Data

Items	Details
Actuator	Manual Pneumatic normally closed (NC) / Double acting (DA)
Control	Feedback device/ adjustment positioner/ cylindrical position sensor
Body material	CF3M (316L), 1.4435 (316L)
Diaphragm material	EPDM, EPDM+TFM
Size	DN4 – DN80
Connections	Butt-weld, Clamp, Weld/clamp ASME BPE, 3A, ISO, DIN
Surface finish	Outer surface sand blasted Inner surface Ra≤0.5µm(SF1), Ra≤0.375µm(SF4)
Certifications	3A, CE

Size		DN4~DN50	DN65/DN80	
Working temperature	EPDM	Max. pressure	10bar	8bar
		Max. temperature	-10°C~130°C, 14~212°F	
		SIP	150°C, 302°F max.60min	
	EPDM+TFM	Max. pressure	6bar, 87psi	5bar, 72psi
		Max. temperature	-10°C~150°C, 14~212°F	
		SIP	150°C, 302°F no.limit	
Pneumatic pressure	Normally close (NC)	5-6bar, 72-87psi	5-7bar, 72-101psi	
	Normally open (NO)	5.5bar, 79psi		
	Double action (DA)	5.5bar, 79psi		
Pneumatic connection		G1/8"	G1/4"	

If the sterilisation temperatures listed above are applied to the EPDM or TFM diaphragms for longer periods of time, the service life of the diaphragms will be reduced. In these cases, maintenance cycles must be adapted accordingly.

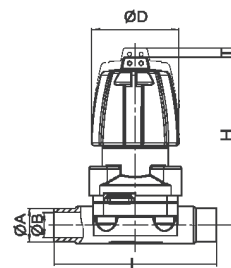
TFM diaphragms can also be used as steam barriers; however, this will reduce their service life. The maintenance cycles must be adapted accordingly.

Types	Casting	Forging, Forged block
Material	CF3M (316L)	1.4435 (316L)
Ferrite	< 15%	< 0.5%
Sulfur contents	< 0.04%	0.005-0.017%

Compliance with EN 10204 3.1/MTR traceability certificate
 FDA-FDA Declaration of Conformity (CFR 21:177.2600 or 177.1550)
 Compliance Certificate for USP-USP VI Category

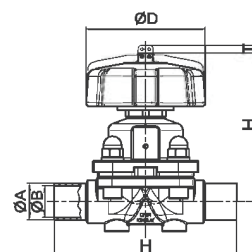
KDV-M100-1
Manual diaphragm valves with welding ends

Code	Size	A	B	D	T	H	L
1558100-000025	¼"	6.35	4.57	33	4.5	58	61
1558100-000038	⅜"	9.53	7.75	33	4.5	58	61
1558100-000050	½"	12.7	9.4	33	4.5	63.5	61

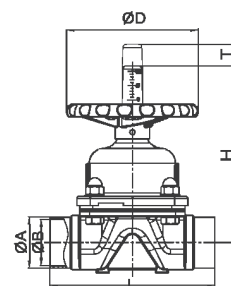

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KDV-M100-2
Manual diaphragm valves with welding ends

Code	Size	A	B	D	T	H	L
1558100-000075	¾"	19.1	15.8	60	6	79.5	113
1558100-000100	1.0"	25.4	22.1	90	11	103.5	127
1558100-000150	1½"	38.1	34.8	110	15.5	129.8	159
1558100-000200	2.0"	50.8	47.5	128	20.5	153	190


KDV-M100-3
Manual diaphragm valves with welding ends

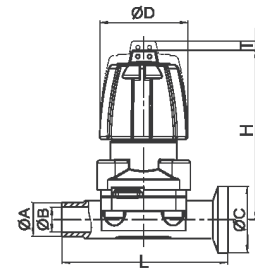
Code	Size	A	B	D	T	H	L
1558100-000250	2½"	63.5	60.2	200	44	264	250
1558100-000300	3"	76.2	72.9	200	44	269	250



KDV-M200-1

Manual diaphragm valves with weld/clamp ends

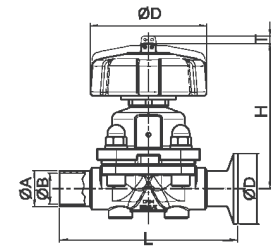
Code	Size	A	B	C	D	T	H	L
1558200-000025	¼"	6.35	4.57	25	33	4.5	58	62
1558200-000038	⅜"	9.53	7.75	25	33	4.5	58	62
1558200-000050	½"	12.7	9.4	25.0	33	4.5	63.5	62



KDV-M200-2

Manual diaphragm valves with welding /clamp ends

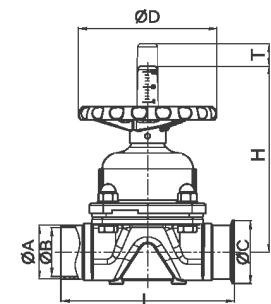
Code	Size	A	B	C	D	T	H	L
1558100-000075	¾"	19.1	15.8	25.0	60	6	79.5	115
1558200-000075	1.0"	25.4	22.1	50.4	90	11	103.5	127
1558120-000075	1½"	38.1	34.8	50.4	110	15.5	129.8	159
1558220-000075	2.0"	50.8	47.5	63.9	128	20.5	153	190



KDV-M200-3

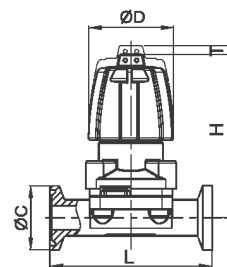
Manual diaphragm valves with welding /clamp ends

Code	Size	A	B	C	D	T	H	L
1558200-000250	2½"	63.5	60.2	77.5	200	44	264	250
1558200-000300	3.0"	76.2	72.9	90.9	200	44	269	250



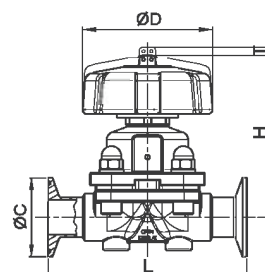
KDV-M300-1
Manual diaphragm valves with clamp ends

Code	Size	C	D	T	H	L
1558300-000025	¼"	25	33	4.5	58	63
1558300-000038	⅜"	25	33	4.5	58	63
1558300-000050	½"	25	33	4.5	63.5	63

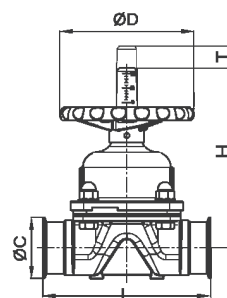

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KDV-M300-2
Manual diaphragm valves with clamp ends

Code	Size	C	D	T	H	L
1558300-000075	¾"	25	60	6	79.5	117
1558300-000100	1.0"	50.4	90	11	103.5	127
1558300-000150	1½"	50.4	110	15.5	129.8	159
000200	2.0"	63.9	128	20.5	153	190


KDV-M300-3
Manual diaphragm valves with clamp ends

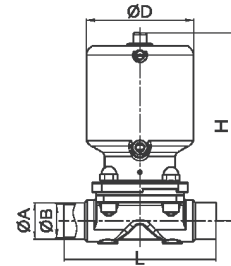
Code	Size	C	D	T	H	L
1558300-000250	2½"	77.5	200	44	264	250
1558300-000300	3.0"	90.9	200	44	269	250



KDV-P120

Pneumatic diaphragm valves with clamp ends

Code	Size	A	B	D	H	L
1558120-000025	¼"	6.35	4.57	45	101	61
1558120-000038	⅜"	9.53	7.75	45	101	61
1558120-000050	½"	12.7	9.4	45	101	61
1558120-000075	¾"	19.1	15.8	60	127	113
1558120-000100	1.0"	25.4	22.1	89	162	127
1558120-000150	1½"	38.1	34.8	112	193	159
1558120-000200	2.0"	50.8	47.5	142	227	190



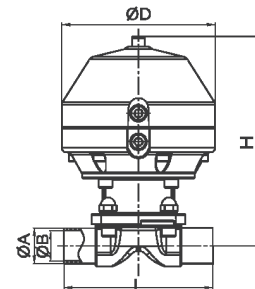
Stainless steel actuator has a smaller diameter and easier to install.

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KDV-P160-1

Pneumatic diaphragm valves with welding ends (plastic actuator)

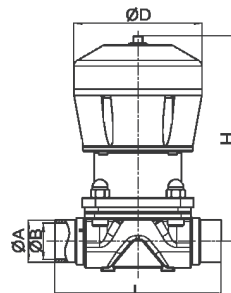
Code	Size	A	B	D	H	L
1558160-000100	1.0"	25.4	22.1	128	188	127
1558160-000150	1½"	38.1	34.8	164	227	159
1558160-000200	2.0"	50.8	47.5	164	227	190



KDV-P160-2

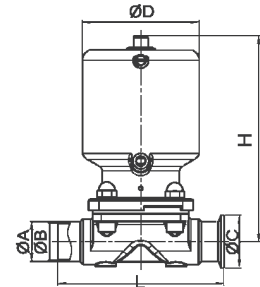
Pneumatic diaphragm valves with welding ends (aluminum actuator)

Code	Size	A	B	D	H	L
1558160-000250	2½"	63.5	60.2	193	311.6	250
1558160-000300	3"	76.2	72.9	193	311.6	250



KDV-P220
Pneumatic diaphragm valves with welding/clamp ends (Stainless steel actuator)

Code	Size	A	B	C	D	H	L
1558220-000025	¼"	6.35	4.57	25.0	45	101	62
1558220-000038	⅜"	9.53	7.75	25.0	45	101	62
1558220-000050	½"	12.7	9.4	25.0	45	101	62
1558220-000075	¾"	19.1	15.8	25.0	60	127	115
1558220-000100	1.0"	25.4	22.1	50.4	89	162	127
1558220-000150	1½"	38.1	34.8	50.4	112	193	159
1558220-000200	2.0"	50.8	47.5	63.9	142	227	190

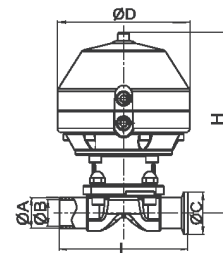


Stainless steel actuator has a smaller diameter and easier to install.

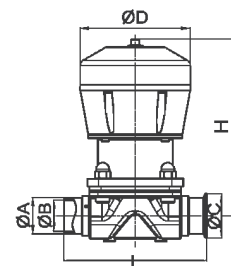
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KDV-P260-1
Pneumatic diaphragm valves with welding/clamp ends (plastic actuator)

Code	Size	A	B	C	D	H	L
1558260-000100	1.0"	25.4	22.1	50.4	89	188	127
1558260-000150	1½"	38.1	34.8	50.4	112	227	159
1558260-000200	2.0"	50.8	47.5	63.9	142	227	190


KDV-P260-2
Pneumatic diaphragm valves with welding/clamp ends (Aluminum alloy actuator)

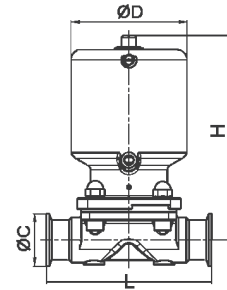
Code	Size	A	B	C	D	H	L
1558260-000250	2½"	63.5	60.2	77.5	193	311.6	250
1558260-000300	3"	76.2	72.9	90.9	193	311.6	250



KDV-P320

Pneumatic diaphragm valves with welding/clamp ends (Stainless steel actuator)

Code	Size	C	D	H	L
1558320-000025	¼"	25	45	101	63
1558320-000038	⅜"	25	45	101	63
1558320-000050	½"	25	45	101	63
1558320-000075	¾"	25	60	127	117
1558320-000100	1.0"	50.4	89	162	127
1558320-000150	1½"	50.4	112	193	159
1558320-000200	2.0"	63.9	142	227	190

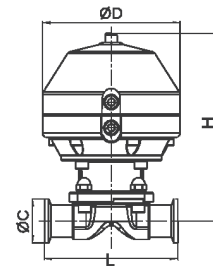


Stainless steel actuator has a smaller diameter and easier to install.

KDV-P360-1

Pneumatic diaphragm valves with clamp ends (plastic actuator)

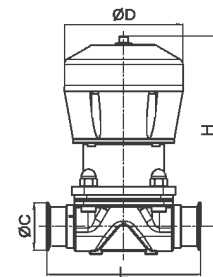
Code	Size	C	D	H	L
1558360-000100	1.0"	50.4	89	188	127
1558360-000150	1½"	50.4	112	227	159
1558360-000200	2.0"	63.9	142	227	190



KDV-P360-2

Pneumatic diaphragm valves with clamp ends (Aluminum alloy actuator)

Code	Size	C	D	H	L
1558360-000250	2½"	77.5	193	311.6	250
1558360-000300	3.0"	90.9	193	311.6	250



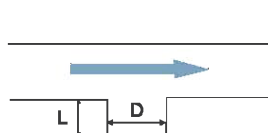
KDV-T Sterile forging diaphragm valve



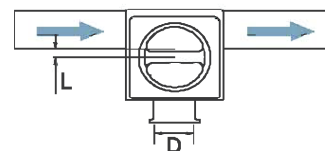
Design of valves body:
Precisely forged blocks

Features

- Compact structure, fully self-drained, and without dead corners.
- Forged valves body with dense inter-granular structure, quick sterilization and easy verification.
- Integrated and art-of-the-state processing to ensure safe and reliable installation.
- The size of the main pipe is larger than that of the branches to ensure the circulation of the main pipeline.
- Applicable to high-purity water system, drainages and taps.



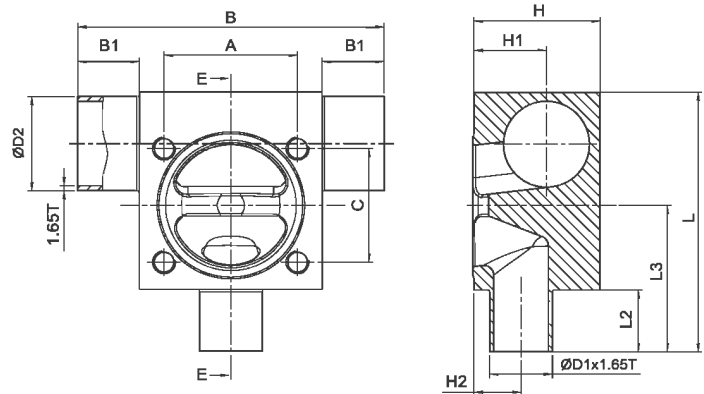
BPE:SD-3.11.1



BioClean Sterile diaphragm
valve L/D ≤ 2:1

Technical Data

Items	Details
Working pressure	0-10bar, 145psi (EPDM) 0-7bar, 101psi (PTFE)
Working temperature	-40~130°C , -40~266 °F (EPDM) -40~150°C , -40~302 °F (EPDM+PTFE)
Driving structure	Manual / pneumatic control
Body design	OEM/ODM
Body material	1.4435 (316L), forging block
Surface finish	External sand blasting Internal surface Ra≤0.5μm(SF1), Ra≤0.375μm(SF4)
Connections	Butt-Weld, Clamp ISO, DIN, ASME BPE, 3A



KDV-T5

NO.	D1	D2
1558500-10005002	12.7	25.4
1558500-10007502	19.1	25.4
1558500-10010002	25.4	25.4
1558500-15007502	19.1	38.1
1558500-15010002	25.4	38.1
1558500-20010002	25.4	50.8
1558500-20015002	38.1	50.8

A	B	B1	C	D	H	H1	H2	L	L1	L2	L3	M
22.0	82.0	25.0	22.0	6.0	35.0	20.0	8.5	66.0	15.3	20.0	36.0	M4
44.5	114.5	25.0	39.7	10.0	38.0	23.5	19.0	93.0	17.9	25.0	55.0	M6
54.0	124.0	25.0	46.0	10.0	38.0	23.5	19.0	93.0	17.9	25.0	59.0	M8
39.7	100.0	25.0	44.5	8.0	48.0	27.7	12.5	97.0	23.5	25.0	53.0	M6
54.0	124.0	25.0	46.0	10.0	51.0	29.9	19.0	105.0	25.0	25.0	59.0	M8
54.0	134.0	30.0	46.0	10.0	64.0	36.2	19.0	118.0	32.0	25.0	59.0	M8
70.0	162.0	30.0	65.0	10.0	66.0	39.1	26.0	133.0	34.1	25.0	71.0	M10

KDV-T Sterile casting diaphragm valve



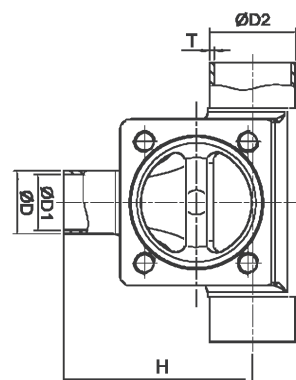
Features

- Compact structure, fully self-drained, and without dead corners.
- Forged valves body with dense inter-granular structure, quick sterilization and easy verification.
- Integrated and art-of-the-state processing to ensure safe and reliable installation.
- The size of the main pipe is larger than that of the branches to ensure the circulation of the main pipeline.
- Applicable to high-purity water system, drainages and taps.

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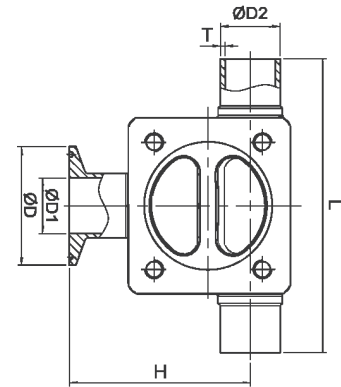
KDV-T500 (welding & welding ends)

NO.	D	D1	D2	T	H	L
1558500-050050	12.7	9.4	12.7	1.65	42.5	72
1558500-075075	19.1	15.8	19.1	1.65	62.8	101
1558500-100050	12.7	9.4	25.4	1.65	49.3	82
1558500-100075	19.1	15.8	25.4	1.65	66.5	101
1558500-100100	25.4	22.1	25.4	1.65	76.9	125
1558500-150050	12.7	9.4	38.1	1.65	57.5	82
1558500-150075	19.1	15.8	38.1	1.65	73.5	101
1558500-150100	25.4	22.1	38.1	1.65	84	124
1558500-150150	38.1	34.8	38.1	1.65	98.1	150
1558500-200050	12.7	9.4	50.8	1.65	64.6	92
1558500-200175	19.1	15.8	50.8	1.65	80.6	111
1558500-200100	25.4	22.1	50.8	1.65	92	134
1558500-200150	38.1	34.8	50.8	1.65	105.1	160
1558500-200200	50.8	47.5	50.8	1.65	120.3	176
1558500-250050	12.7	9.4	63.5	1.65	71.6	92
1558500-250075	19.1	15.8	63.5	1.65	87.6	111
1558500-250100	25.4	22.1	63.5	1.65	98.1	135
1558500-250150	38.1	34.8	63.5	1.65	112.2	160



KDV-T600 (welding & clamp ends)

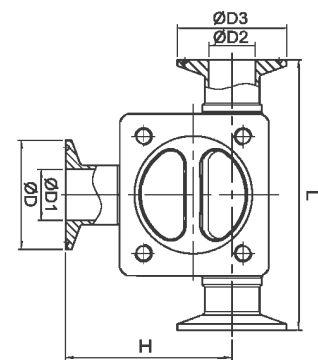
NO.	D	D1	D2	T	H	L
1558600-050050	25	9.4	12.7	1.65	44.5	72
1558600-075075	25	15.8	19.1	1.65	64.8	101
1558600-100050	25	9.4	25.4	1.65	51.3	82
1558600-100075	25	15.8	25.4	1.65	68.5	101
1558600-100100	50.4	22.1	25.4	1.65	76.9	125
1558600-150050	25	9.4	38.1	1.65	59.5	82
1558600-150075	25	15.8	38.1	1.65	75.5	101
1558600-150100	50.4	22.1	38.1	1.65	84	124
1558600-150150	50.4	34.8	38.1	1.65	98.1	150
1558600-200050	25	9.4	50.8	1.65	66.6	92
1558600-200175	25	15.8	50.8	1.65	82.6	111
1558600-200100	50.4	22.1	50.8	1.65	92	134
1558600-200150	50.4	34.8	50.8	1.65	105.1	160
1558600-200200	63.9	47.5	50.8	1.65	120.3	176
1558600-250050	25	9.4	63.5	1.65	73.6	92
1558600-250075	25	15.8	63.5	1.65	89.6	111
1558600-250100	50.4	22.1	63.5	1.65	98.1	135
1558600-250150	50.4	34.8	63.5	1.65	112.2	160



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KDV-T400 (clamp ends)

NO.	D	D1	D2	D3	H	L
1558400-050050	25	9.4	9.4	25	44.5	72
1558400-075075	25	15.8	15.8	25	64.8	101
1558400-100050	25	9.4	22.1	50.4	51.3	82
1558400-100075	25	15.8	22.1	50.4	68.5	101
1558400-100100	50.4	22.1	22.1	50.4	76.9	125
1558400-150050	25	9.4	34.8	50.4	59.5	82
1558400-150075	25	15.8	34.8	50.4	75.5	101
1558400-150100	50.4	22.1	34.8	50.4	84	124
1558400-150150	50.4	34.8	34.8	50.4	98.1	150
1558400-200050	25	9.4	47.5	63.9	66.6	92
1558400-200175	25	15.8	47.5	63.9	82.6	111
1558400-200100	50.4	22.1	47.5	63.9	92	134
1558400-200150	50.4	34.8	47.5	63.9	105.1	160
1558400-200200	64	47.5	47.5	63.9	120.3	176
1558400-250050	25	9.4	60.2	77.5	73.6	92
1558400-250075	25	15.8	60.2	77.5	89.6	111
1558400-250100	50.4	22.1	60.2	77.5	98.1	135
1558400-250150	50.4	34.8	60.2	77.5	112.2	160



KDV-TU Water point diaphragm valve

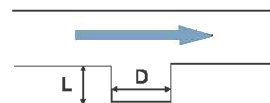


Application

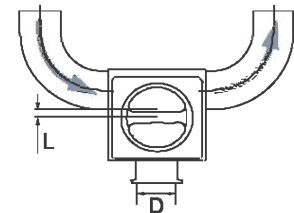
To avoid the retention of the bacterial at the barrier of U-shaped tee through diaphragm valves, reduce the number of welds and improve the smoothness of the contact surface (MOC) with a minimum length of the horizontal pipe. BPE 2012: SD-3.1.2.2, to eliminate the risk of breeding of bacterial at retention area of fluid at discharge port area and ensure that the loop is absolutely safe.

Features

- In the loop for production of purified water (PW) and injection water (WFI), one of the applications is on the tap valves.
- The valve must ensure an absolute safe loop and prevent environmental damage, which will also be worn as a junction point. Therefore this valve must have highest level of security and cleanliness



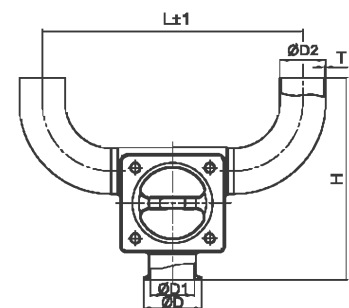
BPE:SD-3.11.1



KDV-T609 L/D ≤ 2:1

KDV-TU6

NO.	D	D1	D2	T	C	H
1559400-050050	25.0	9.4	12.7	1.65	109.2	120.7
1559400-075075	25.0	15.8	19.1	1.65	128.2	131.7
1559400-100050	25.0	9.4	25.4	1.65	128.2	127.5
1559400-100075	25.0	15.8	25.4	1.65	147.2	150.7
1559400-100100	50.4	22.1	25.4	1.65	171.2	153.1
1559400-150050	25.0	9.4	38.1	1.65	166.4	154.8
1559400-150075	25.0	15.8	38.1	1.65	185.4	188.9
1559400-150100	50.4	22.1	38.1	1.65	208.4	179.3
1559400-150150	50.4	34.8	38.1	1.65	234.4	193.4
1559400-200050	25.0	9.4	50.8	1.65	204.4	187.2
1559400-200075	25.0	15.8	50.8	1.65	234.4	226.9
1559400-200100	50.4	22.1	50.8	1.65	246.4	211.7
1559400-200150	50.4	34.8	50.8	1.65	272.4	225.8
1559400-200200	64.0	47.5	50.8	1.65	288.4	241.0
1559400-250050	25.0	9.4	63.5	1.65	242.6	213.3
1559400-250075	25.0	15.8	63.5	1.65	261.6	265.1
1559400-250100	50.4	22.1	63.5	1.65	285.6	237.8
1559400-250150	50.4	34.8	63.5	1.65	310.6	251.9

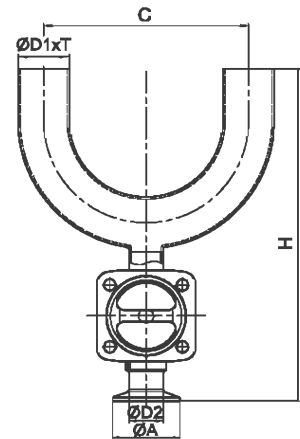


KDV-MU U-type diaphragm valve

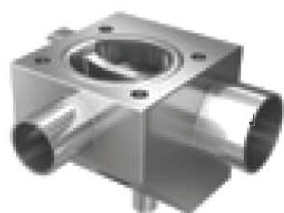
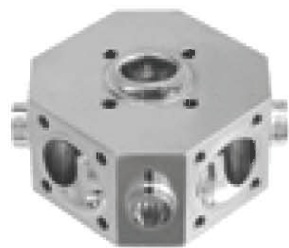


KDV-MU400

NO.	D1	T	D2	A	C	H
1559400-075050	19.1	1.65	12.7	25	114.3	139.7
1559400-075075	19.1	1.65	19.1	25	114.3	179.7
1559400-100050	25.4	1.65	12.7	25	76.2	142.9
1559400-100075	25.4	1.65	19.1	25	76.2	182.9
1559400-100100	25.4	1.65	25.4	50.4	76.2	201.8
1559400-150050	38.1	1.65	12.7	25	114.3	189.1
1559400-150075	38.1	1.65	19.1	25	114.3	229.1
1559400-150100	38.1	1.65	25.4	50.4	114.3	248.4
1559400-150150	38.1	1.65	38.1	50.4	114.3	286.5
1559400-200050	50.8	1.65	12.7	25	152.4	208.9
1559400-200075	50.8	1.65	19.1	25	152.4	248.9
1559400-200100	50.8	1.65	25.4	50.4	152.4	267.8
1559400-200150	50.8	1.65	38.1	50.4	152.4	306.2
1559400-200200	50.8	1.65	50.8	64	152.4	330.2
1559400-250050	63.5	1.65	12.7	25	190.5	232.85
1559400-250075	63.5	1.65	19.1	25	190.5	272.85
1559400-250100	63.5	1.65	25.4	50.4	190.5	293.7
1559400-250150	63.5	1.65	38.1	50.4	190.5	331.8
1559400-250200	63.5	1.65	50.8	64	190.5	355.8
1559400-300050	76.3	1.65	12.7	25	228.6	258.2
1559400-300075	76.3	1.65	19.1	25	228.6	298.2
1559400-300100	76.3	1.65	25.4	50.4	228.6	319
1559400-300150	76.3	1.65	38.1	50.4	228.6	357.1
1559400-300200	76.3	1.65	50.8	64	228.6	381.1



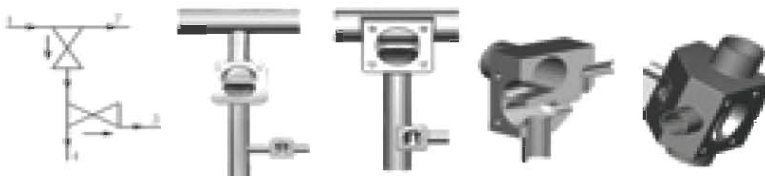
KDMP Multi-port diaphragm valves



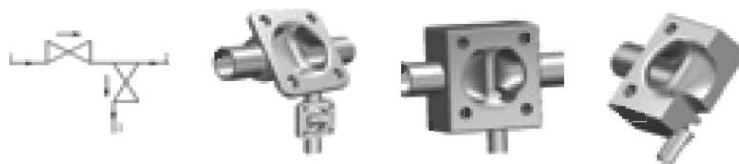
Multi-channel diaphragm valves can save installation space and time, reduce cost, and can be used as a substitute in the valves

Evolution of multi-channel valves

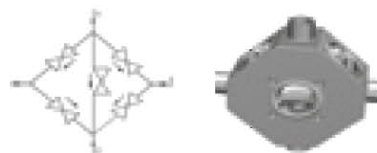
T-valve with sterilizing port



Integrated GMP valve



Chromatography valve



Technical Data

Items	Details
Working pressure	0-10bar, 145psi (EPDM) 0-7bar, 101psi (PTFE)
Working temperature	-40~130°C , -40~266 °F (EPDM) -40~150°C , -40~302 °F (EPDM+PTFE)
Operation	Manual / pneumatic
Body design	OEM/ODM
Body material	1.4435 (316L), forging block
Surface finish	External sand blasting Internal surface Ra≤0.5μm(SF1), Ra≤0.375μm(SF4)
Connections	Butt-Weld, Clamp ISO, DIN, ASME BPE, 3A

KGMP SAP/GMP diaphragm valves



The KGMP / SAP diaphragm valves are available in a variety of angles and positions with forging or casting materials (as shown in the drawing).

Horizontal installation of the main valve with automatic drainage and vertical installation of the branch valve at the left side.



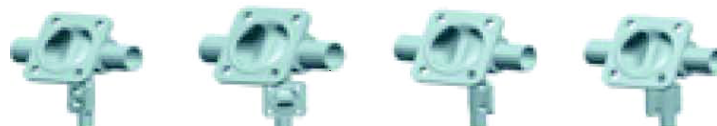
HVL-01

HVL-02

HVL-03

HVL-04

Horizontal installation of the main valve with automatic drainage and vertical installation of the branch valve at the right side.



HVR-01

HVR-02

HVR-03

HVR-04

Horizontal installation of the main valve (upwards) and vertical installation of the branch valve at the right (left) side.



HVR-05

HVR-06

HVR-07

HVR-08

Horizontal installation of the main valve with automatic drainage and automatic drainage for the branch vertically installed at the left side.



HHL-01

HHL-02

HHR-01

HHR-02

Vertical installation of the main valve and automatic drainage for the branch horizontally installed

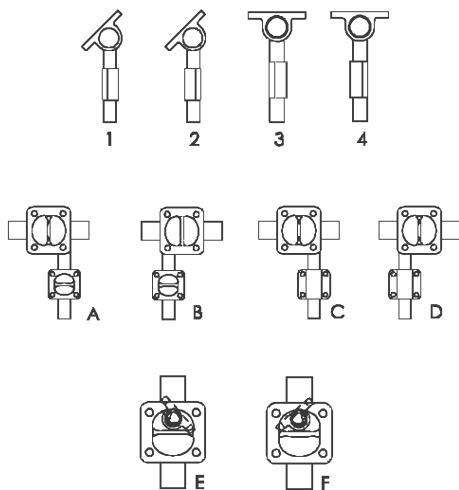


VHU-01

VHU-02

VHD-01

VHD-02



2
2.7