

Vacuum Angle Valve VLP / VLB / VLH

New product portfolio has been added in ULVAC vacuum angle valve. Flange size from DN16 (5/8 ") to DN900 (36"). Flange selection from 4 kinds. 3 types of actuation, double-acting cylinder, single-acting cylinder and manual. This various selection answers to wide range of needs.



VLP-SA025KF



VLH-SB040CH



VLP-SA100KC



VLP-SA100JH



VLH-SB100JH

Selection Guide

Type	Category	Series
Angle Valve	VLP Angle Valve (Double-acting)	VLP-SA Angle Valve (Double-acting / Stainless Steel / O-ring shaft feedthrough)
		VLP-SB Angle Valve (Double-acting / Stainless Steel / bellows feedthrough)
		VLP-MB Angle Valve (Double-acting / Stainless Steel / UHV)
		VLP-U Angle Valve (Double-acting / Steel / O-ring shaft feedthrough)
	VLB Angle Valve (Single-acting)	VLB-SA Angle Valve (Single-acting / Stainless Steel / O-ring shaft feedthrough)
		VLB-SB Angle Valve (Single-acting / Stainless Steel / bellows feedthrough)
	VLH Angle Valve (Manual)	VLH-SB Angle Valve (Manual / Stainless Steel / bellows feedthrough)
		VLH-MB Angle Valve (Manual / Stainless Steel / UHV)

Series	Vacuum level ^{*1}	Pressure range abs. [Pa] < mbar > (torr)	Type	Actuation	Body material	Bakeout temperature [°C] < F > ^{*2}	Allowable pressure difference [MPa] < bar > (torr)
VLP-SA	V	Atm. ~ [1.0E-5] < 1.0E-7 > (7.5E-8)	Angle	Double-acting	Stainless steel 304	150 < 302 >	[0.1] < 1 > (750)
VLP-SB	HV	Atm. ~ [1.0E-6] < 1.0E-8 > (7.5E-9)	Angle	Double-acting	Stainless steel 304	150 < 302 >	[0.1] < 1 > (750)
VLP-MB	UHV	Atm. ~ [1.0E-6] < 1.0E-10 > (7.5E-11)	Angle	Double-acting	Stainless steel 304	150 (200 when opened) < 302 >	[0.1] < 1 > (750)
VLP-U	V	Atm. ~ [1.0E-5] < 1.0E-7 > (7.5E-8)	Angle	Double-acting	Steel 400 + Ni plating	60 < 140 >	n/a
VLB-SA	V	Atm. ~ [1.0E-5] < 1.0E-7 > (7.5E-8)	Angle	Single-acting NC ^{*3}	Stainless steel 304	150 < 302 >	[0.1] < 1 > (750)
VLB-SB	HV	Atm. ~ [1.0E-6] < 1.0E-8 > (7.5E-9)	Angle	Single-acting NC ^{*3}	Stainless steel 304	150 < 302 >	[0.1] < 1 > (750)
VLH-SB	HV	Atm. ~ [1.0E-6] < 1.0E-8 > (7.5E-9)	Angle	Manual	Stainless steel 304	150 < 302 >	[0.1] < 1 > (750)
VLH-MB	UHV	Atm. ~ [1.0E-8] < 1.0E-10 > (7.5E-11)	Angle	Manual	Stainless steel 304	150(200 when opened) < 302 >	[0.1] < 1 > (750)

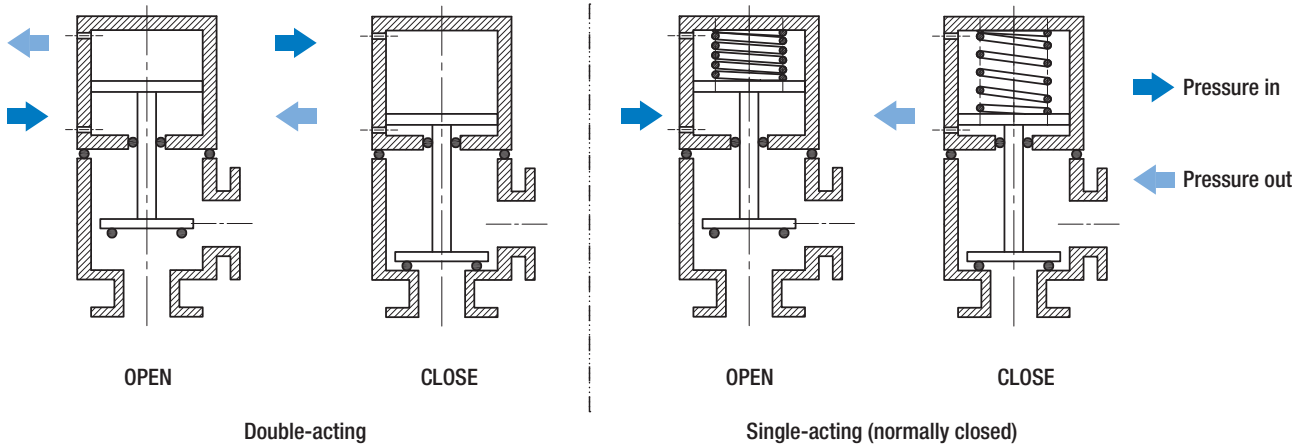
*1 Refer to "Feedthrough" about relationship between vacuum level and feedthrough.

*2 Actuator < 60°C < 140F >.

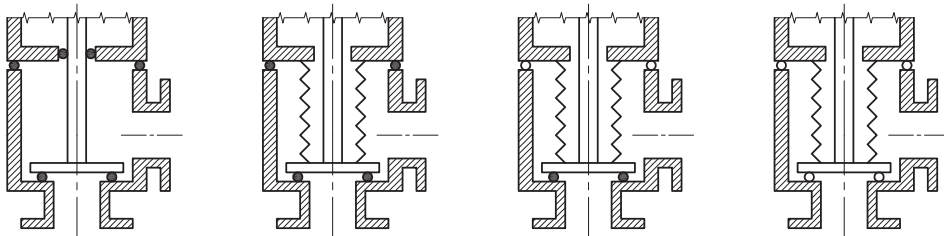
*3 NC = Normally closed (Valve automatically closes when compressed air released)

Vacuum Angle Valve

Cylinder mechanism



Feedthrough



Vacuum level	Pressure range [Pa] <mbar> (torr)
V	$\leq [1.0E-5] <1.0E-7>$ (7.5E-8)
HV	$\leq [1.0E-6] <1.0E-8>$ (7.5E-9)
UHV	$\leq [1.0E-8] <1.0E-10>$ (7.5E-11)
XHV	$\leq [1.0E-9] <1.0E-11>$ (7.5E-12)

Series	Vacuum level
VLP-SA	V
VLB-SA	HV
VLP-U	UHV
	XHV

Series	Vacuum level
VLP-SB	V
VLB-SB	HV
VLH-SB	UHV
	XHV

Series	Vacuum level
VLP-MB	V
VLH-MB	HV
	UHV
	XHV

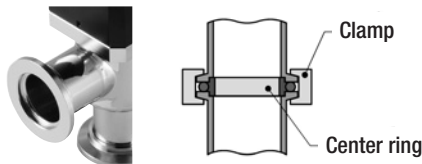
Series	Vacuum level
VUH	V
	HV
	UHV
	XHV

- O-ring seal
- Metal seal
- ≡ Bellows seal

Flange

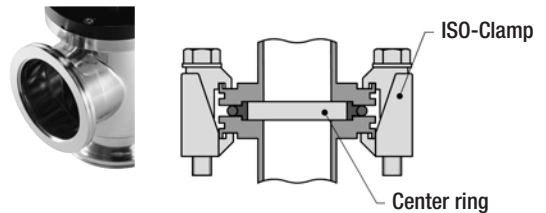
ISO-KF

- KF: Kleinflansch
- Standard: ISO 2861 (clamped-type quick-release couplings)
- Aka: Quick coupling,



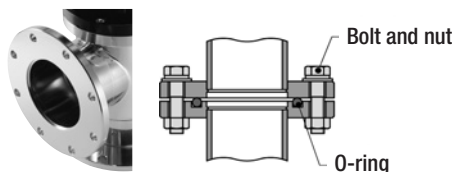
ISO-K

- K: Klampe
- Standard: ISO 1609 / JIS B2290 (clamping flange)
- Aka: MF flange, LF flange
- Connection to ISO-F is possible with claw clamp



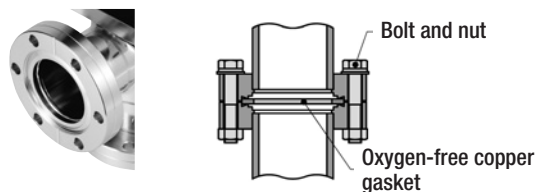
JIS-VF / VG

- Standard: JIS B2290 (clamped-type quick-release couplings)
- VF: Without O-ring groove
- VG: With O-ring groove



ISO-CF

- CF: ConFlat
- Standard: ISO 3669-2 (knife edge flange)
- Aka: Bakable flange, UFC flange, ICF flange



► Model Table

model										
series										
category										
type										
V	L	P	-	S	A	0	2	5	K	F

Product group
Configuration
Operation
Body material
Feedthrough
DN / size
Flange

V										
L										
P										
B										
H										
S										
M										
A										
B										
0	2	5								
								K	F	
								K	C	
								J	H	
								C	H	

Vacuum valve
Angle
Pneumatic double-acting
Pneumatic single-acting NC (normally closed)
Manual
Stainless steel (Bonnet: O-ring sealed)
Stainless steel (Bonnet: metal sealed)
O-ring shaft
Bellows
25A
ISO-KF
ISO-K (Claw)
JIS-VF (Bolted)
ISO-CF (Bolted)

New	ISO-CF nominal diameter	016	025	040	063	100	160	200	250
Conventional	ULVAC-UFC nominal diameter	034	054	070	114	152	203	253	306

► Portfolio table

Nominal diameter ^{*1}	◆A(ISO)	[mm]	016	020	025	040	050	063	080	100	160	200	250	320	-	400	-	500	550	900	
	◇A(JIS)	[mm]	-	020	025	040	050	065	080	100	150	200	250	300	350	400	450	500	600	900	
	●B	[inch]	5/8	3/4	1	1-1/2	2	2-1/2	3	4	6	8	10	12	14	16	18	20	22	36	
VLP-SA□JH	VF		◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇		◇						
VLP-SA□KF	ISO-KF	◆		◆	◆	◆															
VLP-SA□KC	ISO-K							◆	◆	◆	◆	◆	◆								
VLP-SB□JH	VF		◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇								
VLP-SB□KF	ISO-KF	◆		◆	◆	◆															
VLP-SB□KC	ISO-K							◆	◆	◆	◆	◆	◆								
VLP-SB□CH	ISO-CF	◆			◆																
VLP-MB□CH	ISO-CF	*2			*2			*2		*2	*2										
VLP-U□	VF																		●	●	●
VLB-SA□KF	ISO-KF	◆		◆	◆	◆															
VLB-SB□KF	ISO-KF	◆		◆	◆	◆															
VLH-SB□JH	VF		◇	◇	◇	◇	◇	◇	◇	◇	◇										
VLH-SB□KF	ISO-KF	◆		◆	◆	◆															
VLH-SB□KC	ISO-K							◆	◆	◆	◆										
VLH-SB□CH	ISO-CF	◆			◆																
VLH-MB□CH	ISO-CF	*2			*2			*2		*2	*2										

*1 Numerical number used for model is:
 ◆ "Nominal diameter: A (ISO) mm", ◇ "Nominal diameter: A (conventional JIS) mm", ● "Nominal diameter: B inch".
 *2 To be released shortly. Send us RFI.

Vacuum Angle Valve

VLP-SA/SB/MB / VLB-SA/SB / VLH-SB/MB Common specification

Model		VLP-SA	VLP-SB	VLP-MB	VLB-SA	VLB-SB	VLH-SB	VLH-MB
Maximum allowable differential pressure on valve plate (Positive pressure/counter pressure)	MPa				0.10			
	bar				1.00			
	psi				14.5			
Maximum allowable differential pressure in opening direction (Positive pressure/counter pressure)	MPa				0.10			
	bar				1.00			
	psi				14.5			
Plate seal					O-ring			
Feedthrough		O-ring	Bellows		O-ring	Bellows		
Actuation		Double-acting cylinder			Single-acting cylinder (N.C)		Manual	
External leak rate ^{*1}	Pa·m ³ /s				≤ 1.0E-10			
	mbar·L/s				≤ 1.0E-9			
	torr·L/s				≤ 7.5E-10			
Internal leak rate ^{*1}	Pa·m ³ /s				≤ 1.0E-10			
	mbar·L/s				≤ 1.0E-9			
	torr·L/s				≤ 7.5E-10			
Operating pressure range (absolute pressure)	Pa	Atm. ~ 1.0E-5	Atm. ~ 1.0E-6	Atm. ~ 1.0E-8	Atm. ~ 1.0E-5	Atm. ~ 1.0E-6	Atm. ~ 1.0E-6	Atm. ~ 1.0E-8
	mbar	Atm. ~ 1.0E-7	Atm. ~ 1.0E-8	Atm. ~ 1.0E-10	Atm. ~ 1.0E-7	Atm. ~ 1.0E-8	Atm. ~ 1.0E-8	Atm. ~ 1.0E-10
	torr	Atm. ~ 7.5E-8	Atm. ~ 7.5E-10	Atm. ~ 7.5E-11	Atm. ~ 7.5E-8	Atm. ~ 7.5E-10	Atm. ~ 7.5E-10	Atm. ~ 7.5E-11
Bakeout temperature (when stopping) ^{*2}	°C	Body: 150 ^{*3} , actuation: 70 (Indicator: 60)					Body: 150 ^{*3} , actuation: 70	
	F	Body: 302 ^{*3} , actuation: 158 (Indicator: 140)					Body: 302 ^{*3} , actuation: 158	
Operating ambient temperature	°C				5 ~ 70			
	F				41 ~ 158			
Fluid temperature	°C				5 ~ 70			
	F				41 ~ 158			
Heating & cooling speed	°C/h				≤ 30			
	F/h				≤ 86			
Operating ambient					Non-corrosive			
Fluid					Non-corrosive			
Compressed air to cylinder	MPaG	0.40 ~ 0.60			0.50 ~ 0.60		-	
	bar	4.0 ~ 6.0			5.0 ~ 6.0		-	
	psi	58 ~ 87			72 ~ 87		-	
Warranted operation cycle ^{*4}		100,000	10,000		100,000	10,000		
Orientation					No limitation			
Position indicator					Optional (sell separately)			
Material of major parts (Vacuum side)		Stainless steel 304						
Material of major parts (Atmosphere side)		Stainless steel 304, Aluminum-6061 (anodized aluminum)						
Bellows material		-	Stainless steel 316L		-	Stainless steel 316L		
Seal material (Vacuum side)		FKM		External seal: Metal Internal seal: FKM	FKM		External seal: Metal Internal seal: FKM	
Grease (Vacuum side)		Fluorine grease	Any grease is not used		Fluorine grease	Any grease is not used		Any grease is not used
Attachment for lifting					None ^{*5}			
RoHS		Complied						

*1 Leak rate does not include permeation in O-ring. External leak during opening and closing is not regulated in the case of O-ring shaft seal feedthrough.

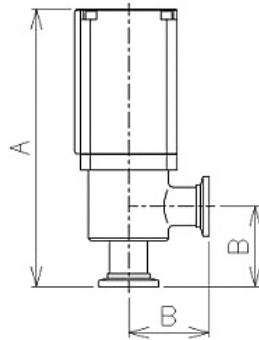
*2 Do not open and close during bakeout.

*3 Regarding to VLP-MB and VLH-MB, maximum body bakeout temperature in opening position: 200°C (392F) and in closing position: 150°C (302F).

*4 See instruction manual for detail.

*5 Lifting attachment is included for VLP-SA350JH (Eyebolt M12 x 2pcs).





- ▶ Stainless steel body material from DN16(5/8") to DN350(14").
- ▶ 4 types of flange, ISO-KF, ISO-K, ISO-CF or JIS-VF.
- ▶ VLP: double-acting cylinder. VLB: single-acting cylinder.
Maximum allowable differential pressure on valve plate is 0.1MPa <1.0bar> (14.5psi).
- ▶ Feedthrough of VL□-SA is O-ring (FKM) shaft feedthrough, which endures particle.
- ▶ Feedthrough of VL□-SB is bellows feedthrough, which minimize outgassing.
- ▶ Bonnet flange seal of VLP-MB is metal which makes possible to bake out at 200°C (392F) in opening position.

VLP-SA/SB/MB VLB-SA/SB Detail specification

Model	VLP-S□[□□□]JH												
	016	020	025	040	050	065	080	100	150	200	250	350	
Flange	-	VF20	VF25	VF40	VF50	VF65	VF80	VF100	VF150	VF200	VF250	VF350	
Conductance in opening position ¹ L/s	-	12	11	34	73	140	190	430	1240	2830	4870	6480	
Cylinder capacity cc	-	11.3	11.3	22.6	49	93.5	109	201	471	745	1,350	3,020	
Compressed air fitting	-	Rc 1/8	Rc 1/8	Rc 1/8	Rc 1/8	Rc 1/8	Rc 1/8	Rc 1/8	Rc 3/8	Rc 3/8	Rc 3/8	Rc 3/4	
Operating speed (open) ² sec	-	1.5±0.5	1.5±0.5	2.0±0.5	2.0±0.5	2.5±0.5	2.5±0.5	2.5±0.5	2.5±1.0	3.0±1.0	4.0±1.0	5.0±1.0	
Operating speed (close) ² sec	-	1.0±0.5	1.0±0.5	1.5±0.5	1.5±0.5	2.0±0.5	2.0±0.5	2.5±0.5	2.5±1.0	3.0±1.0	4.0±1.0	5.0±1.0	
Weight kg	-SA	-	1.2	1.4	2.4	3.2	5.5	7	12	20	35	55	150
	-SB	-	1.3	1.5	2.5	3.5	5.7	7.2	13	21	36	56	-
Height dimension (A) mm	-	156	161	199	220	249	291	325	445	538	618	823	
Center-to-flange dimension (B) mm	-	60	65	80	90	93	120	130	160	200	220	280	

Model	VLP-S□[□□□]KF						VLP-S□[□□□]KC						
	016	020	025	040	050	063	080	100	160	200	250	350	
Flange	KF16	-	KF25	KF40	KF50	K63	K80	K100	K160	K200	K250	-	
Conductance in opening position ¹ L/s	7	-	14	42	95	150	250	520	1430	3180	5150	-	
Cylinder capacity cc	11.3	-	11.3	22.6	49	93.5	109	201	471	745	1,350	-	
Compressed air fitting	Rc 1/8	-	Rc 1/8	Rc 1/8	Rc 1/8	Rc 1/8	Rc 1/8	Rc 1/8	Rc 3/8	Rc 3/8	Rc 3/8	-	
Operating speed (open) ² sec	1.5±0.5	-	1.5±0.5	2.0±0.5	2.0±0.5	2.5±0.5	2.5±0.5	2.5±0.5	2.5±1.0	3.0±1.0	4.0±1.0	-	
Operating speed (close) ² sec	1.0±0.5	-	1.0±0.5	1.5±0.5	1.5±0.5	2.0±0.5	2.0±0.5	2.5±0.5	2.5±1.0	3.0±1.0	4.0±1.0	-	
Weight kg	-SA	0.7	-	0.7	1.3	1.9	4.1	4.7	7.9	17	28	46	-
	-SB	0.75	-	0.75	1.4	2.2	4.3	4.9	8.1	17	28	47	-
Height dimension (A) mm	138	-	146	184	205	244	261	303	423	516	606	-	
Center-to-flange dimension (B) mm	40	-	50	65	70	88	90	108	138	178	208	-	

Model	VLP-SB[□□□]CH											
	016	020	025	040	050	063	080	100	160	200	250	350
Flange (UFC size)	CF16 (034)	-	-	CF40 (070)	-	-	-	-	-	-	-	-
Conductance in opening position ¹ L/s	7	-	-	44	-	-	-	-	-	-	-	-
Cylinder capacity cc	11.3	-	-	22.6	-	-	-	-	-	-	-	-
Compressed air fitting	Rc 1/8	-	-	Rc 1/8	-	-	-	-	-	-	-	-
Operating speed (open) ² sec	1.5±0.5	-	-	2.0±0.5	-	-	-	-	-	-	-	-
Operating speed (close) ² sec	1.0±0.5	-	-	1.5±0.5	-	-	-	-	-	-	-	-
Weight kg	0.79	-	-	1.8	-	-	-	-	-	-	-	-
Height dimension (A) mm	136	-	-	182	-	-	-	-	-	-	-	-
Center-to-flange dimension (B) mm	38	-	-	63	-	-	-	-	-	-	-	-

*1 Conductance is based on molecular flow at 20°C (68F) air.

*2 Adjust operation speed to make its value equal to specified value by using a speed controller.

Vacuum Angle Valve

VLP-MB Detail specification

Model	VLP-MB(□□□)CH											
	016	020	025	040	050	063	080	100	160	200	250	350
Flange (UFC size)	CF16 (034)	-	-	CF40 (070)	-	CF63 (114)	-	CF100 (152)	CF160 (203)	-	-	-
Conductance in opening position ¹ L/s	To be released soon. Send us RFQ.											
Cylinder capacity cc												
Compressed air fitting												
Operating speed (open) ² sec												
Operating speed (close) ² sec												
Weight kg												
Height dimension (A) mm												
Center-to-flange dimension (B) mm	38	-	-	63	-	105	-	135	167	-	-	-

VLB-SA/SB Detail specification

Model	VLB-S□(□□□)KF											
	016	020	025	040	050	063	080	100	160	200	250	350
Flange	KF16	-	KF25	KF40	KF50	-	-	-	-	-	-	-
Conductance in opening position ¹ L/s	7	-	14	42	95	-	-	-	-	-	-	-
Cylinder capacity cc	11.3	-	11.3	22.6	49	-	-	-	-	-	-	-
Compressed air fitting	Rc 1/8	-	Rc 1/8	Rc 1/8	Rc 1/8	-	-	-	-	-	-	-
Operating speed (open) ² sec	1.5±0.5	-	1.5±0.5	2.0±0.5	2.0±0.5	-	-	-	-	-	-	-
Operating speed (close) ² sec	1.0±0.5	-	1.0±0.5	1.5±0.5	1.5±0.5	-	-	-	-	-	-	-
Weight kg	-SA	0.75	-	0.75	1.4	2	-	-	-	-	-	-
	-SB	0.75	-	0.75	1.5	2.2	-	-	-	-	-	-
Height dimension (A) mm	138	-	146	184	205	-	-	-	-	-	-	-
Center-to-flange dimension (B) mm	40	-	50	65	70	-	-	-	-	-	-	-

*1 Conductance is based on molecular flow at 20°C (68°F) air.

*2 Adjust operation speed to make its value equal to specified value by using a speed controller.

Optional positioning indicator (sell separately)



Applicable valve	VLP-SA/SB/MB	VLB-SA/SB
Model	W8H(TPC)	
Position indicator type	Lead switch (double wire system, contact switch, cable length 1m (3.28 feet))	
Contact capacity of position indicator	DC24V/5~50mA	AC110V/5~20mA
Contact capacity of position indicator	Lead switch LED indicator	

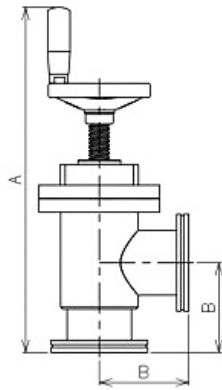
※ 2pcs/set.

※ Refer to the instruction manual to attach them to the valve.

Applicable valve	VLP-U20/U22	VLP-U36
Model	D-A54/BT-16(SMC)	D-A54/BT-20(SMC)
Position indicator type	Lead switch (double wire system, contact switch, cable length 1m (1.64 feet))	
Position indicator type	DC24V/5~50mA	AC100V/5~25mA AC200V/5~12.5mA
Indication of valve opening and closing position	Lead switch LED indicator	

※ 2pcs/set.

※ To be attached to the valve before delivery.



- ▶ Stainless steel body material from DN16(5/8") to DN150(6").
- ▶ 4 types of flange, ISO-KF, ISO-K, ISO-CF or JIS-VF.
- ▶ Large size and easy-to-rotate hand wheel is used for VLH.
- ▶ Feedthrough of VLH-SB is bellows feedthrough, which minimize outgassing.
- ▶ Bonnet flange seal of VLH-MB is metal which makes possible to bake out at 200°C (392F) in opening position.

VLH-SB/MB Detail specification

Model	VLH-SB[□□□]JH											
	016	020	025	040	050	065	080	100	150	200	250	350
Flange	-	VF20	VF25	VF40	VF50	VF65	VF80	VF100	VF150	-	-	-
Conductance in opening position ¹ L/s	-	12	11	34	73	140	190	430	1240	-	-	-
Hand wheel rotation per stroke	-	7.0	7.0	9.0	12.5	7.5	8.8	10.0	12.0	-	-	-
Weight kg	-	1.2	1.4	2.2	3.3	5.4	6.9	12	21	-	-	-
Height dimension (A) mm	-	154	159	185	208	344	385	422	545	-	-	-
Center-to-flange dimension (B) mm	-	60	65	80	90	93	120	130	160	-	-	-

Model	VLH-SB[□□□]KF						VLH-SB[□□□]KC					
	016	020	025	040	050	063	080	100	160	200	250	350
Flange	KF16	-	KF25	KF40	KF50	K63	K80	K100	K160	-	-	-
Conductance in opening position ¹ L/s	7	-	14	42	95	150	250	520	1430	-	-	-
Hand wheel rotation per stroke	7.0	-	7.0	9.0	12.5	7.5	8.8	10.0	12.0	-	-	-
Weight kg	0.7	-	0.7	1.1	2	4.0	4.6	7.3	17	-	-	-
Height dimension (A) mm	136	-	144	170	188	339	355	400	523	-	-	-
Center-to-flange dimension (B) mm	40	-	50	65	70	88	90	108	138	-	-	-

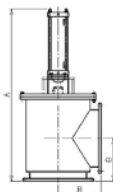
Model	VLH-SB[□□□]CH											
	016	020	025	040	050	063	080	100	160	200	250	350
Flange	CF16	-	-	CF40	-	-	-	-	-	-	-	-
Conductance in opening position ¹ L/s	7	-	-	44	-	-	-	-	-	-	-	-
Hand wheel rotation per stroke	7.0	-	-	9.0	-	-	-	-	-	-	-	-
Weight kg	0.74	-	-	1.5	-	-	-	-	-	-	-	-
Height dimension (A) mm	134	-	-	168	-	-	-	-	-	-	-	-
Center-to-flange dimension (B) mm	38	-	-	63	-	-	-	-	-	-	-	-

*1 Conductance is based on molecular flow at 20°C (68F) air.

VLH-MB Detail specification

Model	VLH-MB[□□□]CH											
	016	020	025	040	050	063	080	100	150	200	250	350
Flange (UFC size)	CF16 (034)	-	-	CF40 (070)	-	CF63 (105)	-	CF100 (152)	CF160 (203)	-	-	-
Conductance in opening position ¹ L/s	To be released soon. Send us RFQ.											
Hand wheel rotation per stroke												
Weight kg												
Height dimension (A) mm												
Center-to-flange dimension (B) mm	38	-	-	63	-	105	-	135	167	-	-	-

Vacuum Angle Valve



- ▶ 3 models are available for steel 400 made valve from 500A (20") to 900A (36").
- ▶ Flange: JIS-VF.
- ▶ Double-acting cylinder. It does not stand for differential pressure.
- ▶ Feedthrough of VLP-U is O-ring (NBR) shaft feedthrough, which endures particle.

VLP-U Common specification

Model		VLP-U
Maximum allowable differential pressure on valve plate (Positive pressure)	MPa	0.10
	bar	1.00
	psi	14.50
Maximum allowable differential pressure on valve plate (Counter pressure)	n/a	Not available
Maximum allowable differential pressure in opening direction (Positive pressure)	kPa	1.00
	bar	0.01
	psi	0.145
Maximum allowable differential pressure in opening direction (Counter pressure)	n/a	Not available
Plate seal		O-ring
Feedthrough		O-ring
Actuation		Double-acting cylinder
External leak rate ^{*1}	Pa·m ³ /s	≤ 1.3E-7
	mbar·L/s	≤ 1.3E-6
	torr·L/s	≤ 9.7E-7
Internal leak rate ^{*1}	Pa·m ³ /s	≤ 1.3E-7
	mbar·L/s	≤ 1.3E-6
	torr·L/s	≤ 9.7E-7
Operating pressure range (absolute pressure)	Pa	Atm. ~ 1.0E-5
	mbar	Atm. ~ 1.0E-7
	torr	Atm. ~ 7.5E-8
Bakeout temperature (when stopping) ^{*2}	°C	60
	F	140
Operating ambient temperature	°C	5 ~ 40
	F	32 ~ 104
Fluid temperature	°C	5 ~ 40
	F	32 ~ 104
Heating & cooling speed	°C/h	≤ 30
	F/h	≤ 86
Operating ambient fluid		Non-corrosive
Compressed air to cylinder	MPaG	0.45 ~ 0.55
	bar	4.5 ~ 5.5
	psi	65.2 ~ 79.7
Warranted operation cycle ^{*3}		100,000
Orientation		Vertical
Position indicator		Optional (sell separately)
Material of major parts (Vacuum side)		Steel 400 with Ni plating
Material of major parts (Atmosphere side)		Steel 400 with Ni plating + acrylic painting
Seal material (Vacuum side)		Nitrile rubber
Grease (Vacuum side)		Highly purified paraffin oil
Attachment for lifting		None
RoHS		Complied

Detail of specification	VLP-U20	VLP-U22	VLP-U36
Flange	VF500	VF550	VF900
Conductance in opening position ^{*4} L/s	9,198	10,680	33,350
Cylinder capacity cc	9,040	9,040	25,100
Compressed air fitting	Rc3/4	Rc3/4	Rc3/4
Operating speed (open) ^{*5} sec	7.0±0.5	7.0±0.5	16.5±0.5
Operating speed (close) ^{*5} sec	7.0±0.5	7.0±0.5	16.5±0.5
Weight kg	310	350	970
Height dimension (A) mm	1,530	1,560	2,380
Center-to-flange dimension (B) mm	380	420	620

*1 Leak rate does not include permeation in O-ring. External leak during opening and closing is not regulated in the case of O-ring shaft seal feedthrough.

*2 Do not open and close during bakeout.

*3 See instruction manual for detail.

*4 Conductance is based on molecular flow at 20°C (68F) air.

*5 Adjust operation speed to make its value equal to specified value by using a speed controller.

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