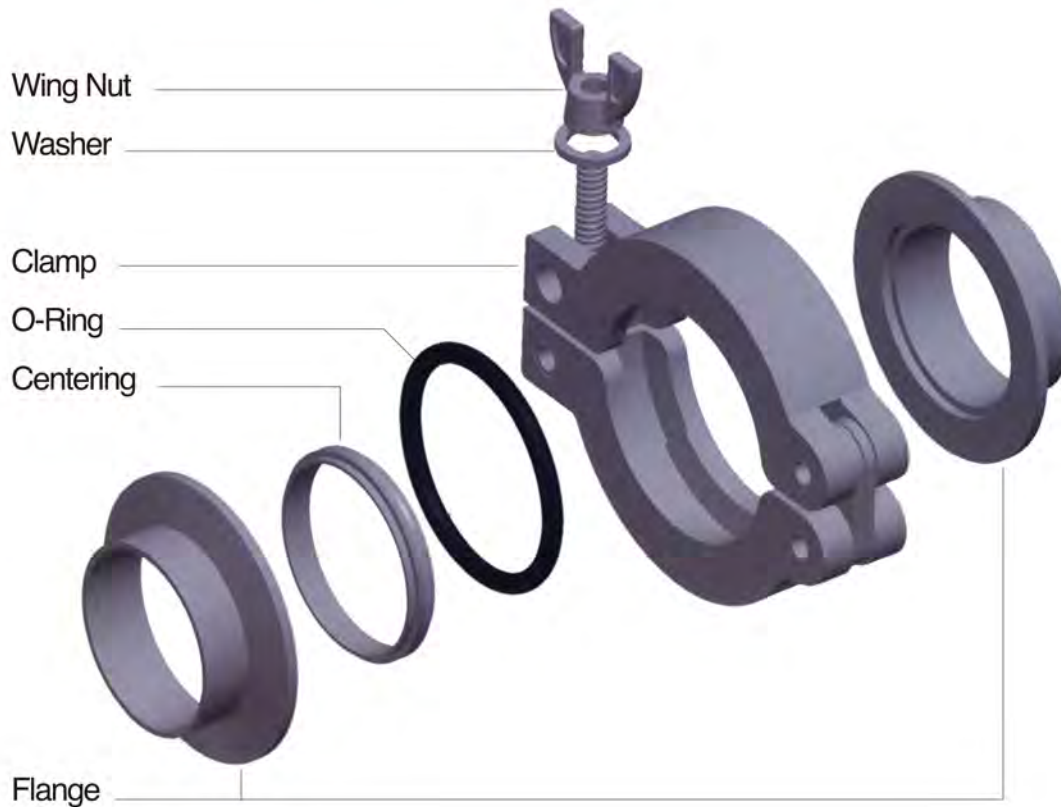


KF FLANGE CONNECTION WITH CLAMPS



Characteristic :

- Easy Assembly and Quick Disassembly manually without tools-KF or NW assembly comprises two flanges, a center-rings, an O-ring and an aluminum clamp or stainless steel clamp with a wingnut fastener for quick and fast connection.
- Uniform Pressure to Effect Vacuum Seal Connection-15° taper surface of KF or NW flange allows uniform pressure to compress an O-ring, which is held in place by metal center-ring, by the clamp to generate a vacuum seal.

Material and Size

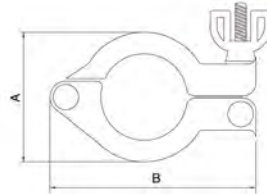
- Flanges, Blanks, Fitting : Material S.S.304
- Clamps : Material Aluminum or S.S.304
- O-ring : Material Viton
- Sizes : KF-10~KF160, JIS Standard : NW10~NW100
- Material S.S304, 304L, 316L and Sizes can be customized per customers' designs and requirements.

Vacuum Fittings

7

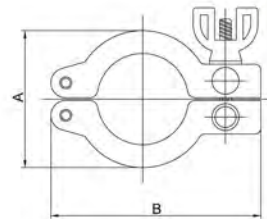
Vacuum Fittings

Model	Item	Page
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VF-01(SS)	KF Hinged Clamp (SUS304, Single Pin)	36
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VF-01(SA) KF Hinged Clamp (Single Pin) material : Aluminum

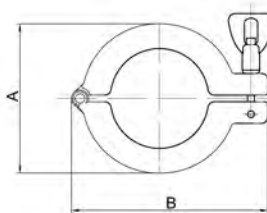
Unit:mm

Size	A	B	WT(g)	Material
NW16	42.5	63	63	AL
NW25	54	72	78	
NW40	70	90	98	
NW50	90	114	165	

VF-01(DA) KF Hinged Clamp (Double Pin) Material : Aluminum

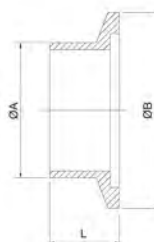
Unit:mm

Size	A	B	WT(g)	Material
NW16	45	61	66	AL
NW25	55	72	78	
NW40	70	90	103	
NW50	95	123	182	

VF-01(SS) KF Hinged Clamp (Single Pin) Material : Stainless Steel 304

Unit:mm

Size	A	B	WT(g)	Material
NW16	42.5	63	114	SS304
NW25	54	72	161	
NW40	70	90	193	
NW50	90	114	324	

VF-02 KF Flange (Short Weld)

Unit:mm

Size	ØA	ØB	L
NW16	* 19.05	30	20
	21.7	30	20
	25.4	30	20
NW25	* 25.4	40	20
	27.2	40	20
	34	40	20
NW40	* 38.1	55	20
	42.7	55	20
	48.6	55	20
NW50	* 50.8	75	20
	60.5	75	20
NW63	* 63.5	95	20
	76.3	95	20
NW80	* 76.3	114	20
	89.1	114	20
NW100	* 101.6	134	20
	114.3	134	20

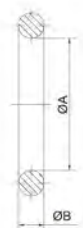
VF-03 Centering Ring



Unit:mm

Size	ØA	ØB	C
NW16	16.8	3.9	8
NW25	25.9	3.9	8
NW40	40.9	3.9	8
NW50	51.9	3.9	8
ISO63	69.9	3.9	8
ISO80	82.9	3.9	8
ISO100	101.7	3.9	8
ISO125	126.9	3.9	8
ISO160	152.5	3.9	8
ISO200	211.9	3.9	8
ISO250	260.8	3.9	8
ISO320	317	5.6	13

VF-04 O-Ring



Unit:mm

Size	DASH ØA	ØB	WT(g)
NW16	AS314	18.42	3
NW25	AS320	27.94	4.5
NW40	AS326	40.64	6
NW50	AS330	53.35	7.5
ISO63	AS336	75.57	10.4
ISO80	AS341	88.27	12
ISO100	AS347	107.32	14.6
ISO125	AS356	135.89	18.8
ISO160	AS362	158.12	20.9
ISO200	AS371	215.27	29.4
ISO250	AS378	266.07	36.1
ISO320	AS454	316.87	74.2

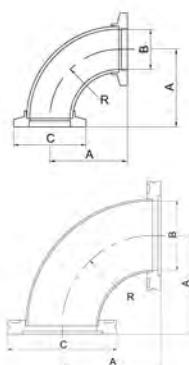
VF-05 KF Blank Flange



Unit:mm

Size	ØA	B
NW16	30	5
NW25	40	5
NW40	55	5
NW50	75	5
NW63	95	12
NW80	114	12
NW100	134	12
NW125	160	12
NW160	190	12

VF-06 90° Elbow



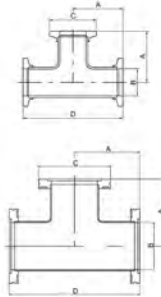
(1) KF 90° ELBOW

Unit:mm

Size	A	B	C	R
NW16	32	19.05	30	28.5
NW25	38.5	25.4	40	35
NW40	53.5	38.1	55	50
NW50	63.5	50.8	75	60
NW63	86	63.5	95	79
NW80	89	76.3	114	82
NW100	137	101.6	134	130

(2) ISO-k 90° ELBOW

Size	A	B	C	R
ISO63	86	63.5	95	79
ISO80	89	76.3	110	82
ISO100	137	101.6	130	130

VF-07 KF Tee

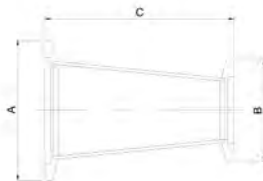
(1) KF 90° TEE

Unit:mm

Size	A	B	C	D
NW16	32	19.05	30	64
NW25	38.5	25.4	40	77
NW40	53.5	38.1	55	107
NW50	63.5	50.8	75	127
NW63	86	63.5	95	172
NW80	89	76.3	114	178
NW100	137	101.6	134	274

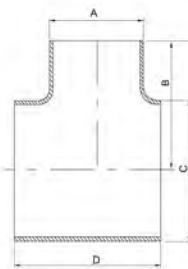
(2) ISO-k 90° TEE

Size	A	B	C	D
ISO63	86	63.5	95	172
ISO80	89	76.3	110	178
ISO100	137	101.6	130	274

VF-08 KF Conical Reducer

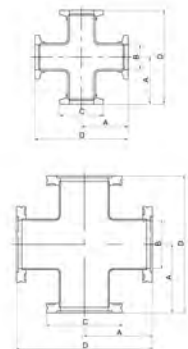
Unit:mm

Size	A	B	C
NW25-16	40	30	57.0
NW40-16	55	30	57.0
NW40-25	55	40	74.0
NW50-40	75	55	74.0
NW63-25	95	40	77.5
NW63-40	95	55	77.5
NW63-50	95	75	77.5
NW80-40	114	55	77.5
NW80-50	114	75	77.5
NW80-63	114	95	81.0
NW100-50	134	75	113.5
NW100-63	134	95	117.0
NW100-80	134	114	117.0

VF-09 T-Body(Bow) * Custom Made

Unit:mm

Size	A	B	C	D
NW16	19.05	42.4	40	1.5
NW25	25.4	42.4	40	1.5
NW40	38.1	56	53	1.5
NW50	50.8	66.5	63.5	1.5
NW63	63.5	79.5	76	2
NW80	76.3	92.5	89	2
NW100	101.6	134	127	2

VF-10 KF Cross

(1) KF 90° CROSS

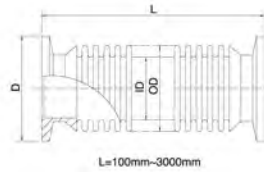
Unit:mm

Size	A	B	C	D
NW16	32.0	19.05	30	64
NW25	38.5	25.4	40	77
NW40	53.5	38.1	55	107
NW50	63.5	50.8	75	127
NW63	86.0	63.5	95	172
NW80	89.0	76.3	114	178
NW100	137.0	101.6	134	274

(2) ISO-k 90° CROSS

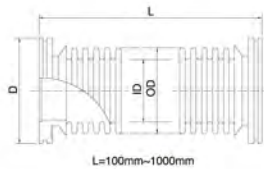
Size	A	B	C	D
ISO63	86	63.5	95	172
ISO80	89	76.3	110	178
ISO100	137	101.6	130	274

VF-11 KF Formed Bellows



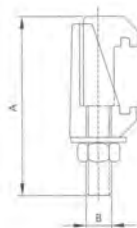
Unit:mm			
Size	I.D	O.D	D
NW16	20.0	28.5	30
NW25	25.3	35.5	40
NW40	37.7	54	55
NW50	49.8	67.5	75

VF-12 ISO-LF Bellows



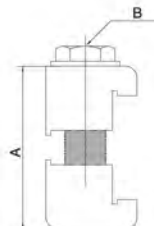
Unit:mm			
Size	I.D	O.D	D
ISO63	66	86.5	95
ISO80	78.1	101	110
ISO100	100	126.5	130
ISO125	127.2	155	155
ISO160	148.6	175.5	180
ISO200	200.2	235	240
ISO250	250.3	293	290
ISO320	300	345	370

VF-13 ISO Double Claw Clamp

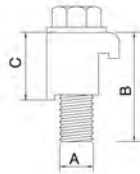


Unit:mm			
Size	Material	A	B
ISO63-250	SS304	61.5	M10
ISO320-500		76	M12
ISO63-250	Steel+Zn	61.5	M10
ISO320-500	Plated	76	M12

VF-14 ISO Double Wall Clamp

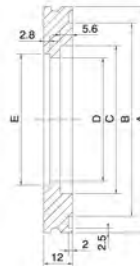


Unit:mm			
Size	Material	A	B
ISO63-100	Aluminum	45	M8
ISO160-250		45	M10
ISO320-500		60	M12

VF-15 ISO Single Wall Clamp

Unit:mm

Size	Material	A	B	C
ISO63-100	Aluminum	M8	35	23.5
ISO160-250	Aluminum	M10	35	23.5
ISO320-500	Aluminum	M12	50	30
ISO63-100	304S.S.	M8	35	23
ISO160-250	304S.S.	M10	35	23
ISO320-500	304S.S.	M12	50	30
ISO63-100	Steel+Zn Plated	M8	35	23
ISO160-250	Steel+Zn Plated	M10	35	23
ISO320-500	Steel+Zn Plated	M12	50	30

VF-16 Large Flange ISO LF (Claw Clamp)

Unit:mm

Size	A	B	C	D	E	WT(Kg)
ISO63	95	80	63.7	60.2	70.2	0.35
ISO80	110	94	76.5	73	83.3	0.44
ISO100	130	115	101.9	98.3	102.2	0.55
ISO160	180	164.8	153	148	153.2	0.77
ISO200	240	225	203.7	197	213.2	1.06
ISO250	290	275	254.5	247.6	261.3	1.37

VF-17 Rotatable Bolt Ring

Unit:mm

Size	L	D	A	B	N-E	WT(Kg)
ISO63	12	130	110	95.5	4-9	0.56
ISO80	12	145	125	110.5	8-9	0.63
ISO100	12	165	145	130.5	8-9	0.73
ISO160	16	225	200	180.7	8-11	1.29
ISO200	16	285	260	240.7	12-11	1.67
ISO250	16	335	310	290.7	12-11	1.99

VF-18 Retaining Ring

Unit:mm

Size	A	B	WT(Kg)
ISO63	91	3	16
ISO80	106	3	19
ISO100	126	3	23
ISO160	174	5	87
ISO200	234	5	116
ISO250	284	5	140

VF-19 Large Flange ISO LF (Bolt Style)



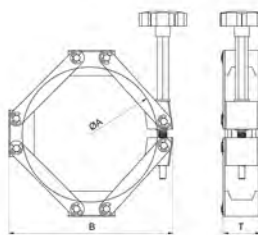
Unit:mm						
Size	L	D	A	B	N-E	WT(Kg)
ISO63	12	130	110	70.2	4-9	0.9
ISO80	12	145	125	83.3	8-9	1.1
ISO100	12	165	145	102.2	8-9	1.3
ISO160	16	225	200	153	8-11	2.1
ISO200	16	285	260	213	12-11	2.8
ISO250	16	335	310	261.1	12-11	3.4

VF-20 Outer Ring Material : Aluminium & Stainless Steel



Unit:mm				
Size	A	B	C	D
NW16	32	28.27	29.42	4.0
NW25	40	38.27	39.35	3.9
NW40	55	52.72	53.80	3.9
NW50	75	65.42	66.50	3.9

VF-21 Chain Clamp



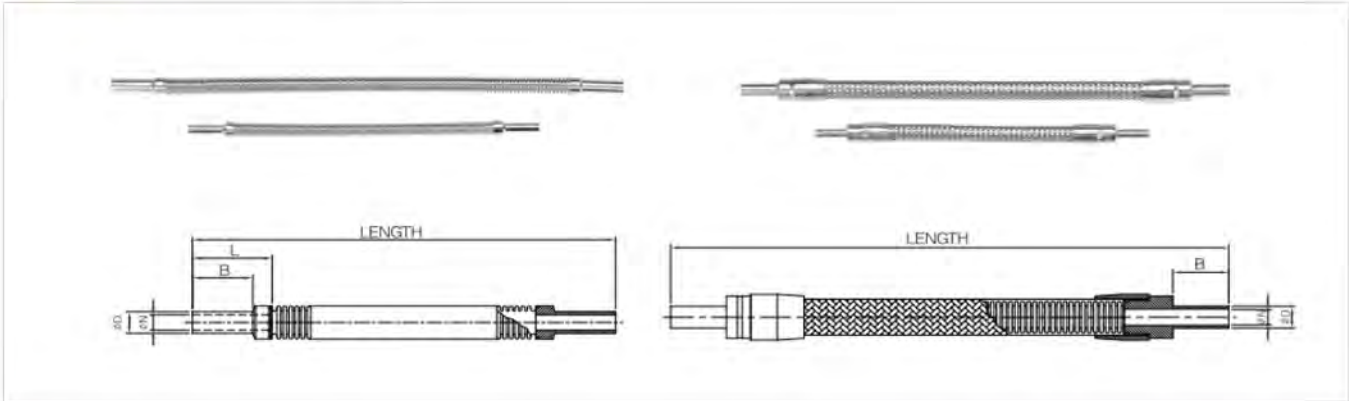
Unit:mm			
Size	ØA	B	T
NW63	116	145.82	33
NW80	116.6	147.04	33
NW100	134	165.5	33
NW125	166.08	191.15	33

VF-22 KF Bored Blank Flange



Unit:mm				
Size	A	B	C	D
NW16	30	17.2	5	19.3
NW25	40	26.2	5	25.7
NW40	55	41.2	5	38.4
NW50	75	52.2	5	51.0
NW63	87	70	5	63.7
NW80	114	83	11	76.4
NW100	134	102	11	101.8
NW160	190	153	11	152.9

VF-23 Flexible Tubes



Material

- Bellows : SUS321, SUS316L, etc.
- Braid : SUS304

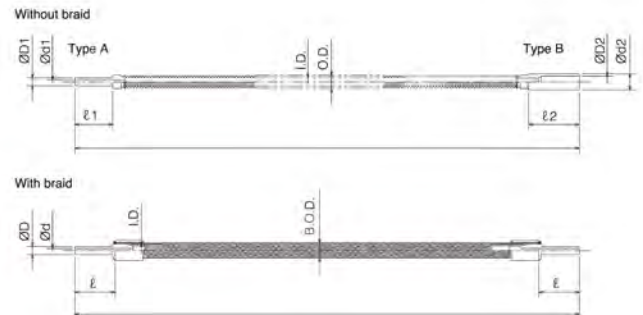
Differential Pressure : <1.2bar without braid

He Gas Leak Rate : <5.0 x 10⁻⁹ std cc/sec

Unit:mm			
Flange	I.D	O.D	ØD
1/4"	6.2	9.5	6.35
3/8"	10.2	14.5	9.52
1/2"	12.5	16.7	12.7
3/4"	16.4	21.7	19.05
1"	20.5	27	25.4

VF-24 High Vacuum Flexible Tubes & Bellows

3A(1/8") Super Mini Flexible



Standard Specifications

Material : Hose SUS 316L)
Tube end SUS 316L
Braid SUS 304

Working pressure : Without Braid(Vacuum ~ 0.5 MPa)
With Braid(Vacuum ~ 3.78MPa)

Allowable Leak Rate : 1.33 x 10⁻¹⁰ pa·m³/sec or less

We Can Supply From **OSAKA RASENKAN KOGYO CO., LTD.** of Japan

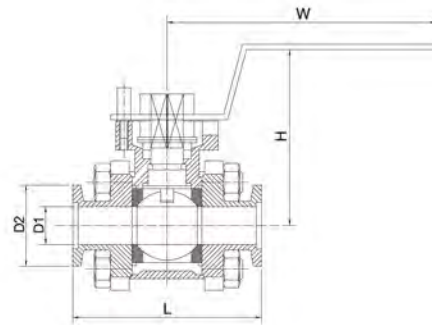
Vacuum Valve (Manual)

8

Vacuum Valve
(Manual)

Model	Item	Page
VV-01	Vacuum 2-Way Ball Valve	44
VV-02	Vacuum 2-Way Ball Valve	44
VV-03	Vacuum Right Angle Valve	45
VV-04	Vacuum In-Line Valve	46
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VV-06	Vacuum Butterfly Valve(Handle)	47
VV-07	Vacuum Butterfly Valve(Gear)	47

VV-01 Vacuum 2-Way Ball Valve



■Features

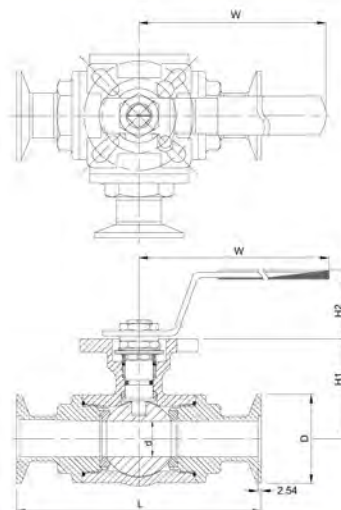
- NW Ends, 3-Piece Body
- Body : SS316(CF8M)
- Seat : PTFE(NW16~NW50), TFM-1600(NW100)
- ISO5211 Direct Mounting Pad
- with Lever Handle
- Vacuum rate : 1×10^{-5} Torr
- Leakage Helium Test : 1×10^{-9} atm cc/sec

Unit:mm

Size	L	D1	D2	H	W	Stem/ISO5211	WT(Kg)
NW16	90	15	30	65	131	9mm/F03,04	0.7
NW25	97.6	25	40	87	157	11mm/F04,05	1.2
NW40	115.2	38	55	112	190	14mm/F05,07	2.5
NW50	115.2	38	75	112	190	14mm/F05,07	2.6
NW100	240	102.2	130	167	394	22mm/F10,12	21.0

* Certificate of Patent : 특허 제10-1020126

VV-02 Vacuum 3-Way Ball Valve



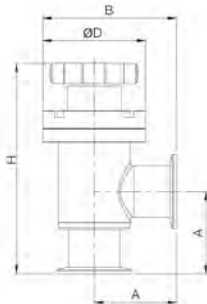
■Features

- NW Ends, L or T-Position
- Body : SS316(CF8M)
- Seat : PTFE
- ISO5211 Direct Mounting Pad
- with Lever Handle
- Vacuum rate : 1×10^{-5} Torr
- Leakage Helium Test : 1×10^{-9} atm cc/sec

Unit:mm

SIZE	L	d	D	H1	H2	W	Stem/ISO5211
NW16	100	15	30	44	26	143	9mm/F03,04
NW25	130	25	40	63.5	34	160	11mm/F04,05
NW40	155	38.1	55	87.5	42	187	14mm/F05,07
NW50	190	38.1	75	87.5	42	187	14mm/F05,07

VV-03 Vacuum Right Angle Valve



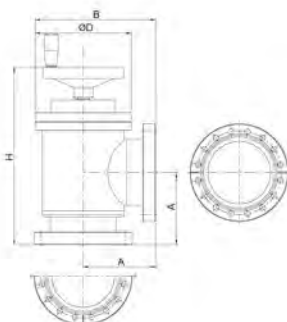
■Features

- Material:
 - Body & Flanges : SUS304, Mechanical Polishing & Electro-polishing
 - Vacuum Side O-Ring : Viton Black
 - Handle : Aluminium
 - Bellow : SUS316L, SUS316 Ti, etc.
- Differential Pressure : < 1.2bar
- Max. working Temp. : < 60°C
- He Gas Leak Rate : < 5.0×10^{-9} std. cc/sec

(1) KF Right Angle Valve

Unit:mm

Size	Port OD	A	B	øD	H	Air Pilot Port
NW16	19.05	54.6	83.6	58	130.8	None
NW25	25.4	51.6	80.6	58	125.8	
NW40	38.1	61	99	76	156	
NW50	50.8	86.4	130.9	89	189.6	
NW63	63.5	88	146	116	236.5	
NW80	76.3	90	149.5	119	245	
NW100	101.6	108	182.5	149	282.5	
NW160	152.4	138	237.5	199	370	



■Features

- Material:
 - Body & Flanges : SUS304, Mechanical Polishing & Electro-polishing
 - Vacuum Side O-Ring : Viton Black
 - Handle : Aluminium
 - Bellow : SUS316L, SUS316 Ti, etc.
- Differential Pressure : < 1.2bar
- Max. working Temp. : < 60°C
- He Gas Leak Rate : < 5.0×10^{-9} std. cc/sec

(2) ISO-K Right Angle Valve

Unit:mm

Size	Port OD	A	B	øD	H	Air Pilot Port
MF63	63.5	88	146	116	236.5	None
MF80	76.3	90	149.5	119	245	
MF100	101.6	108	182.5	149	282.5	
MF160	152.4	138	237.5	199	370	

VV-04 Vacuum Right In-Line Valve



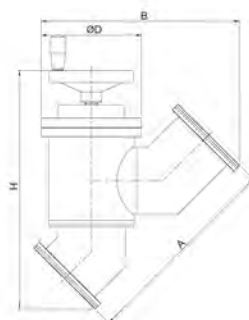
■Features

- Material:
 - Body & Flanges : SUS304, Mechanical Polishing & Electro-polishing
 - Vacuum Side O-Ring : Viton Black
 - Handle : Aluminium
 - Bellow : SUS316L, SUS316 Ti, etc.
- Differential Pressure : < 1.2bar
- Max. working Temp. : < 60°C
- He Gas Leak Rate : < 5.0×10^{-9} std. cc/sec

(1) KF In-Line Valve

Unit:mm

Size	Port OD	A	B	øD	H	Air Pilot Port
NW16	19.05	101.6	101	58	134.9	None
NW25	25.4	106.7	150.3	58	137	
NW40	38.1	130	135	76	173.3	
NW50	50.8	178	176.8	89	206	
NW63	63.5	209	214.8	116	277	
NW80	76.3	268	254.6	119	314.8	
NW100	101.6	305	296.8	149	368.8	
NW160	152.4	420	406.8	199	497	



■Features

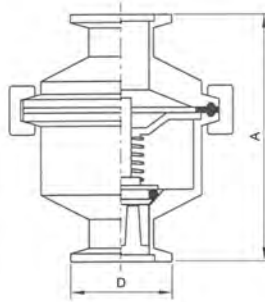
- Material:
 - Body & Flanges : SUS304, Mechanical Polishing & Electro-polishing
 - Vacuum Side O-Ring : Viton Black
 - Handle : Aluminium
 - Bellow : SUS316L, SUS316 Ti, etc.
- Differential Pressure : < 1.2bar
- Max. working Temp. : < 60°C
- He Gas Leak Rate : < 5.0×10^{-9} std. cc/sec

(2) ISO-K Right Angle Valve

Unit:mm

Size	Port OD	A	B	øD	H	Air Pilot Port
MF63	63.5	209	214.7	116	277	None
MF80	76.3	268	253	119	313.1	
MF100	101.6	305	295.2	149	367	
MF160	152.4	420	403.1	199	493.2	

VV-05 Vacuum Check Valve



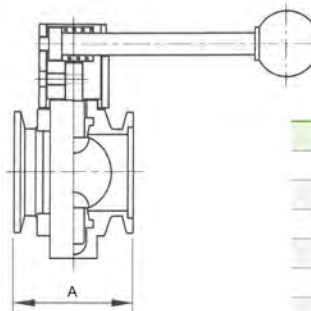
■Features

- KF Flange Ends
- Body: SS304, Sealing: Silicone, EPDM & Viton
- Max. working Temp. : 80~15°C
- Vacuum level : 2.0×10^{-8} std. cc/sec

Unit:mm

Size	For Tubing O.D.	A	D
NW25	1"	94	40
NW40	1-1/2"	95	55
NW50	2"	103	75

VV-06 Vacuum Butterfly Valve (Handle type)



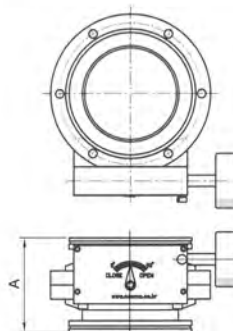
■Features

- Stainless Steel 304
- EPDM seal standard

Unit:mm

Size	For Tubing O.D.	A
NW25	1"	50
NW40	1-1/2"	50
NW50	2"	60
NW63	2-1/2"	80
NW80	3"	100
NW100	4"	140
NW160	6"	200

VV-07 Vacuum Butterfly Valve (Gear type)



■Features

- Stainless Steel 304
- EPDM seal standard

Unit:mm

Size	For Tubing O.D.	A
NW25	1"	50
NW40	1-1/2"	50
NW50	2"	60
NW63	2-1/2"	80
NW80	3"	100
NW100	4"	140
NW160	6"	200

ISO Flange Connection With Clamp



Characteristic :

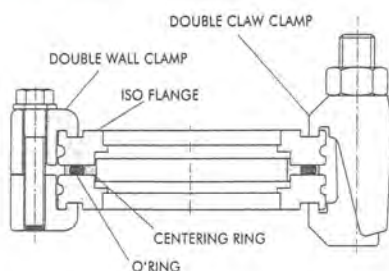
- ISO Flange series are in accordance with International Standards Operation Standard, which are compatible to other makers' standard.
- ISO Flange assembly :
 - a. ISO Clamp type-comprises two ISO flanges, a Center Ring with O-ring, and a double wall clamp or a double claw clamp.
 - b. ISO Bolt type-comprises two ISO bolted flanges, a Center Ring with O-ring, bolt screws, washers and nuts.

Material and Size

- Flanges, Blanks, Fitting : Material S.S.304
- Clamps : Material Aluminum or S.S.304
- O-ring : Material Viton
- Sizes : ISO63~ISO160
- Material S.S304, 304L, 316L and Sizes can be customized per customers' designs and requirements.

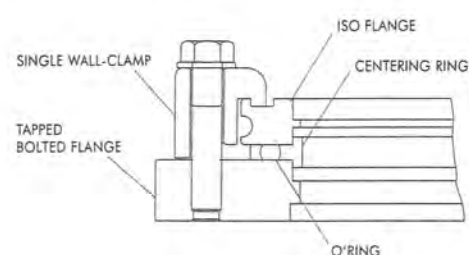
Double Wall-Clamp or Double Claw Clamp

Illustrates the double wall(claw)clamp assembly to connect pairs of ISO flanges. Ease of use and economic make this the most commonly used configuration.



Single Wall Clamp

Single wall clamps are used to join an ISO flange to a tapped flange on a pump or gate valve.

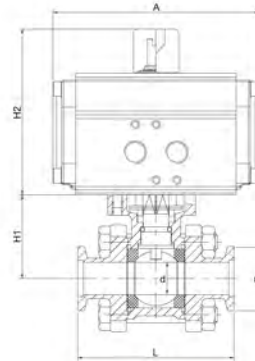


Vacuum Valve (Automatic)

9

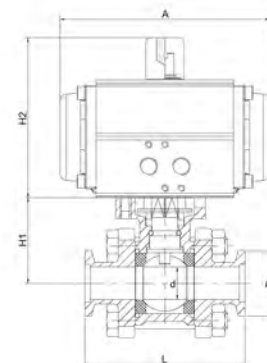
Vacuum Valve
(Automatic)

Model	Item	Page
VVP-01	Pneumatic Vacuum 2 Way Ball Valve(D.A)	50
VVP-02	Pneumatic Vacuum 2 Way Ball Valve(S.A)	50
VVP-03	Pneumatic Vacuum 3 Way Ball Valve(D.A)	51
VVP-04	Pneumatic Vacuum 3 Way Ball Valve(S.A)	51
VVP-05	Pneumatic Vacuum Butterfly Valve	52
VVP-06	Pneumatic KF Right Angle Valve	52
VVP-07	Pneumatic KF In-Line Valve	53
VVP-08	Pneumatic ISO-K Right Angle Valve	53
VVE-09	Electric Vacuum 2 Way Ball Valve	54
VVE-10	Electric Vacuum 3 Way Ball Valve	54

VVP-01 Pneumatic 2-Way Vacuum Ball Valve (Double Acting)

Unit:mm

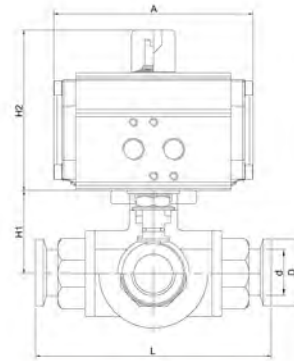
Size	L	d	D	A	H1	H2	Actuator	Stem/ ISO5211	TORQUE	
									N.m	Kg.m
NW16	90	15	30	119	35.9	90	RP-050RD	9mm/F03,04	7.7	0.79
NW25	97.6	25	40	131	49.8	106.5	RP-065RD	11mm/F04,05	21	2.14
NW40	115.2	38	55	189	70.1	126	RP-080RD	14mm/F05,07	39	3.98
NW50	115.2	38	75	189	70.1	126	RP-080RD	14mm/F05,07	39	3.98

VVP-02 Pneumatic 2-Way Vacuum Ball Valve (Single Acting / Spring Return)
Normally Closed(N.C), Fail to Close

Unit:mm

Size	L	d	D	A	H1	H2	Actuator	Stem/ ISO5211	TORQUE	
									N.m	Kg.m
NW16	90	15	30	154	35.9	106.5	RP-065RS9	9mm/F03,04	7.7	0.79
NW25	97.6	25	40	220	49.8	126	RP-080RS10	11mm/F04,05	21	2.14
NW40	115.2	38	55	256	70.1	148	RP-100RS10	14mm/F05,07	39	3.98
NW50	115.2	38	75	256	70.1	148	RP-100RS10	14mm/F05,07	39	3.98

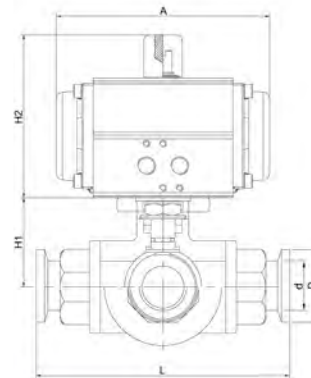
VVP-03 Pneumatic 3-Way Vacuum Ball Valve (Double Acting)



Unit:mm

Size	L	d	D	A	H1	H2	Actuator	Stem/ ISO5211	TORQUE	
									N.m	Kg.m
NW16	100	15	30	119	44	90	RP-050RD	9mm/F03,04	11	1.12
NW25	130	25	40	131	63.5	106.5	RP-065RD	11mm/F04,05	24	2.45
NW40	155	38	55	189	87.5	126	RP-080RD	14mm/F05,07	53	5.41
NW50	190	38	75	189	87.5	126	RP-080RD	14mm/F05,07	53	5.41

VVP-04 Pneumatic 3-Way Vacuum Ball Valve (Single Acting / Spring Return) Normally Closed(N.C), Fail to Close

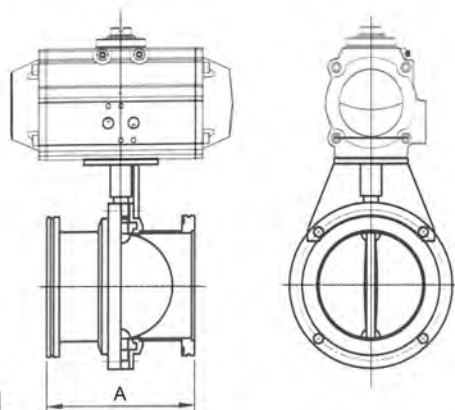


Unit:mm

Size	L	d	D	A	H1	H2	Actuator	Stem/ ISO5211	TORQUE	
									N.m	Kg.m
NW16	100	15	30	220	44	126	RP-080RS5	9mm/F03,04	11	1.12
NW25	130	25	40	220	63.5	126	RP-080RS11	11mm/F04,05	24	2.45
NW40	155	38	55	302	87.5	163	RP-115RS10	14mm/F05,07	53	5.41
NW50	190	38	75	302	87.5	163	RP-115RS10	14mm/F05,07	53	5.41

VVP-05 Pneumatic Vacuum Butterfly Valve

- Stainless Steel 304
- EPDM seal standard



Unit:mm

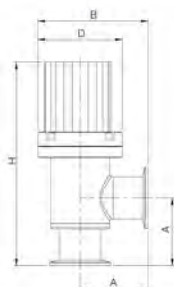
Size	For Tubing O.D	A
NW25	1"	50
NW40	1-1/2"	50
NW50	2"	60
NW63	2-1/2"	80
NW80	3"	100
NW100	4"	140
NW160	6"	200

VVP-06 KF Right Angle Valve (Double acting or Single acting)

■ Features

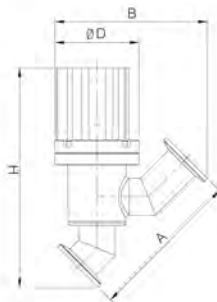
- Material:
 - Body & Flanges : SUS304, Mechanical Polishing & Electro-polishing
 - Vacuum Side O-ring : Viton Black
- Cylinder side O-ring : NBR
 - Actuator : AL6061, Anodized
 - Bellow : SUS316L, SUS316 Ti, etc.
- Required Air Pressure : 4 ~ 6 bar
- Differential Pressure : < 1.2bar
- Max. working Temp. : < 60°C
- He Gas Leak Rate : < 5.0×10^{-9} std. cc/sec

Unit:mm



Size	Port OD	A	B	øD	H	Air Pilot Port
NW16	ø19.05	54.6	83.6	58	145.6	PT 1/8"
NW25	ø25.4	51.6	80.6	58	140.6	
NW40	ø38.1	61	99	76	183.5	
NW50	ø50.8	86.4	130.9	89	223.4	PT 1/4"
NW63	ø63.5	88	146	116	251.5	
NW80	ø76.3	90	149.5	119	260	PT 3/8"
NW100	ø101.6	108	182.5	149	310	
NW160	ø152.4	138	237.5	199	420	

VVP-07 KF In-Line Valve (Double acting or Single acting)



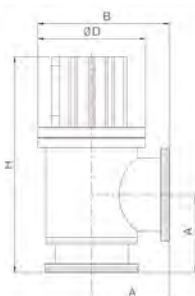
■Features

- Material:
 - Body & Flanges : SUS304, Mechanical Polishing & Electro-polishing
 - Vacuum Side O-ring : Viton Black
 - Cylinder side O-ring : NBR
 - Actuator : AL6061, Anodized
 - Bellow : SUS316L, SUS316 Ti, etc.
- Required Air Pressure : 4 ~ 6 bar
- Differential Pressure : < 1.2bar
- Max. working Temp. : < 60°C
- He Gas Leak Rate : < 5.0×10^{-9} std. cc/sec

Unit:mm

Size	Port OD	A	B	øD	H	Air Pilot Port
NW16	ø19.05	101.6	101	58	147.4	PT 1/8"
NW25	ø25.4	106.7	105.3	58	151.8	
NW40	ø38.1	130	135	76	201.1	
NW50	ø50.8	178	176.8	89	239.7	
NW63	ø63.5	209	214.8	116	292	PT 1/4"
NW80	ø76.3	268	254.6	119	339.8	
NW100	ø101.6	305	296.8	149	396	PT 3/8"
NW160	ø152.4	420	403.1	199	543.2	

VVP-08 ISO-K Right Angle Valve (Double acting or Single acting)



■Features

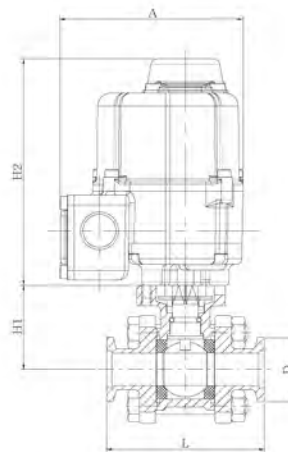
- Material:
 - Body & Flanges : SUS304, Mechanical Polishing & Electro-polishing
 - Vacuum Side O-ring : Viton Black
 - Cylinder side O-ring : NBR
 - Actuator : AL6061, Anodized
 - Bellow : SUS316L, SUS316 Ti, etc.
- Required Air Pressure : 4 ~ 6 bar
- Differential Pressure : < 1.2bar
- Max. working Temp. : < 60°C
- He Gas Leak Rate : < 5.0×10^{-9} std. cc/sec

Unit:mm

Size	Port OD	A	B	øD	H	Air Pilot Port
ISO63	ø63.5	88	146	116	251.5	PT 1/4"
ISO80	ø76.3	90	149.5	119	260.0	
ISO100	ø101.6	108	182.5	149	310.0	PT 3/8"
ISO160	ø152.4	138	237.5	199	420.0	
ISO200	ø216.3	175	303	256	630	PT 1/2"
ISO250	ø267.4	220	375	310	720.0	
ISO320	ø318.5	260	445	370	837	

VVE-09 Electric 2-Way Vacuum Ball Valve

* Option : Modulating Controller(4 to 20mA, 0 to 10VDC)



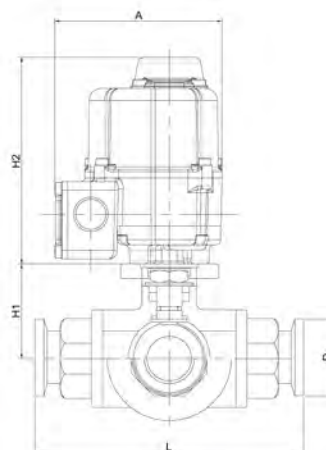
● Power : 110/220VAC1ph, 24VDC

Unit:mm

Size	L	d	D	A	H1	H2	Actuator	Stem/ ISO5211	TORQUE	
									N.m	Kg.m
NW16	90	15	30	105.3	35.9	104	DE-002	9mm/F03,04	7.7	0.79
NW25	97.6	25	40	116.5	49.8	123.8	DE-004	11mm/F04,05	21	2.14
NW40	115.2	38	55	123.1	70.1	126.4	DE-005	14mm/F05,07	39	3.98
NW50	115.2	38	75	123.1	70.1	126.4	DE-005	14mm/F05,07	39	3.98

VVE-10 Electric 3-Way Vacuum Ball Valve

* Option : Modulating Controller(4 to 20mA, 0 to 10VDC)



● Power : 110/220VAC1ph, 24VDC

Unit:mm

Size	L	d	D	A	H1	H2	Actuator	Stem/ ISO5211	TORQUE	
									N.m	Kg.m
NW16	100	15	30	105.3	44	104.2	DE-002	9mm/F03,04	11	1.12
NW25	130	25	40	116.5	63.5	123.8	DE-004	11mm/F04,05	24	2.45
NW40	155	38	55	125.3	87.5	155.5	DE-008	14mm/F05,07	53	5.41
NW50	190	38	75	125.3	87.5	155.5	DE-008	14mm/F05,07	53	5.41