

vacuum

SOLUTION

There is always something to do with vacuum tech in life.



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General Information

Features

- HTC is pleased to offer vacuum valves designed and manufactured in Tainan, Taiwan, R.O.C. These valves are the result of a long and careful development program designed to insure product quality, reliability and value. Every effort has been made to provide a valve family suited to the requirements of various users.
They will function reliably in applications ranging from semiconductor production system with chemical and particulate contamination.
- Long life operation.
- Stainless steel welded bellows seal.
- Manual and electropneumatic actuation or fail safe operators (closes in the event of air pressure loss).
- Bakeable to 200°C intermittently, Viton seal bonnet.
- Compact size.
- Simple and fast maintenance.
- Simple control via solenoid valve with manual override.

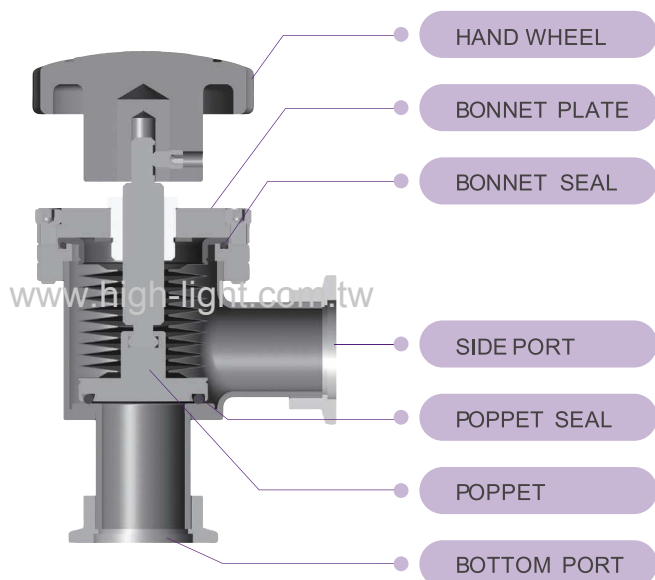
Specifications

- Body : 304 S.S. (Other material available upon request)
- Poppet : 304 S.S. (Other material available upon request)
- Bellows : Welded AM-350 (option)
- Solenoid : Option
- Position indicator : Option
- Seal : Viton O'ring
- Leak rate : 2×10^{-9} mbar.l/sec
- Pressure range : 1×10^{-9} torr to 760 torr Viton seal bonnet
- Maximum Δ pressure before opening : 1.2 Bar
- Operating air pressure : 4~6.5 kg/cm²
- Cycles until service : 16 to 50~500,000 ; 63 to 150~250,000
: No Bellows Type : 16 to 50~200,000 ; 63 to 150~100,000 (Depend on O'ring condition)
: No Bellows Type Suggest to install in vertical orientation
: 200 to larger~application dependent
- Bake-out limitation : 150°C Viton seal bonnet
- Larger or special size available upon request

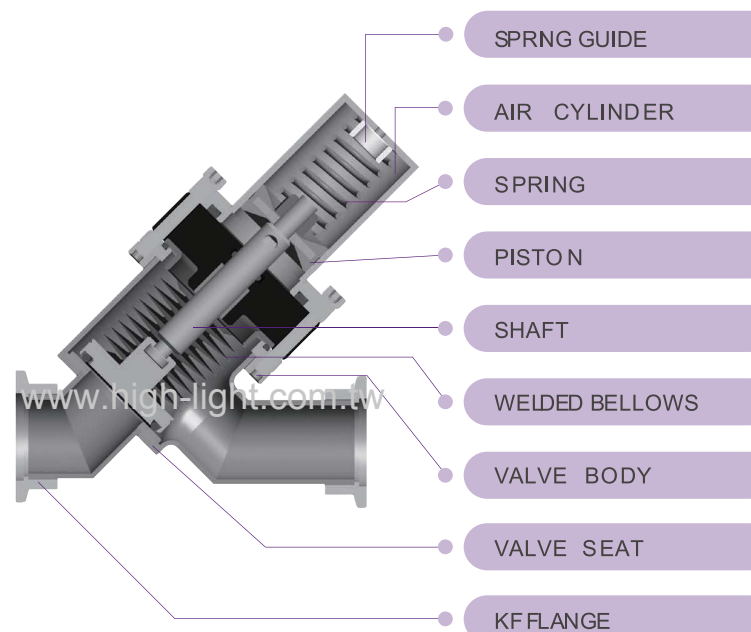
Applications

- KF, ISO and ANSI port models are designed for high vacuum applications where vacuum pressures approximate 10^{-9} torr and bake-out temperature do not exceed 150°C . The standard international KF/ISO configurations and ANSI configurations are used in areas requiring an easily mountable and demountable flange type seal.
- CF port models are designed for ultra-high vacuum applications where the vacuum pressure approximates 10^{-10} torr and bake-out temperatures do not exceed 200°C . These valves are used in applications during an OFHC copper gasket rather than the conventional Viton O-ring because of higher bake-out temperatures, lower vacuum pressures, (minimal outgassing) and reduced permeability. They are also commonly used in applications requiring a more permanent seal.

Manually Operated Angle Valve:



Pneumatically Actuated Y-In-Line Valve:



Ordering Information

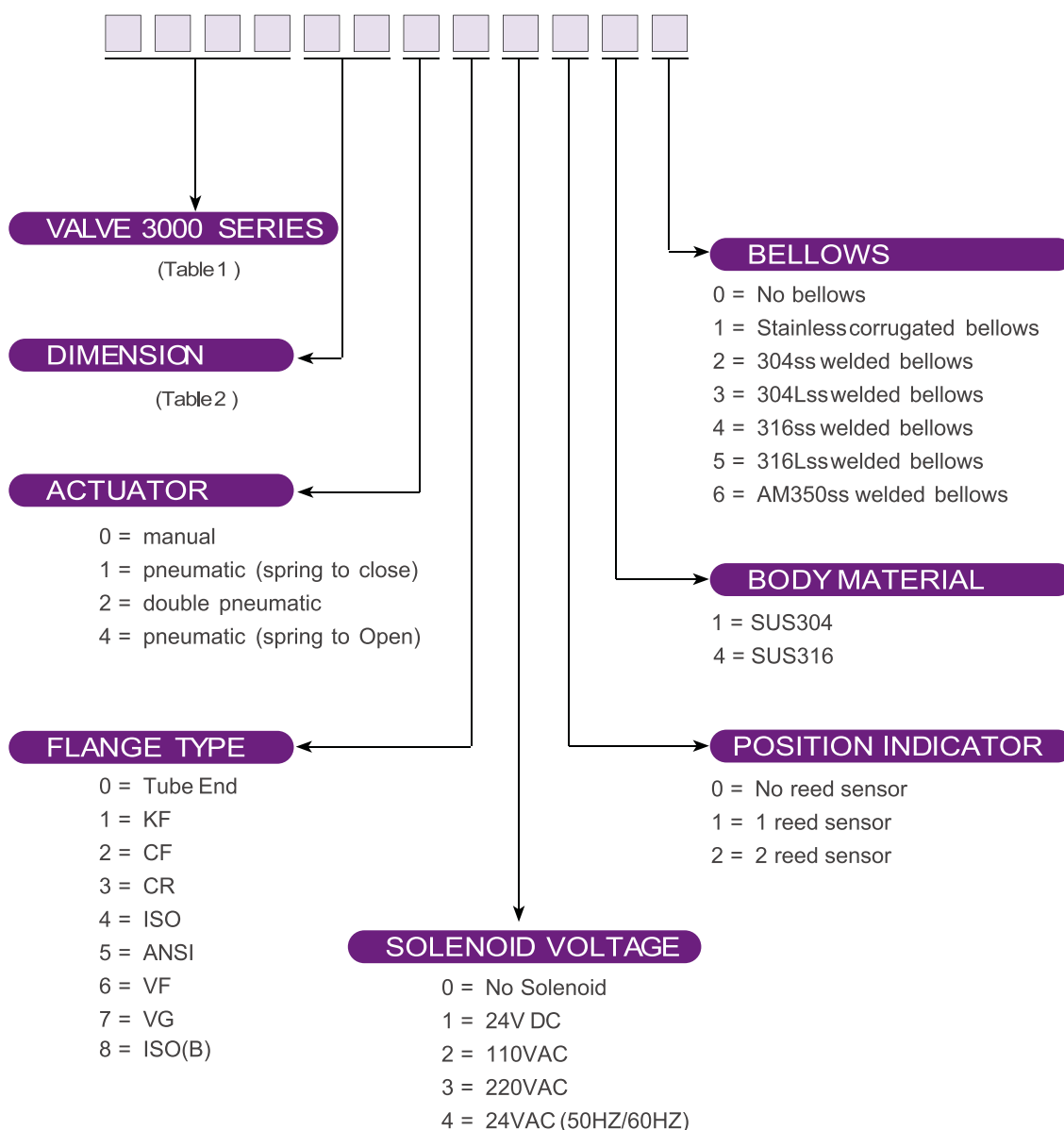


Table 1. Valve 3000 Series

	VALVE	U.S.A.	Series code
Angle Valve 3001 3019	VITON POPPET	BONNET SEAL	3001
	FFKM POPPET	BONNET SEAL	3003
	FFKM POPPET	METAL BONNET SEAL	3004
	BONNET ALL-METAL		3005
Z-Inline Valve 3021 3039	VITON POPPET	METAL BONNET SEAL	3006
	VITON POPPET	BONNET SEAL	3021
	FFKM POPPET	BONNET SEAL	3023
	FFKM POPPET	METAL BONNET SEAL	3024
Y-Inline Valve 3041 3059	BONNET ALL-METAL		3025
	VITON POPPET	BONNET SEAL	3026
	VITON POPPET	BONNET SEAL	3041
	FFKM POPPET	BONNET SEAL	3043
Tee Valve 3061 3069	FFKM POPPET	METAL BONNET SEAL	3044
	BAKEABLE ALL-METAL		3045
	VITON POPPET	METAL BONNET SEAL	3046
	VITON POPPET	BONNET SEAL	3061
Straight-Through 3071 3089	FFKM POPPET	BONNET SEAL	3063
	FFKM POPPET	METAL BONNET SEAL	3064
	BAKEABLE ALL-METAL		3065
	VITON POPPET	METAL BONNET SEAL	3066
	VITON POPPET	BONNET SEAL	3071
	FFKM POPPET	BONNET SEAL	3073
	FFKM POPPET	METAL BONNET SEAL	3074
	BAKEABLE ALL-METAL		3075
	VITON POPPET	METAL BONNET SEAL	3076

Table 1. Continuous

	VALVE	Europe	Series code
Angle Valve 3101 3119	VITON POPPET	BONNET SEAL	3101
	FFKM POPPET	BONNET SEAL	3103
	FFKM POPPET	METAL BONNET SEAL	3104
	BONNET ALL-METAL		3105
Z-Inline Valve 3121 3139	VITON POPPET	METAL BONNET SEAL	3106
	VITON POPPET	BONNET SEAL	3121
	FFKM POPPET	BONNET SEAL	3123
	FFKM POPPET	METAL BONNET SEAL	3124
	BONNET ALL-METAL		3125
Y-Inline Valve 3141 3159	VITON POPPET	BONNET SEAL	3126
	VITON POPPET	BONNET SEAL	3141
	FFKM POPPET	BONNET SEAL	3143
	FFKM POPPET	METAL BONNET SEAL	3144
	BAKEABLE ALL-METAL		3145
	VITON POPPET	METAL BONNET SEAL	3146
Tee Valve 3161 3169	VITON POPPET	BONNET SEAL	3161
	FFKM POPPET	BONNET SEAL	3163
	FFKM POPPET	METAL BONNET SEAL	3164
	BAKEABLE ALL-METAL		3165
	VITON POPPET	METAL BONNET SEAL	3166
Straight-Through 3171 3189	VITON POPPET	BONNET SEAL	3171
	FFKM POPPET	BONNET SEAL	3173
	FFKM POPPET	METAL BONNET SEAL	3174
	BAKEABLE ALL-METAL		3175
	VITON POPPET	METAL BONNET SEAL	3176

Table 2. Dimension

Codes and Dimensions Description							
01 ~ 99TUBE (Fractional)		1A ~ 9Z TUBE (Metric)		A1 ~ Z9 PIPE (ANSI)		AA ~ ZZ PIPE (JIS)	
Code	Dimension	Code	Dimension	Code	Dimension	Code	Dimension
01	1/16"	1A	2	A1	1/8"	AA	6(1/8")
02	1/8"	1B	3	A2	1/4"	AB	8(1/4")
03	3/16"	1C	4	A3	3/8"	AC	10(3/8")
04	1/4"	1D	6	A4	1/2"	AD	15(1/2")
05	5/16"	1E	8	A5	3/4"	AE	20(3/4")
06	3/8"	1F	10	A6	1"	AF	25(1")
07	1/2"	1G	12	A7	1-1/4"	AG	32(1-1/4")
08	5/8"	1H	16	A8	1-1/2"	AH	40(1-1/2")
09	3/4"(16)	1J	20	A9	2"	AJ	50(2")
10	7/8"	1K	22	B1	2-1/2"	AK	65(2-1/2")
11	1"(25)	1L	25	B2	3"	AL	80(3")
12	1-1/4"	1M		B3	3-1/2"	AM	90(3-1/2")
13	1-1/2"(40)	1N		B4	4"	AN	100(4")
14	2"(50)	1P		B5	5"	AP	125(5")
15	2-1/2"(63)	1Q		B6	6"	AQ	150(6")
16	3"(80)	1R		B7	8"	AR	100(4")
17	3-1/2"	1S		B8	10"	AS	125(5")
18	4"(100)	1T		B9	12"	AT	150(6")
19	5"	1U		C1		AU	200(8")
20	6"(160)	1V		C2		AV	250(10")
21	8"(200)	1W		C3		AW	300(12")
22	10"(250)	1X		C4		AX	
23	12"	1Y		C5		AY	
24	14"	1Z		C6		AZ	
25	16"						
26	18"						
27	20"						
28	22"						
29	24"						

Specifications for No Port Flange Angle Valve

Characteristic	Units	Model No.			
		AVB-TE16-P	AVB-TE25-P	AVB-TE40-P	AVB-TE50-P
Conductance	Liters/second	4	13	42	72
Seal Leak Rate	Std cc/s	$<10^{-9}$	$<10^{-9}$	$<10^{-9}$	$<10^{-9}$
Body Leak Rate	Std cc/s	$<10^{-9}$	$<10^{-9}$	$<10^{-9}$	$<10^{-9}$
Cylinder Air Pressure Required For Fully Opening	Bar	4 ~ 6.5	4 ~ 6.5	4 ~ 6.5	4 ~ 6.5

Note

- Conductance is for molecular flow of right-angle elbow with same dimension , and based on air at 20°C
- Measure using helium search gas with test time less than one minute to avoid the leak signal caused by permeation through elastomer seal.

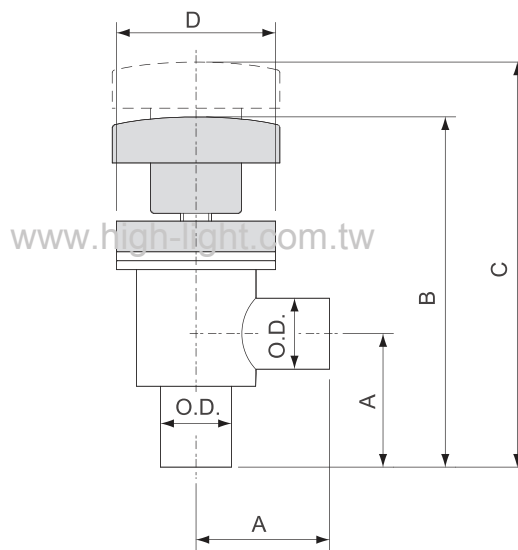
ANGLE VALVE

Manually Operated with Bellows

Tube End



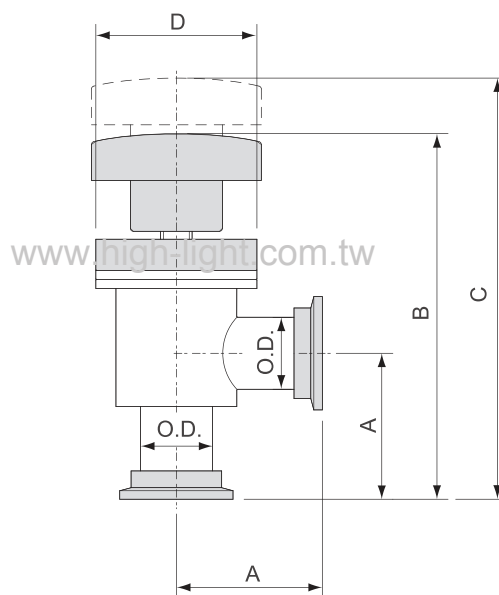
Figure 1



KF Flange



Figure 2



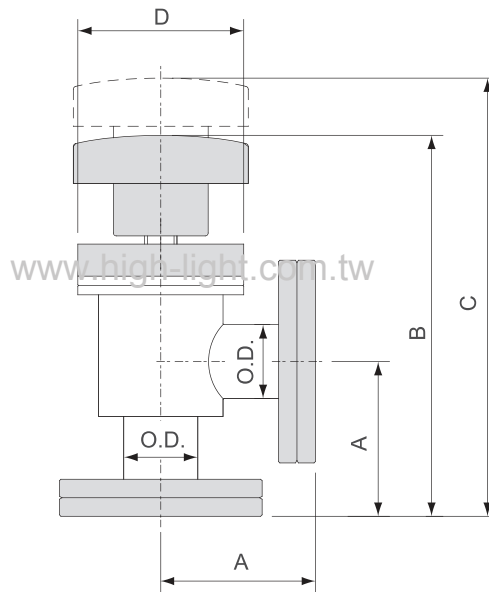
ANGLE VALVE

Manually Operated with Bellows

CF Flange



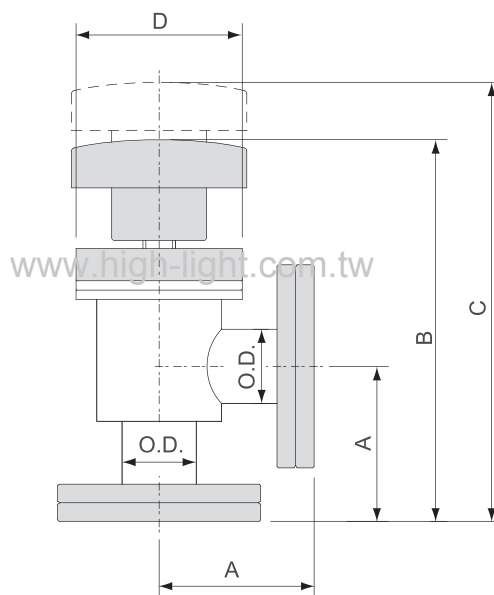
Figure 3



ISO Flange



Figure 4



ANGLE VALVE

Manually Operated with Bellows

Available Area : U.S.A.

Port Connections : Tube End

Model No.	O.D.	A	B	C	D	Figure	Parts No.
AVB-TE16-M	0.75	2.00	5.25	6.00	2.24	1	300109000016
AVB-TE25-M	1.00	1.88	4.97	5.70	2.24	1	300111000016
AVB-TE40-M	1.50	2.25	6.28	7.50	2.98	1	300113000016
AVB-TE50-M	2.00	3.25	8	9.76	3.48	1	300114000016
AVB-TE63-M	2.50	3.00	8.37	10.04	3.92	1	300115000016
AVB-TE80-M	3.00	3.25	8.69	10.57	4.49	1	300116000016

Port Connections : KF Flange

Model No.	O.D.	A	B	C	D	Figure	Parts No.
AVB-KF16-M	0.75	2.15	5.41	6.15	2.24	2	300109010016
AVB-KF25-M	1.00	2.03	5.13	5.89	2.24	2	300111010016
AVB-KF40-M	1.50	2.40	6.20	7.48	2.98	2	300113010016
AVB-KF50-M	2.00	3.40	8.15	9.91	3.48	2	300114010016

Port Connections : CF Rotatable Flange

Model No.	O.D.	A	B	C	D	Figure	Parts No.
AVB-CR16-M	0.75	2.50	5.7	6.50	2.24	3	300109030016
AVB-CR35-M	1.50	2.46	6.50	7.78	2.98	3	300113030016
AVB-CR63-M	2.50	3.37	8.75	10.42	3.92	3	300115030016

Port Connections : ISO Flange

Model No.	O.D.	A	B	C	D	Figure	Parts No.
AVB-ISO63-M	2.50	3.26	8.63	10.30	3.92	4	300115040016
AVB-ISO80-M	3.00	3.51	8.95	10.83	4.49	4	300116040016

- Note : All dimensions shown on this page are in inch.

Specifications

- Stainless steel body surface treatment :
 1. below 4" puff polishing
 2. above 4" (include 4") sand blasting
- 3/4~3 inch port ODs.
- Bakeable to 150°C.
- Viton Seal Bonnet : 10⁻⁹ Torr vacuum rating KF, ISO and CF flange.

06 CHAPTER VACUUM VALVE

ANGLE VALVE

Manually Operated with Bellows

Available Area :Europe

(Special Sizes Available Upon Request)

Port Connections : KF Flange

Model No.	O.D.	A	B	C	D	Figure	Parts No.
AVB-KF16-M-E	19.05	40	121.9	141.5	56.8	2	310109010016
AVB-KF25-M-E	25.4	50	128.6	148.1	56.8	2	310111010016
AVB-KF40-M-E	38.1	65	167.5	200	75.8	2	310113010016
AVB-KF50-M-E	50.8	70	190.5	235.5	88.4	2	310114010016

Port Connections : CF Rotatable Flange

Model No.	O.D.	A	B	C	D	Figure	Parts No.
AVB-CR16-M-E	19.05	38	119.9	139.5	56.8	3	310109030016
AVB-CR35-M-E	38.1	63	165.5	198	75.8	3	310113030016
AVB-CR63-M-E	63.5	105	241.5	283.9	99.5	3	310115030016

Port Connections : ISO Flange

Model No.	O.D.	A	B	C	D	Figure	Parts No.
AVB-ISO63-M-E	63.5	88	224.5	266.9	99.5	4	310115040016
AVB-ISO80-M-E	76.2	98	236.3	283.9	114	4	310116040016

Specifications

- Stainless steel body surface treatment :
1. below 4" puff polishing
2. above 4"(include 4") sand blasting
- 19.05~76.2 mm port ODs.
- Bakeable to 150°C.
- Viton Seal Bonnet : 10⁻⁹Torr vacuum rating KF, ISO and CF flange.

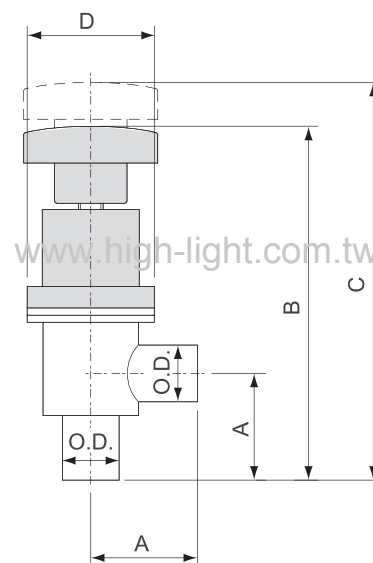
ANGLE VALVE

Manually Operated without Bellows

Tube End



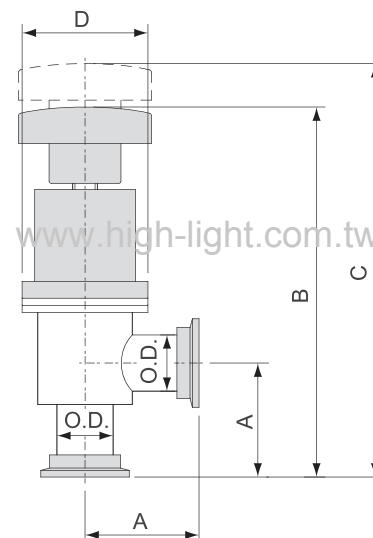
Figure 5



KF Flange



Figure 6



ANGLE VALVE

Manually Operated without Bellows

Available Area : U.S.A.

Port Connections : Tube End

Model No.	O.D.	A	B	C	D	Figure	Parts No.
AV-TE16-M	0.75	2.00	6.45	7.07	2.24	5	300109000010
AV-TE25-M	1.00	1.88	6.20	6.82	2.24	5	300111000010
AV-TE40-M	1.50	2.25	7.35	8.63	2.98	5	300113000010
AV-TE50-M	2.00	3.25	9.65	11.24	3.48	5	300114000010

Port Connections : KF Flange

Model No.	O.D.	A	B	C	D	Figure	Parts No.
AV-KF16-M	0.75	2.15	6.59	7.22	2.24	6	300109010010
AV-KF25-M	1.00	2.03	6.35	6.97	2.24	6	300111010010
AV-KF40-M	1.50	2.40	7.50	8.78	2.98	6	300113010010
AV-KF50-M	2.00	3.40	9.80	11.39	3.48	6	300114010010

- Note: All dimensions shown on this page are in inch

Specifications

- Stainless steel body surface treatment :
 1. below 4" puff polishing
 2. above 4" (include 4") sand blasting
- 3/4~2 inch port ODs.
- Bakeable to 150°C.
- Viton Seal Bonnet : 10⁻⁹ Torr vacuum rating KF flange.

ANGLE VALVE

Manually Operated without Bellows

Available Area :Europe

(Special Sizes Available Upon Request)

Port Connections : KF Flange

Model No.	O.D.	A	B	C	D	Figure	Parts No.
AV-KF16-M-E	19.05	40	152.9	168.7	56.8	6	310109010010
AV-KF25-M-E	25.4	50	159.6	175.4	56.8	6	310111010010
AV-KF40-M-E	38.1	65	194.5	227	75.8	6	310113010010
AV-KF50-M-E	50.8	70	232.7	273.1	88.4	6	310114010010

Specifications

- Stainless steel body surface treatment :
1. below 4" puff polishing
2. above 4"(include 4") sand blasting
- 19.05~50.8 mm port ODs.
- Bakeable to 150°C .
- Viton Seal Bonnet : 10⁻⁹ Torr vacuum rating KF, ISO and CF flange.

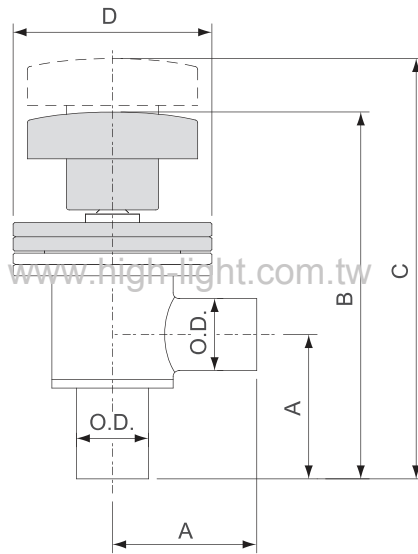
ANGLE VALVE

Manually Operated Copper Seal Bonnet with Bellows

Tube End



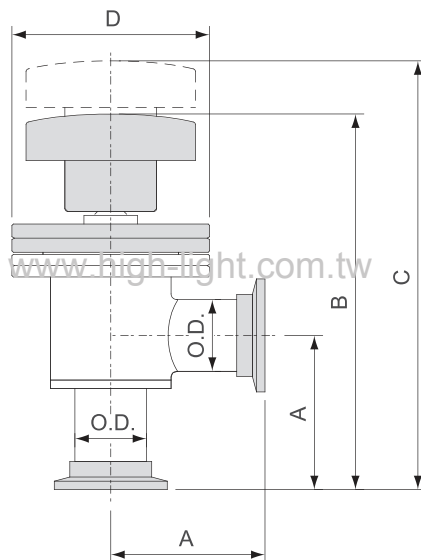
Figure 7



KF Flange



Figure 8



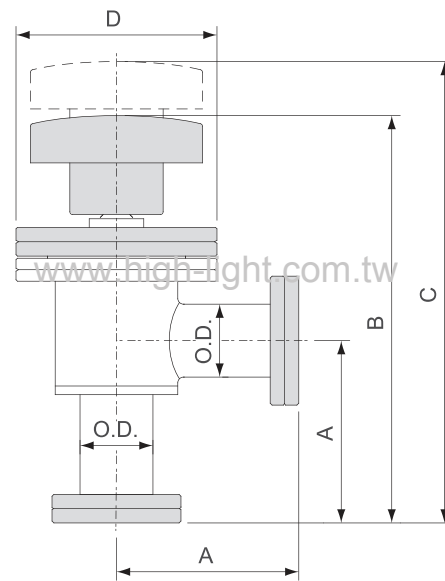
ANGLE VALVE

Manually Operated Copper Seal Bonnet with Bellows

CF Flange



Figure 9



ANGLE VALVE

Manually Operated Copper Seal Bonnet with Bellows Available Area : U.S.A.

Port Connections : Tube End

Model No.	O.D.	A	B	C	D	Figure	Parts No.
AVB-CU-TE16-M	0.75	2.00	5.20	5.98	2.75	7	300609000016
AVB-CU-TE25-M	1.00	1.88	4.96	5.74	2.75	7	300611000016
AVB-CU-TE40-M	1.50	2.25	6.48	7.70	3.37	7	300613000016
AVB-CU-TE50-M	2.00	3.25	7.99	9.76	4.47	7	300614000016
AVB-CU-TE63-M	2.50	3.00	8.35	11.01	4.47	7	300615000016

Port Connections : KF Flange

Model No.	O.D.	A	B	C	D	Figure	Parts No.
AVB-CU-KF16-M	0.75	2.15	5.24	6.01	2.75	8	300609010016
AVB-CU-KF25-M	1.00	2.03	5.11	5.89	2.75	8	300611010016
AVB-CU-KF40-M	1.50	2.40	6.62	7.85	3.37	8	300613010016
AVB-CU-KF50-M	2.00	3.40	8.14	9.91	4.47	8	300614010016

Port Connections : CF Rotatable Flange

Model No.	O.D.	A	B	C	D	Figure	Parts No.
AVB-CU-CR16-M	0.75	2.50	5.58	6.36	2.75	9	300609030016
AVB-CU-CR35-M	1.50	2.45	6.68	7.90	3.37	9	300613030016
AVB-CU-CR63-M	2.50	3.38	8.72	11.38	4.47	9	300615030016

- **Note : All dimensions shown on this page are in inch.**

Specifications

- Stainless steel body surface treatment :
 1. below 4" puff polishing
 2. above 4" (include 4") sand blasting
- 3/4~3 inch port ODs.
- Bakeable to 150°C. (200°C intermittently for CF flange port).
- Metal Seal Bonnet : 10^{-9} Torr vacuum rating KF, and approximate 10^{-10} Torr vacuum rating CF flange.

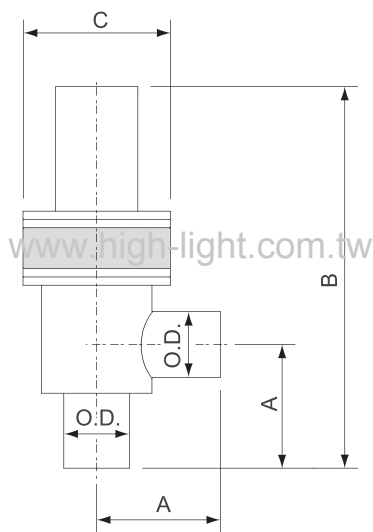
ANGLE VALVE

Pneumatically Actuated

Tube End



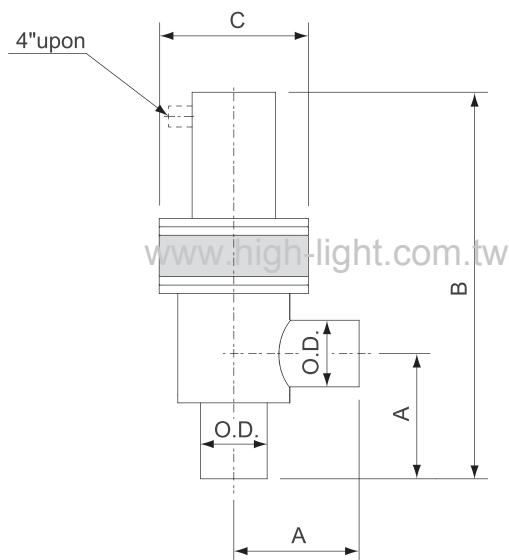
Figure 10



Tube End



Figure 11



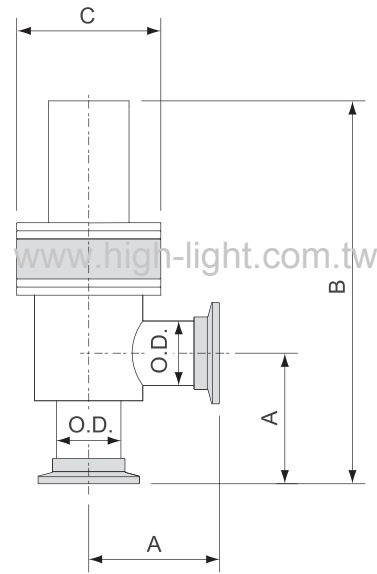
ANGLE VALVE

Pneumatically Actuated

KF Flange



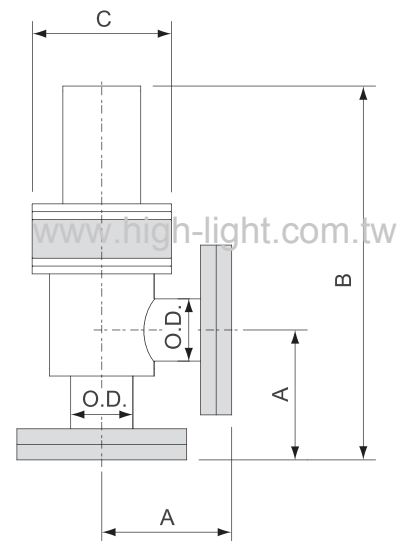
Figure 12



CF Flange



Figure 13



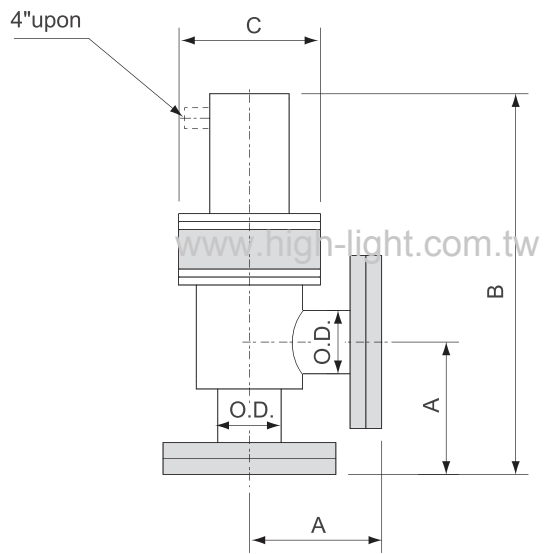
ANGLE VALVE

Pneumatically Actuated

CF Flange



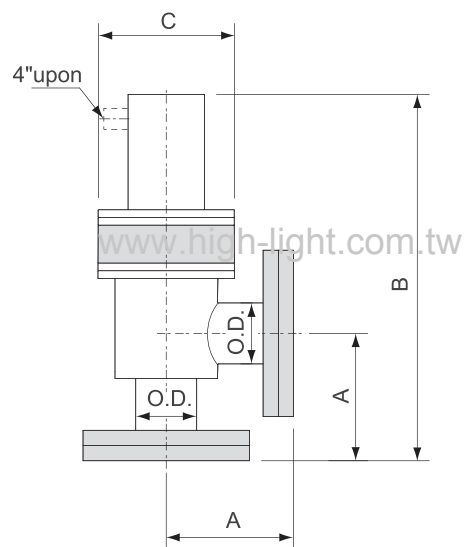
Figure 14



ISO Flange



Figure 15



ANGLE VALVE

Pneumatically Actuated

Available Area : U.S.A.

With bellows, air to open, spring to close.

Port Connections : Tube End

Model No.	O.D.	A	B	C	Figure	Parts No.
AVB-TE16-P	0.75	2.00	6.03	2.24	10	300109100016
AVB-TE25-P	1.00	1.88	5.77	2.24	10	300111100016
AVB-TE40-P	1.50	2.25	7.69	2.98	10	300113100016
AVB-TE50-P	2.00	3.25	10.18	3.48	10	300114100016

Port Connections : KF Flange

Model No.	O.D.	A	B	C	Figure	Parts No.
AVB-KF16-P	0.75	2.15	6.17	2.24	12	300109110016
AVB-KF25-P	1.00	2.03	5.92	2.24	12	300111110016
AVB-KF40-P	1.50	2.40	7.60	2.98	12	300113110016
AVB-KF50-P	2.00	3.40	10.33	3.48	12	300114110016

Port Connections : CF Rotatable Flange

Model No.	O.D.	A	B	C	Figure	Parts No.
AVB-CR16-P	0.75	2.50	6.52	2.24	13	300109130016
AVB-CR35-P	1.50	2.46	7.89	2.98	13	300113130016

- **Note : All dimensions shown on this page are in inch.**

Specifications

- Stainless steel body surface treatment :
 1. below 4" puff polishing
 2. above 4"(include 4") sand blasting
- 3/4~2 inch port ODs.
- 4~6.5 kg/cm² operating air pressure.
- Bakeable to 150°C.
- Viton Seal Bonnet : 10⁻⁹ Torr vacuum rating KF and CF flange.

ANGLE VALVE

Pneumatically Actuated

Available Area : U.S.A.

With bellows, air to open, air to close.

Port Connections : Tube End

Model No.	O.D.	A	B	C	Figure	Parts No.
AVB-TE16-P2	0.75	2.00	6.41	2.24	11	300109200016
AVB-TE25-P2	1.00	1.88	6.17	2.24	11	300111200016
AVB-TE40-P2	1.50	2.25	7.18	2.98	11	300113200016
AVB-TE50-P2	2.00	3.25	9.44	3.48	11	300114200016
AVB-TE63-P2	2.50	3.00	10.44	3.92	11	300115200016
AVB-TE80-P2	3.00	3.25	10.69	4.49	11	300116200016
AVB-TE100-P2	4.00	4.21	13.60	5.97	11	300118200016
AVB-TE160-P2	6.00	6.00	17.56	9.45	11	300120200016

Port Connections : CF Rotatable Flange

Model No.	O.D.	A	B	C	Figure	Parts No.
AVB-CR63-P2	2.50	3.37	10.81	3.92	14	300115230016
AVB-CR100-P2	4.00	4.7	18.06	5.97	14	300118230016

Port Connections : ISO Flange

Model No.	O.D.	A	B	C	Figure	Parts No.
AVB-ISO-63-P2	2.50	3.26	10.70	3.92	15	300115240016
AVB-ISO-80-P2	3.00	3.51	10.95	4.49	15	300116240016
AVB-ISO-100-P2	4.00	4.47	13.86	5.97	15	300118240016
AVB-ISO-160-P2	6.00	6.26	17.03	9.45	15	300120240016

- Note : All dimensions shown on this page are in inch.

Specifications

- Stainless steel body surface treatment :
 1. below 4" puff polishing
 2. above 4"(include 4") sand blasting
- 3/4~8 inch port ODs.
- 4~6.5 kg/cm² operating air pressure.
- Bakeable to 150°C.
- Viton Seal Bonnet : 10⁻⁹ Torr vacuum rating KF and ISO flange.

ANGLE VALVE

Pneumatically Actuated

Available Area : U.S.A.

Without bellows, air to open, spring to close.

Port Connections : Tube End

Model No.	O.D.	A	B	C	Figure	Parts No.
AV-TE16-P	0.75	2.00	6.03	2.24	10	300109100010
AV-TE25-P	1.00	1.88	5.77	2.24	10	300111100010
AV-TE40-P	1.50	2.25	7.69	2.98	10	300113100010
AV -TE50-P	2.00	3.25	10.18	3.48	10	300114100010

Port Connections : KF Flange

Model No.	O.D.	A	B	C	Figure	Parts No.
AV-KF16-P	0.75	2.15	6.17	2.24	12	300109110010
AV-KF25-P	1.00	2.03	5.92	2.24	12	300111110010
AV-KF40-P	1.50	2.40	7.60	2.98	12	300113110010
AV-KF50-P	2.00	3.40	10.33	3.48	12	300114110010

Port Connections : CF Rotatable Flange

Model No.	O.D.	A	B	C	Figure	Parts No.
AV-CR16-P	0.75	2.50	6.52	2.24	13	300109130010
AV-CR35-P	1.50	2.46	7.89	2.98	13	300113130010

- **Note : All dimensions shown on this page are in inch.**

Specifications

- Stainless steel body surface treatment :
1. below 4" puff polishing
2. above 4"(include 4") sand blasting
- 3/4~2 inch port ODs.
- 4~6.5 kg/cm² operating air pressure.
- Bakeable to 150°C.
- Viton Seal Bonnet : 10⁻⁹ Torr vacuum rating KF and CF flange.

ANGLE VALVE

Pneumatically Actuated

Available Area : U.S.A.

Without bellows, air to open, air to close.

Port Connections : Tube End

Model No.	O.D.	A	B	C	Figure	Parts No.
AV-TE16-P2	0.75	2.00	6.41	2.24	11	300109200010
AV-TE25-P2	1.00	1.88	6.16	2.24	11	300111200010
AV-TE40-P2	1.50	2.25	7.17	2.98	11	300113200010
AV-TE50-P2	2.00	3.25	9.44	3.48	11	300114200010
AV-TE63-P2	2.50	3.00	10.44	3.92	11	300115200010
AV-TE80-P2	3.00	3.25	10.68	4.49	11	300116200010
AV-TE100-P2	4.00	4.21	14.11	5.97	11	300118200010
AV-TE160-P2	6.00	6.00	17.71	9.45	11	300120200010

Port Connections : CF Rotatable Flange

Model No.	O.D.	A	B	C	Figure	Parts No.
AV-CR63-P2	2.50	3.37	10.81	3.92	14	300115230010
AV-CR100-P2	4.00	4.70	14.61	5.97	14	300118230010

Port Connections : ISO Flange

Model No.	O.D.	A	B	C	Figure	Parts No.
AV-ISO-63-P2	2.50	3.26	10.70	3.92	15	300115240010
AV-ISO-80-P2	3.00	3.51	10.94	4.49	15	300116240010
AV-ISO-100-P2	4.00	4.47	13.86	5.97	15	300118240010
AV-ISO-160-P2	6.00	6.26	16.67	9.45	15	300120240010

- **Note : All dimensions shown on this page are in inch.**

Specifications

- Stainless steel body surface treatment :
 1. below 4" puff polishing
 2. above 4"(include 4") sand blasting
- 3/4~8 inch port ODs.
- 4~6.5 kg/cm² operating air pressure.
- Bakeable to 150°C.
- Viton Seal Bonnet : 10⁻⁹ Torr vacuum rating KF and CF flange.

ANGLE VALVE

Pneumatically Actuated

Available Area :Europe (Special Sizes Available Upon Request)

With bellows, air to open, spring to close.

Port Connections : KF Flange

Model No.	O.D.	A	B	C	Figure	Parts No.
AVB-KF16-P-E	19.05	40	142	56.8	12	310109110016
AVB-KF25-P-E	25.4	50	149	56.8	12	310111110016
AVB-KF40-P-E	38.1	65	203	75.8	12	310113110016
AVB-KF50-P-E	50.8	70	246	88.4	12	310114110016

Port Connections : CF Rotatable Flange

Model No.	O.D.	A	B	C	Figure	Parts No.
AVB-CR16-P-E	19.05	38	140	56.8	13	310109130016
AVB-CR35-P-E	38.1	63	201	75.8	13	310113130016

Specifications

- Stainless steel body surface treatment :
 - 1.below 4" puff polishing
 - 2.above 4"(include 4") sand blasting
- 19.05~50.8 mm port ODs.
- 4~6.5 kg/cm² operating air pressure.
- Bakeable to 150°C.
- Viton Seal Bonnet : 10⁻⁹ Torr vacuum rating KF and CF flange.

ANGLE VALVE

Pneumatically Actuated

Available Area :Europe (Special Sizes Available Upon Request)

With bellows, air to open, air to close.

Port Connections : CF Rotatable Flange

Model No.	O.D.	A	B	C	Figure	Parts No.
AVB-CR63-P2-E	63.5	105	294	99.5	14	310115230016
AVB-CR100-P2-E	101.6	135	373.6	151.6	14	310118230016

Port Connections : ISO Flange

Model No.	O.D.	A	B	C	Figure	Parts No.
AVB-ISO63-P2-E	63.5	88	277	99.5	15	310115240016
AVB-ISO80-P2-E	76.2	98	294	114.0	15	310116240016
AVB-ISO100-P2-E	101.6	108	346.6	151.6	15	310118240016

Specifications

- Stainless steel body surface treatment :
1. below 4" puff polishing
2. above 4"(include 4") sand blasting
- 63.5~101.6 mm port ODs.
- 4~6.5 kg/cm² operating air pressure.
- Bakeable to 150 °C.
- Viton Seal Bonnet : 10⁻⁹ Torr vacuum rating CF and ISO flange.

ANGLE VALVE

Pneumatically Actuated

Available Area :Europe (Special Sizes Available Upon Request)

Without bellows, air to open, spring to close.

Port Connections : KF Flange

Model No.	O.D.	A	B	C	Figure	Parts No.
AV-KF16-P-E	19.05	40	142	56.8	12	310109110010
AV-KF25-P-E	25.4	50	149	56.8	12	310111110010
AV-KF40-P-E	38.1	65	203	75.8	12	310113110010
AV-KF50-P-E	50.8	70	246	88.4	12	310114110010

Port Connections : CF Rotatable Flange

Model No.	O.D.	A	B	C	Figure	Parts No.
AV-CR16-P-E	19.05	38	140	56.8	13	310109130010
AV-CR35-P-E	38.1	63	201	75.8	13	310113130010

Specifications

- Stainless steel body surface treatment :
 - 1.below 4" puff polishing
 - 2.above 4"(include 4") sand blasting
- 19.05~50.8 mm port ODs.
- 4~6.5 kg/cm² operating air pressure.
- Bakeable to 150 °C.
- Viton Seal Bonnet : 10⁻⁹ Torr vacuum rating KF and CF flange.

ANGLE VALVE

Pneumatically Actuated

Available Area :Europe (Special Sizes Available Upon Request)

Without bellows, air to open, air to close.

Port Connections : CF Rotatable Flange

Model No.	O.D.	A	B	C	Figure	Parts No.
AV-CR63-P2-E	63.5	105	294	99.5	14	310115230010
AV-CR100-P2-E	101.6	135	373.6	151.6	14	310118230010

Port Connections : ISO Flange

Model No.	O.D.	A	B	C	Figure	Parts No.
AV-ISO63-P2-E	63.5	88	277	99.5	15	310115240010
AV-ISO80-P2-E	76.2	98	287	114.0	15	310116240010
AV-ISO100-P2-E	101.6	108	360	151.6	15	310118240010

Specifications

- Stainless steel body surface treatment :
 1. below 4" puff polishing
 2. above 4"(include 4") sand blasting
- 63.5~101.6 mm port ODs.
- 4~6.5 kg/cm² operating air pressure.
- Bakeable to 150°C.
- Viton Seal Bonnet : 10⁻⁹ Torr vacuum rating CF and ISO flange.

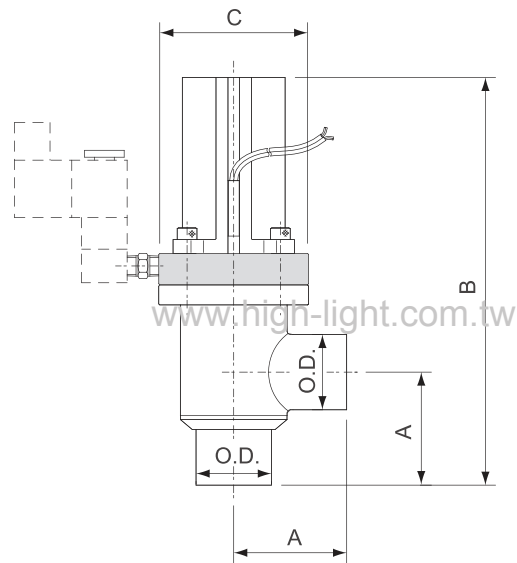
ANGLE VALVE

Pneumatically Actuated with Bellows Attached Reed Sensor

Tube End



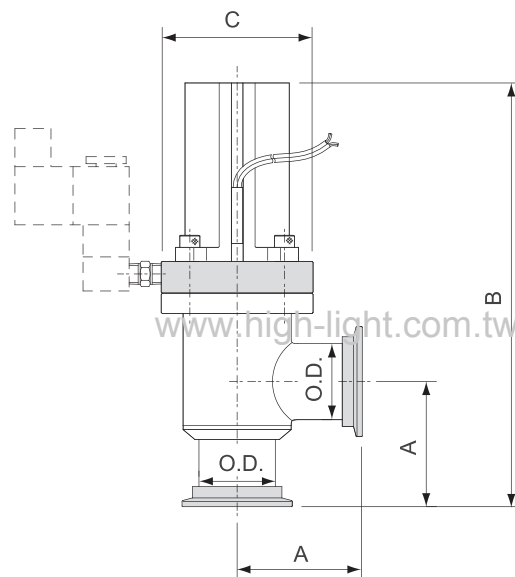
Figure 16



KF Flange



Figure 17



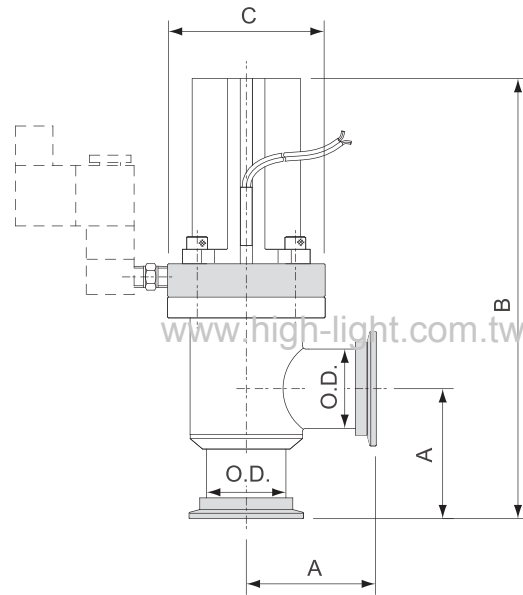
ANGLE VALVE

Pneumatically Actuated with Bellows Attached Reed Sensor

CF Flange



Figure 18



ANGLE VALVE

Pneumatically Actuated with Bellows Attached Reed Sensor
Available Area : U.S.A.

Port Connections : Tube End

Model No.	O.D.	A	B	C	Figure	Parts No.
AVBS-TE16-P	0.75	2.00	6.63	2.24	16	300109100216
AVBS-TE25-P	1.00	1.88	6.38	2.24	16	300111100216
AVBS-TE40-P	1.50	2.25	8.13	2.98	16	300113100216
AVBS-TE50-P	2.00	3.25	10.39	3.48	16	300114100216

Port Connections : KF Flange

Model No.	O.D.	A	B	C	Figure	Parts No.
AVBS-KF16-P	0.75	2.15	6.78	2.24	17	300109110216
AVBS-KF25-P	1.00	2.03	6.53	2.24	17	300111110216
AVBS-KF40-P	1.50	2.40	8.28	2.98	17	300113110216
AVBS-KF50-P	2.00	3.40	11.08	3.48	17	300114110216

Port Connections : CF Rotatable Flange

Model No.	O.D.	A	B	C	Figure	Parts No.
AVBS-CR16-P	0.75	2.50	7.13	2.24	18	300109130216
AVBS-CR35-P	1.50	2.46	8.33	2.98	18	300113130216

- **Note : All dimensions shown on this page are in inch.**

Specifications

- Stainless steel body surface treatment :
 1. below 4" puff polishing
 2. above 4"(include 4") sand blasting
- 3/4~2 inch port ODs.
- 3/4~2 inch : air to open, spring to close. (Normally Close)
- 4~6.5kg/cm² operating air pressure.
- Sensor Specification : Voltage DC/AC 4~240V Amps : 5~40mA
- Options Available : Air solenoid DC24V, AC24V, AC110V, AC220V.
- Viton Seal Bonnet : 10⁻⁹ Torr vacuum rating KF and CF flange..

ANGLE VALVE

Pneumatically Actuated with Bellows Attached Reed Sensor
Available Area : Europe (Special Sizes Available Upon Request)

Port Connections : KF Flange

Model No.	O.D.	A	B	C	Figure	Parts No.
AVBS-KF16-P-E	19.05	40	158	56.8	17	310109110216
AVBS-KF25-P-E	25.4	50	164.3	56.8	17	310111110216
AVBS-KF40-P-E	38.1	65	214	75.8	17	310113110216
AVBS-KF50-P-E	50.8	70	251.3	88.4	17	310114110216

Port Connections : CF Rotatable Flange

Model No.	O.D.	A	B	C	Figure	Parts No.
AVBS-CR16-P-E	19.05	38	155.6	56.8	18	310109130216
AVBS-CR35-P-E	38.1	63	212	75.8	18	310113130216

Specifications

- Stainless steel body surface treatment :
 1. below 4" puff polishing
 2. above 4"(include 4") sand blasting
- 3/4~2 inch port ODs.
- 3/4~2 inch : air to open, spring to close. (Normally Close)
- 4~6.5kg/cm² operating air pressure.
- Sensor Specification : Voltage DC/AC 4~240V Amps : 5~40mA
- Options Available : Air solenoid DC24V, AC24V, AC110V, AC220V.
- Viton Seal Bonnet : 10⁻⁹ Torr vacuum rating KF and CF flange.

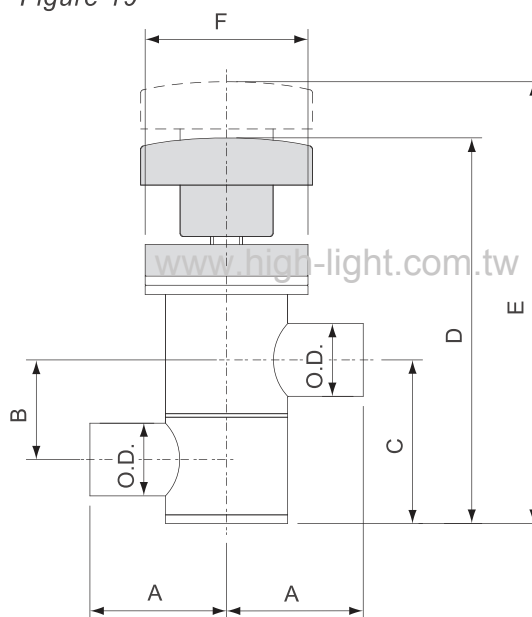
Z-INLINE VALVE

Manually Operated with Bellows

Tube End



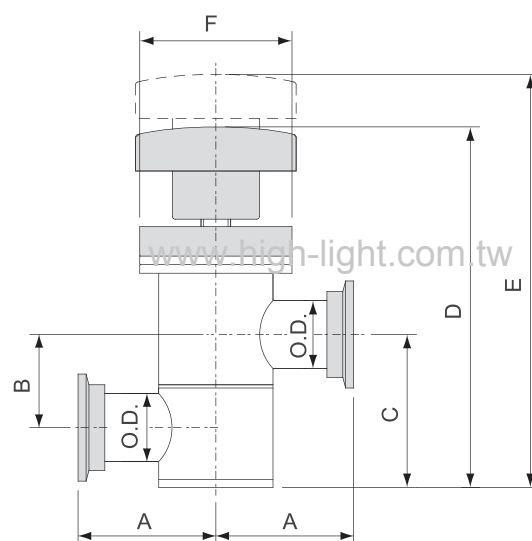
Figure 19



KF Flange



Figure 20



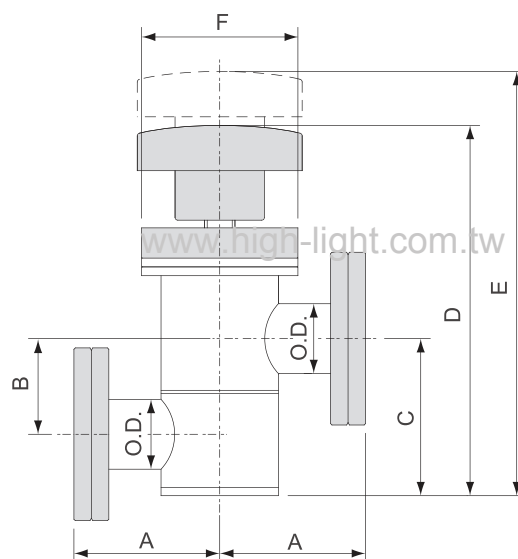
Z-INLINE VALVE

Manually Operated with Bellows

CF Flange



Figure 21



Z-INLINE VALVE

Manually Operated with Bellows

Available Area : U.S.A.

Port Connections : Tube End

Model No.	O.D.	A	B	C	D	E	F	Figure	Parts No.
IVB-TE16-M	0.75	2.00	1.13	1.87	5.09	5.86	2.24	19	302109000016
IVB-TE25-M	1.00	1.88	1.37	2.25	5.35	6.11	2.24	19	302111000016
IVB-TE40-M	1.50	2.25	1.88	3.12	7.16	8.44	2.98	19	302113000016
IVB-TE50-M	2.00	3.25	2.62	4.12	8.85	10.61	3.48	19	302114000016

Port Connections : KF Flange

Model No.	O.D.	A	B	C	D	E	F	Figure	Parts No.
IVB-KF16-M	0.75	2.15	1.13	1.87	5.09	5.86	2.24	20	302109010016
IVB-KF25-M	1.00	2.03	1.37	2.25	5.35	6.11	2.24	20	302111010016
IVB-KF40-M	1.50	2.40	1.88	3.12	7.16	8.44	2.98	20	302113010016
IVB-KF50-M	2.00	3.40	2.62	4.12	8.85	10.61	3.48	20	302114010016

Port Connections : CF Rotatable Flange

Model No.	O.D.	A	B	C	D	E	F	Figure	Parts No.
IVB-CR16-M	0.75	2.50	1.13	1.87	5.09	5.86	2.24	21	302109030016
IVB-CR35-M	1.50	2.46	1.88	3.12	7.16	8.44	2.98	21	302113030016

- Note : All dimensions shown on this page are in inch.

Specifications

- Stainless steel body surface treatment :
 - below 4" puff polishing
 - above 4"(include 4") sand blasting
- 3/4~2 inch port ODs.
- Bakeable to 150 °C.
- Viton Seal Bonnet : 10⁻⁹ Torr vacuum rating KF and CF flange.

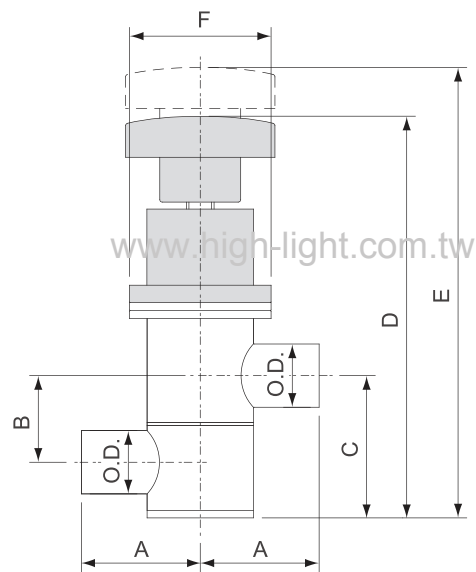
Z-INLINE VALVE

Manually Operated without Bellows

Tube End



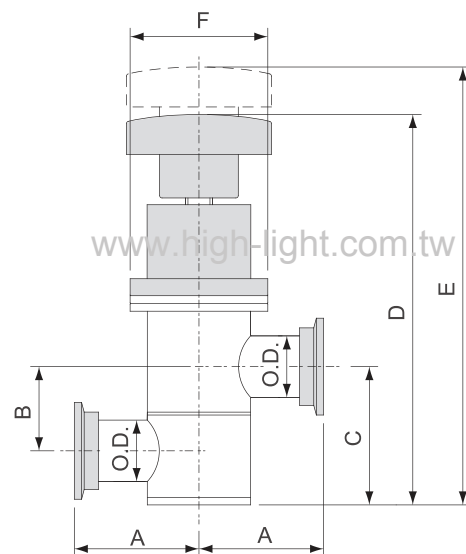
Figure 22



KF Flange



Figure 23



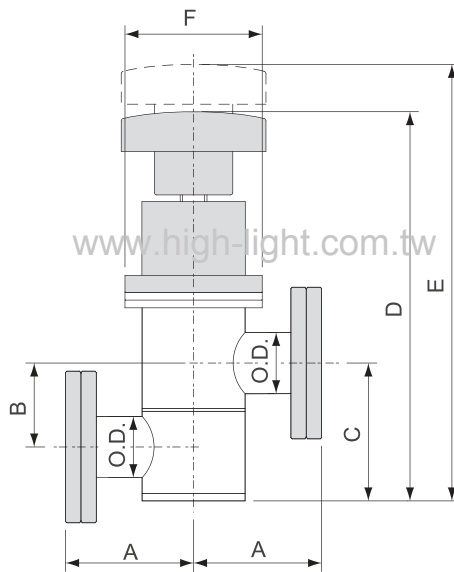
Z-INLINE VALVE

Manually Operated without Bellows

CF Flange



Figure 24



Z-INLINE VALVE

Manually Operated without Bellows

Available Area : U.S.A.

Port Connections : Tube End

Model No.	O.D.	A	B	C	D	E	F	Figure	Parts No.
IV-TE16-M	0.75	2.00	1.13	1.87	6.32	6.94	2.24	22	302109000010
IV-TE25-M	1.00	1.88	1.37	2.25	6.57	7.19	2.24	22	302111000010
IV-TE40-M	1.50	2.25	1.88	3.12	8.22	9.32	2.98	22	302113000010
IV-TE50-M	2.00	3.25	2.62	4.12	10.53	12.12	3.48	22	302114000010

Port Connections : KF Flange

Model No.	O.D.	A	B	C	D	E	F	Figure	Parts No.
IV-KF16-M	0.75	2.15	1.13	1.87	6.32	6.94	2.24	23	302109010010
IV-KF25-M	1.00	2.03	1.37	2.25	6.57	7.19	2.24	23	302111010010
IV-KF40-M	1.50	2.40	1.88	3.12	8.22	9.32	2.98	23	302113010010
IV-KF50-M	2.00	3.40	2.62	4.12	10.53	12.12	3.48	23	302114010010

Port Connections : CF Rotatable Flange

Model No.	O.D.	A	B	C	D	E	F	Figure	Parts No.
IV-CR16-M	0.75	2.50	1.13	1.87	6.32	6.94	2.24	24	302109030010
IV-CR35-M	1.50	2.46	1.88	3.12	8.22	9.32	2.98	24	302113030010

- Note : All dimensions shown on this page are in inch.

Specifications

- Stainless steel body surface treatment :
 - below 4" puff polishing
 - above 4"(include 4") sand blasting
- 3/4~2 inch port ODs.
- Bakeable to 150°C.
- Viton Seal Bonnet : 10^{-9} Torr vacuum rating KF and CF flange.

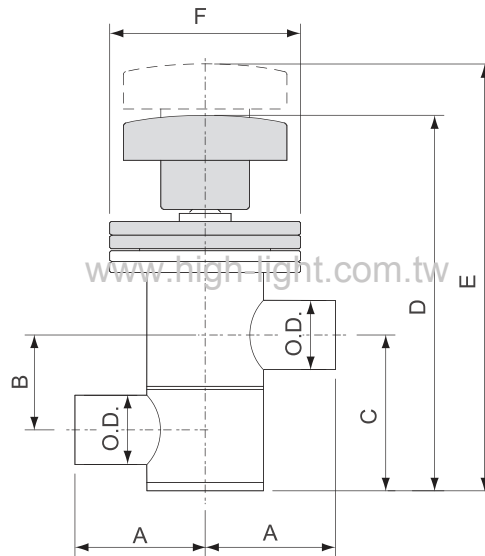
Z-INLINE VALVE

Manually Operated Copper Seal Bonnet with Bellows

Tube End



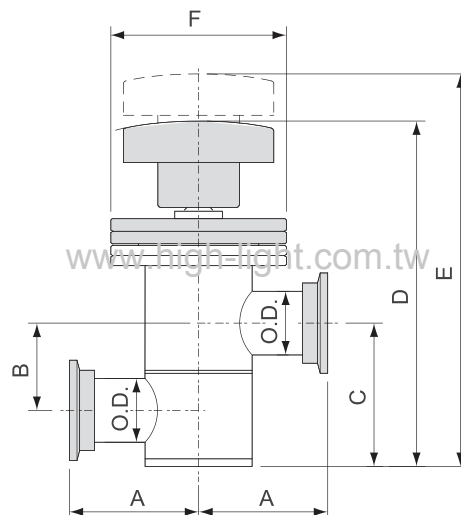
Figure 25



KF Flange



Figure 26



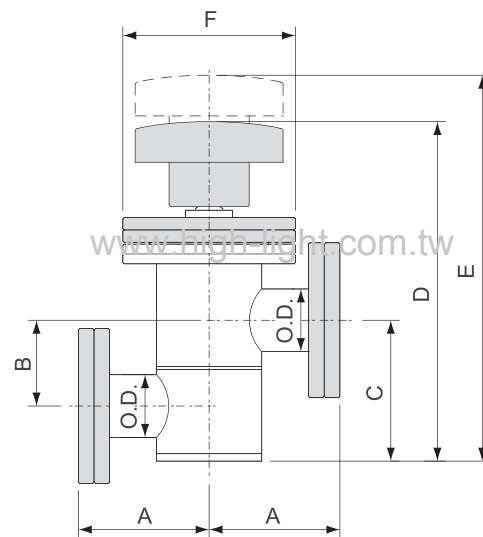
Z-INLINE VALVE

Manually Operated Copper Seal Bonnet with Bellows

CF Flange



Figure 27



Z-INLINE VALVE

Manually Operated Copper Seal Bonnet with Bellows

Available Area : U.S.A.

Port Connections : Tube End

Model No.	O.D.	A	B	C	D	E	F	Figure	Parts No.
IVB-CU-TE16-M	0.75	2.00	1.12	1.87	5.07	5.85	2.75	25	302609000016
IVB-CU-TE25-M	1.00	1.88	1.37	2.25	5.33	6.11	2.75	25	302611000016
IVB-CU-TE40-M	1.50	2.25	1.88	3.12	7.35	8.57	3.37	25	302613000016
IVB-CU-TE50-M	2.00	3.25	2.62	4.12	8.86	10.63	4.47	25	302614000016

Port Connections : KF Flange

Model No.	O.D.	A	B	C	D	E	F	Figure	Parts No.
IVB-CU-KF16-M	0.75	2.15	1.12	1.87	5.07	5.86	2.75	26	302609010016
IVB-CU-KF25-M	1.00	2.03	1.37	2.25	5.33	6.11	2.75	26	302611010016
IVB-CU-KF40-M	1.50	2.40	1.88	3.12	7.35	8.57	3.37	26	302613010016
IVB-CU-KF50-M	2.00	3.40	2.62	4.12	8.86	10.63	4.17	26	302614010016

Port Connections : CF Rotatable Flange

Model No.	O.D.	A	B	C	D	E	F	Figure	Parts No.
IVB-CU-CR16-M	0.75	2.50	1.12	1.87	5.07	5.85	2.75	27	302609030016
IVB-CU-CR35-M	1.50	2.45	1.88	3.12	7.35	8.57	3.37	27	302613030016

● **Note :** All dimensions shown on this page are in inch.

Specifications

- Stainless steel body surface treatment :
1. below 4" puff polishing
2. above 4"(include 4") sand blasting
- 3/4~2 inch port ODs.
- Bakeable to 150°C.(200°C intermittently for CF flange port).
- Metal Seal Bonnet : 10^{-9} Torr vacuum rating KF and approximate 10^{-10} Torr vacuum rating CF flange.

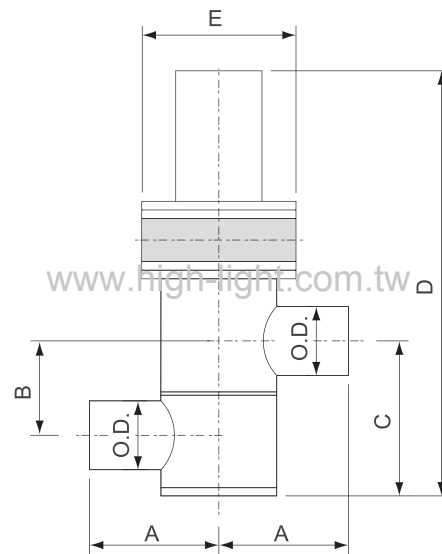
Z-INLINE VALVE

Pneumatically Actuated

Tube End



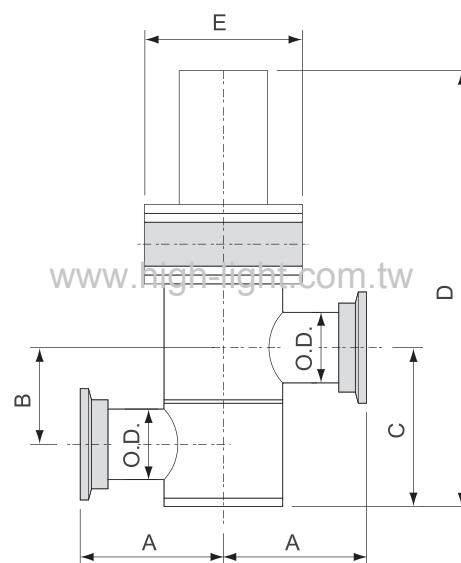
Figure 28



KF Flange



Figure 29



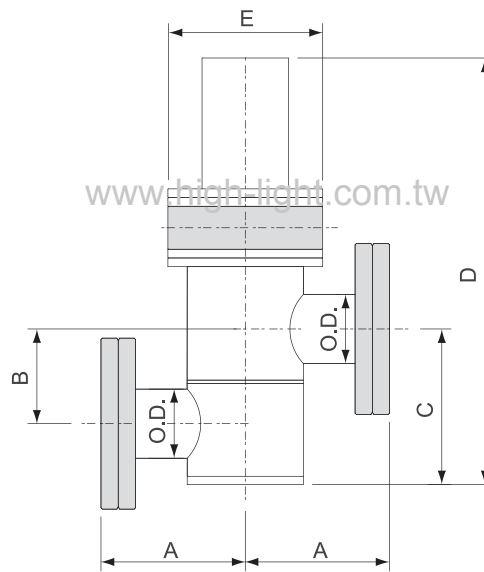
Z-INLINE VALVE

Pneumatically Actuated

CF Flange



Figure 30



Z-INLINE VALVE

Pneumatically Actuated

Available Area : U.S.A.

With bellows, air to open, spring to close.

Port Connections : Tube End

Model No.	O.D.	A	B	C	D	E	Figure	Parts No.
IVB-TE16-P	0.75	2.00	1.13	1.87	5.90	2.24	28	302109100016
IVB-TE25-P	1.00	1.88	1.37	2.25	6.14	2.24	28	302111100016
IVB-TE40-P	1.50	2.25	1.88	3.12	8.56	2.98	28	302113100016
IVB-TE50-P	2.00	3.25	2.62	4.12	11.05	3.48	28	302114100016

Port Connections : KF Flange

Model No.	O.D.	A	B	C	D	E	Figure	Parts No.
IVB-KF16-P	0.75	2.15	1.13	1.87	5.90	2.24	29	302109110016
IVB-KF25-P	1.00	2.03	1.37	2.25	6.14	2.24	29	302111110016
IVB-KF40-P	1.50	2.40	1.88	3.12	8.56	2.98	29	302113110016
IVB-KF50-P	2.00	3.40	2.62	4.12	11.05	3.48	29	302114110016

Port Connections : CF Rotatable Flange

Model No.	O.D.	A	B	C	D	E	Figure	Parts No.
IVB-CR16-P	0.75	2.50	1.13	1.87	5.90	2.24	30	302109130016
IVB-CR35-P	1.50	2.46	1.88	3.12	8.56	2.98	30	302113130016

- **Note : All dimensions shown on this page are in inch.**

Specifications

- Stainless steel body surface treatment :
 1. below 4" puff polishing
 2. above 4"(include 4") sand blasting
- 3/4~2 inch port ODs.
- 4~6.5 kg/cm² operating air pressure.
- Bakeable to 150°C.
- Viton Seal Bonnet : 10⁻⁹ Torr vacuum rating KF and CF flange.

Z-INLINE VALVE

Pneumatically Actuated

Available Area : U.S.A.

Without bellows, air to open, spring to close.

Port Connections : Tube End

Model No.	O.D.	A	B	C	D	E	Figure	Parts No.
IV-TE16-P	0.75	2.00	1.13	1.87	5.90	2.24	28	302109100010
IV-TE25-P	1.00	1.88	1.37	2.25	6.14	2.24	28	302111100010
IV-TE40-P	1.50	2.25	1.88	3.12	8.56	2.98	28	302113100010
IV-TE50-P	2.00	3.25	2.62	4.12	11.05	3.48	28	302114100010

Port Connections : KF Flange

Model No.	O.D.	A	B	C	D	E	Figure	Parts No.
IV-KF16-P	0.75	2.15	1.13	1.87	5.90	2.24	29	302109110010
IV-KF25-P	1.00	2.03	1.37	2.25	6.14	2.24	29	302111110010
IV-KF40-P	1.50	2.40	1.88	3.12	8.56	2.98	29	302113110010
IV-KF50-P	2.00	3.40	2.62	4.12	11.05	3.48	29	302114110010

Port Connections : CF Rotatable Flange

Model No.	O.D.	A	B	C	D	E	Figure	Parts No.
IV-CR16-P	0.75	2.50	1.13	1.87	5.90	2.24	30	302109130010
IV-CR35-P	1.50	2.46	1.88	3.12	8.56	2.98	30	302113130010

● **Note : All dimensions shown on this page are in inch.**

Specifications

- Stainless steel body surface treatment :
 1. below 4" puff polishing
 2. above 4"(include 4") sand blasting
- 3/4~2 inch port ODs.
- 4~6.5 kg/cm² operating air pressure.
- Bakeable to 150 °C.
- Viton Seal Bonnet : 10⁻⁹ Torr vacuum rating KF and CF flange.

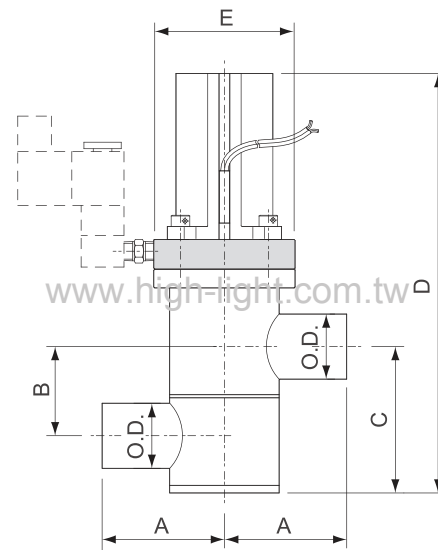
Z-INLINE VALVE

Pneumatically Actuated with Bellows Attached Reed Sensor

Tube End



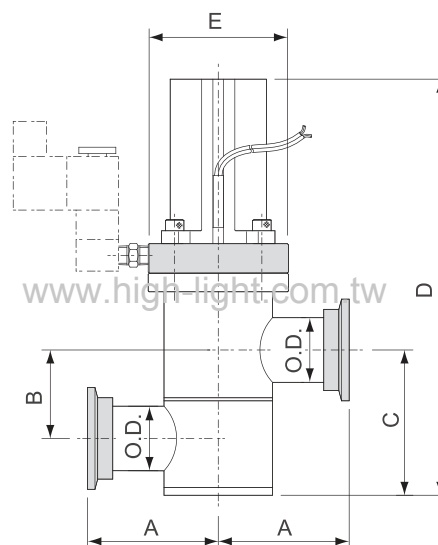
Figure 31



KF Flange



Figure 32



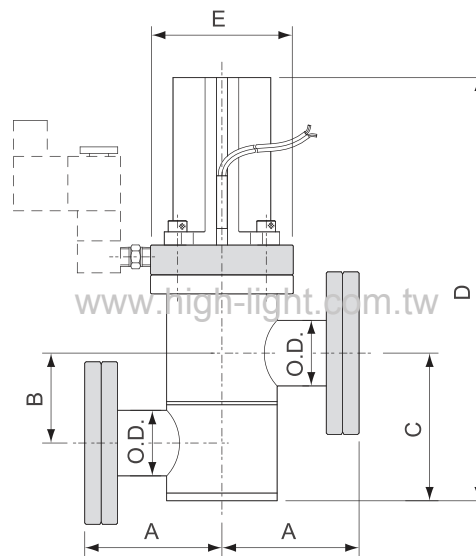
Z-INLINE VALVE

Pneumatically Actuated with Bellows Attached Reed Sensor

CF Flange



Figure 33



Z-INLINE VALVE

Pneumatically Actuated with Bellows Attached Reed Sensor
Available Area : U.S.A.

Port Connections : Tube End

Model No.	O.D.	A	B	C	D	E	Figure	Parts No.
IVBS-TE16-P	0.75	2.00	1.13	1.87	6.51	2.24	31	302109100216
IVBS-TE25-P	1.00	1.88	1.37	2.25	6.75	2.24	31	302111100216
IVBS-TE40-P	1.50	2.25	1.88	3.12	8.90	2.98	31	302113100216
IVBS-TE50-P	2.00	3.25	2.62	4.12	11.26	3.48	31	302114100216

Port Connections : KF Flange

Model No.	O.D.	A	B	C	D	E	Figure	Parts No.
IVBS-KF16-P	0.75	2.15	1.13	1.87	6.51	2.24	32	302109110216
IVBS-KF25-P	1.00	2.03	1.37	2.25	6.75	2.24	32	302111110216
IVBS-KF40-P	1.50	2.40	1.88	3.12	8.90	2.98	32	302113110216
IVBS-KF50-P	2.00	3.40	2.62	4.12	11.26	3.48	32	302114110216

Port Connections : CF Rotatable Flange

Model No.	O.D.	A	B	C	D	E	Figure	Parts No.
IVBS-CR16-P	0.75	2.50	1.13	1.87	6.51	2.24	33	302109130216
IVBS-CR35-P	1.50	2.46	1.88	3.12	8.90	2.98	33	302113130216

- **Note :** All dimensions shown on this page are in inch.

Specifications

- Stainless steel body surface treatment :
 1. below 4" puff polishing
 2. above 4"(include 4") sand blasting
- 3/4~2 inch port ODs.
- 3/4~2 inch : air to open, spring to close. (Normally Close)
- 4~6.5 kg/cm² operating pressure.
- Sensor Specification : Voltage DC/AC 4~240V Amps : 5~40 mA.
- Option Available : Air Solenoid DC24V, AC24V, AC110V, AC220V.
- Viton Seal Bonnet : 10⁻⁹ Torr vacuum rating KF and CF flange.

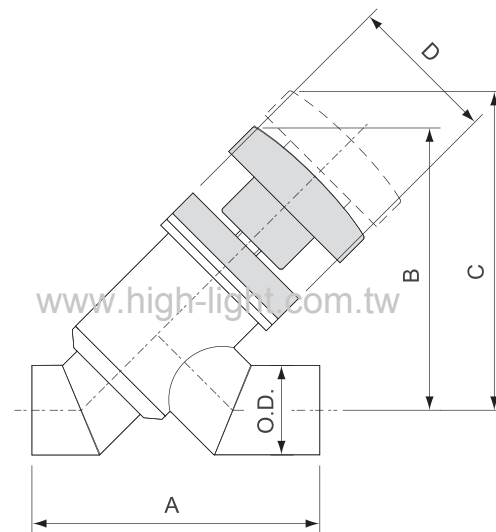
Y-INLINE VALVE

Manually Operated with Bellows

Tube End



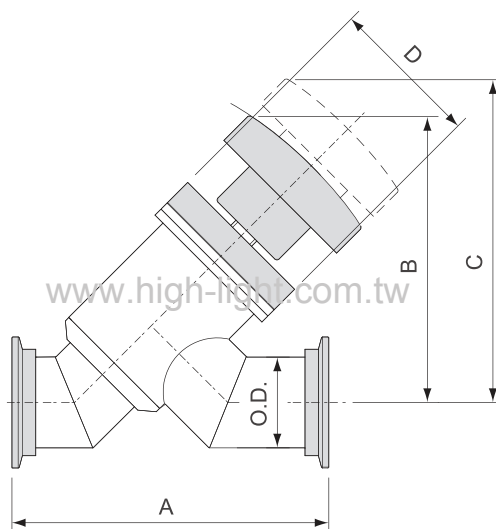
Figure 34



KF Flange



Figure 35



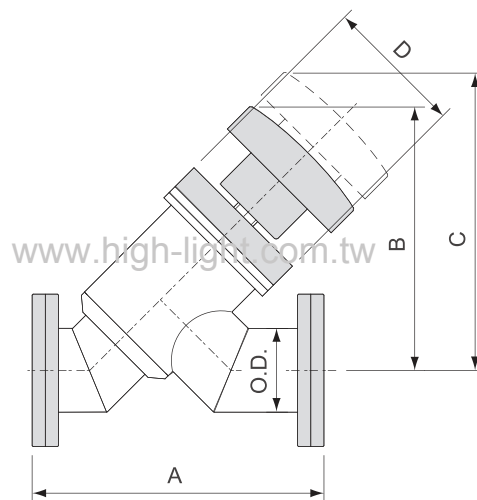
Y-INLINE VALVE

Manually Operated with Bellows

CF Flange



Figure 36



Y-INLINE VALVE

Manually Operated with Bellows

Available Area : U.S.A.

Port Connections : Tube End

Model No.	O.D.	A	B	C	D	Figure	Parts No.
YVB-TE16-M	0.75	3.70	3.89	4.43	2.24	34	304109000016
YVB-TE25-M	1.00	3.90	3.89	4.43	2.24	34	304111000016
YVB-TE40-M	1.50	4.82	4.89	5.80	2.98	34	304113000016
YVB-TE50-M	2.00	6.70	5.59	6.83	3.48	34	304114000016

Port Connections : KF Flange

Model No.	O.D.	A	B	C	D	Figure	Parts No.
YVB-KF16-M	0.75	4.00	3.89	4.43	2.24	35	304109010016
YVB-KF25-M	1.00	4.20	3.89	4.43	2.24	35	304111010016
YVB-KF40-M	1.50	5.12	4.89	5.80	2.98	35	304113010016
YVB-KF50-M	2.00	7.00	5.59	6.83	3.48	35	304114010016

Port Connections : CF Rotatable Flange

Model No.	O.D.	A	B	C	D	Figure	Parts No.
YVB-CR16-M	0.75	4.70	3.89	4.43	2.24	36	304109030016
YVB-CR35-M	1.50	5.24	4.89	5.80	2.98	36	304113030016

● **Note :** All dimensions shown on this page are in inch.

Specifications

- Stainless steel body surface treatment :
 1. below 4" puff polishing
 2. above 4"(include 4") sand blasting
- 3/4~2 inch port ODs.
- Bakeable to 150 °C.
- Viton Seal Bonnet : 10⁻⁹ Torr vacuum rating KF and CF flange.

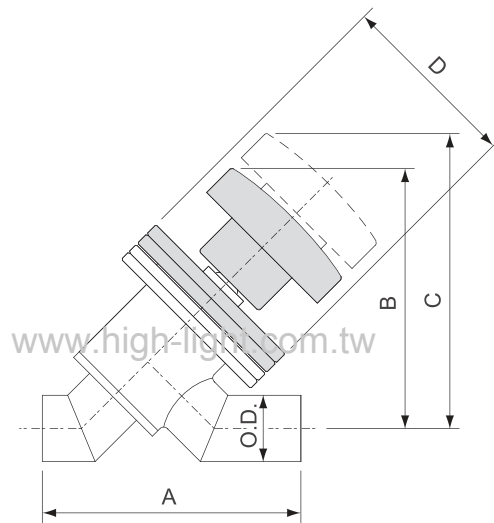
Y-INLINE VALVE

Manually Operated Copper Seal Bonnet with Bellows

Tube End



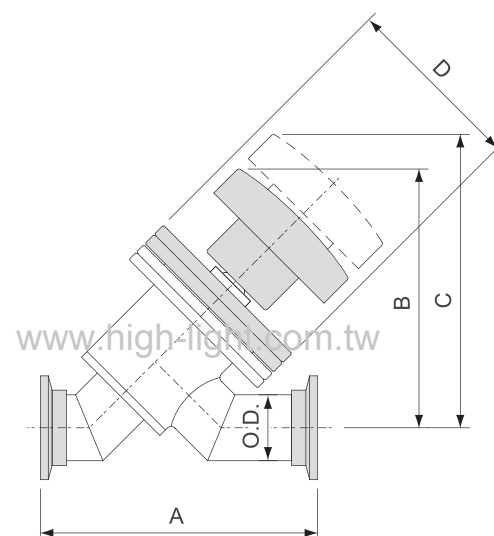
Figure 37



KF Flange



Figure 38



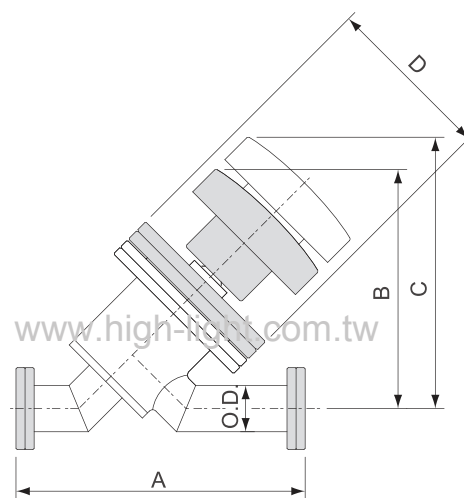
Y-INLINE VALVE

Manually Operated Copper Seal Bonnet with Bellows

CF Flange



Figure 39



Y-INLINE VALVE

Manually Operated Copper Seal Bonnet with Bellows

Available Area : U.S.A.

Port Connections : Tube End

Model No.	O.D.	A	B	C	D	Figure	Parts No.
YVB-CU-TE16-M	0.75	3.70	3.88	4.76	2.75	37	304609000016
YVB-CU-TE25-M	1.00	3.90	3.92	4.44	2.75	37	304611000016
YVB-CU-TE40-M	1.50	4.82	5.01	5.87	3.37	37	304613000016
YVB-CU-TE50-M	2.00	6.70	5.30	6.55	4.47	37	304614000016

Port Connections : KF Flange

Model No.	O.D.	A	B	C	D	Figure	Parts No.
YVB-CU-KF16-M	0.75	4.00	3.88	4.76	2.75	38	304609010016
YVB-CU-KF25-M	1.00	4.20	3.92	4.44	2.75	38	304611010016
YVB-CU-KF40-M	1.50	5.12	5.01	5.87	3.37	38	304613010016
YVB-CU-KF50-M	2.00	7.00	5.30	6.55	4.47	38	304614010016

Port Connections : CF Rotatable Flange

Model No.	O.D.	A	B	C	D	Figure	Parts No.
YVB-CU-CR16-M	0.75	4.70	3.88	4.76	2.75	39	304609030016
YVB-CU-CR35-M	1.50	5.24	5.01	5.87	3.37	39	304613030016

- Note : All dimensions shown on this page are in inch.

Specifications

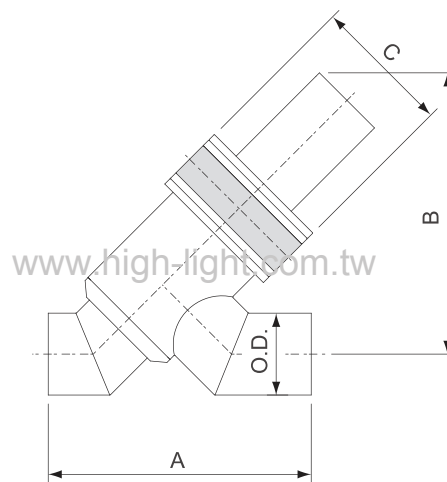
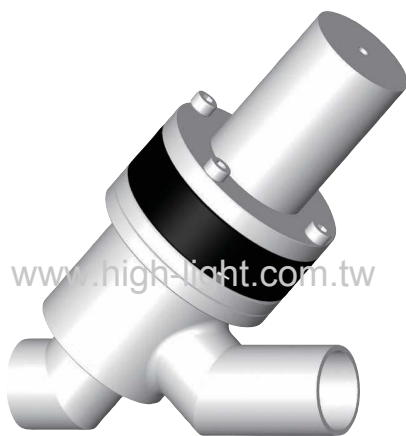
- Stainless steel body surface treatment :
 1. below 4" puff polishing
 2. above 4"(include 4") sand blasting
- 3/4~2 inch port ODs.
- Bakeable to 150°C. (200°C intermittently for CF flange port).
- Metal Seal Bonnet : 10^{-9} Torr vacuum rating KF and approximate 10^{-10} Torr vacuum rating CF flange.

Y-INLINE VALVE

Pneumatically Actuated with Bellows

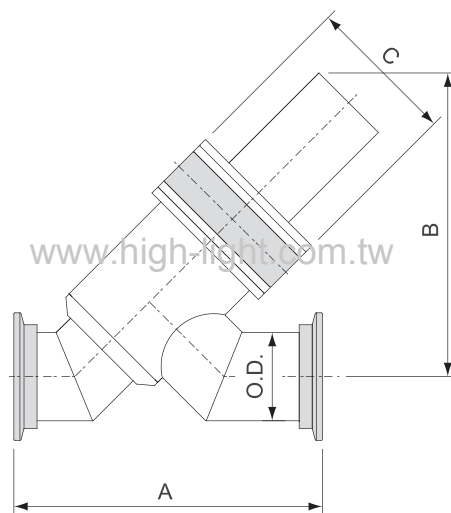
Tube End

Figure 40



KF Flange

Figure 41

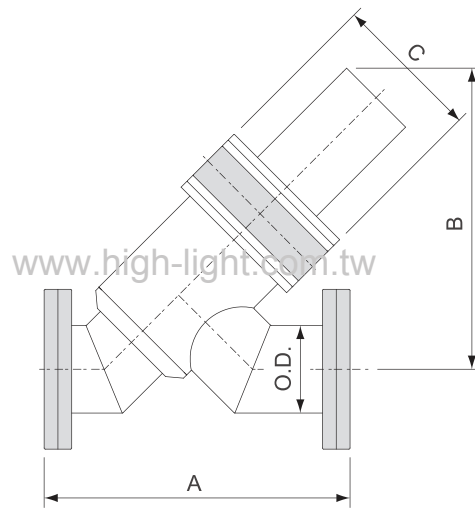


Y-INLINE VALVE

Pneumatically Actuated with Bellows

CF Flange

Figure 42



Y-INLINE VALVE

Pneumatically Actuated with Bellows

Available Area : U.S.A.

Port Connections : Tube End

Model No.	O.D.	A	B	C	Figure	Parts No.
YVB-TE16-P	0.75	3.70	4.15	2.24	40	304109100016
YVB-TE25-P	1.00	3.90	4.16	2.24	40	304111100016
YVB-TE40-P	1.50	4.82	5.71	2.98	40	304113100016
YVB-TE50-P	2.00	6.70	7.15	3.48	40	304114100016
YVB-TE63-P2	2.50	7.75	7.87	3.92	40	304115200016

Port Connections : KF Flange

Model No.	O.D.	A	B	C	Figure	Parts No.
YVB-KF16-P	0.75	4.00	4.15	2.24	41	304109110016
YVB-KF25-P	1.00	4.20	4.16	2.24	41	304111110016
YVB-KF40-P	1.50	5.12	5.71	2.98	41	304113110016
YVB-KF50-P	2.00	7.00	7.15	3.48	41	304114110016

Port Connections : CF Rotatable Flange

Model No.	O.D.	A	B	C	Figure	Parts No.
YVB-CR16-P	0.75	4.70	4.15	2.24	42	304109130016
YVB-CR35-P	1.50	5.24	5.71	2.98	42	304113130016
YVB-CR63-P2	2.50	8.5	7.87	3.48	42	304115230016

- Note : All dimensions shown on this page are in inch.

Specifications

- Stainless steel body surface treatment :
 - below 4" puff polishing
 - above 4"(include 4") sand blasting
- 3/4~2 inch port ODs.
- 3/4"~2 inch : air to open, spring to close.
- Over 2 inch : air to open, air to close.
- 4~6.5 kg/cm² operating pressure.
- Bakeable to 150°C.
- Viton Seal Bonnet : 10⁻⁹Torr vacuum rating KF and CF flange.

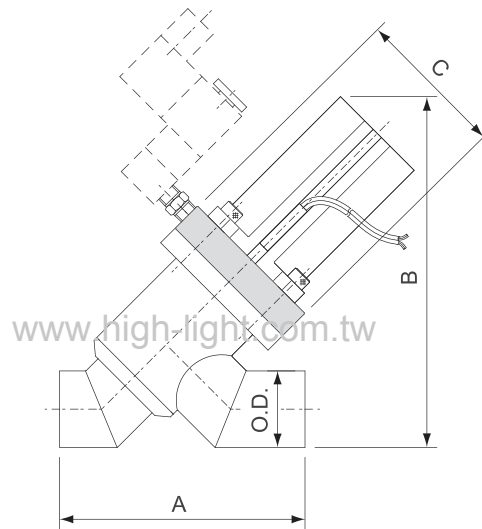
Y-INLINE VALVE

Pneumatically Actuated with Bellows Attached Reed Sensor

Tube End



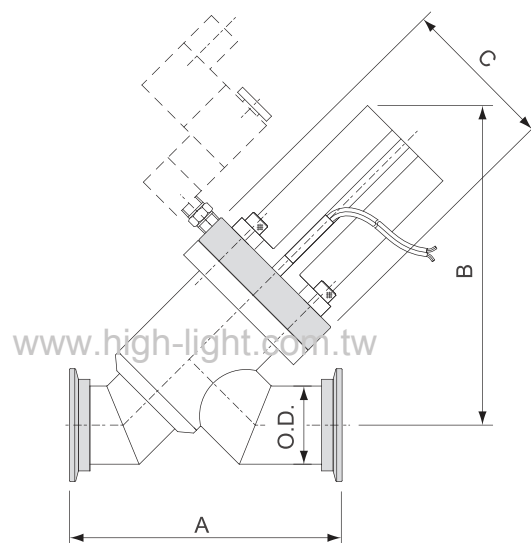
Figure 43



KF Flange



Figure 44



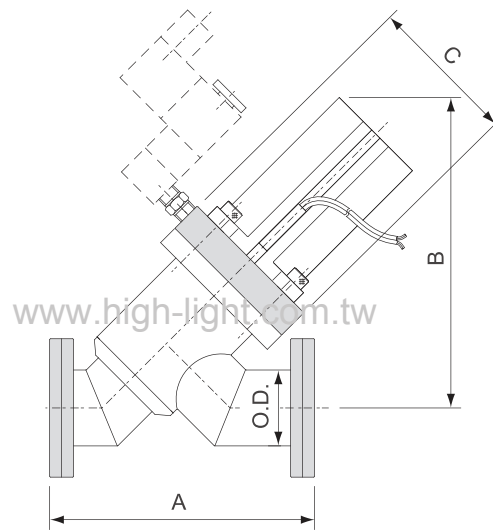
Y-INLINE VALVE

Pneumatically Actuated with Bellows Attached Reed Sensor

CF Flange



Figure 45



Y-INLINE VALVE

Pneumatically Actuated with Bellows Attached Reed Sensor
Available Area : U.S.A.

Port Connections : Tube End

Model No.	O.D.	A	B	C	Figure	Parts No.
YVBS-TE16-P	0.75	3.70	4.74	2.24	43	304109100216
YVBS-TE25-P	1.00	3.90	4.73	2.24	43	304111100216
YVBS-TE40-P	1.50	4.82	6.17	2.98	43	304113100216
YVBS-TE50-P	2.00	6.70	7.43	3.48	43	304114100216

Port Connections : KF Flange

Model No.	O.D.	A	B	C	Figure	Parts No.
YVBS-KF16-P	0.75	4.00	4.74	2.24	44	304109110216
YVBS-KF25-P	1.00	4.20	4.73	2.24	44	304111110216
YVBS-KF40-P	1.50	5.12	6.17	2.98	44	304113110216
YVBS-KF50-P	2.00	7.00	7.43	3.48	44	304114110216

Port Connections : CF Rotatable Flange

Model No.	O.D.	A	B	C	Figure	Parts No.
YVBS-CR16-P	0.75	4.70	4.74	2.24	45	304109130216
YVBS-CR35-P	1.50	5.24	6.17	2.98	45	304113130216

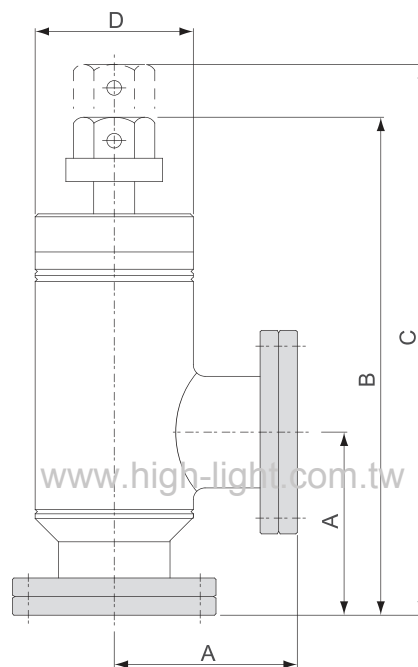
- Note : All dimensions shown on this page are in inch.

Specifications

- Stainless steel body surface treatment :
 - below 4" puff polishing
 - above 4"(include 4") sand blasting
- 3/4~2 inch port ODs.
- 3/4"~2 inch : air to open, spring to close. (Normally Close)
- 4~6.5 kg/cm² operating pressure.
- Sensor Specification : Voltage DC/AC 4~240V Amps : 5~40 mA.
- Option Available : Air Solenoid DC24V, AC24V, AC110V, AC220V.
- Viton Seal Bonnet : 10⁻⁹ Torr vacuum rating KF and CF flange.

Bakeable All-Metal Valve

Angle Valve

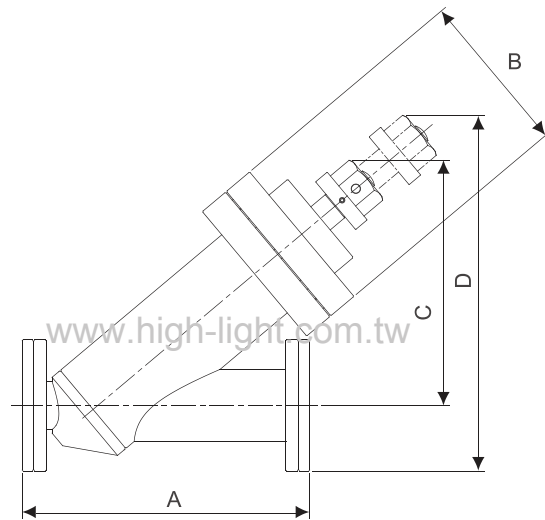


Model No.	OD.	A	B	C	D	Parts No.
AVBAK-CR16	19.05	38.1	121.2	131	38.1	300509030011
AVBAK-CR35	38.1	62.5	170	187	54	300513030011
AVBAK-CR63	63.5	105	266	294	76.2	300515030011

Specifications

- Temperature operating range:
Bakeable to :400°C(open), 300°C(close).
Cryogenic to:-200 °C
- Pressure Range : 1×10^{-10} torr ~ 760 torr
- All stainless steel construction.
- Bellows stem seal.
- Leak Rate : 10^{-10} mbar·l/sec.
- Closure Torque : CR16 First 150kg-cm, Maximum 250kg-cm.
CR35 First 300kg-cm, Maximum 600kg-cm.
CR63 First 300kg-cm,Maximum 900 kg-cm
- Orientation : Any position.

Straight-Through Valve



Model No.	O.D.	A	B	C	D	Parts No.
SVBAK-CR35	38.1 / 25.4	152.4	86	125	184	307513030011
SVBAK-CR63	60.5 / 34	228.6	113.6	165	247	307515030011

Specifications

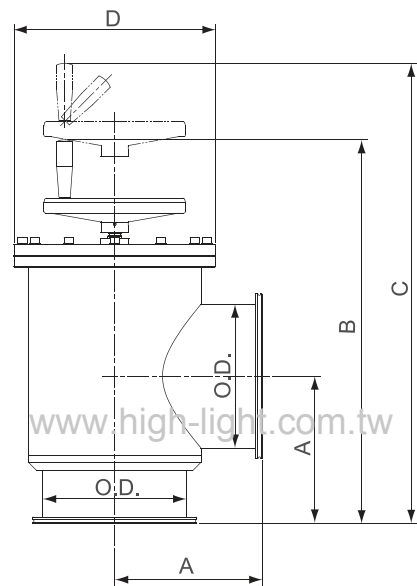
- Temperature operating range:
Bakeable to : 400°C(open), 300°C(close).
Cryogenic to : -200°C
- Pressure Range : 1×10^{-10} torr ~ 760 torr
- All stainless steel construction.
- Bellows stem seal.
- Leak Rate : 10^{-10} mbar-l/sec.
- Closure Torque : CR35 First 300kg-cm,Maximum 600 kg-cm
CR63 First 300kg-cm,Maximum 900 kg-cm
- Orientation : Any position.

LARGE ANGLE VALVE

Manually Operated with Bellows

Available Area : U.S.A.

Port Connections : ISO Flange



Model No.	O.D.	A	B	C	D	Parts No.
AVB-ISO100-M	101.6	113.5	340.3	404.3	151.6	300118040016
AVB-ISO160-M	152.4	159	437.5	512.5	240	300120040016
AVB-ISO200-M	203.2	209.5	548.4	678.1	250	300121040016
AVB-ISO250-M	254	260.6	677.6	807.6	355.6	300122040016

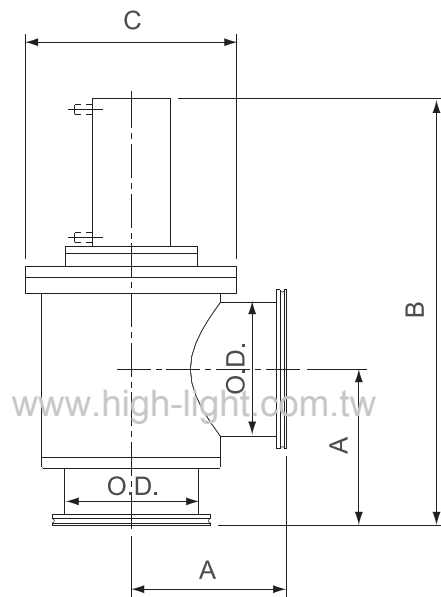
LARGE ANGLE VALVE

Pneumatically Actuated

Available Area: U.S.A.

With bellows, air to open, air to close

Port Connection : ISO Flange



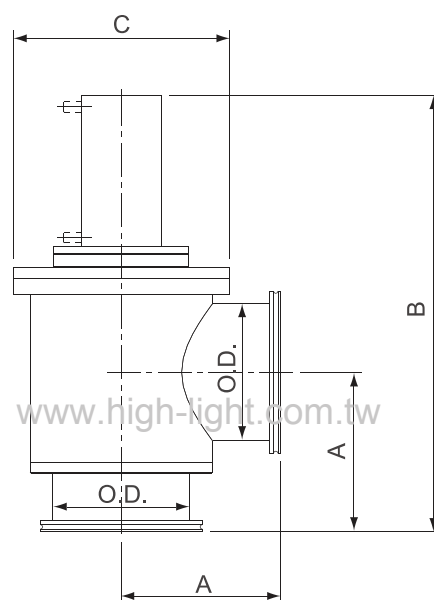
Model No.	O.D.	A	B	C	Parts No.
AVB-ISO100-P2	101.6	113.5	352.1	151.6	300118240016
AVB-ISO160-P2	152.4	159	432.5	240	300120240016
AVB-ISO200-P2	203.2	209.5	623.6	250	300121240016
AVB-ISO250-P2	254	260.6	734.6	355.6	300122240016

Pneumatically Actuated

Available Area : U.S.A.

Without bellows , air to open , air to close

Port Connection : ISO Flange



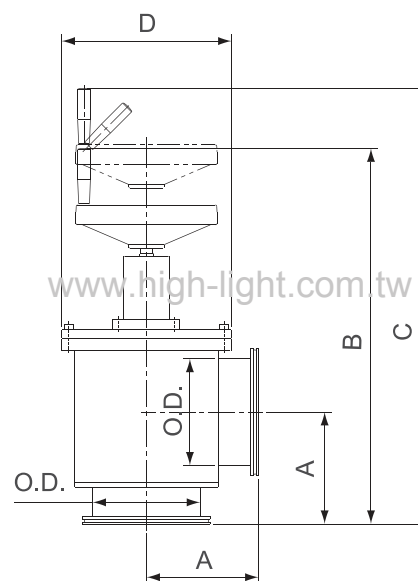
Model No.	O.D.	A	B	C	Parts No.
AV-ISO100-P2	101.6	113.5	352.1	151.6	300118240010
AV-ISO160-P2	152.4	159	432.5	240	300120240010
AV-ISO200-P2	203.2	209.5	623.6	250	300121240010
AV-ISO250-P2	254	260.6	734.6	355.6	300122240010

LARGE ANGLE VALVE

Manually Operated without Bellows

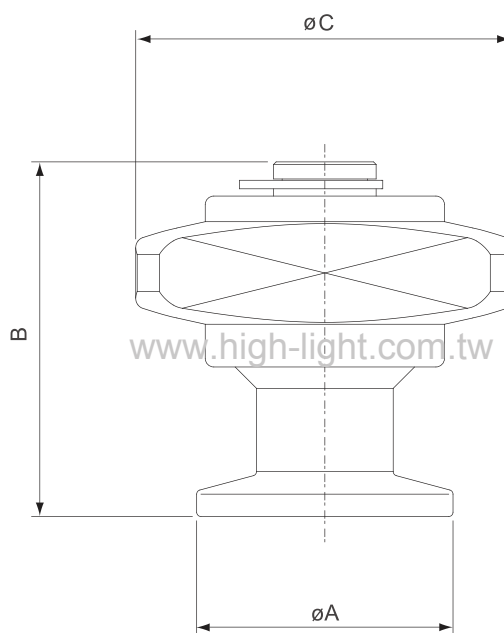
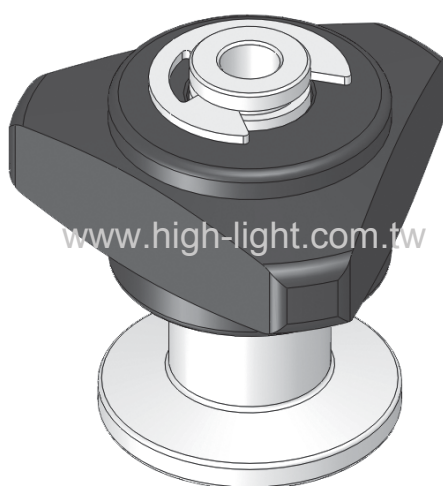
Available Area:U.S.A.

Port Connection:ISO Flange



Model No.	O.D.	A	B	C	D	Parts No.
AV-ISO100-M	101.6	113.5	419.3	494.3	151.6	300118040010
AV-ISO160-M	152.4	159	536	621	240	300120040010
AV-ISO200-M	203.2	209.5	700	830	250	300121040010
AV-ISO250-M	254	260.6	833	963	355.6	300122040010

Vent Valve



Model No.	Port	A	B	C	Parts No.
KF10VVM	KF10	30	41.5	48	340207011
KF16VVM	KF16	30	41.5	48	340209011
KF25VVM	KF25	40	41.5	48	340211011

Specifications

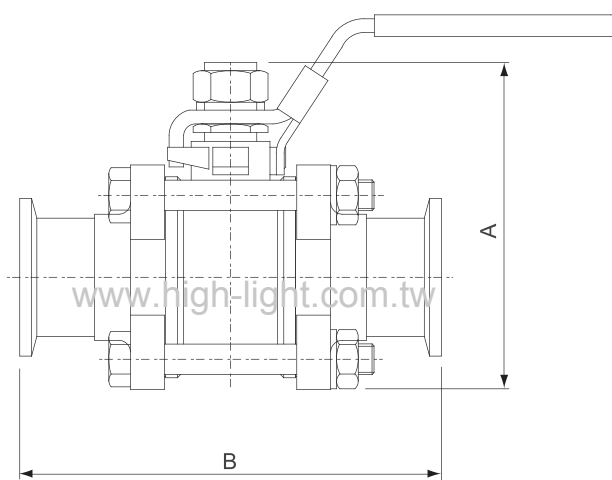
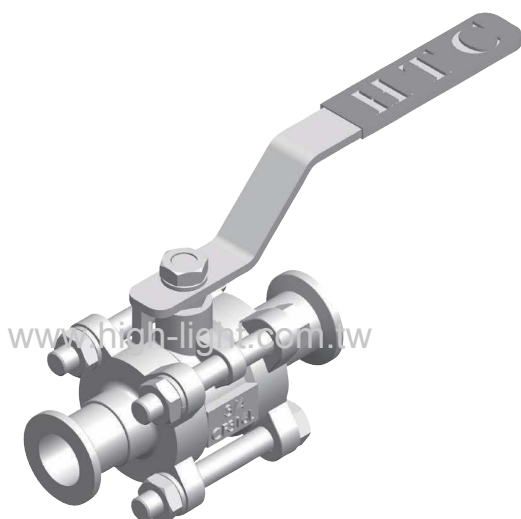
- Flange: KF(NW)
- Installation Angle: Any
- Valve completely opened: 2 Turns
- Venting Times(50L): 14 Sec
- Pressure Range: 1×10^{-8} Torr ~ 760 torr
- Leak rate: 1×10^{-9} Torr.l/s
- Valve Body: SUS 304
- Plate: SUS 304
- Washer: Teflon
- O-ring: Viton
- Screw cap: Aluminum

BALL VALVE



- In vacuum industry, Ball Valves are durable and usually work to achieve perfect shutoff. A Ball Valve is a valve with a ball in the central part of the valve, the ball controls the flow through it. The ball has a hole, or port, through the middle so that when the port is in line with both ends of the valve, flow will occur. When the valve is closed, the hole is perpendicular to the ends of the valve, and flow is blocked. The handle or lever will be inline with the port position letting you "see" the valve's position when the valve is fully open. The Ball Valve, along with the butterfly valve, are part of the family of quarter turn valves.
- Ball Valve's simple, rugged structure provides high reliability in "dirty" vacuum application. For example, they are always used to isolate traps and scrubbers downstream from the chamber or vacuum pump in the process equipment. Ball Valves also are suitable for isolating gauges, vacuum roughing lines, food processing lines and many other industrial applications.

06 CHAPTER VACUUM VALVE

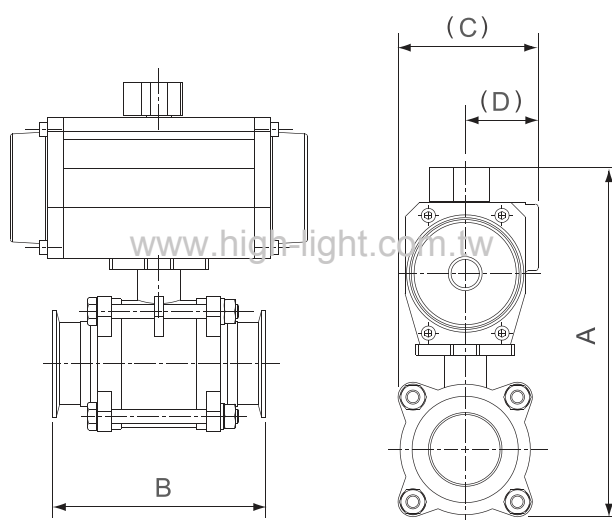


Model No.	Connector	A	B	Parts No.
KF16BV092(3/4")	KF16	64.4	92	3201093101131
KF25BV107(1")	KF25	92	107	3201113101131
KF40BV130(1.5")	KF40	120.5	130	3201133101131
KF50BV151(2")	KF50	134	151	3201143101131

Description	Description
Flange	KF (NW)
Operation	1/4 Turn manual open and close
Fittings	N/A
Sensors	N/A
Wetted materials	SS316, Viton, PTFE
Leak rate mbar-L/sec	9.0×10^{-7}
Max pressure	56.8 PSI
Pneumatic supply	N/A
Operation time	N/A
Operating temperature	150°C MAX
Pressure range	2atm~ 1×10^{-4} torr
Weight	3/4,, 0.6KG
	1" 1.2KG
	1.5" 2.4KG
	2" 3.8KG

BALL VALVE

Pneumatic Actuated



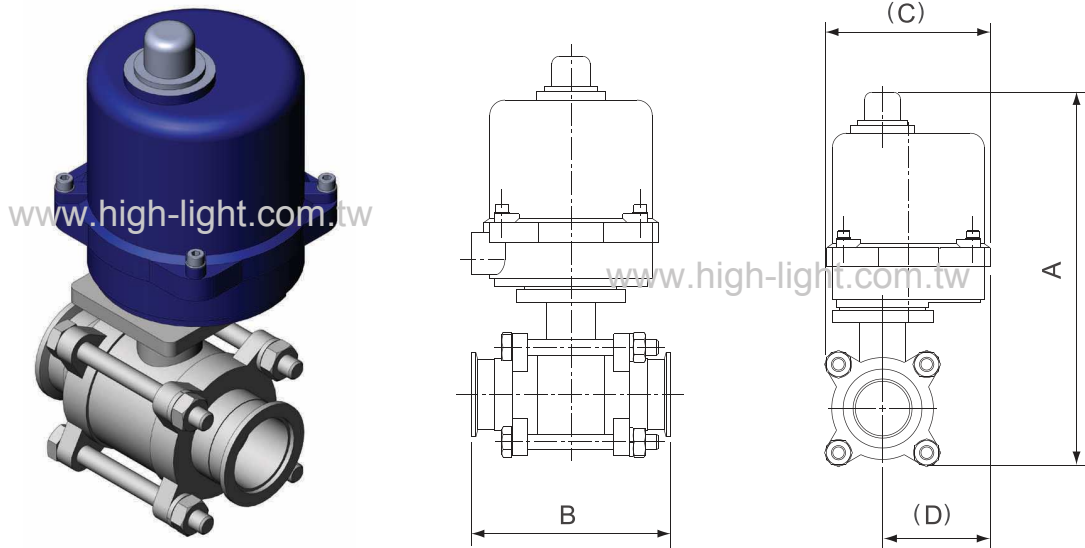
Model No.	SIZE	Connector	A	B	C	D	Parts No.
KF25BV107P	1"	KF25	173	107	71	41.5	3201113101133
KF40BV130P	1.5"	KF40	216	130	88	48	3201133101133
KF50BV151P	2"	KF50	246	151	99	51.5	3201143101133

Specifications

- Valve size for 1" to 2"
- Flange : KF(NW)
- Pressure Range : 2atm ~ 1×10^{-4} Torr
- Leak rate: 5×10^{-9} Torr.l/s
- Wetted materials : SUS316 , PTFE
- Max temperature : Cylinder 80°C
Body 150°C
- Option : Limit switch , solenoid

06 CHAPTER VACUUM VALVE

BALL VALVE



Model No.	SIZE	Connector	A	B	C	D	Parts No.
KF25BV107E	1"	KF25	231	107	114	79	320111310113A
KF40BV130E	1.5"	KF40	258	130	119	79	320113310113A
KF50BV151E	2"	KF50	318	151	114	57	320114310113A

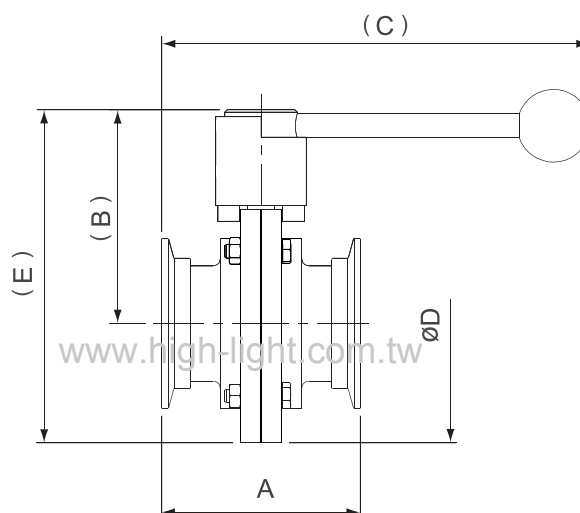
Standard voltage 110V, other voltage see note 8.

Specifications

- Valve size for 1" to 2"
- Flange : KF(NW)
- Pressure Range : 2atm ~ 1×10^{-4} Torr
- Leak rate: 5×10^{-9} Torr.l/s
- Wetted materials : SUS316 , PTFE
- Max temperature : Motor drive 80°C
Body 150°C
- Time to fall open : 50Hz-13sec , 60Hz-12sec
- last letter of the P/N represents the Motor Voltage : A=AC 110V , B= AC 220V , C=AC 220 3 ϕ , D=AC 380 3 ϕ
- Option : Limit switch

BUTTERFLY VALVE

BUTTERFLY VALVE (KF TYPE)



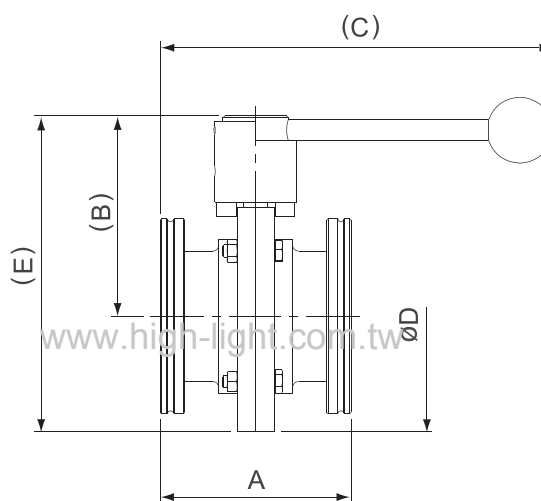
Model No.	SIZE	Connector	A	B	C	D	E	Parts No.
KF25BFV	1"	KF25	75.6	80	179	79	119.5	3202112101111
KF40BFV	1.5"	KF40	83.6	83.3	186.8	85	125.5	3202132101111
KF50BFV	2"	KF50	87.6	93.3	185	105	145.5	3202142101111

Specifications

- Valve size for 1" to 2"
- Flange : KF(NW)
- Pressure Range : 1atm ~ 1x10⁻⁸ Torr
- Leak rate: 5x10⁻⁹ Torr.l/s
- Body materials : SUS304
- Seal materials : EPDM

BUTTERFLY VALVE

BUTTERFLY VALVE (ISO TYPE)



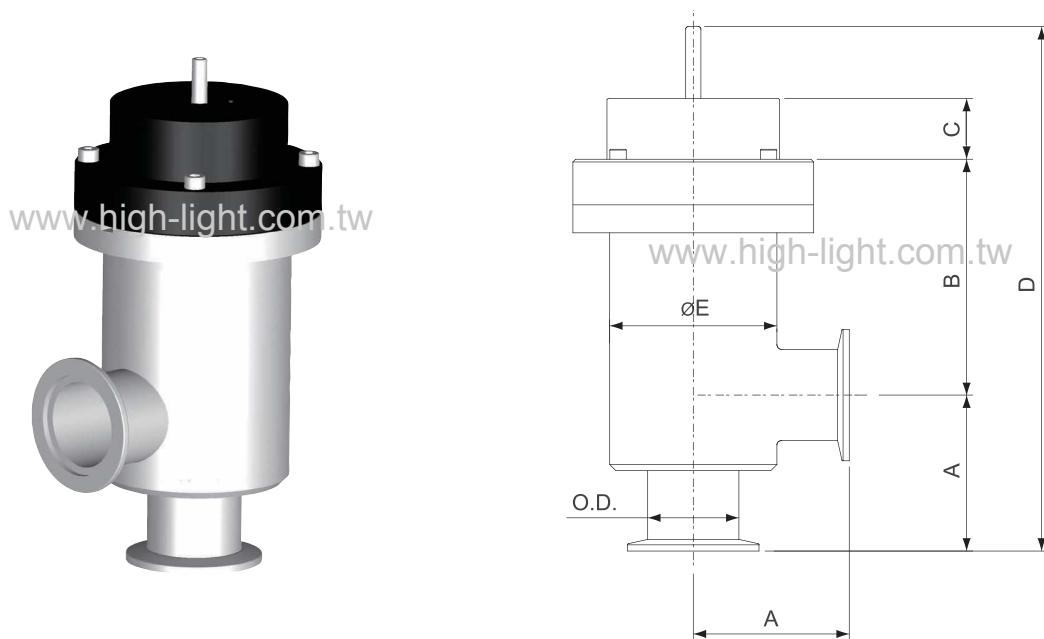
Model No.	SIZE	Connector	A	B	C	D	E	Parts No.
ISO63BFV	2.5"	ISO63	93.2	96.6	191.6	112	152.6	3202152103111
ISO80BFV	3.0"	ISO80	95.2	103.8	192.6	125	166.3	3202162103111
ISO100BFV	4.0"	ISO100	101.2	120.6	195.6	157	200	3202182103111

Specifications

- Valve size for 2.5" to 4.0"
- Flange : ISO
- Pressure Range : 1atm ~ 1x10⁻⁸ Torr
- Leak rate: 5x10⁻⁹ Torr.l/s
- Body materials : SUS304
- Seal materials : EPDM

FORMED BELLOWS SEAL STAINLESS VALVE

Angle Valve

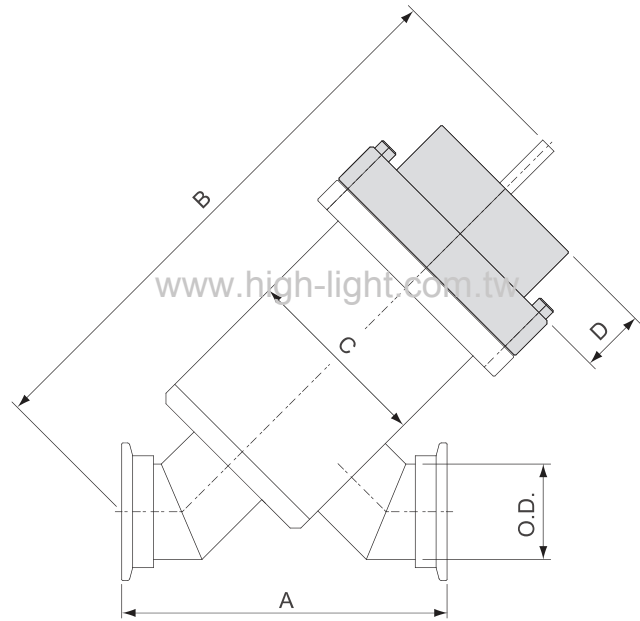


Parts No.	O.D.	A	B	C	D	E
ZFP0081520040K00	1.50	65	99.5	25.5	214.3	76.2

Specifications

- Polished 304 stainless steel body.
- 3/4~2 inch port ODs.
- Operation : Air to open, spring to close.
- Operating pressure : 4~6 kg/cm²
- Orientation : Any position.
- Bakeable to 150°C.
- Viton Seal Bonnet : 10⁻⁹ Torr vacuum rating KF, ISO and CF flange.

Y-inline Valve



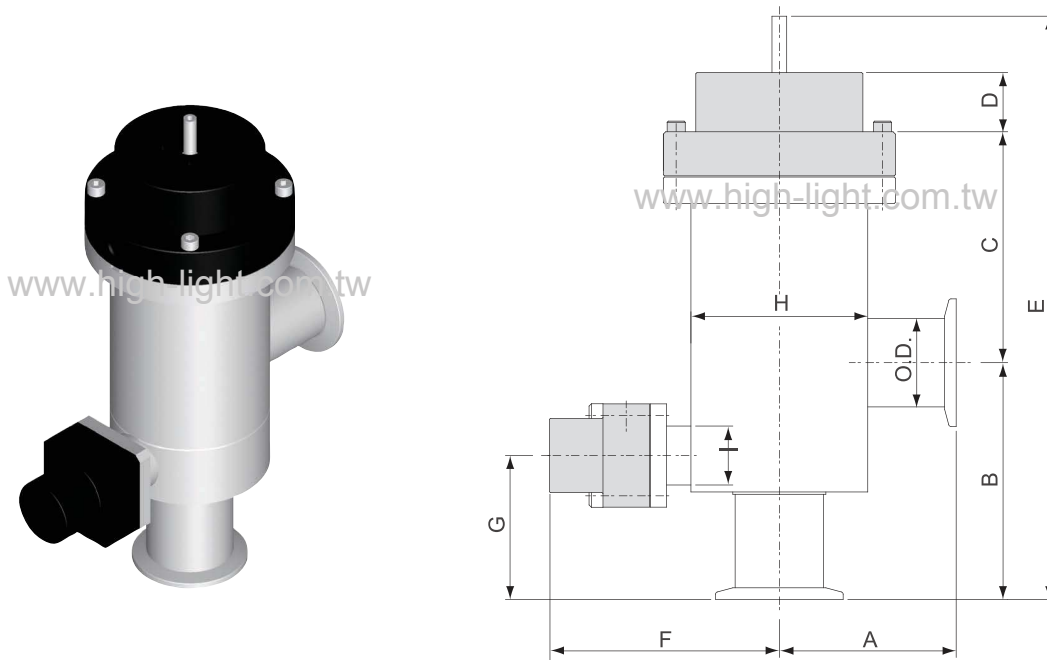
Parts No.	O.D.	A	B	C	D
ZFP0081620040K00	1.50	130	224	76.2	25.5

Specifications

- Polished 304 stainless steel body.
- 3/4~2 inch port ODs.
- Operation : Air to open, spring to close.
- Operating pressure : 4~6 kg/cm²
- Orientation : Any position.
- Bakeable to 150°C.
- Viton Seal Bonnet : 10⁻⁹ Torr vacuum rating KF, ISO and CF flange.

FORMED BELLOWS SEAL STAINLESS VALVE

Two-Stage Valve



Parts No.	O.D.	A	B	C	D	E	F	G	H	I
ZFP008V2040AK00	1.50	76.2	102	99.5	25.5	251.3	99	62	76.2	25.4
ZFP008V2050SAK00	2.00	89	126.5	129.4	40	303	107.2	63.3	89.1	25.4

Specifications

- Polished 304 stainless steel body .
- 3/4~2 inch port ODs .
- Operation : Air to open, spring to close.
- Operating pressure : 4~6 kg/cm²
- Orientation : Any position.
- Bakeable to 150°C.
- Viton Seal Bonnet : 10⁻⁹ Torr vacuum rating KF, ISO and CF flange.
- Provides soft pumpdown and isolation for vacuum system.
- Reduces particulate contamination during early turbulent pumpdown.

ACCESSORIES

Valve Kit



Figure 1



Figure 2



Figure 3

Spare Parts For 16~50 Manual Bellows Type Vacuum Valves

Kit P/N	Content	Figure	For Port Size inches/(MM)
3001110K	Poppet seal x 1 – Viton	1	0.75" / (16) ; 1.00" / (25)
3001130K	Bonnet seal x 1 – Viton	1	1.50" / (40)
3001140K		1	2.00" / (50)

Spare Parts For 16~50 Pneumatic Bellows Type Vacuum Valves(air to open , spring to close)

Only available for valves without sensor

Kit P/N	Content	Figure	For Port Size inches/(MM)
3001111K	Poppet seal x 1 – Viton	2	0.75" / (16) ; 1.00" / (25)
3001131K	Bonnet seal x 1 – Viton	2	1.50" / (40)
3001141K	Shaft seal x 1 – NBR Cylinder seal x 1 – NBR	2	2.00" / (50)

Spare Parts For 16~50 Pneumatic Bellows Type Vacuum Valves(air to open , air to close)

Only available for valves without sensor

Kit P/N	Content	Figure	For Port Size inches/(MM)
3001112K	Poppet seal x 1 – Viton	2	0.75" / (16) ; 1.00" / (25)
3001132K	Bonnet seal x 1 – Viton	2	1.50" / (40)
3001142K	Shaft seal x 1 – NBR Cylinder seal x 1 – NBR	2	2.00" / (50)

Bellows Assembly Kit

Part No	Content	Figure	For Port Size inches/(MM)
300111000016BA		3	0.75" / (16) ; 1.00" / (25)
300113000016BA	Bellows Assembly	3	1.50" / (40)
300114000016BA		3	2.00" / (50)

ACCESSORIES

Heating Jacket (Customized)



Specifications

- Voltage:110/220AVC
- Temperature:170°C
- Connector : K Type Thermocouple & Plug
- Wire Length:2 m



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