Valves

Vacuum

2021

Htc leading the new future for vacuum

Htc

VACUUM VALVE

GATE VALVE

VACUUM POPPET VALVES

Angle valve
Bellows

Angle valve
O-ring

Large angle valve
Bellows

Large angle valve
O-ring

Y-inline valve
Bellows

Y-inline valve
O-ring

VACUUM POPPET VALVES

Z-inline valve
Bellows

Z-inline valve
O-ring

Fomed bellows seal
stainless valve
Bellows

ALUMINUM BLOCK VALVES

Pneumatic All-in-one
angle valve
Bellows

Pneumatic
aluminum angle valve
Bellows

Pneumatic
aluminum angle valve
O-ring

BUTTERFLY VALVES

Manual aluminum
angle valve
Bellows

Manual aluminum
angle valve
O-ring

LV Manual
butterfly valve
O-ring

HV Manual
butterfly valve
O-ring

Pneumatic
butterfly valve
O-ring

3-Position
butterfly valve
O-ring

BALL VALVES

CHECK VALVES

VENT VALVES

APC
butterfly valve
O-ring

Manual
ball valve
Teflon-ring

Pneumatic
ball valve
Teflon-ring

Motor drive
ball valve
Teflon-ring

Check valve

Vent valve

O-ring

BAKEABLE ALL-METAL VALVES

TEFLON COATING VALVES

Angle valve
Bellows

Straight
through valve
Bellows

Manual PTFE
angle valve
O-ring

Pneumatic PTFE
angle valve
O-ring

Pneumatic PTFE
Y-inline valve
O-ring

Type / Size	Shaft seal	HV VALVE											
		KF 10	KF 16	KF 25	KF 40	KF 50	ISO 63	ISO 80	ISO 100	ISO 160	ISO 200	ISO 250	ISO 320
VACUUM POPPET VALVES													
ANGLE VALVE (Manual & Pneumatic)	Bellows		●	●	●	●	●	●					
	O-ring		●	●	●	●	●	●					
LARGE ANGLE VALVE (Manual & Pneumatic)	Bellows								●	●	●	●	
	O-ring								●	●	●	●	
Y-INLINE VALVE (Manual & Pneumatic)	Bellows		●	●	●	●	●	●	●				
	O-ring		●	●	●	●	●	●	●				
Z-INLINE VALVE (Manual & Pneumatic)	Bellows		●	●	●	●	●	●	●				
	O-ring		●	●	●	●	●						
Formed Bellows Seal Stainless Valve (Pneumatic)	Bellows				●	●							
ALUMINUM BLOCK VALVES													
Pneumatic All-in-one angle valve	Bellows		●	●	●								
Pneumatic aluminum angle valve	Bellows		●	●	●	●	●						
	O-ring		●	●	●								
Manual aluminum angle valve	Bellows		●	●	●	●							
	O-ring		●	●	●	●							
BUTTERFLY VALVES													
LV Manual butterfly valve	O-ring		●	●	●	●	●		●				
HV Manual butterfly valve	O-ring				●	●		●		●	●		
Pneumatic butterfly valve	O-ring			●	●	●	●		●	●	●	●	
3-Position butterfly valve	O-ring				●	●	●		●	●			
APC butterfly valve	O-ring			●	●	●	●		●				
BALL VALVES													
Manual ball valves	Teflon-ring		●	●	●	●		●	●				
Pneumatic ball valve	Teflon-ring			●	●	●		●	●				
Motor Drive ball valve	Teflon-ring			●	●	●							
CHECK VALVES													
Check Valve					●								
VENT VALVES													
Vent valve	O-ring	●	●	●	●								
BAKEABLE ALL- METAL VALVES													
Angle valve	Bellows												
Straight through valve	Bellows												
TEFLON COATING VALVES													
Manual PTFE Angle Valve	O-ring			●	●	●							
Pneumatic PTFE Angle Valve	O-ring			●	●	●		●	●				
Pneumatic PTFE Y-inline Valve	O-ring			●	●	●		●	●				

Dimension in mm unless otherwise noted

Type / Size	Shaft seal	UHV VALVE							
		CF 16	CF 35	CF 63	CF 100	CF 150	CF 200	CF 250	CF 300
VACUUM POPPET VALVES									
ANGLE VALVE (Manual & Pneumatic)	Bellows	●	●	●					
	O-ring	●	●	●					
LARGE ANGLE VALVE (Manual & Pneumatic)	Bellows				●	●	●	●	
	O-ring				●	●	●	●	
Y-INLINE VALVE (Manual & Pneumatic)	Bellows	●	●	●	●				
	O-ring	●	●	●					
Z-INLINE VALVE (Manual & Pneumatic)	Bellows	●	●	●					
	O-ring	●	●	●					
Formed Bellows Seal Stainless Valve (Pneumatic)	Bellows								
ALUMINUM BLOCK VALVES									
Pneumatic All-in-one angle valve	Bellows								
Pneumatic aluminum angle valve	Bellows								
	O-ring								
Manual aluminum angle valve	Bellows								
	O-ring								
BUTTERFLY VALVES									
LV Manual butterfly valve	O-ring								
HV Manual butterfly valve	O-ring								
Pneumatic butterfly valve	O-ring					●			
3-Position butterfly valve	O-ring								
APC butterfly valve	O-ring		●	●	●	●			
BALL VALVES									
Manual ball valves	Teflon-ring								
Pneumatic ball valve	Teflon-ring								
Motor Drive ball valve	Teflon-ring								
CHECK VALVES									
Check Valve									
VENT VALVES									
Vent valve	O-ring	●							
BAKEABLE ALL- METAL VALVES									
Angle valve	Bellows	●	●	●					
Straight through valve	Bellows		●	●					
TEFLON COATING VALVES									
Manual PTFE Angle Valve	O-ring								
Pneumatic PTFE Angle Valve	O-ring								
Pneumatic PTFE Y-inline Valve	O-ring								

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.
- Bakeable to 200ºC intermittently, Viton seal bonnet.
- Simple control via solenoid valve with manual override.
- Stainless steel welded bellows seal.
- Compact size.
- Simple and fast maintenance.
- Manual and electropneumatic actuation or fail safe operators (closes in the event of air pressure loss).

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 : $2x10^{-9}$ mbar.l/s
- Pressure range : $1x10^{-9}$ mbar to 1000 mbar Viton seal bonnet
- Maximum △pressure before opening : 1.2 Bar
- Operating air pressure : 4~6.5 kg/cm^2
- Cycles until service : Bellows Type : 16 to 50~500,000 ; 63 to 150~250,000 ; 200 to 250 ~ 80,000
  : No Bellows Type : 16 to 50~200,000 ; 63 to 250~100,000 (Depend on O'ring Condition)
  (No Bellows Type Suggest to install in vertical orientation)

- Bake-out limitation :

Bake Temperature	Valve body	O-ring bonnet seal	Open ≤ 100°C
			Close ≤ 100°C
		metal bonnet seal	Open ≤ 200°C
			Close ≤ 150°C
	Manual and pneumatic actuator		≤ 80°C

- **Larger or special size available upon request**

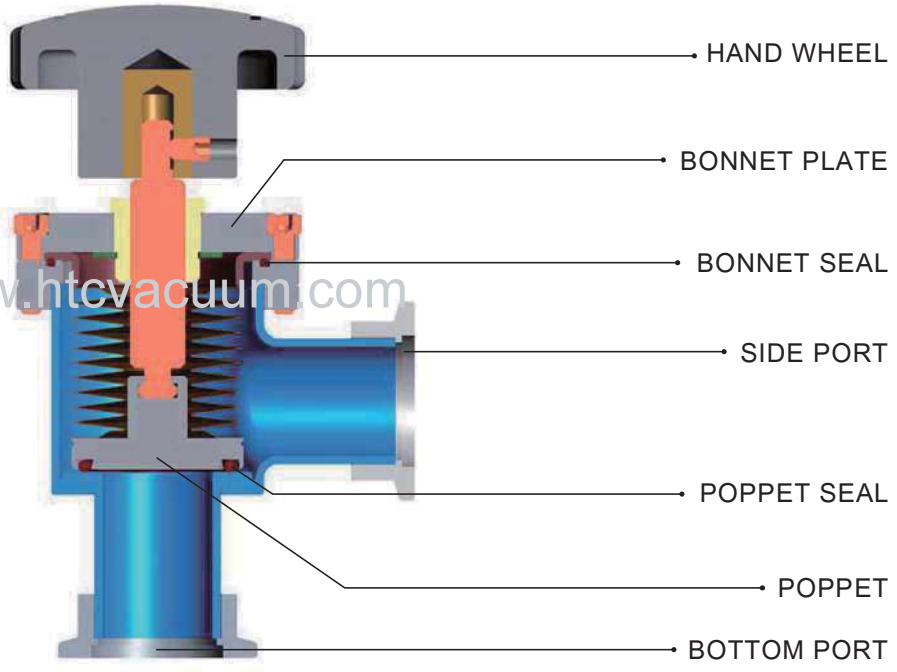
Applications

- 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 150ºC. The standard international KF/ISO configurations and ANSI configurations are used in areas requiring an easily mountable and demountable flange type seal.

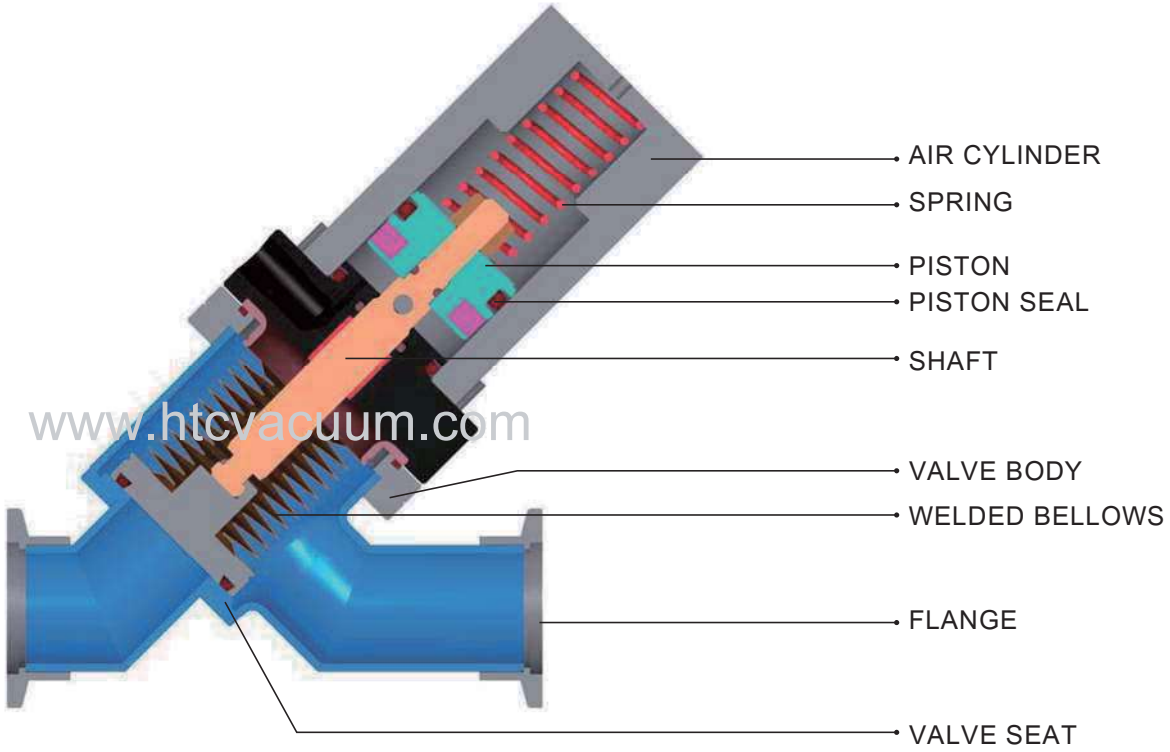
- CF port models are designed for ultra-high vacuum applications where the vacuum pressure approximates 10^{-10} torr and bake-out temperatures do not exceed 200ºC. These valves are used in applications during an OFHC copper gasket rather the conventional Viton O'ring because of higher bake-out temperatures, lower vacuum pressures, (minimal outgassing) and reduced permeability. They are also commonly used in applications requiring a more permanent seal.

Dimension in mm unless otherwise noted

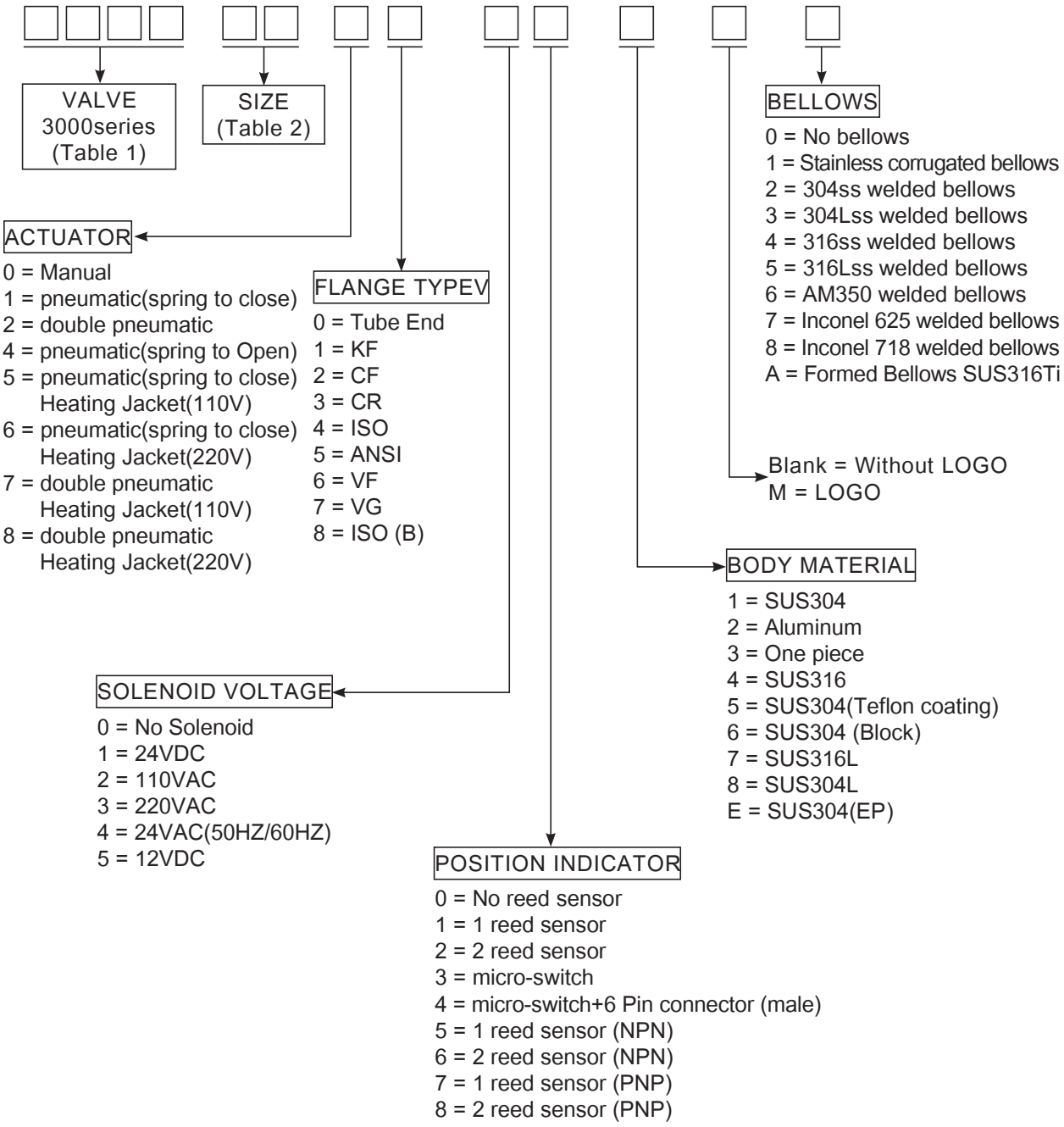
Manually Operated Angle Valve



Pneumatically Actuated Y-In-Line Valve



Ordering Information



Dimension in mm unless otherwise noted

Table1 Valve 3000 Series

	VALVE	U.S.A.	Series code
Angle Valve 3001-3009	VITON POPPET	BONNET SEAL	3001
	FFKM POPPET	BONNET SEAL	3003
	FFKM POPPET	METAL BONNET SEAL	3004
	BAKEABLE ALL-METAL		3005
	VITON POPPET	METAL BONNET SEAL	3006
	Teflon Coating-VITON POPPET	BONNET SEAL	3007
	Teflon Coating- FFKM POPPET	BONNET SEAL	3008
High Cycle Angle valve 3011-3019	VITON POPPET	BONNET SEAL	3011
Z-Inline Valve 3021-3039	VITON POPPET	BONNET SEAL	3021
	FFKM POPPET	BONNET SEAL	3023
	FFKM POPPET	METAL BONNET SEAL	3024
	BAKEABLE ALL-METAL		3025
	VITON POPPET	BONNET SEAL	3026
	Teflon Coating-VITON POPPET	BONNET SEAL	3027
	Teflon Coating- FFKM POPPET	BONNET SEAL	3028
High Cycle Z-Inline valve 3031-3039	VITON POPPET	BONNET SEAL	3031
Y-Inline Valve 3041-3049	VITON POPPET	BONNET SEAL	3041
	FFKM POPPET	BONNET SEAL	3043
	FFKM POPPET	METAL BONNET SEAL	3044
	BAKEABLE ALL-METAL		3045
	VITON POPPET	METAL BONNET SEAL	3046
	Teflon Coating-VITON POPPET	BONNET SEAL	3047
	Teflon Coating- FFKM POPPET	BONNET SEAL	3048
High Cycle Y-Inline valve 3051-3059	VITON POPPET	BONNET SEAL	3051
Tee Valve 3061-3069	VITON POPPET	BONNET SEAL	3061
	FFKM POPPET	BONNET SEAL	3063
	FFKM POPPET	METAL BONNET SEAL	3064
	BAKEABLE ALL-METAL		3065
	VITON POPPET	METAL BONNET SEAL	3066
	Teflon Coating-VITON POPPET	BONNET SEAL	3067
	Teflon Coating- FFKM POPPET	BONNET SEAL	3068
Straight-Through 3071-3079	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
	Teflon Coating-VITON POPPET	BONNET SEAL	3077
	Teflon Coating- FFKM POPPET	BONNET SEAL	3078
TWO STAGE 3501-3509	VITON POPPET	BONNET SEAL	3501

Table 1. Continuous

	VALVE	U.S.A.	Series code
Angle Valve 3101-3109	VITON POPPET	BONNET SEAL	3101
	FFKM POPPET	BONNET SEAL	3103
	FFKM POPPET	METAL BONNET SEAL	3104
	BAKEABLE ALL-METAL		3105
	VITON POPPET	METAL BONNET SEAL	3106
	Teflon Coating-VITON POPPET	BONNET SEAL	3107
	Teflon Coating- FFKM POPPET	BONNET SEAL	3108
High Cycle Angle valve 3111-3119	VITON POPPET	BONNET SEAL	3111
Z-Inline Valve 3121-3129	VITON POPPET	BONNET SEAL	3121
	FFKM POPPET	BONNET SEAL	3123
	FFKM POPPET	METAL BONNET SEAL	3124
	BAKEABLE ALL-METAL		3125
	VITON POPPET	BONNET SEAL	3126
	Teflon Coating-VITON POPPET	BONNET SEAL	3127
	Teflon Coating- FFKM POPPET	BONNET SEAL	3128
High Cycle Z-Inline valve 3131-3139	VITON POPPET	BONNET SEAL	3131
Y-Inline Valve 3141-3159	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
	Teflon Coating-VITON POPPET	BONNET SEAL	3147
	Teflon Coating- FFKM POPPET	BONNET SEAL	3148
High Cycle Y-Inline valve 3111-3119	VITON POPPET	BONNET SEAL	3151
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
	Teflon Coating-VITON POPPET	BONNET SEAL	3167
	Teflon Coating- FFKM POPPET	BONNET SEAL	3168
Straight-Through 3171-3179	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
	Teflon Coating-VITON POPPET	BONNET SEAL	3177
	Teflon Coating- FFKM POPPET	BONNET SEAL	3178

Dimension in mm unless otherwise noted

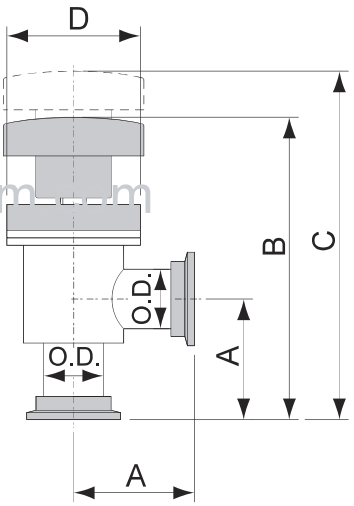
Table 2. Dimension

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	1/14"	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")00
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"	E5	45				
26	18"	EM	57				
27	20"	D8	28				
28	22"						
29	24"						

VACUUM POPPET VALVES - ANGLE VALVE

Manually Operated with Bellows

KF Flange



Features

- Stainless steel body surface treatment : below 4”puff polishing
- 3/4~2 inch(19.05~50.8mm) port ODs.
- Viton Seal Bonnet : 10^{-9} mbar vacuum rating KF flange

Available Area : U.S.A.

Model No.	A"(mm)	B"(mm)	C"(mm)	D"(mm)	O.D."(mm)	Parts No.
AVB-KF16-M	2.15"(54.6)	5.41"(136.5)	6.15"(156)	2.24"(56.8)	0.75"(19.05)	300109010016
AVB-KF25-M	2.03"(51.6)	5.13"(130.2)	5.89"(149.7)	2.24"(56.8)	1.00"(25.4)	300111010016
AVB-KF40-M	2.40"(61)	6.43"(163.5)	7.48"(196)	2.98"(75.8)	1.50"(38.1)	300113010016
AVB-KF50-M	3.40"(86.3)	8.15"(207)	9.91"(251.7)	3.48"(88.4)	2.00"(50.8)	300114010016

Note: Dimension in inch(mm) unless otherwise noted

Available Area : Europe

Special Sizes Available Upon Request

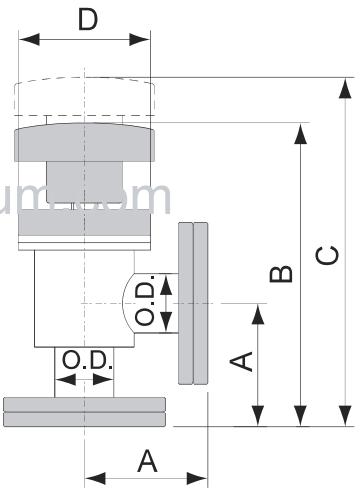
Model No.	A	B	C	D	O.D.	Parts No.
AVB-KF16-M-E	40	121.9	141.5	56.8	19.05	310109010016
AVB-KF25-M-E	50	128.6	148.1	56.8	25.4	310111010016
AVB-KF40-M-E	65	167.5	200	75.8	38.1	310113010016
AVB-KF50-M-E	70	190.5	235.5	88.4	50.8	310114010016

Dimension in mm unless otherwise noted

VACUUM POPPET VALVES - ANGLE VALVE

Manually Operated with Bellows

CF Flange



Features

- Stainless steel body surface treatment : below 4”puff polishing
- 3/4~3 inch(19.05~76.2mm) port ODs.
- Viton Seal Bonnet : 10^{-9} mbar vacuum rating CF flange

Available Area : U.S.A.

Model No.	A"(mm)	B"(mm)	C"(mm)	D"(mm)	O.D."(mm)	Parts No.
AVB-CR16-M	2.05"(63.5)	5.72"(145.4)	6.50"(164.9)	2.24"(56.8)	0.75"(19.05)	300109030016
AVB-CR35-M	2.46"(62.5)	6.50"(165)	7.78"(197.5)	2.98"(75.8)	1.50"(38.1)	300113030016
AVB-CR63-M	3.37"(85.7)	8.75"(222.2)	10.42"(264.6)	3.92"(99.5)	2.50"(63.5)	300115030016

Note: Dimension in inch(mm) unless otherwise noted

Available Area : Europe

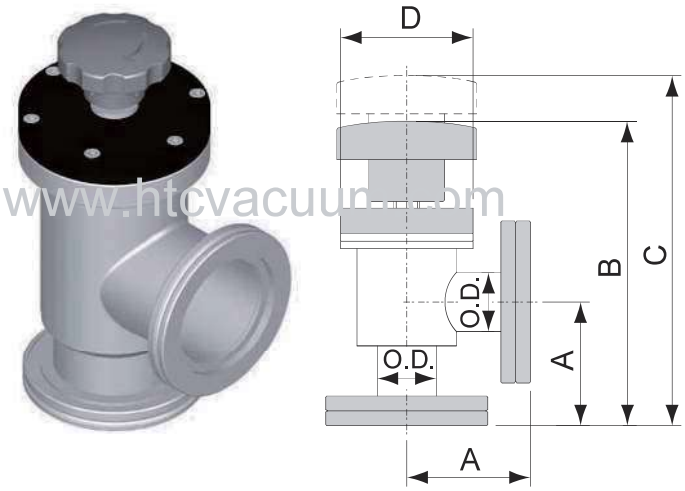
Special Sizes Available Upon Request

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

VACUUM POPPET VALVES - ANGLE VALVE

Manually Operated with Bellows

ISO Flange



Features

- Stainless steel body surface treatment : below 4”puff polishing
- 2.5~3 inch(63.5~76.2mm) port ODs.
- Viton Seal Bonnet : 10^{-9} mbar vacuum rating ISO flange

Available Area : U.S.A.

Model No.	A"(mm)	B"(mm)	C"(mm)	D"(mm)	O.D."(mm)	Parts No.
AVB-ISO63-M	3.26"(82.8)	8.63"(219.3)	10.30"(261.7)	3.92"(99.5)	2.50"(63.5)	300115040016
AVB-ISO80-M	3.51"(89.1)	8.95"(227.4)	10.83"(275)	4.49"(114)	3.00"(76.2)	300116040016

Note: Dimension in inch(mm) unless otherwise noted

Available Area : Europe

Special Sizes Available Upon Request

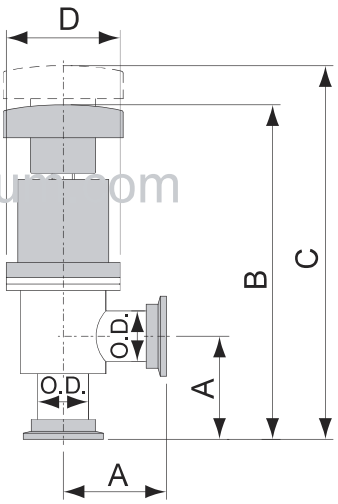
Model No.	A	B	C	D	O.D.	Parts No.
AVB-ISO63-M-E	88	224.5	266.9	99.5	63.5	310115040016
AVB-ISO80-M-E	98	236.3	283.9	114	76.2	310116040016

Dimension in mm unless otherwise noted

VACUUM POPPET VALVES - ANGLE VALVE

Manually Operated without Bellows

KF Flange



Features

- Stainless steel body surface treatment : below 4”puff polishing
- Viton Seal Bonnet : 10^{-9} mbar vacuum rating KF flange

Available Area : U.S.A.

Model No.	A"(mm)	B"(mm)	C"(mm)	D"(mm)	O.D. "(mm)	Parts No.
AV-KF16-M	2.15"(54.6)	6.59"(167.5)	7.22"(183.3)	2.24"(56.8)	0.75"(19.05)	300109010010
AV-KF25-M	2.03"(51.6)	6.35"(161.2)	6.97"(177)	2.24"(56.8)	1.00"(25.4)	300111010010
AV-KF40-M	2.40"(61)	7.50"(190.5)	8.78"(223)	2.98"(75.8)	1.50"(38.1)	300113010010
AV-KF50-M	3.40"(86.3)	9.80"(249)	11.39"(291.6)	3.48"(88.4)	2.00"(50.8)	300114010010

Note: Dimension in inch(mm) unless otherwise noted

Available Area : Europe

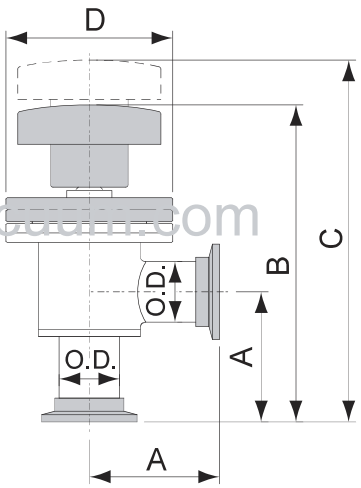
Special Sizes Available Upon Request

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

VACUUM POPPET VALVES - ANGLE VALVE

Manually Operated Copper Seal Bonnet with Bellows

KF Flange



Features

- Stainless steel body surface treatment : below 4”puff polishing
- Bakeable to 150°C
- Metal Seal Bonnet : 10^{-9} mbar vacuum rating KF flange

Available Area : U.S.A.

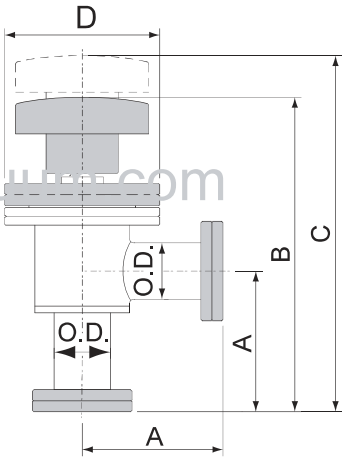
Model No.	A"(mm)	B"(mm)	C"(mm)	D"(mm)	O.D. "(mm)	Parts No.
AVB-CU-KF16-M	2.15"(54.6)	5.24"(136.5)	6.01"(157.4)	2.75"(70)	0.75"(19.05)	300609010016
AVB-CU-KF25-M	2.03"(51.6)	5.11"(130.2)	5.89"(151.1)	2.75"(70)	1.00"(25.4)	300611010016
AVB-CU-KF40-M	2.40"(61)	6.62"(163.5)	7.85"(196.5)	3.33"(84.6)	1.50"(38.1)	300613010016
AVB-CU-KF50-M	3.40"(86.3)	8.14"(207)	9.95"(252.8)	4.47"(113.6)	2.00"(50.8)	300614010016

Note: Dimension in inch(mm) unless otherwise noted

VACUUM POPPET VALVES - ANGLE VALVE

Manually Operated Copper Seal Bonnet with Bellows

CF Flange



Features

- Stainless steel body surface treatment : below 4”puff polishing
- Bakeable to 200°C(open),150°C(close)
- Metal Seal Bonnet : approximate 10^{-10} mbar vacuum rating CF flange

Available Area : U.S.A.

Model No.	A"(mm)	B"(mm)	C"(mm)	D"(mm)	O.D. "(mm)	Parts No.
AVB-CU-CR16-M	2.50"(63.5)	5.58"(145.4)	6.36"(166.3)	2.75"(70)	0.75"(19.05)	300609030016
AVB-CU-CR35-M	2.45"(62.5)	6.68"(165)	7.90"(198)	3.33"(84.6)	1.50"(38.1)	300613030016
AVB-CU-CR63-M	3.38"(85.7)	8.72"(222.2)	10.42"(264.7)	4.62"(117.4)	2.50"(63.5)	300615030016

Note: Dimension in inch(mm) unless otherwise noted

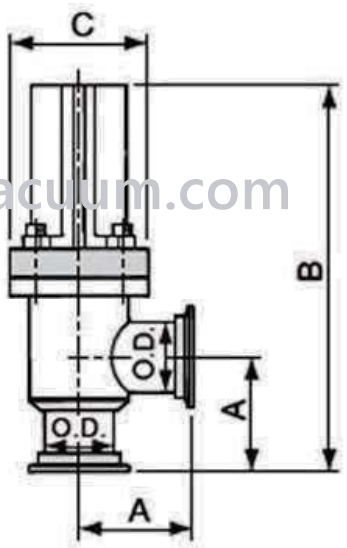
Dimension in mm unless otherwise noted

VACUUM POPPET VALVES - ANGLE VALVE

Pneumatically Actuated with Bellows

Single-Acting, air to open, spring to close

KF Flange



Features

- Stainless steel body surface treatment : below 4”puff polishing
- 3/4~2 inch(19.05~50.8mm) port ODs.
- 4~6.5 kg/cm^2 operating air pressure.
- Viton Seal Bonnet : 10^{-9} mbar vacuum rating KF flange

Available Area : U.S.A.

Model No.	A"(mm)	B"(mm)	C"(mm)	O.D."(mm)	Parts No.
AVB-KF16-P	2.15"(54.6)	6.78"(172.2)	2.24"(56.8)	0.75"(19.05)	300109110016
AVB-KF25-P	2.03"(51.6)	6.53"(165.9)	2.24"(56.8)	1.00"(25.4)	300111110016
AVB-KF40-P	2.40"(61)	8.28"(210.2)	2.98"(75.8)	1.50"(38.1)	300113110016
AVB-KF50-P	3.40"(86.3)	11.08"(267.6)	3.48"(88.4)	2.00"(50.8)	300114110016

Note: Dimension in inch(mm) unless otherwise noted

Available Area : Europe

Special Sizes Available Upon Request

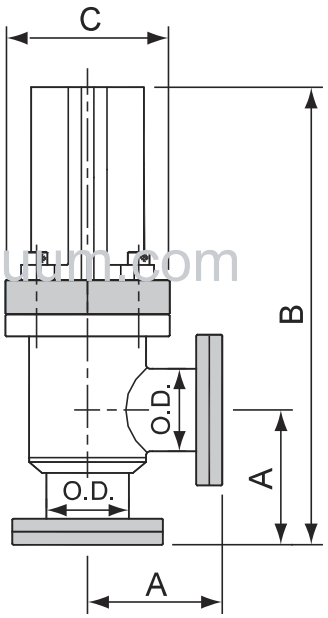
Model No.	A	B	C	O.D.	Parts No.
AVB-KF16-P-E	40	157.6	56.8	19.05	310109110016
AVB-KF25-P-E	50	164.3	56.8	25.4	310111110016
AVB-KF40-P-E	65	214.2	75.8	38.1	310113110016
AVB-KF50-P-E	70	251.3	88.4	50.8	310114110016

VACUUM POPPET VALVES - ANGLE VALVE

Pneumatically Actuated with Bellows

Single-Acting, air to open, spring to close

CF Flange



Features

- Stainless steel body surface treatment : below 4”puff polishing
- 3/4~3 inch(19.05~76.2mm) port ODs.
- 4~6.5 kg/cm^2 operating air pressure.
- Viton Seal Bonnet : 10^{-9} mbar vacuum rating CF flange

Available Area : U.S.A.

Model No.	A"(mm)	B"(mm)	C"(mm)	O.D."(mm)	Parts No.
AVB-CR16-P	2.50"(63.5)	7.13"(181.1)	2.24"(56.8)	0.75"(19.05)	300109130016
AVB-CR35-P	2.46"(62.5)	8.33"(211.7)	2.98"(75.8)	1.50"(38.1)	300113130016

Note: Dimension in inch(mm) unless otherwise noted

Available Area : Europe

Special Sizes Available Upon Request

Model No.	A	B	C	O.D.	Parts No.
AVB-CR16-P-E	38	155.6	56.8	19.05	310109130016
AVB-CR35-P-E	63	212.2	75.8	38.1	310113130016

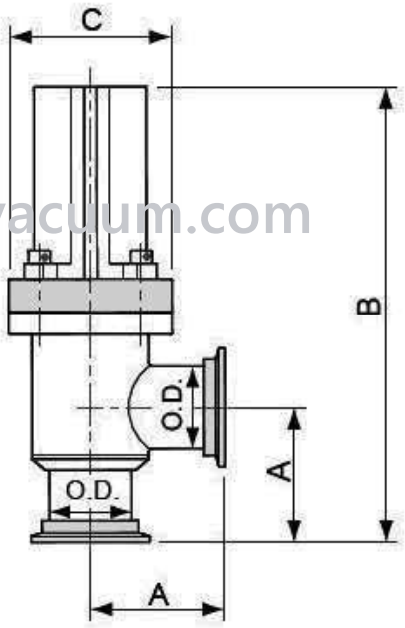
Dimension in mm unless otherwise noted

VACUUM POPPET VALVES - ANGLE VALVE

Pneumatically Actuated without Bellows

Single-Acting, air to open, spring to close

KF Flange



Features

- Stainless steel body surface treatment : below 4”puff polishing
- 3/4~2 inch(19.05~50.8mm) port ODs.
- 4~6.5 kg/cm^2 operating air pressure.
- Viton Seal Bonnet : 10^{-9} mbar vacuum rating KF flange

Available Area : U.S.A.

Model No.	A"(mm)	B"(mm)	C"(mm)	O.D."(mm)	Parts No.
AV-KF16-P	2.15"(54.6)	6.77"(172)	2.24"(56.8)	0.75"(19.05)	300109110010
AV-KF25-P	2.03"(51.6)	6.52"(165.7)	2.24"(56.8)	1.00"(25.4)	300111110010
AV-KF40-P	2.40"(61)	8.28"(210)	2.98"(75.8)	1.50"(38.1)	300113110010
AV-KF50-P	3.40"(86.3)	11.08"(267.6)	3.48"(88.4)	2.00"(50.8)	300114110010

Note: Dimension in inch(mm) unless otherwise noted

Available Area : Europe

Special Sizes Available Upon Request

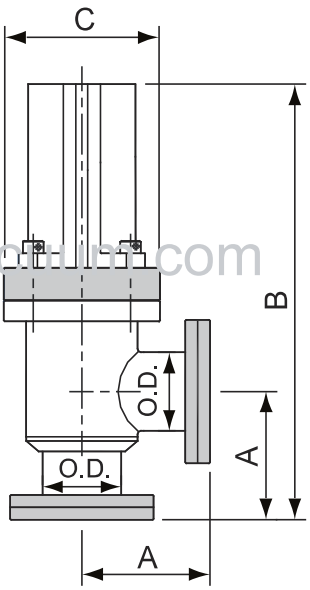
Model No.	A	B	C	O.D.	Parts No.
AV-KF16-P-E	40	157.4	56.8	19.05	310109110010
AV-KF25-P-E	50	164.1	56.8	25.4	310111110010
AV-KF40-P-E	65	214	75.8	38.1	310113110010
AV-KF50-P-E	70	251.3	88.4	50.8	310114110010

VACUUM POPPET VALVES - ANGLE VALVE

Pneumatically Actuated without Bellows

Single-Acting, air to open, spring to close

CF Flange



Features

- Stainless steel body surface treatment : below 4”puff polishing
- 3/4~2 inch(19.05~76.2mm) port ODs.
- 4~6.5 kg/cm^2 operating air pressure.
- Viton Seal Bonnet : 10^{-9} mbar vacuum rating CF flange

Available Area : U.S.A.

Model No.	A"(mm)	B"(mm)	C"(mm)	O.D."(mm)	Parts No.
AV-CR16-P	2.50"(63.5)	7.12"(180.9)	2.24"(56.8)	0.75"(19.05)	300109130010
AV-CR35-P	2.46"(62.5)	8.33"(211.5)	2.98"(75.8)	1.50"(38.1)	300113130010

Note: Dimension in inch(mm) unless otherwise noted

Available Area : Europe

Special Sizes Available Upon Request

Model No.	A	B	C	O.D.	Parts No.
AV-CR16-P-E	38	155.4	56.8	19.05	310109130010
AV-CR35-P-E	63	212	75.8	38.1	310113130010

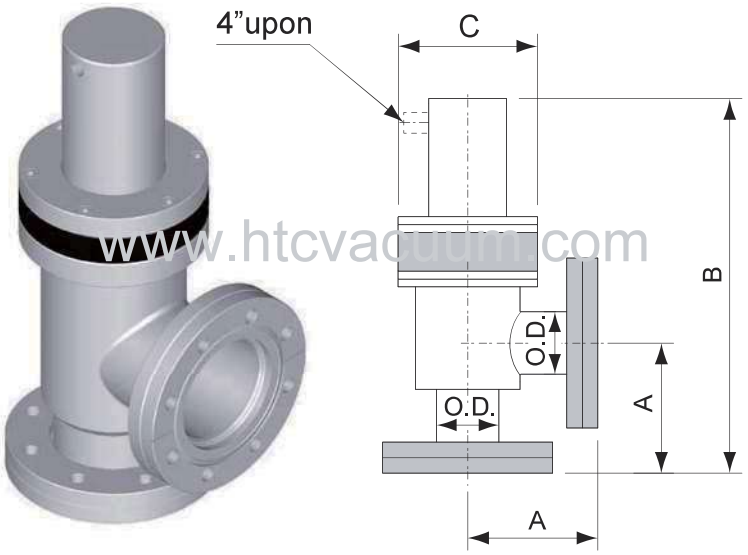
Dimension in mm unless otherwise noted

VACUUM POPPET VALVES - ANGLE VALVE

Pneumatically Actuated with Bellows

Double-Acting, air to open, air to close

CF Flange



Features

- Stainless steel body surface treatment : below 4”puff polishing
- 2.5 inch (63.5mm) port ODs.
- 4~6.5 kg/cm^2 operating air pressure.
- Viton Seal Bonnet : 10^{-9} mbar vacuum rating CF flange

Available Area : U.S.A.

Model No.	A"(mm)	B"(mm)	C"(mm)	O.D."(mm)	Parts No.
AVB-CR63-P2	3.37"(85.7)	10.81"(274.6)	3.92"(99.5)	2.50"(63.5)	300115230016

Note: Dimension in inch(mm) unless otherwise noted

Available Area : Europe

Special Sizes Available Upon Request

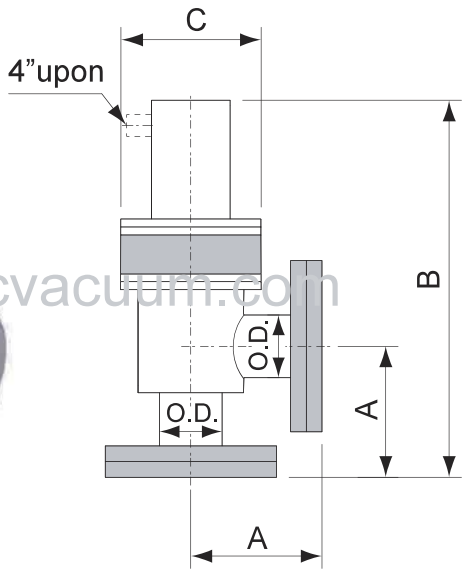
Model No.	A	B	C	O.D.	Parts No.
AVB-CR63-P2-E	105	293.9	99.5	63.5	310115230016

VACUUM POPPET VALVES - ANGLE VALVE

Pneumatically Actuated with Bellows

Double-Acting, air to open, air to close

ISO Flange



Features

- Stainless steel body surface treatment :
  1. below 4” puff polishing
  2. Above 4”(include 4”) sand blasting
- 2.5~3 inch (63.5~76.2mm) port ODs.
- 4~6.5 kg/cm2 operating air pressure.
- Viton Seal Bonnet : 10^{-9} mbar vacuum rating ISO flange

Available Area : U.S.A.

Model No.	A"(mm)	B"(mm)	C"(mm)	O.D."(mm)	Parts No.
AVB-IS063-P2	3.26"(82.8)	10.70"(271.7)	3.92"(99.5)	2.50"(63.5)	300115240016
AVB-IS080-P2	3.51"(89.1)	10.95"(278)	4.49"(114)	3.00"(76.2)	300116240016

Note: Dimension in inch(mm) unless otherwise noted

Available Area : Europe

Special Sizes Available Upon Request

Model No.	A	B	C	O.D.	Parts No.
AVB-ISO63-P2-E	88	276.9	99.5	63.5	310115240016
AVB-ISO80-P2-E	98	286.9	114	76.2	310116240016

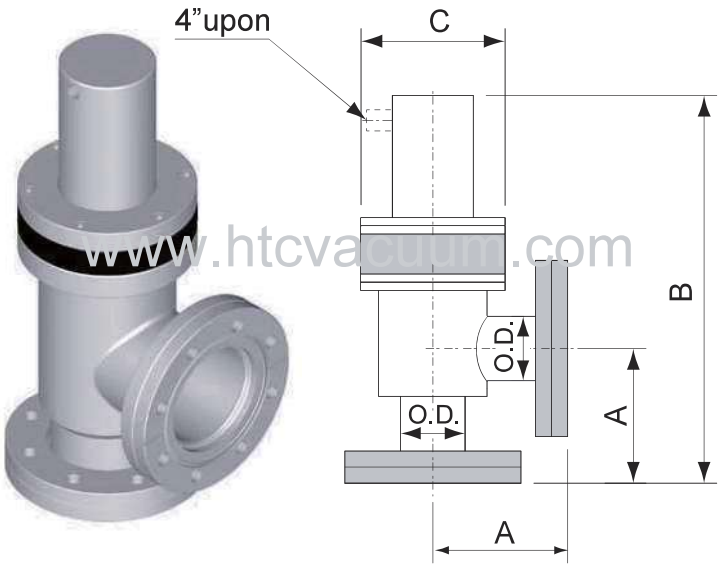
Dimension in mm unless otherwise noted

VACUUM POPPET VALVES - ANGLE VALVE

Pneumatically Actuated without Bellows

Double-Acting, air to open, air to close

CF Flange



Features

- Stainless steel body surface treatment : below 4”puff polishing
- 2.5 inch (63.5mm) port ODs.
- 4~6.5 kg/cm^2 operating air pressure.
- Viton Seal Bonnet : 10^{-9} mbar vacuum rating CF flange

Available Area : U.S.A.

Model No.	A"(mm)	B"(mm)	C"(mm)	O.D."(mm)	Parts No.
AV-CR63-P2	3.37"(85.7)	10.81"(274.6)	3.92"(99.5)	2.50"(63.5)	300115230010

Note: Dimension in inch(mm) unless otherwise noted

Available Area : Europe

Special Sizes Available Upon Request

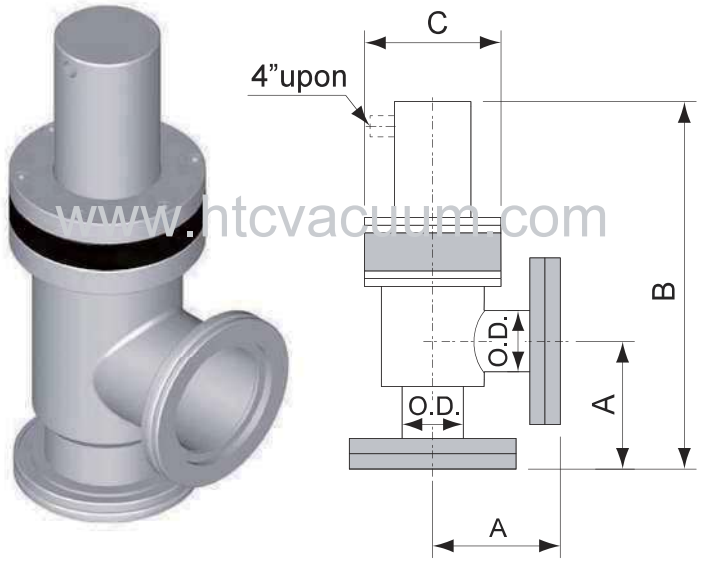
Model No.	A	B	C	O.D.	Parts No.
AV-CR63-P2-E	105	293.9	99.5	63.5	310115230010

VACUUM POPPET VALVES - ANGLE VALVE

Pneumatically Actuated without Bellows

Double-Acting, air to open, air to close

ISO Flange



Features

- Stainless steel body surface treatment : below 4”puff polishing
- 2.5~3 inch(63.5~76.2mm) port ODs.
- 4~6.5 kg/cm^2 operating air pressure.
- Viton Seal Bonnet : 10^{-9} mbar vacuum rating ISO flange

Available Area : U.S.A.

Model No.	A"(mm)	B"(mm)	C"(mm)	O.D."(mm)	Parts No.
AV-ISO63-P2	3.26"(82.8)	10.70"(271.7)	3.92"(99.5)	2.50"(63.5)	300115240010
AV-ISO80-P2	3.51"(89.1)	10.95"(278)	4.49"(114)	3.00"(76.2)	300116240010

Note: Dimension in inch(mm) unless otherwise noted

Available Area : Europe

Special Sizes Available Upon Request

Model No.	A	B	C	O.D.	Parts No.
AV-ISO63-P2-E	88	276.9	99.5	63.5	310115240010
AV-ISO80-P2-E	98	286.9	114	76.2	310116240010
AV-ISO100-P2-E	108	346.6	151.6	101.6	310118240010

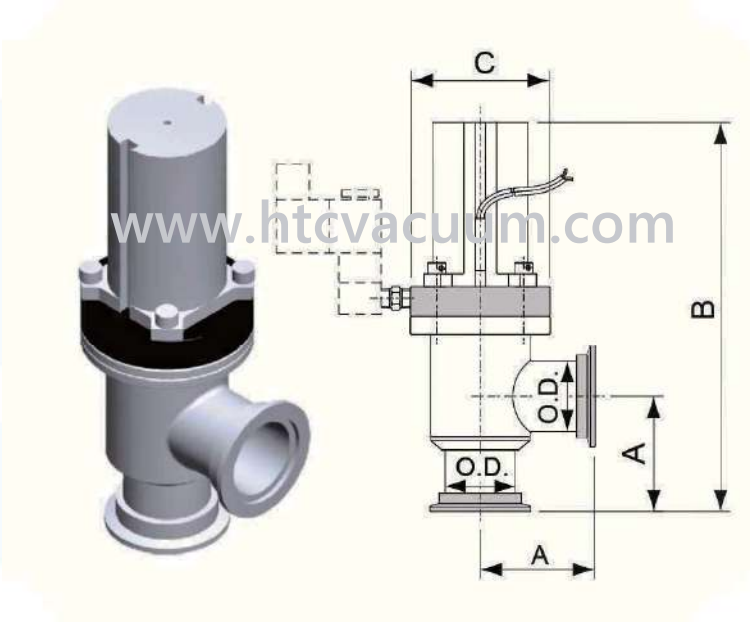
Dimension in mm unless otherwise noted

VACUUM POPPET VALVES - ANGLE VALVE

Pneumatically Actuated with Bellows Attached Reed Sensor

Single-Acting, air to open, spring to close

KF Flange



Features

- Stainless steel body surface treatment : below 4”puff polishing
- 3/4~2 inch(19.05~50.8mm) port ODs
- 4~6.5 kg/cm^2 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} mbar vacuum rating KF flange.

Available Area : U.S.A.

Model No.	A"(mm)	B"(mm)	C"(mm)	O.D."(mm)	Parts No.
AVBS-KF16-P	2.15"(54.6)	6.78"(172.2)	2.24"(56.8)	0.75"(19.05)	300109110216
AVBS-KF25-P	2.03"(51.6)	6.53"(165.9)	2.24"(56.8)	1.00"(25.4)	300111110216
AVBS-KF40-P	2.40"(61)	8.28"(210.2)	2.98"(75.8)	1.50"(38.1)	300113110216
AVBS-KF50-P	3.40"(86.3)	11.08"(267.6)	3.48"(88.4)	2.00"(50.8)	300114110216

Note: Dimension in inch(mm) unless otherwise noted

Available Area : Europe

Special Sizes Available Upon Request

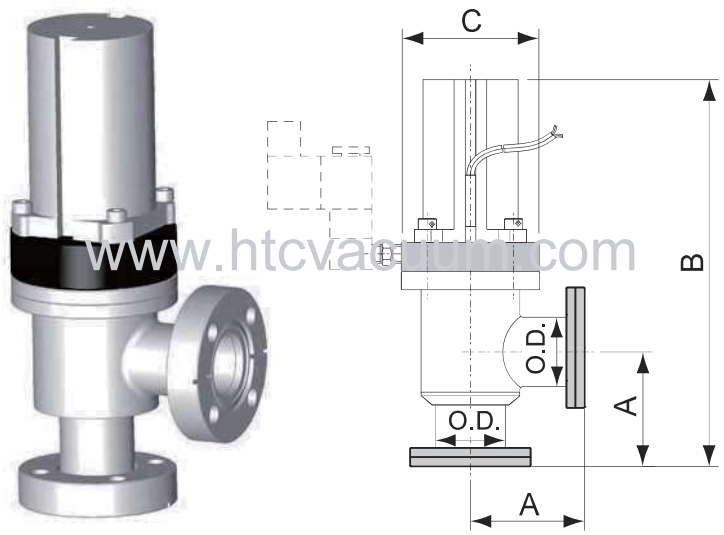
Model No.	A	B	C	O.D.	Parts No.
AVBS-KF16-P-E	40	157.6	56.8	19.05	310109110216
AVBS-KF25-P-E	50	164.3	56.8	25.4	310111110216
AVBS-KF40-P-E	65	214.2	75.8	38.1	310113110216
AVBS-KF50-P-E	70	251.3	88.4	50.8	310114110216

VACUUM POPPET VALVES - ANGLE VALVE

Pneumatically Actuated with Bellows Attached Reed Sensor

Single-Acting, air to open, spring to close

CF Flange



Features

- Stainless steel body surface treatment : below 4”puff polishing
- 3/4~2 inch(19.05~50.8mm) port ODs
- 4~6.5 kg/cm^2 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} mbar vacuum rating CF flange.

Available Area : U.S.A.

Model No.	A"(mm)	B"(mm)	C"(mm)	O.D."(mm)	Parts No.
AVBS-CR16-P	2.50"(63.5)	7.13"(181.1)	2.24"(56.8)	0.75"(19.05)	300109130216
AVBS-CR35-P	2.46"(62.5)	8.33"(211.7)	2.98"(75.8)	1.50"(38.1)	300113130216

Note: Dimension in inch(mm) unless otherwise noted

Available Area : Europe

Special Sizes Available Upon Request

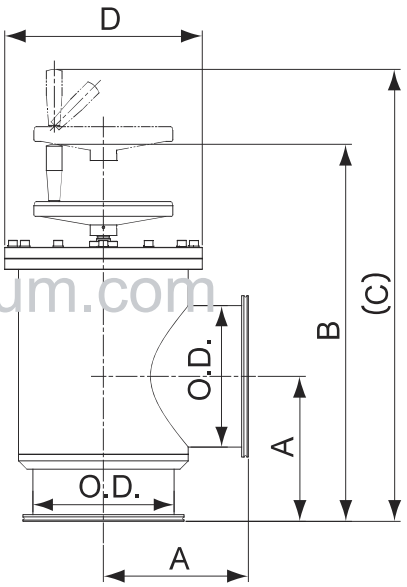
Model No.	A	B	C	O.D.	Parts No.
AVBS-CR16-P-E	38	155.6	56.8	19.05	310109130216
AVBS-CR35-P-E	63	212.2	75.8	38.1	310113130216

Dimension in mm unless otherwise noted

LARGE ANGLE VALVE

Manually Operated with Bellows

ISO Flange



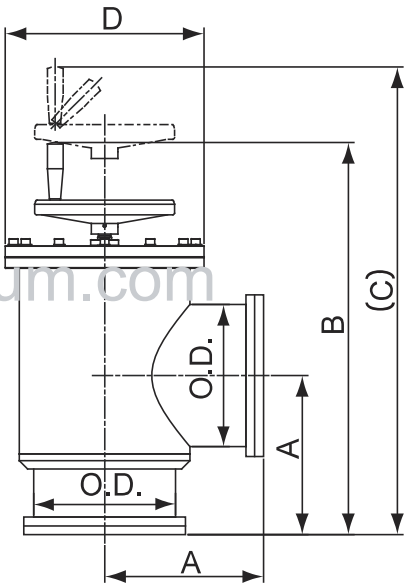
Available Area : U.S.A.

Model No.	A	B	C	D	O.D.	Parts No.
AVB-ISO100-M	113.5	340.3	404.3	151.6	101.6	300118040016
AVB-ISO160-M	159	437.5	512.5	240	152.4	300120040016
AVB-ISO200-M	209.5	543.6	673.6	250	203.2	300121040016
AVB-ISO250-M	260.6	672.7	802.7	325	254	300122040016

LARGE ANGLE VALVE

Manually Operated with Bellows

CF Flange



Available Area : U.S.A.

Model No.	A	B	C	D	O.D.	Parts No.
AVB-CR100-M	118	344.8	408.8	151.6	101.6	300118030016
AVB-CR150-M	165.1	443.6	518.6	240	152.4	300120030016
AVB-CR200-M	215.6	549.7	679.7	250	203.2	300121030016
AVB-CR250-M	266.7	678. 8	808.8	325	254	300122030016

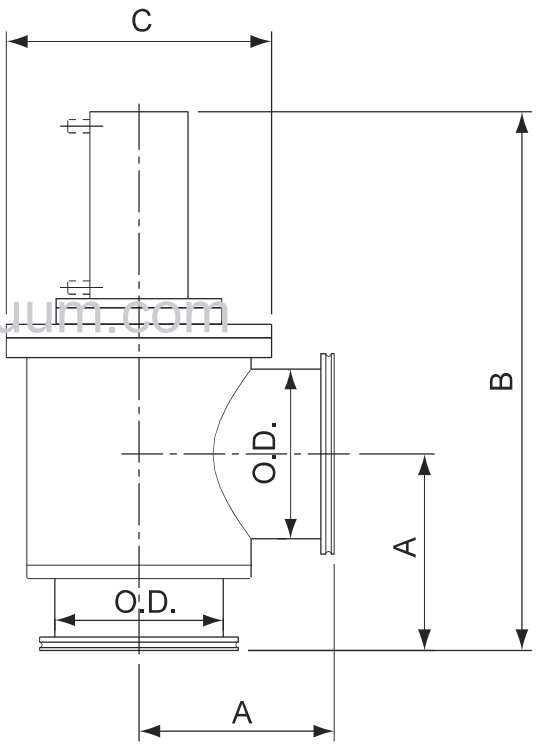
Dimension in mm unless otherwise noted

LARGE ANGLE VALVE

Pneumatically Actuated with Bellows

Double-Acting, air to open, air to close

ISO Flange



Available Area : U.S.A.

Model No.	A	B	C	O.D.	Parts No.
AVB-ISO100-P2	113.5	352.1	151.6	101.6	300118240016
AVB-ISO160-P2	159	432.5	240	152.4	300120240016
AVB-ISO200-P2	209.5	623.6	250	203.2	300121240016
AVB-ISO250-P2	260.6	641.5	325	254	300122240016

Available Area : Europe

Model No.	A	B	C	O.D.	Parts No.
AVB-ISO100-P2-E	108	346.6	151.6	101.6	310118240016
AVB-ISO160-P2-E	138	411.5	240	152.4	310120240016

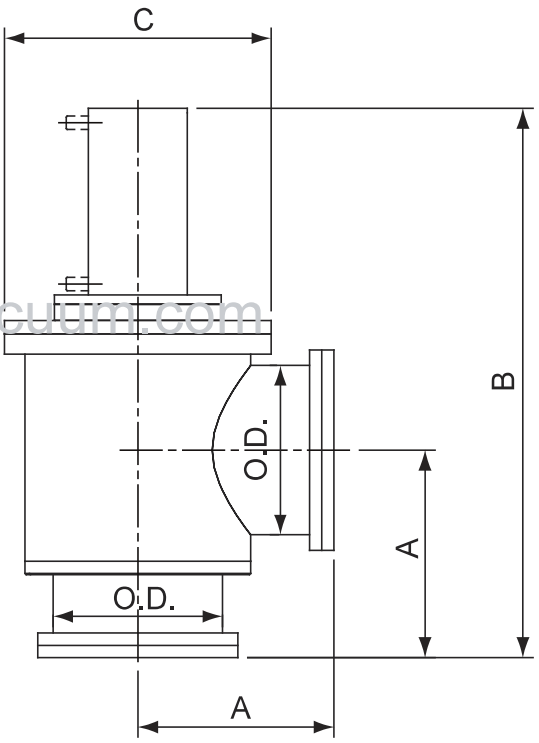
Dimension in mm unless otherwise noted

LARGE ANGLE VALVE

Pneumatically Actuated with Bellows

Double-Acting, air to open, air to close

CF Flange



Available Area : U.S.A.

Model No.	A	B	C	O.D.	Parts No.
AVB-CR100-P2	118	356.6	151.6	101.6	300118230016
AVB-CR150-P2	165.1	438.6	240	152.4	300120230016
AVB-CR200-P2	215.6	629.7	250	203.2	300121230016
AVB-CR250-P2	266.7	647.6	325	254	300122230016

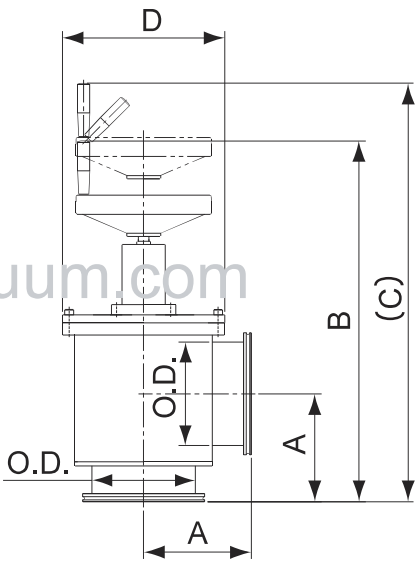
Available Area : Europe

Model No.	A	B	C	O.D.	Parts No.
AVB-CR100-P2-E	135	373.6	151.6	101.6	310118230016

LARGE ANGLE VALVE

Manually Operated without Bellows

ISO Flange



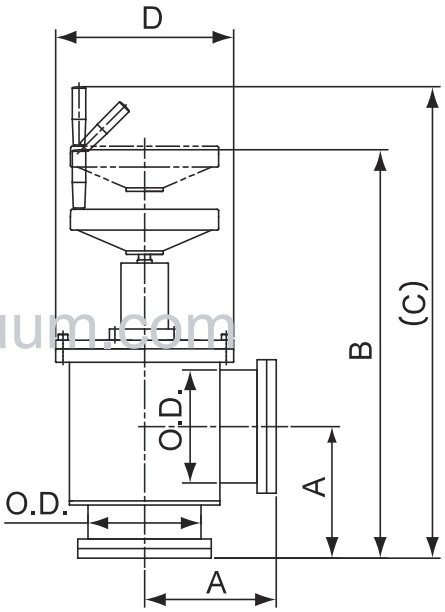
Available Area : U.S.A.

Model No.	A	B	C	D	O.D.	Parts No.
AV-ISO100-M	113.5	419.3	497.3	151.6	101.6	300118040010
AV-ISO160-M	159	531.4	606.4	240	152.4	300120040010
AV-ISO200-M	209.5	668.1	798.1	250	203.2	300121040010

LARGE ANGLE VALVE

Manually Operated without Bellows

CF Flange



Available Area : U.S.A.

Model No.	A	B	C	D	O.D.	Parts No.
AV-CR100-M	118	423.8	501.8	151.6	101.6	300118030010
AV-CR150-M	165.1	537.5	612.5	240	152.4	300120030010
AV-CR200-M	215.6	674.2	804.2	250	203.2	300121030010

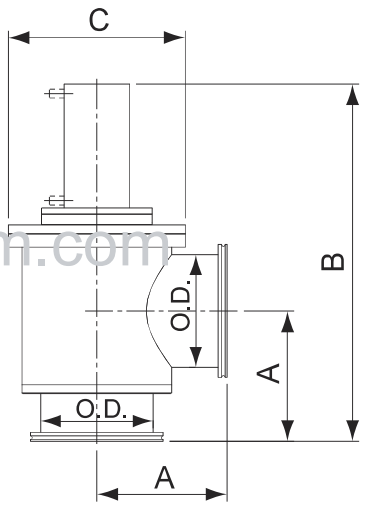
Dimension in mm unless otherwise noted

LARGE ANGLE VALVE

Pneumatically Actuated without Bellows

Double-Acting, air to open, air to close

ISO Flange



Available Area : U.S.A.

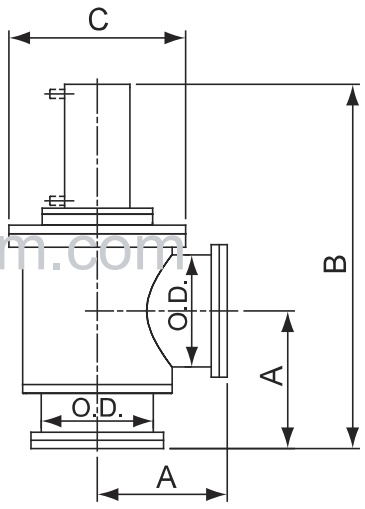
Model No.	A	B	C	O.D.	Parts No.
AV-ISO100-P2	113.5	352.1	151.6	101.6	300118240010
AV-ISO160-P2	159	432.5	240	152.4	300120240010
AV-ISO200-P2	209.5	623.6	250	203.2	300121240010
AV-ISO250-P2	260.6	641.5	325	254	300122240010

LARGE ANGLE VALVE

Pneumatically Actuated without Bellows

Double-Acting, air to open, air to close

CF Flange



Available Area : U.S.A.

Model No.	A	B	C	O.D.	Parts No.
AV-CR100-P2	118	356.6	151.6	101.6	300118230010
AV-CR150-P2	165.1	438.6	240	152.4	300120230010
AV-CR200-P2	215.6	629.7	250	203.2	300121230010
AV-CR250-P2	266.7	647.6	325	254	300122230010

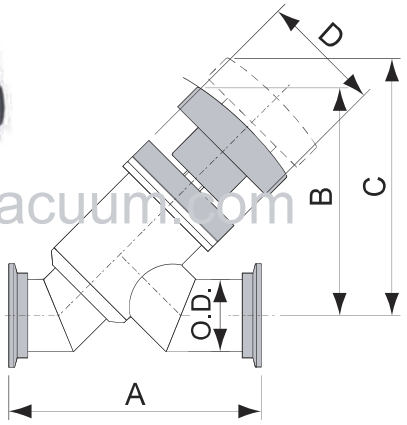
Available Area : Europe

Model No.	A	B	C	O.D.	Parts No.
AV-CR100-P2-E	135	373.6	151.6	101.6	310118230010

Y-INLINE VALVE

Manually Operated with Bellows

KF Flange



Features

- Stainless steel body surface treatment : below 4”puff polishing
- 3/4~2 inch(19.05~50.8mm) port ODs.
- Viton Seal Bonnet : 10^{-9} mbar vacuum rating KF flange

Available Area : U.S.A.

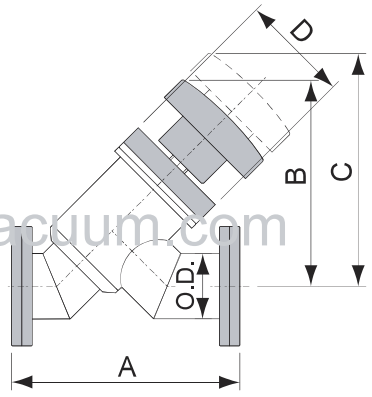
Model No.	A"(mm)	B"(mm)	C"(mm)	D"(mm)	O.D. "(mm)	Parts No.
YVB-KF16-M	4.00"(101.6)	3.89"(98.7)	4.43"(112.5)	2.24"(56.8)	0.75"(19.05)	304109010016
YVB-KF25-M	4.20"(106.8)	3.89"(98.8)	4.43"(112.6)	2.24"(56.8)	1.00"(25.4)	304111010016
YVB-KF40-M	5.12"(130)	4.89"(124.2)	5.80"(147.2)	2.98"(75.8)	1.50"(38.1)	304113010016
YVB-KF50-M	7.00"(177.8)	5.59"(141.9)	6.83"(173.5)	3.48"(88.4)	2.00"(50.8)	304114010016

Note: Dimension in inch(mm) unless otherwise noted

Y-INLINE VALVE

Manually Operated with Bellows

CF Flange



Features

- Stainless steel body surface treatment : below 4”puff polishing
- 3/4~2 inch(19.05~50.8mm) port ODs.
- Viton Seal Bonnet : 10^{-9} mbar vacuum rating CF flange

Available Area : U.S.A.

Model No.	A"(mm)	B"(mm)	C"(mm)	D"(mm)	O.D. "(mm)	Parts No.
YVB-CR16-M	4.7"(119.4)	3.89"(98.7)	4.43"(112.5)	2.24"(56.8)	0.75"(19.05)	304109030016
YVB-CR35-M	5.24"(133)	4.89"(124.2)	5.80"(147.2)	2.98"(75.8)	1.50"(38.1)	304113030016

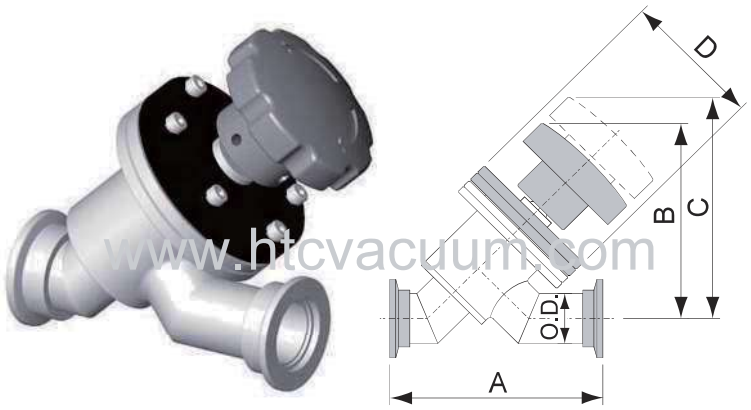
Note: Dimension in inch(mm) unless otherwise noted

Dimension in mm unless otherwise noted

Y-INLINE VALVE

Manually Operated Copper Seal Bonnet with Bellows

KF Flange



Features

- Stainless steel body surface treatment : below 4”puff polishing
- 3/4~2 inch(19.05~50.8mm) port ODs.
- Bakeable to 150°C
- Metal Seal Bonnet : 10^{-9} mbar vacuum rating KF flange

Available Area : U.S.A.

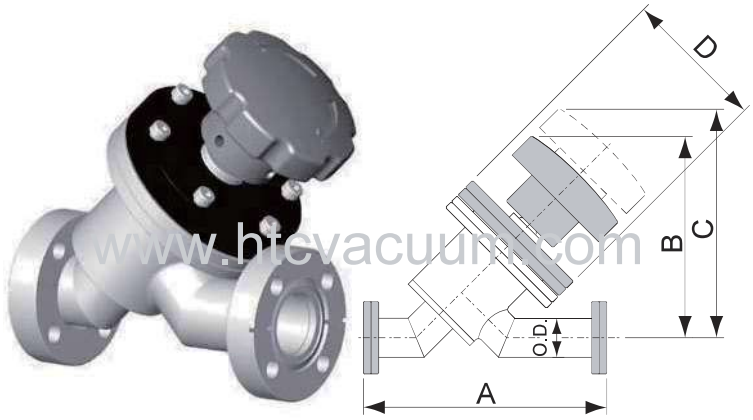
Model No.	A"(mm)	B"(mm)	C"(mm)	D"(mm)	O.D. "(mm)	Parts No.
YVB-CU-KF16-M	4.00"(101.6)	3.88"(98.7)	4.76"(113.5)	2.75"(70)	0.75"(19.05)	304609010016
YVB-CU-KF25-M	4.20"(106.8)	3.92"(98.8)	4.44"(113.6)	2.75"(70)	1.00"(25.4)	304611010016
YVB-CU-KF40-M	5.12"(130)	5.01"(124.2)	5.87"(147.5)	3.37"(84.6)	1.50"(38.1)	304613010016
YVB-CU-KF50-M	7.00"(177.8)	5.30"(140.7)	6.55"(174.7)	4.47"(113.6)	2.00"(50.8)	304614010016

Note: Dimension in inch(mm) unless otherwise noted

Y-INLINE VALVE

Manually Operated Copper Seal Bonnet with Bellows

CF Flange



Features

- Stainless steel body surface treatment : below 4”puff polishing
- 3/4~2 inch(19.05~50.8mm) port ODs.
- Bakeable to 200°C(open),150°C(close)
- Metal Seal Bonnet : approximate 10^{-10} mbar vacuum rating CF flange

Available Area : U.S.A.

Model No.	A"(mm)	B"(mm)	C"(mm)	D"(mm)	O.D. "(mm)	Parts No.
YVB-CU-CR16-M	4.7"(119.4)	3.88"(98.7)	4.76"(113.5)	2.75"(70)	0.75"(19.05)	304609030016
YVB-CU-CR35-M	5.24"(133)	5.01"(124.2)	5.87"(147.5)	3.37"(84.6)	1.50"(38.1)	304613030016

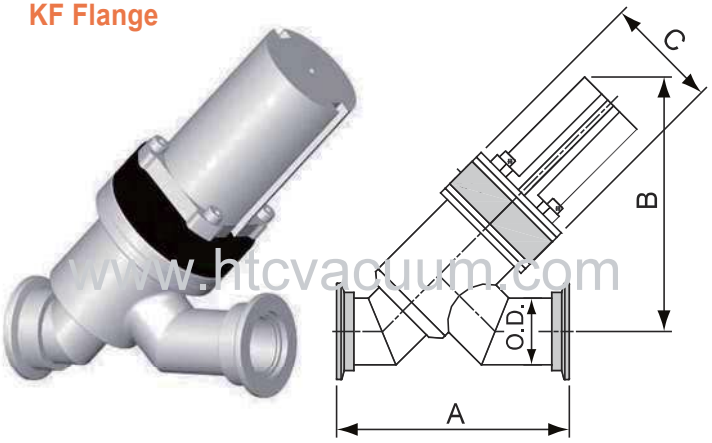
Note: Dimension in inch(mm) unless otherwise noted

Y-INLINE VALVE

Pneumatically Actuated with Bellows

Single-Acting, air to open, spring to close

KF Flange



Features

- Stainless steel body surface treatment : below 4”puff polishing
- 3/4~2 inch(19.05~50.8mm) port ODs.
- 4~6.5 kg/cm^2 operating air pressure.
- Viton Seal Bonnet : 10^{-9} mbar vacuum rating KF flange

Available Area : U.S.A.

Model No.	A"(mm)	B"(mm)	C"(mm)	O.D.	Parts No.
YVB-KF16-P	4.00"(101.6)	4.73"(120)	2.24"(56.8)	0.75"(19.05)	304109110016
YVB-KF25-P	4.20"(106.8)	4.73"(120)	2.24"(56.8)	1.00"(25.4)	304111110016
YVB-KF40-P	5.12"(130)	6.17"(156.8)	2.98"(75.8)	1.50"(38.1)	304113110016
YVB-KF50-P	7.00"(177.8)	7.43"(188.8)	3.48"(88.4)	2.00"(50.8)	304114110016

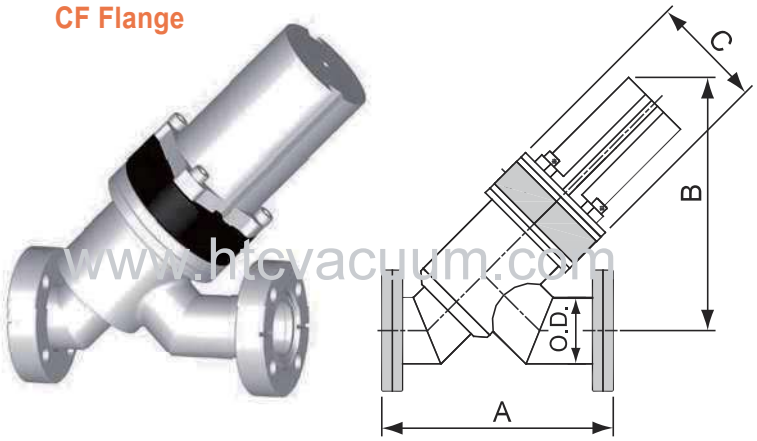
Note: Dimension in inch(mm) unless otherwise noted

Y-INLINE VALVE

Pneumatically Actuated with Bellows

Single-Acting, air to open, spring to close

CF Flange



Features

- Stainless steel body surface treatment : below 4”puff polishing
- 3/4~2 inch(19.05~50.8mm) port ODs.
- 4~6.5 kg/cm^2 operating air pressure.
- Viton Seal Bonnet : 10^{-9} mbar vacuum rating CF flange

Available Area : U.S.A.

Model No.	A"(mm)	B"(mm)	C"(mm)	O.D.	Parts No.
YVB-CR16-P	4.70"(119.4)	4.73"(120)	2.24"(56.8)	0.75"(19.05)	304109130016
YVB-CR35-P	5.24"(133)	6.17"(156.8)	2.98"(75.8)	1.50"(38.1)	304113130016

Note: Dimension in inch(mm) unless otherwise noted

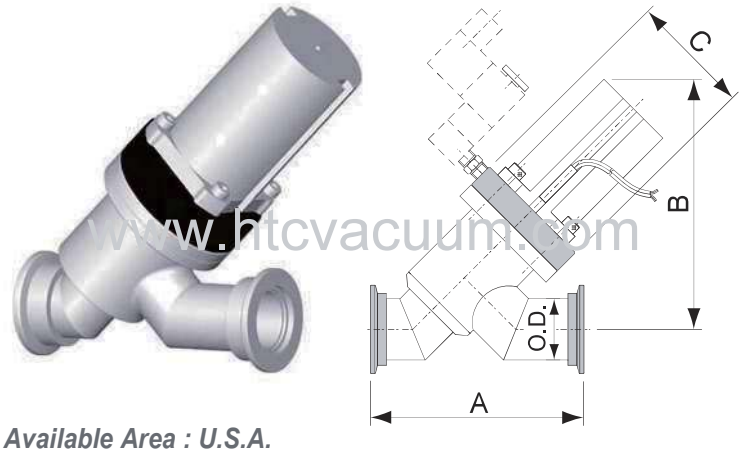
Dimension in mm unless otherwise noted

Y-INLINE VALVE

Pneumatically Actuated with Bellows Attached Reed Sensor

Single-Acting, air to open, spring to close

KF Flange



Features

- Stainless steel body surface treatment : below 4”puff polishing
- 3/4~2 inch(19.05~50.8mm) port ODs.
- 4~6.5 kg/cm^2 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} mbar vacuum rating KF flange

Available Area : U.S.A.

Model No.	A"(mm)	B"(mm)	C"(mm)	O.D.	Parts No.
YVBS-KF16-P	4.00"(101.6)	4.73"(120)	2.24"(56.8)	0.75"(19.05)	304109110216
YVBS-KF25-P	4.20"(106.8)	4.73"(120)	2.24"(56.8)	1.00"(25.4)	304111110216
YVBS-KF40-P	5.12"(130)	6.17"(156.8)	2.98"(75.8)	1.50"(38.1)	304113110216
YVBS-KF50-P	7.00"(177.8)	7.43"(188.8)	3.48"(88.4)	2.00"(50.8)	304114110216

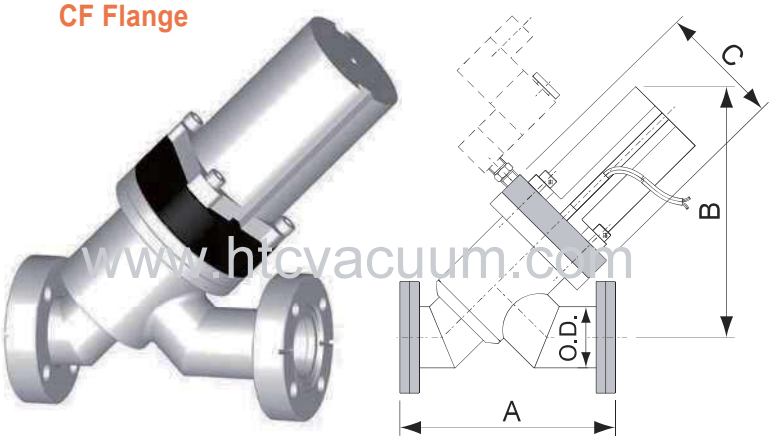
Note: Dimension in inch(mm) unless otherwise noted

Y-INLINE VALVE

Pneumatically Actuated with Bellows Attached Reed Sensor

Single-Acting, air to open, spring to close

CF Flange



Features

- Stainless steel body surface treatment : below 4”puff polishing
- 3/4~2 inch(19.05~50.8mm) port ODs.
- 4~6.5 kg/cm^2 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} mbar vacuum rating CF flange

Available Area : U.S.A.

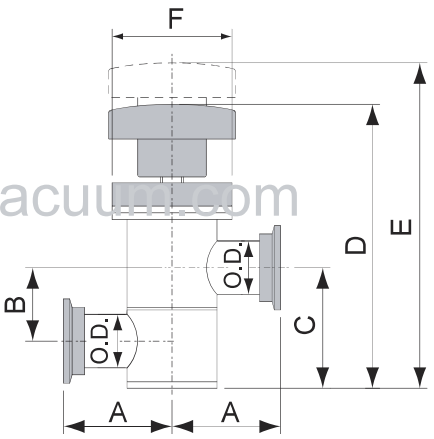
Model No.	A"(mm)	B"(mm)	C"(mm)	O.D.	Parts No.
YVBS-CR16-P	4.70"(119.4)	4.73"(120)	2.24"(56.8)	0.75"(19.05)	304109130216
YVBS-CR35-P	5.24"(133)	6.17"(156.8)	2.98"(75.8)	1.50"(38.1)	304113130216

Note: Dimension in inch(mm) unless otherwise noted

Z-INLINE VALVE

Manually Operated with Bellows

KF Flange



Features

- Stainless steel body surface treatment : below 4”puff polishing
- 3/4~2 inch(19.05~50.8mm) port ODs.
- Viton Seal Bonnet : 10^{-9} mbar vacuum rating KF flange

Available Area : U.S.A.

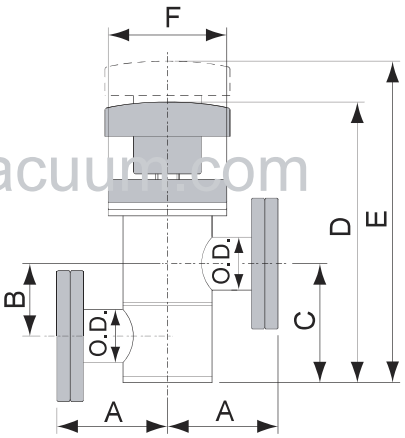
Model No.	A"(mm)	B"(mm)	C"(mm)	D"(mm)	E"(mm)	F"(mm)	O.D."(mm)	Parts No.
IVB-KF16-M	2.15"(54.6)	1.13"(28.5)	1.87"(47.5)	5.09"(129.4)	5.86"(148.9)	2.24"(56.8)	0.75"(19.05)	302109010016
IVB-KF25-M	2.03"(51.6)	1.37"(34.8)	2.25"(57.2)	5.35"(135.8)	6.11"(155.3)	2.24"(56.8)	1.00"(25.4)	302111010016
IVB-KF40-M	2.40"(61)	1.88"(47.8)	3.12"(79.3)	7.16"(181.8)	8.44"(214.3)	2.98"(75.8)	1.50"(38.1)	302113010016
IVB-KF50-M	3.40"(86.3)	2.62"(66.5)	4.12"(104.6)	8.85"(224.8)	10.61"(269.5)	3.48"(88.4)	2.00"(50.8)	302114010016

Note: Dimension in inch(mm) unless otherwise noted

Z-INLINE VALVE

Manually Operated with Bellows

CF Flange



Features

- Stainless steel body surface treatment : below 4”puff polishing
- 3/4~2 inch(19.05~50.8mm) port ODs.
- Viton Seal Bonnet : 10^{-9} mbar vacuum rating CF flange

Available Area : U.S.A.

Model No.	A"(mm)	B"(mm)	C"(mm)	D"(mm)	E"(mm)	F"(mm)	O.D."(mm)	Parts No.
IVB-CR16-M	2.50"(63.5)	1.13"(28.6)	1.87"(47.6)	5.09"(129.6)	5.86"(149.1)	2.24"(56.8)	0.75"(19.05)	302109030016
IVB-CR35-M	2.46"(62.5)	1.88"(47.8)	3.12"(79.3)	7.16"(181.8)	8.44"(214.3)	2.98"(75.8)	1.50"(38.1)	302113030016

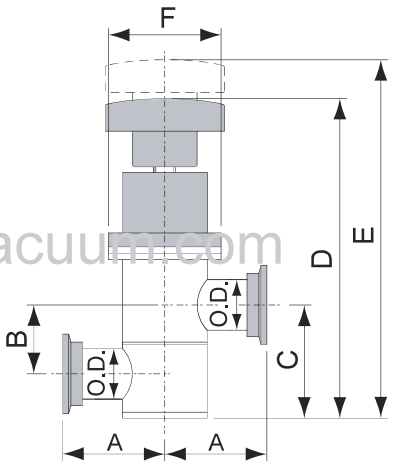
Note: Dimension in inch(mm) unless otherwise noted

Dimension in mm unless otherwise noted

Z-INLINE VALVE

Manually Operated without Bellows

KF Flange



Features

- Stainless steel body surface treatment : below 4”puff polishing
- 3/4~2 inch(19.05~50.8mm) port ODs.
- Viton Seal Bonnet : 10^{-9} mbar vacuum rating KF flange

Available Area : U.S.A.

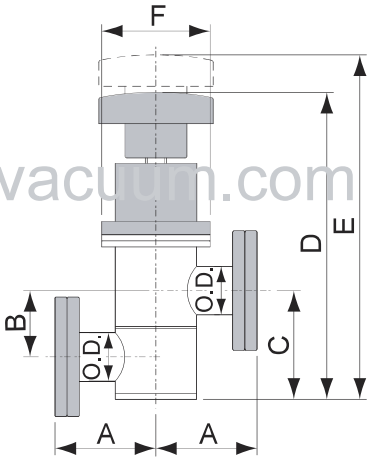
Model No.	A"(mm)	B"(mm)	C"(mm)	D"(mm)	E"(mm)	F"(mm)	O.D."(mm)	Parts No.
IV-KF16-M	2.15"(54.6)	1.13"(28.5)	1.87"(47.5)	6.32"(160.6)	6.94"(176.4)	2.24"(56.8)	0.75"(19.05)	302109010010
IV-KF25-M	2.03"(51.6)	1.37"(34.8)	2.25"(57.2)	6.57"(166.8)	7.19"(182.6)	2.24"(56.8)	1.00"(25.4)	302111010010
IV-KF40-M	2.40"(61)	1.88"(47.8)	3.12"(79.3)	8.22"(208.8)	9.32"(236.8)	2.98"(75.8)	1.50"(38.1)	302113010010
IV-KF50-M	3.40"(86.3)	2.62"(66.5)	4.12"(104.6)	10.53"(267.4)	12.12"(310)	3.48"(88.4)	2.00"(50.8)	302114010010

Note: Dimension in inch(mm) unless otherwise noted

Z-INLINE VALVE

Manually Operated without Bellows

CF Flange



Features

- Stainless steel body surface treatment : below 4”puff polishing
- 3/4~2 inch(19.05~50.8mm) port ODs.
- Viton Seal Bonnet : 10^{-9} mbar vacuum rating CF flange

Available Area : U.S.A.

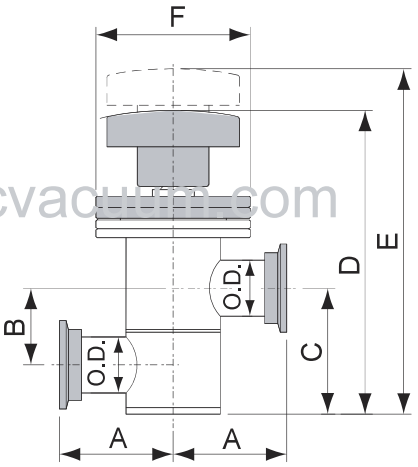
Model No.	A"(mm)	B"(mm)	C"(mm)	D"(mm)	E"(mm)	F"(mm)	O.D."(mm)	Parts No.
IV-CR16-M	2.50"(63.5)	1.13"(28.6)	1.87"(47.6)	6.32"(160.6)	6.94"(176.4)	2.24"(56.8)	0.75"(19.05)	302109030010
IV-CR35-M	2.46"(62.5)	1.88"(47.8)	3.12"(79.3)	8.22"(208.8)	9.32"(236.8)	2.98"(75.8)	1.50"(38.1)	302113030010

Note: Dimension in inch(mm) unless otherwise noted

Z-INLINE VALVE

Manually Operated Copper Seal Bonnet with Bellows

KF Flange



Features

- Stainless steel body surface treatment : below 4”puff polishing
- 3/4~2 inch(19.05~50.8mm) port ODs.
- Bakeable to 150°C
- Metal Bonnet : 10^{-9} mbar vacuum rating KF flange

Available Area : U.S.A.

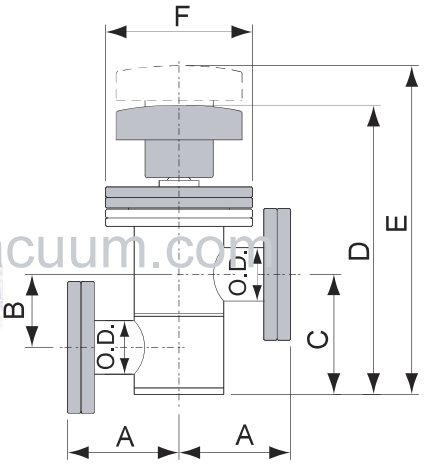
Model No.	A"(mm)	B"(mm)	C"(mm)	D"(mm)	E"(mm)	F"(mm)	O.D."(mm)	Parts No.
IVB-CU-KF16-M	2.15"(54.6)	1.12"(28.5)	1.87"(47.5)	5.07"(129.6)	5.86"(150.5)	2.75"(70)	0.75"(19.05)	302609010016
IVB-CU-KF25-M	2.03"(51.6)	1.37"(34.8)	2.25"(57.2)	5.33"(135.8)	6.11"(156.7)	2.75"(70)	1.00"(25.4)	302611010016
IVB-CU-KF40-M	2.40"(61)	1.88"(47.8)	3.12"(79.3)	7.35"(181.8)	8.57"(214.8)	3.37"(84.6)	1.50"(38.1)	302613010016
IVB-CU-KF50-M	3.40"(86.3)	2.62"(66.5)	4.12"(104.6)	8.86"(225.3)	10.63"(271.2)	4.17"(113.6)	2.00"(50.8)	302614010016

Note: Dimension in inch(mm) unless otherwise noted

Z-INLINE VALVE

Manually Operated Copper Seal Bonnet with Bellows

CF Flange



Features

- Stainless steel body surface treatment : below 4”puff polishing
- 3/4~2 inch(19.05~50.8mm) port ODs.
- Bakeable to 200°C(open),150°C(close)
- Metal Bonnet : approximate 10^{-10} mbar vacuum rating CF flange

Available Area : U.S.A.

Model No.	A"(mm)	B"(mm)	C"(mm)	D"(mm)	E"(mm)	F"(mm)	O.D."(mm)	Parts No.
IVB-CU-CR16-M	2.50"(63.5)	1.12"(28.5)	1.87"(47.5)	5.07"(129.6)	5.85"(150.5)	2.75"(70)	0.75"(19.05)	302609030016
IVB-CU-CR35-M	2.45"(62.5)	1.88"(47.8)	3.12"(79.3)	7.35"(181.8)	8.57"(214.8)	3.37"(84.6)	1.50"(38.1)	302613030016

Note: Dimension in inch(mm) unless otherwise noted

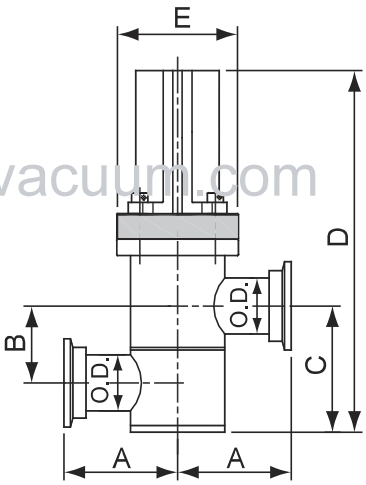
Dimension in mm unless otherwise noted

Z-INLINE VALVE

Pneumatically Actuated with Bellows

Single-Acting, air to open, spring to close

KF Flange



Features

- Stainless steel body surface treatment : below 4”puff polishing
- 3/4~2 inch(19.05~50.8mm) port ODs.
- 4~6.5 kg/cm^2 operating air pressure.
- Viton Seal Bonnet : 10^{-9} mbar vacuum rating KF flange

Available Area : U.S.A.

Model No.	A"(mm)	B"(mm)	C"(mm)	D"(mm)	E"(mm)	O.D."	Parts No.
IVB-KF16-P	2.15"(54.6)	1.13"(28.5)	1.87"(47.5)	6.50"(165.25)	2.24"(56.8)	0.75"(19.05)	302109110016
IVB-KF25-P	2.03"(51.6)	1.37"(34.8)	2.25"(57.2)	6.75"(171.5)	2.24"(56.8)	1.00"(25.4)	302111110016
IVB-KF40-P	2.40"(61)	1.88"(47.8)	3.12"(79.3)	8.99"(228.5)	2.98"(75.8)	1.50"(38.1)	302113110016
IVB-KF50-P	3.40"(86.3)	2.62"(66.5)	4.12"(104.6)	11.25"(285.95)	3.48"(88.4)	2.00"(50.8)	302114110016

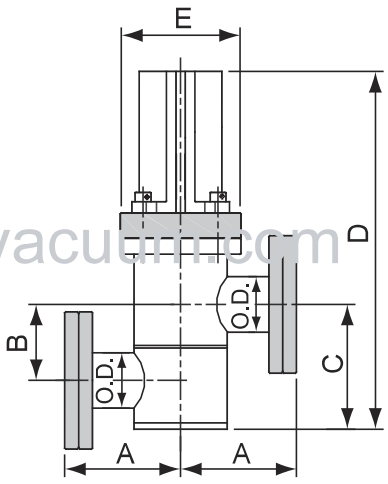
Note: Dimension in inch(mm) unless otherwise noted

Z-INLINE VALVE

Pneumatically Actuated with Bellows

Single-Acting, air to open, spring to close

CF Flange



Features

- Stainless steel body surface treatment : below 4”puff polishing
- 3/4~2 inch(19.05~50.8mm) port ODs.
- 4~6.5 kg/cm^2 operating air pressure.
- Viton Seal Bonnet : 10^{-9} mbar vacuum rating CF flange

Available Area : U.S.A.

Model No.	A"(mm)	B"(mm)	C"(mm)	D"(mm)	E"(mm)	O.D."	Parts No.
IVB-CR16-P	2.50"(63.5)	1.13"(28.6)	1.87"(47.6)	6.50"(165.25)	2.24"(56.8)	0.75"(19.05)	302109130016
IVB-CR35-P	2.46"(62.5)	1.88"(47.8)	3.12"(79.3)	8.99"(228.5)	2.98"(75.8)	1.50"(38.1)	302113130016

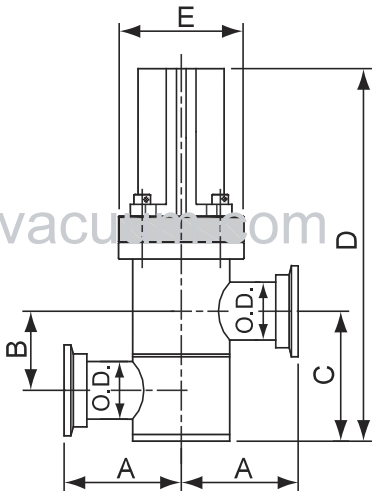
Note: Dimension in inch(mm) unless otherwise noted

Z-INLINE VALVE

Pneumatically Actuated without Bellows

Single-Acting, air to open, spring to close

KF Flange



Features

- Stainless steel body surface treatment : below 4”puff polishing
- 3/4~2 inch(19.05~50.8mm) port ODs.
- 4~6.5 kg/cm^2 operating air pressure.
- Viton Seal Bonnet : 10^{-9} mbar vacuum rating KF flange

Available Area : U.S.A.

Model No.	A"(mm)	B"(mm)	C"(mm)	D"(mm)	E"(mm)	O.D."	Parts No.
IV-KF16-P	2.15"(54.6)	1.13"(28.5)	1.87"(47.5)	6.49"(165.05)	2.24"(56.8)	0.75"(19.05)	302109110010
IV-KF25-P	2.03"(51.6)	1.37"(34.8)	2.25"(57.2)	6.74"(171.3)	2.24"(56.8)	1.00"(25.4)	302111110010
IV-KF40-P	2.40"(61)	1.88"(47.8)	3.12"(79.3)	8.98"(228.3)	2.98"(75.8)	1.50"(38.1)	302113110010
IV-KF50-P	3.40"(86.3)	2.62"(66.5)	4.12"(104.6)	11.25"(285.93)	3.48"(88.4)	2.00"(50.8)	302114110010

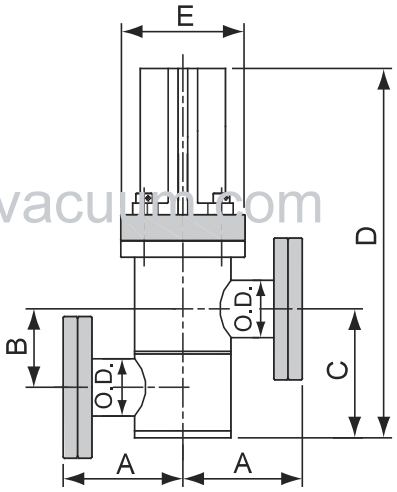
Note: Dimension in inch(mm) unless otherwise noted

Z-INLINE VALVE

Pneumatically Actuated without Bellows

Single-Acting, air to open, spring to close

CF Flange



Features

- Stainless steel body surface treatment : below 4”puff polishing
- 3/4~2 inch(19.05~50.8mm) port ODs.
- 4~6.5 kg/cm^2 operating air pressure.
- Viton Seal Bonnet : 10^{-9} mbar vacuum rating CF flange

Available Area : U.S.A.

Model No.	A"(mm)	B"(mm)	C"(mm)	D"(mm)	E"(mm)	O.D."	Parts No.
IV-CR16-P	2.50"(63.5)	1.13"(28.6)	1.87"(47.6)	6.49"(165.05)	2.24"(56.8)	0.75"(19.05)	302109130010
IV-CR35-P	2.46"(62.5)	1.88"(47.8)	3.12"(79.3)	8.98"(228.3)	2.98"(75.8)	1.50"(38.1)	302113130010

Note: Dimension in inch(mm) unless otherwise noted

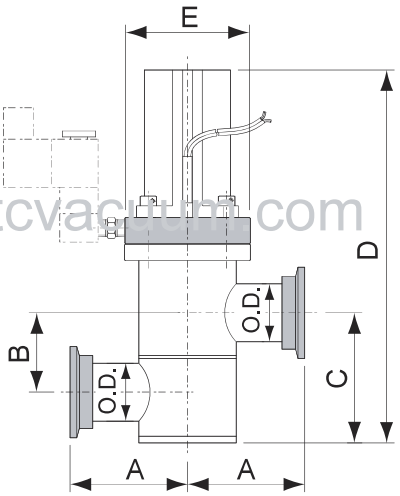
Dimension in mm unless otherwise noted

Z-INLINE VALVE

Pneumatically Actuated with Bellows Attached Reed Sensor

Single-Acting, air to open, spring to close

KF Flange



Features

- Stainless steel body surface treatment : below 4”puff polishing
- 3/4~2 inch(19.05~50.8mm) port ODs.
- 4~6.5 kg/cm^2 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} mbar vacuum rating KF flange

Available Area : U.S.A.

Model No.	A"(mm)	B"(mm)	C"(mm)	D"(mm)	E"(mm)	O.D."	Parts No.
IVBS-KF16-P	2.15"(54.6)	1.13"(28.5)	1.87"(47.5)	6.51"(165.2)	2.24"(56.8)	0.75"(19.05)	302109110216
IVBS-KF25-P	2.03"(51.6)	1.37"(34.8)	2.25"(57.2)	6.75"(171.5)	2.24"(56.8)	1.00"(25.4)	302111110216
IVBS-KF40-P	2.40"(61)	1.88"(47.8)	3.12"(79.3)	8.90"(228.5)	2.98"(75.8)	1.50"(38.1)	302113110216
IVBS-KF50-P	3.40"(86.3)	2.62"(66.5)	4.12"(104.3)	11.26"(285.9)	3.48"(88.4)	2.00"(50.8)	302114110216

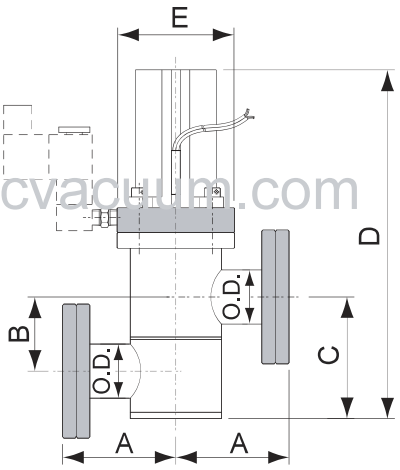
Note: Dimension in inch(mm) unless otherwise noted

Z-INLINE VALVE

Pneumatically Actuated with Bellows Attached Reed Sensor

Single-Acting, air to open, spring to close

CF Flange



Features

- Stainless steel body surface treatment : below 4”puff polishing
- 3/4~2 inch(19.05~50.8mm) port ODs.
- 4~6.5 kg/cm^2 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} mbar vacuum rating CF flange

Available Area : U.S.A.

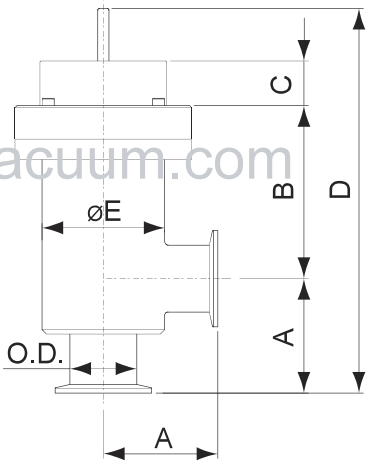
Model No.	A"(mm)	B"(mm)	C"(mm)	D"(mm)	E"(mm)	O.D."	Parts No.
IVBS-CR16-P	2.50"(63.5)	1.13"(28.6)	1.87"(47.6)	6.51"(165.2)	2.24"(56.8)	0.75"(19.05)	302109130216
IVBS-CR35-P	2.46"(62.5)	1.88"(47.8)	3.12"(79.3)	8.90"(228.5)	2.98"(75.8)	1.50"(38.1)	302113130216

Note: Dimension in inch(mm) unless otherwise noted

FORMED BELLOWS SEAL STAINLESS VALVE

Single-Acting, air to open, spring to close

Angle Valve



Features

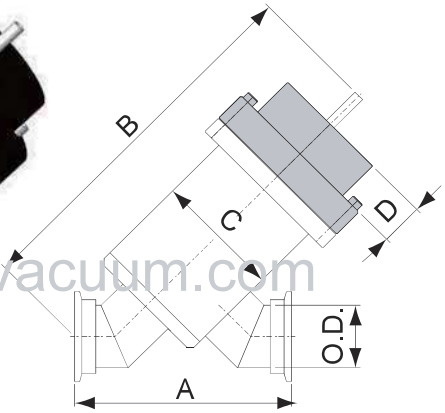
- Polished 304 stainless steel body.
- Operating pressure : 4~6 kg/cm^2
- Orientation : Any position
- Viton Seal Bonnet : 10^{-9} mbar vacuum rating KF flange

Parts No.	A	B	C	D	E	O.D.
ZFP0081520040K00	65	99.5	25.5	214.3	76.2	38.1(1.50")

FORMED BELLOWS SEAL STAINLESS VALVE

Single-Acting, air to open, spring to close

Y-inline Valve



Features

- Polished 304 stainless steel body.
- Operating pressure : 4~6 kg/cm^2
- Orientation : Any position
- Viton Seal Bonnet : 10^{-9} mbar vacuum rating KF flange

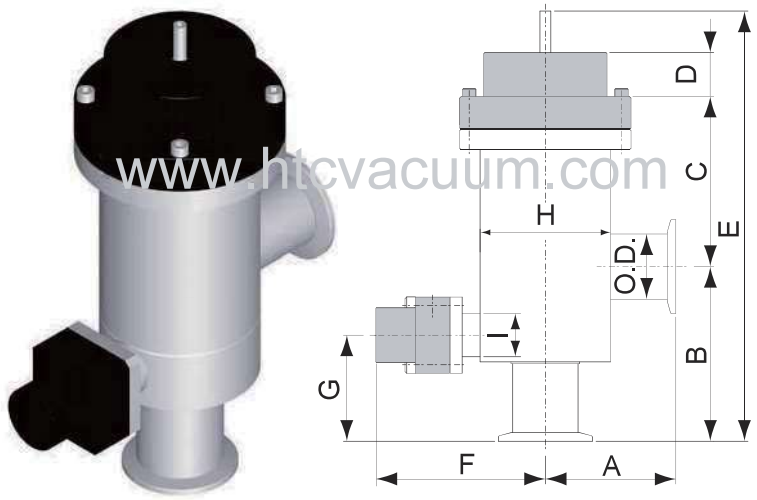
Parts No.	A	B	C	D	O.D.
ZFP0081620040K00	130	224	76.2	25.5	38.1(1.50")

Dimension in mm unless otherwise noted

FORMED BELLOWS SEAL STAINLESS VALVE

Single-Acting, air to open, spring to close

Two-Stage Valve



Features

- Polished 304 stainless steel body.
- Operating pressure : 4~6 kg/cm^2
- Orientation : Any position
- Viton Seal Bonnet : 10^{-9} mbar vacuum rating KF flange
- Provides soft pumpdown and isolation for vacuum system
- Reduces particulate contamination during early turbulent pumpdown.

Parts No.	A	B	C	D	E	F	G	H	I	O.D.
35011311001A	76.2	102	99.5	25.5	251.3	99	62	76.2	25.4	38.1(1.50")

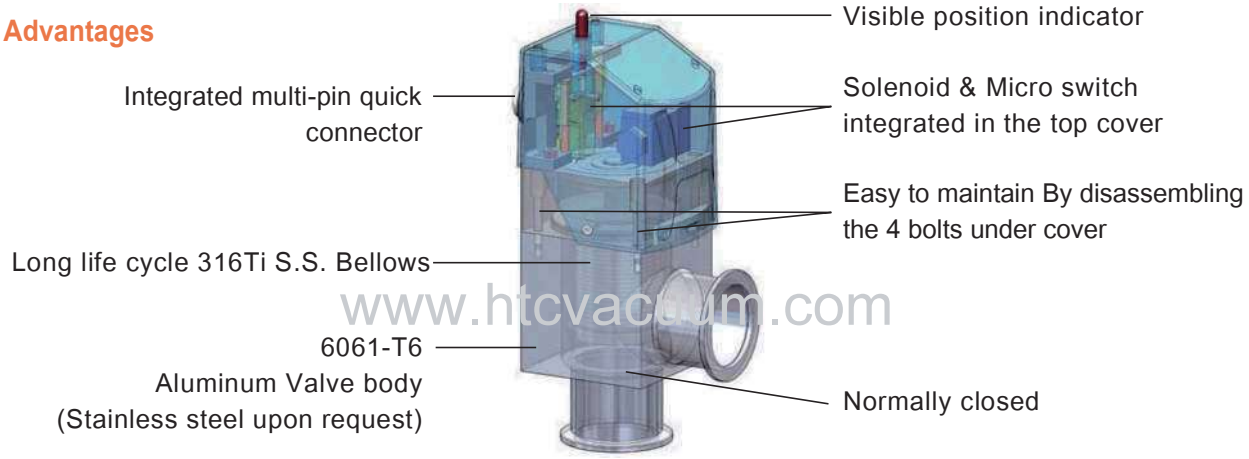
Dimension in mm unless otherwise noted

HV Aluminum Block Valve

Features

- Twin micro switches in Htc standard All-in-one valve.
- Reed sensor or Micro switch is available upon request for HV type.
- Available in aluminum or stainless steel valve body.
- Non-magnetic aluminum 6061-T6 valve body.
- Visible position indicator on the top of valve.
- Electrical and visual (LED) position indication.
- Selectable operating mode
- Remote control via PLC or PC
- Local operation
- Easy maintenance, fast bellows and seal replacement.
- Fast opening and closing time.

Advantages



A.I.O. : Easy to plug & play

Htc All-in-one Type

Quick connector for solenid & micro switches

General Type

Solenoid & reed sensor installed on the back of valve, 6 wires need to be connected

Photos of various applications

Venting with filter

Gas Isolation

Process gas control

Dimension in mm unless otherwise noted

Specification:

Pilot valve **Naminal voltage** **Power** **DC voltage** **AC voltage** **Nominal diameter**	Product nameplate 2.4W 3.6VA 1.2mm		
Electrical position indicator **Connection** **Rating**	 Soldered joints 125 VAC/1A 30 VDC/0.5A		
Vacuum connection	KF16	KF25	KF40
Actuation	opening : pneumatic closing : by pressure spring		
Compressed air supply **Tube connection** **Pressure range**	Ø6 mm 4~6 Kg/cm^2(overpressure)		
Piston displacement	4 cm^3	11 cm^3	35 cm^3
Stroke of valve plate	6 mm	8 mm	13 mm
Conductance **Angle valve**	5 l/s	14 l/s	45 l/s
Switching frequency **Opening time** **Closing time**	10/min 100ms 100ms	10/min 120ms 160ms	8/min 260ms 540ms
Cycle life*	10 million		
Leak Rate	1x10^{-9} mbar.l/s		
Pressure max.	5 bar(absolute)		
Operating pressure min.	1x10^{-8} mbar		
Operating pressure max.	2 bar		
Pressure difference △P **In closing direction** **In opening direction**	 5 bar 2 bar		
Temperature **Ambiance** **Bakeout** **Housing** **Aluminum** **Actuator** **Pilot valve**	0°C…+50°C 80°C 50°C 50°C		
Mounting orientation **Flow direction**	Any Any		
Materials **Housing** **Aluminum** **Bellows/valve plate** **Pressure spring** **Seals** **Cover** **Visual position indicator** **Cylinder unit**	 A6061-T6 316Ti S.S. Spring steel Viton ABS A5083		
Weight **All in one** **Aluminum** **Pneumatic N/C** **Aluminum**	 0.54 kg 0.36kg	 0.73kg 0.56 kg	 1.34kg 1.2kg

* The Cycle life of valve is apply to room temperature 25°C and clean environment, and the opening action apply to be less than 10 mbar pressure difference. (If the opening action exceeds the pressure difference of 10 mbar, it is not covered by this guarantee.)

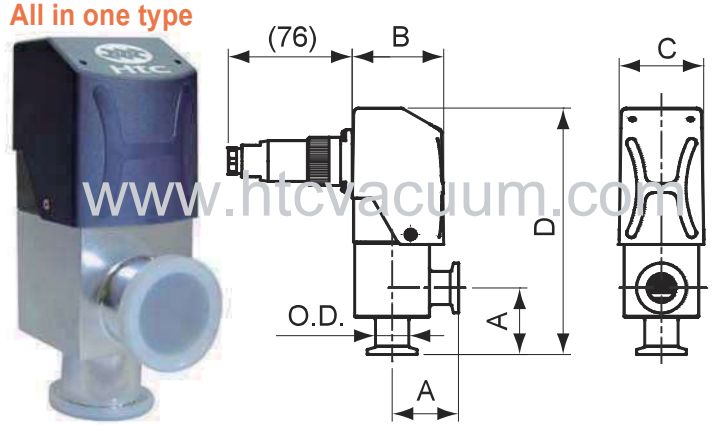
Dimension in mm unless otherwise noted

HV ALUMINUM ANGLE VALVE-Pneumatically Actuated

with formed bellows seal, Limit Switch

Single-Acting, air to open, spring to close

All in one type



Features

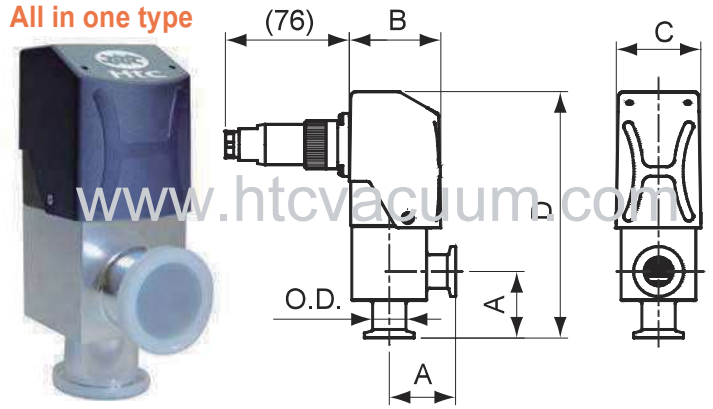
- 10 million cycle 316Ti stainless steel bellows
- Easy maintenance, fast bellows and seal replacement
- Fast opening and closing time
- High purity aluminum body
- Leak rate: $1x10^{-9}$ mbar. l /sec
- Flange : KF(NW)

Model No.	A	B	C	D	O.D.	Parts No.
AVABHLS-KF16-P-E	40	55	51	148	20	31010911042MA
AVABHLS-KF25-P-E	50	65.5	60	153	28	31011111042MA
AVABHLS-KF40-P-E	65	81	75	201	45	31011311042MA

with formed bellows seal, Solenoid, Limit Switch

Single-Acting, air to open, spring to close

All in one type



Features

- 10 million cycle 316Ti stainless steel bellows
- Easy maintenance, fast bellows and seal replacement
- Fast opening and closing time
- High purity aluminum body
- Leak rate: $1x10^{-9}$ mbar. l /sec
- Flange : KF(NW)

Model No.	A	B	C	D	O.D.
AVABHLSV-KF16-P-E	40	55	51	148	20
AVABHLSV-KF25-P-E	50	65.5	60	153	28
AVABHLSV-KF40-P-E	65	81	75	201	45

A.I.O Parts No.

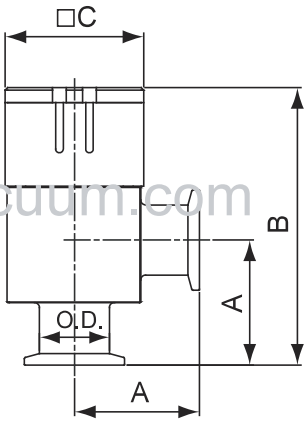
Solenold	KF16	KF25	KF40
24V DC	31010911142MA	31011111142MA	31011311142MA
110V AC	31010911242MA	31011111242MA	31011311242MA
220V AC	31010911342MA	31011111342MA	31011311342MA
24V AC	31010911442MA	31011111442MA	31011311442MA

Dimension in mm unless otherwise noted

HV ALUMINUM ANGLE VALVE-Pneumatically Actuated

with formed bellows seal

Single-Acting, air to open, spring to close



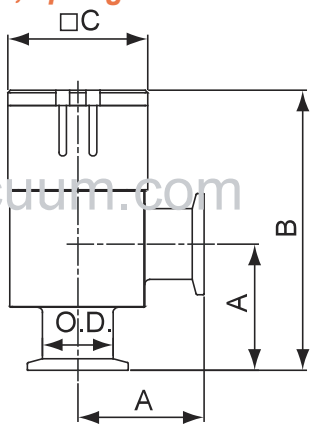
Features

- 10 million cycle 316Ti stainless steel bellows
- Easy maintenance, fast bellows and seal replacement
- Fast opening and closing time
- High purity aluminum body
- Leak rate: $1x10^{-9}$ mbar. l /sec
- Flange : KF(NW)

Model No.	A	B	C	O.D.	Parts No.
AVABH-KF16-P-E	40	102	46.4	20	31010911002MA
AVABH-KF25-P-E	50	111	55.4	28	31011111002MA
AVABH-KF40-P-E	65	153	70.4	45	31011311002MA
AVABH-KF50-P-E	70	165.2	77	55	31011411002MA

with formed bellows seal, Attached Reed Sensor

Single-Acting, air to open, spring to close



Features

- 10 million cycle 316Ti stainless steel bellows
- Easy maintenance, fast bellows and seal replacement
- Fast opening and closing time
- High purity aluminum body
- Leak rate: $1x10^{-9}$ mbar. l /sec
- Flange : KF(NW)

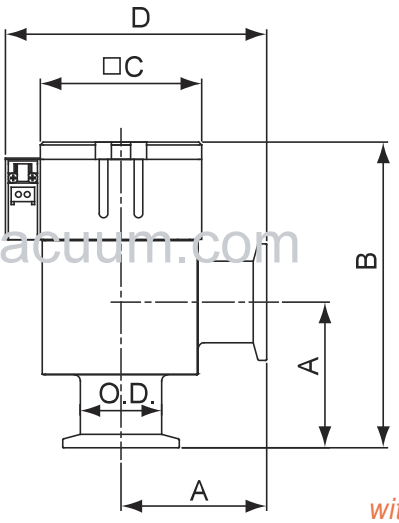
Model No.	A	B	C	O.D.	Parts No.
AVABHS-KF16-P-E	40	102	46.4	20	31010911022MA
AVABHS-KF25-P-E	50	111	55.4	28	31011111022MA
AVABHS-KF40-P-E	65	153	70.4	45	31011311022MA
AVABHS-KF50-P-E	70	165.2	77	55	31011411022MA

Dimension in mm unless otherwise noted

HV ALUMINUM ANGLE VALVE-Pneumatically Actuated

with formed bellows seal, Attached Solenoid

Single-Acting, air to open, spring to close



Features

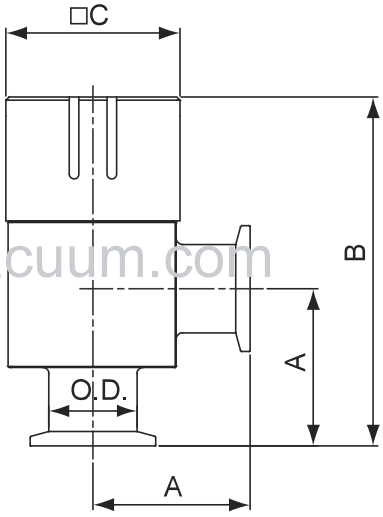
- 10 million cycle 316Ti stainless steel bellows
- Easy maintenance, fast bellows and seal replacement
- Fast opening and closing time
- High purity aluminum body
- Leak rate: $1x10^{-9}$ mbar. l /sec
- Flange : KF(NW)

with standard voltage DC24V solenoid,
With LN type connector without sensors, without limit switch

Model No.	A	B	C	D	O.D.	Parts No.
AVABHSV-KF16-P-E	40	102	46.4	75	20	31010911102MA
AVABHSV-KF25-P-E	50	111	55.4	90	28	31011111102MA
AVABHSV-KF40-P-E	65	153	70.4	112	45	31011311102MA

with formed bellows seal, Attached Reed Sensor

Double -Acting, air to open, air to close



Features

- 10 million cycle 316Ti stainless steel bellows
- Easy maintenance, fast bellows and seal replacement
- Fast opening and closing time
- High purity aluminum body
- Leak rate: $1x10^{-9}$ mbar. l /sec
- Flange : KF(NW)

with reed sensor, without limit switch, without solenoid valve

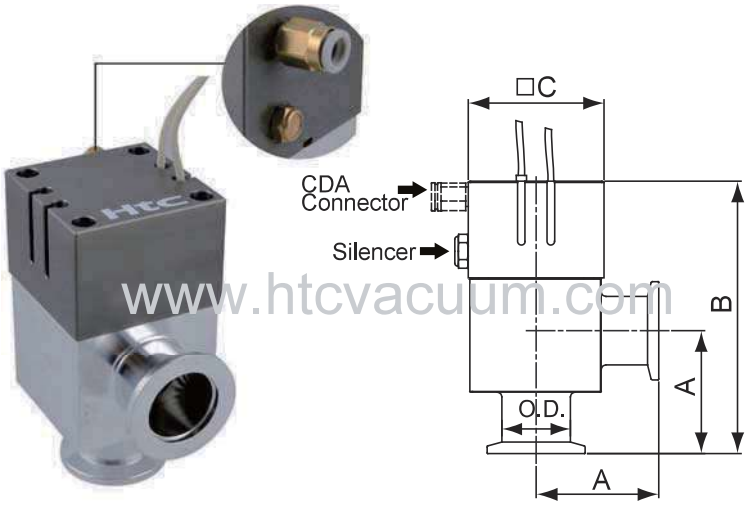
Model No.	A	B	C	O.D.	Parts No.
AVABHS-KF16-P2-E	40	108.2	46.4	20	31010921022MA
AVABHS-KF25-P2-E	50	111	55.4	28	31011121022MA
AVABHS-KF40-P2-E	65	153.8	70.4	45	31011321022MA

Dimension in mm unless otherwise noted

Normally Open

with formed bellows seal, Attached Reed Sensor

Single-Acting, spring to open, air to close



Features

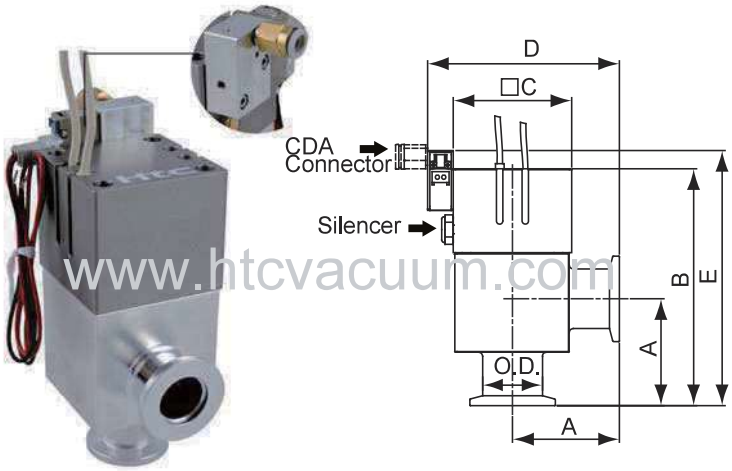
- 10 million cycle 316Ti stainless steel bellows
- Easy maintenance, fast bellows and seal replacement
- Fast opening and closing time
- High purity aluminum body
- Leak rate: $1x10^{-9}$ mbar. l /sec
- Flange : KF(NW)

with reed sensors, without limit switch, without solenoid

Model No.	A	B	C	O.D.	Parts No.
AVABHS-KF16-P-NO-E	40	108.2	46.4	20	31010941022MA
AVABHS-KF25-P-NO-E	50	111	55.4	28	31011141022MA
AVABHS-KF40-P-NO-E	65	153.8	70.4	45	31011341022MA

with formed bellows seal, Attached Reed Sensor & Solenoid

Single -Acting, spring to open, air to close



Features

- 10 million cycle 316Ti stainless steel bellows
- Easy maintenance, fast bellows and seal replacement
- Fast opening and closing time
- High purity aluminum body
- Leak rate: $1x10^{-9}$ mbar. l /sec
- Flange : KF(NW)

with reed sensors, with standard voltage DC24V solenoid, with LN type connector, without limit switch

Model No.	A	B	C	D	E	O.D.	Parts No.
AVABHSSV-KF16-P-NO-E	40	108.2	46.4	75	111	20	31010941122MA
AVABHSSV-KF25-P-NO-E	50	111	55.4	90	120	28	31011141122MA
AVABHSSV-KF40-P-NO-E	65	153.8	70.4	112	162	45	31011341122MA

Dimension in mm unless otherwise noted

HV ALUMINUM ANGLE VALVE-Pneumatic Actuated

Without bellows seal, Normal close

Specification:

Electrical position indicator **Connection** **Rating**	AC 24 ~ 240 VAC 4~24VDC		
Vacuum connection	KF16	KF25	KF40
Actuation	opening : pneumatic closing : by pressure spring		
Compressed air supply **Tube connection** **Pressure range** **Piston displacement**	Ø6 mm 4~6 Kg/cm^2(overpressure) 4 cm^3	11 cm^3	35 cm^3
Stroke of valve plate	6 mm	8 mm	13 mm
Conductance **Angle valve**	5 l/s	14 l/s	45 l/s
Switching frequency **Opening time** **Closing time**	10/min 100ms 100ms	10/min 120ms 160ms	8/min 260ms 540ms
Cycle life*	1,000,000		
Leak Rate	3x10^{-9} mbar.l/s		
Pressure max.	6 bar(absolute)		
Operating pressure min.	1x10^{-8} mbar		
Operating pressure max.	6 bar		
Pressure difference △P **In closing direction** **In opening direction**	6 bar 2 bar		
Temperature **Ambiance** **Bakeout** **Housing** **Aluminum** **Actuator** **Pilot valve**	0°C…+50°C 80°C 50°C 50°C		
Mounting orientation	Any		
Materials **Housing** **Aluminum** **valve plate** **Pressure spring** **Seals** **Visual position indicator** **Cylinder unit**	 A6061-T6 316S.S. Spring steel Viton A5083		

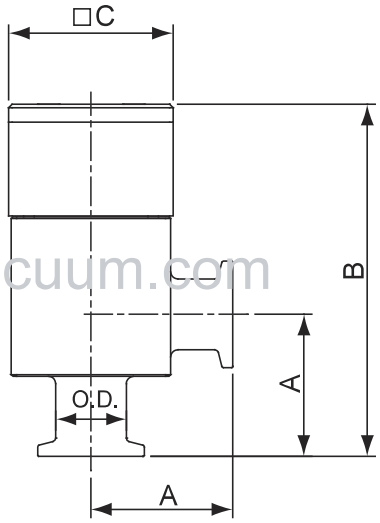
* The Cycle life of valve is apply to room temperature 25°C and clean environment, and the opening action apply to be less than 10 mbar pressure difference. (If the opening action exceeds the pressure difference of 10 mbar, it is not covered by this guarantee.)

Dimension in mm unless otherwise noted

HV ALUMINUM ANGLE VALVE-Pneumatically Actuated

without bellows seal

Single-Acting, Normal close



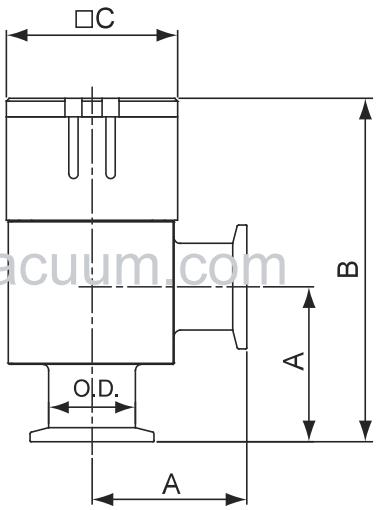
Features

- 10 million cycle o-ring seal
- Easy maintenance, seal replacement
- Fast opening and closing time
- High purity aluminum body
- Leak rate: $3x10^{-9}$ mbar. l /sec
- Flange : KF(NW)

Model No.	A	B	C	O.D.	Parts No.
AVAH-KF16-P-E	40	102	46.4	20	31010911002M0
AVAH-KF25-P-E	50	111	55.4	28	31011111002M0
AVAH-KF40-P-E	65	153	70.4	45	31011311002M0

without bellows seal, Attached Reed Sensor

Single-Acting, Normal close



Features

- 10 million cycle o-ring seal
- Easy maintenance, seal replacement
- Fast opening and closing time
- High purity aluminum body
- Leak rate: $3x10^{-9}$ mbar. l /sec
- Flange : KF(NW)

Model No.	A	B	C	O.D.	Parts No.
AVAHS-KF16-P-E	40	102	46.4	20	31010911022M0
AVAHS-KF25-P-E	50	111	55.4	28	31011111022M0
AVAHS-KF40-P-E	65	153	70.4	45	31011311022M0

Manual aluminum angle valve (with bellows)

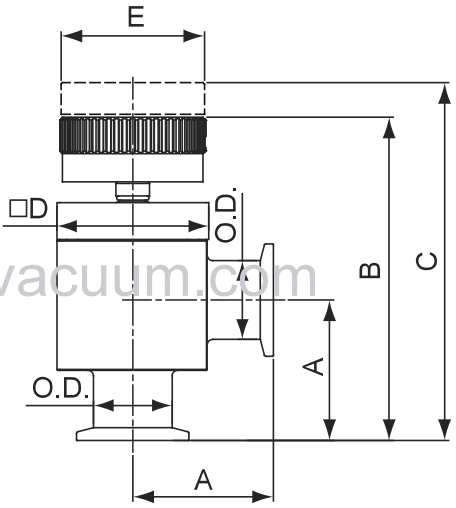
Specification:

Vacuum connection Port	KF16	KF25	KF40
Actuation	Manual Actuator		
Stroke of valve plate	6 mm	8 mm	13 mm
Weight (Kg)	0.5	0.59	1.12
Conductance Angle valve	5 l/s	14 l/s	45 l/s
Cycles until first service (Tmax 80°C, under clean conditions)	20,000		
Leak Rate	$1x10^{-9}$ mbar.l/s		
Pressure Range.	$1x10^{-8}$ mbar ~5 bar (absolute)		
Pressure difference △P In closing direction In opening direction	5 bar 2 bar		
Temperature Ambiance Bakeout Housing Aluminum Actuator	0°C…+50°C 150°C 120°C		
Mounting orientation Flow direction	Any Any		
Materials Housing Aluminum Bellows/valve plate Seals	A6061-T6 316Ti S.S. Viton		

Dimension in mm unless otherwise noted

HV ALUMINUM ANGLE VALVE-Manual Operated

with formed bellows

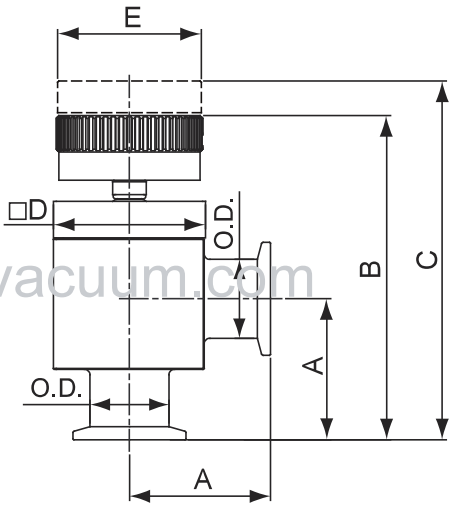


Features

- 316Ti stainless steel bellows
- Easy maintenance, fast bellows and seal replacement
- High purity aluminum body
- Leak rate: $1x10^{-9}$ mbar. l /sec
- Flange : KF(NW)

Model No.	A	B	C	D	E	O.D.	Parts No.
AVABH-KF16-M-E	40	103	107	45	52	20	31010901002MA
AVABH-KF25-M-E	50	110	115	54	52	28	31011101002MA
AVABH-KF40-M-E	65	150	157	69	62	45	31011301002MA

without formed bellows



Features

- High purity aluminum body
- Leak rate: $1x10^{-9}$ mbar. l /sec
- Flange : KF(NW)

Model No.	A	B	C	D	E	O.D.	Parts No.
AVAH-KF16-M-E	40	106.2	110	45	52	20	31010901002M0
AVAH-KF25-M-E	50	110	115	54	52	28	31011101002M0
AVAH-KF40-M-E	65	150	157	69	62	45	31011301002M0

Dimension in mm unless otherwise noted

HV Angle Valve - Pneumatic Actuated

Specification:

Electrical position indicator **Connection** **Rating**	AC 24 ~ 240 VAC 4~24VDC		
Vacuum connection	KF16	KF25	KF40
Actuation	opening : pneumatic closing : by pressure spring		
Compressed air supply **Tube connection** **Pressure range** **Piston displacement**	Ø6 mm 4~6 Kg/cm^2(overpressure) 4 cm^3	11 cm^3	35 cm^3
Stroke of valve plate	6 mm	8 mm	13 mm
Switching frequency **Opening time** **Closing time**	10/min 100ms 100ms	10/min 120ms 160ms	8/min 260ms 540ms
Cycle life (*1)	10,000,000		
Leak Rate	1x10^{-9} mbar l/s		
Pressure max.	5 bar(absolute)		
Operating pressure min.	1x10^{-8} mbar		
Operating pressure max.	2 bar		
Pressure difference △p **In closing direction** **In opening direction**	5 bar 2 bar		
Temperature **Ambiance** **Bakeout** **Housing** **Stainless Steel** **Actuator** **Pilot valve**	0°C…+50°C 150°C 50°C 50°C		
Mounting orientation	Any		
Materials **Housing** **valve plate** **Pressure spring** **Seals** **Visual position indicator** **Cylinder unit**	304S.S. 316S.S. Spring steel Viton A5083		

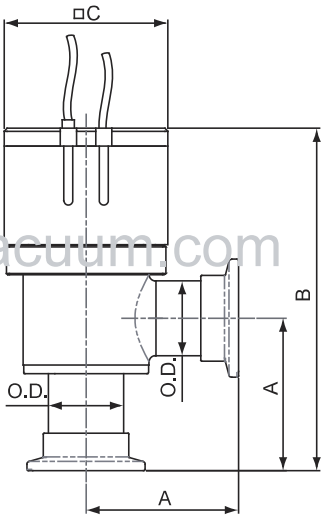
* 1 The Cycle life of valve is apply to room temperature 25°C and clean environment, and the opening action apply to be less than 10 mbar pressure difference. (If the opening action exceeds the pressure difference of 10 mbar, it is not covered by this guarantee.)

Dimension in mm unless otherwise noted

HV Angle Valve - Pneumatic Actuated

Normally Closed

Single-Acting, air to open, spring to close
With formed bellows seal



Features

- 10 million cycle 316Ti stainless steel bellows
- Easy maintenance, fast bellows and seal replacement
- Fast opening and closing
- Stainless steel body
- Leak rate: $1x10^{-9}$ mbar. l /sec
- Flange type: KF(NW)

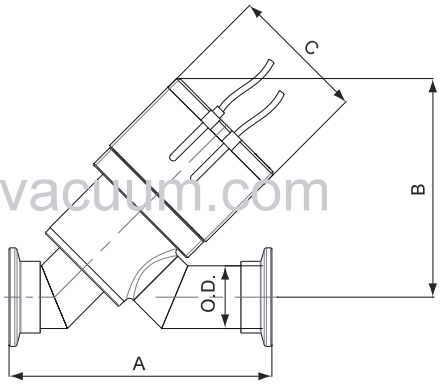
Model No.	A	B	C	O.D.	Parts No.
AVBHS-KF16-P	54.6	118.3	46.4	19.05	30110911021A
AVBHS-KF25-P	51.6	115.9	55.4	25.4	30111111021A
AVBHS-KF40-P	61	156.8	70.4	38.1	30111311021A

With reed sensors

HV Y-INLINE Valve - Pneumatic Actuated

Normally Closed

With formed bellows seal , Attached Reed Sensor
Single-Acting , air to open , spring to close



Features

- 10 million cycle 316Ti stainless steel bellows
- Easy maintenance, fast bellows and seal replacement
- Fast opening and closing
- Stainless steel body
- Leak rate: $1x10^{-9}$ mbar. l /sec
- Flange type: KF(NW)

Model No.	A	B	C	O.D.	Parts No.
YVBHS-KF16-P	101.6	84.2	46.4	19.05	30510911021A
YVBHS-KF25-P	106.8	88.8	55.4	25.4	30511111021A
YVBHS-KF40-P	129.8	124.8	70.4	38.1	30511311021A

With reed sensors

HV Angle Valve - Pneumatic Actuated

Specification:

Electrical position indicator **Connection** **Rating**	AC 24 ~ 240 VAC 4~24VDC
Vacuum connection	ISO I00
Actuation	opening : pneumatic closing : by pressure spring
Compressed air supply **Tube connection** **Pressure range** **Piston displacement**	Ø6 mm 4~6 Kg/cm^2(overpressure)
Opening time **Closing time**	1s 1s
Cycle life (*1)	1,000,000
Leak Rate	1x10^{-9} mbar l/s
Pressure max.	2 bar(absolute)
Operating pressure min.	1x10^{-9} mbar
Operating pressure max.	2 bar
Pressure difference △p **In closing direction** **In opening direction**	 2 bar 1.2 bar
Temperature **Ambiance** **Bakeout** **Housing** **Aluminum** **Actuator** **Pilot valve**	 0°C…+50°C 150°C 50°C 50°C
Mounting orientation	Any
Materials **Housing** **valve plate** **Pressure spring** **Seals** **Visual position indicator** **Cylinder unit**	 304S.S. 316S.S. Spring steel Viton A6061

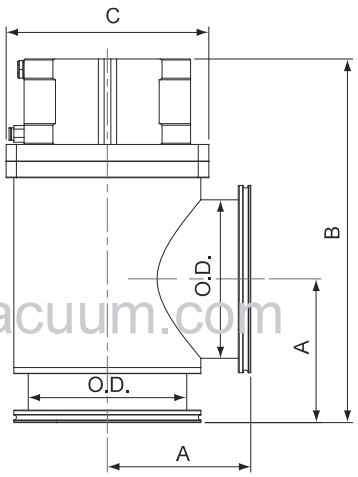
*1 The Cycle life of valve is apply to room temperature 25°C and clean environment, and the opening action apply to be less than 10 mbar pressure difference. (If the opening action exceeds the pressure difference of 10 mbar, it is not covered by this guarantee.)

Dimension in mm unless otherwise noted

HV Angle Valve - Pneumatic Actuated

With formed bellows seal

Single-Acting , air to open , spring to close



Features

- 1 million cycle 316L stainless steel bellows
- Polished 304 stainless steel body
- Operating pressure: 4~6 kg/cm^2
- Orientation: Any position

Model No.	A	B	C	O.D.	Parts No.
AVBHS-ISO100-P	113.5	314	154	101.6	30111814021A
AVBHS-ISO100-P-E	108	308	154	101.6	31111814021A
AVBHS-ISO160-P	159	371	195	152.4	30112014021A
AVBHS-ISO160-P-E	138	350	195	152.4	31112014021A

With reed sensors

HV Angle Valve- Manual

Specification:

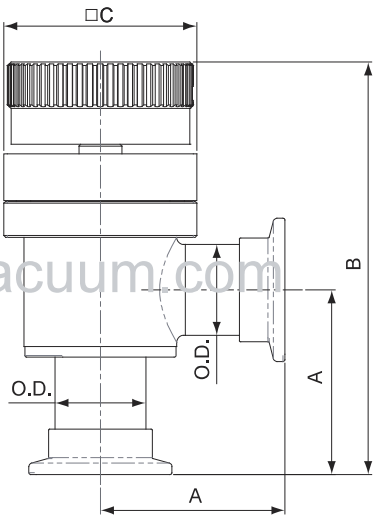
Vacuum connection	KF16	KF25	KF40
Stroke of valve plate	6 mm	8 mm	13 mm
Cycle life	10,000		
Leak Rate	$1x10^{-9}$ mbar l/s		
Operating pressure min.	$1x10^{-8}$ mbar		
Operating pressure max.	2 bar		
Pressure difference △p In closing direction In opening direction	 5 bar 2 bar		
Temperature Ambiance Bakeout Housing Stainless Steel	 0°C…+50°C 150°C		
Mounting orientation	Any		
Materials Housing Stainess steel valve plate Pressure spring Seals Hand wheel	 304S.S. 316S.S. Spring steel Viton A6061		

Dimension in mm unless otherwise noted

HV Angle Valve

Manual

With formed bellows seal



Features

- 10,000 cycle 316Ti stainless steel bellows
- Easy maintenance, fast bellows and seal replacement
- Stainless steel body
- Leak rate: $1x10^{-9}$ mbar. l /sec
- Flange type: KF(NW)

Model No.	A	B	C	O.D.	Parts No.
AVBH-KF16-M	54.6	119.4	45	19.05	30110901001A
AVBH-KF25-M	51.6	115.3	54	25.4	30111101001A
AVBH-KF40-M	61	153.8	69	38.1	30111301001A

Dimension in mm unless otherwise noted

FORMED BELLOWS SEAL STAINLESS VALVE

Reduces particulate contamination during early turbulent pumpdown.

First stage flow inlet

Flow adjustment switch

Specification:

Vacuum connection	ISO100
Cycle life (*1)	1,000,000
Leak Rate	$1x10^{-9}$ mbar l/s
Operating pressure min.	$1x10^{-8}$ mbar
Operating pressure max.	2 bar
Pressure difference △p **In closing direction** **In opening direction**	 2 bar 1.2 bar
Temperature **Ambiance** **Bakeout** **Housing** **Stainless Steel**	 0°C…+50°C 150°C
Conductance for two stage	Min : 10.8 L/s/ ， MAX : 47.5L/s
Mounting orientation	Any
Materials **Housing** **Stainess steel** **valve plate** **Pressure spring** **Seals** **Visual position indicator** **Cylinder unit**	 304 S.S. 316L S.S. Spring steel Viton A6061

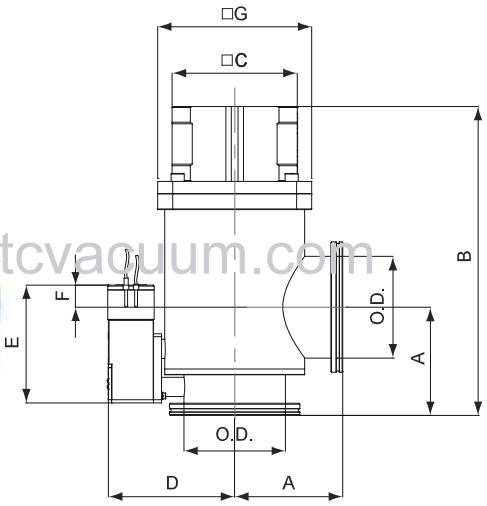
*1 The Cycle life of valve is apply to room temperature 25°C and clean environment, and the opening action apply to be less than 10 mbar pressure difference.(If the opening action exceeds the pressure difference of 10 mbar, it is not covered by this guarantee.)

Dimension in mm unless otherwise noted

FORMED BELLOWS SEAL STAINLESS VALVE

Single-Acting, air to open, spring to close with reed sensor

Two-Stage Valve



Features

- 1 millin cycle 316L stainless steel bellows
- Polished 304 stainless steel body.
- Operating pressure:4~6kg/cm^2
- Orientation : Any position.
- Viton Seal Bonnet : 10^{-9} mbar vacuum rating.
- Provides soft pumpdown and isolation for vacuum system

Model No.	A	B	C	D	E	F	G	O.D.	Parts No.
TSAVBHS-ISO63-P	82.8	203.6	100	107	117.7	36.7	NA	63.5	35111514021A
TSAVBHS-ISO63-P-E	88	208.8	100	107	117.7	36.7	NA	63.5	36111514021A
TSAVBHS-ISO100-P	113.5	319.9	125	126	117.7	22.1	154	101.6	35111814021A
TSAVBHS-ISO100-P-E	108	308.4	125	126	117.7	22.1	154	101.6	36111814001A

Dimension in mm unless otherwise noted

Butterfly valve

BUTTERFLY VALVES

Butterfly valve is a valve which can be used for isolating or regulating flow. The closing mechanism takes the form of a disk. Operation is similar to that of a ball valve, which allows for quick shut off. Butterfly valves are generally favored because they are lighter in weight, meaning less support is required.

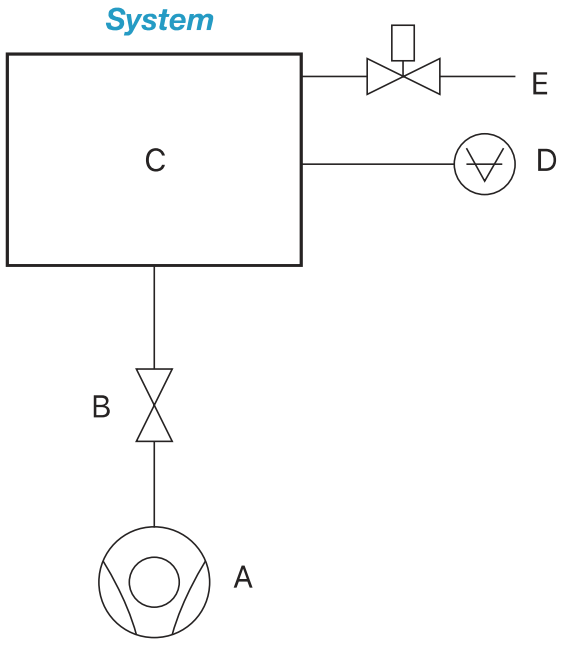
Htc vacuum provides various butterfly valves which features long service life, high quality and high performance, the robust and rugged design can be relied upon for years of trouble free service. There are manual, pneumatic and electric actuators butterfly valve available for different applications. One thing should be aware is that when the butterfly valve is fully open and the disk is protrusive from the valve body, the disk might interfere the inner surface of the connecting duct, users should check the minimum ID of connecting duct before installation.

Pneumatic butterfly valve

Main applications
Compact isolation valve for clean processes.

Application process
■ FPD ■ SEMI ■ PVD

Pneumatic butterfly valve-gate system settings



A : Pump
B : Htc pneumatic butterfly valve
C : Process chamber
D : Gauge
E : Gas inlet

Application

Htc Pneumatic butterfly valve is driven by rotating cylinder valve. The seal plate compacts O-ring isolated from the vacuum and atmosphere completely. Htc Pneumatic butterfly valve has advantages as quick opening and closing, easy installation, small size and long life cycles. Main application of Htc Pneumatic butterfly valve will be fully isolated contaminating and aggressive gas in processes. And the valve is located between pump and process chamber.

Dimension in mm unless otherwise noted

Pneumatic Butterfly valve

Specification:

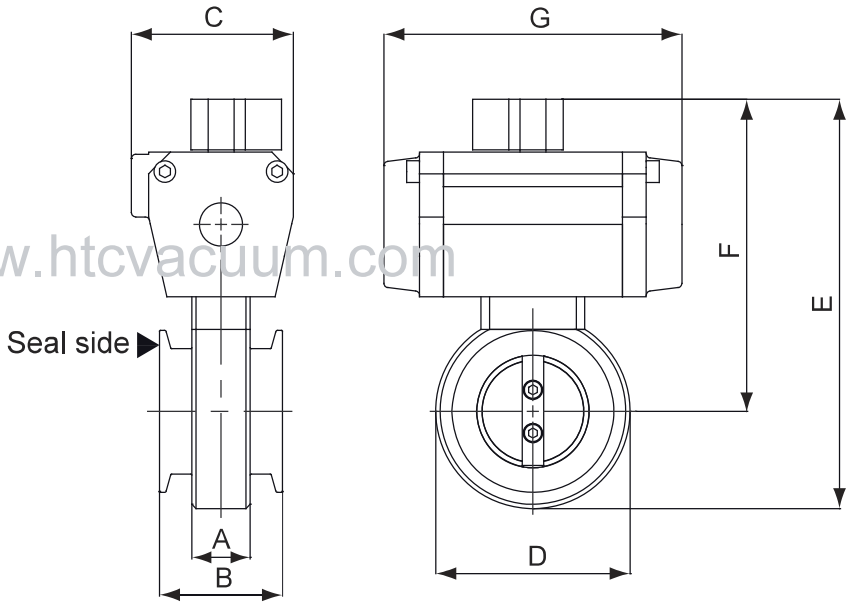
Material	Body		304 S.S.
	Plate		304 S.S.
	Shaft		304 S.S.
	Gate seal		Viton
	Shaft seal		Viton
Mounting orientation			Any
Cycles life*	cycles	KF25 - KF50	1,500,000
		ISO63 - ISO160	1,500,000
		ISO200 - ISO250	1,000,000
Cycles life for plate o-ring	cycles	KF25 - KF50	250,000
		ISO63 - ISO160	250,000
		ISO200 - ISO250	200,000
Helium leak rate at 1 atm differential	mbar-Liter/sec		$< 1 \times 10^{-9}$
Pressure range in either direction			1×10^{-8} mbar to 2 bar
Differential pressure △P in either direction			$\leq$ 2 bar
Maximum differential pressure during opening			< 1 bar
Compressed air connection	KF25~ISO63		2 x 1/8”NPT
	ISO100~250		2 x 1/4”NPT
Compressed air pressure			4 ~ 6 bar
Weight	KF25		1.3 kg
	KF40		2.3 kg
	KF50		2.6 kg
	ISO63		4.2 kg
	ISO100		5.2 kg
	ISO160		9.8 kg
	ISO200		17.8 kg
	ISO250		15.1 kg

* The Cycle life of valve is apply to room temperature 25°C and clean environment, and the opening action apply to be less than 10 mbar pressure difference. (If the opening action exceeds the pressure difference of 10 mbar, it is not covered by this guarantee.)

BUTTERFLY VALVE (KF TYPE)

Pneumatically Actuated

air to open, air to close



Model No.	A	B	C	D	E	F	G	Parts No.
KF25BFVP2	27	50	49	65	144	112	100	3202111101213
KF40BFVP2	27	57	75	80	192	152	138	3202131101213
KF50BFVP2	27	57	75	90	203	158	138	3202141101213

Features

- Valve size for 1"(25.4mm) to 2"(50.8mm)
- Flange : KF
- Pressure Range : 10^{-8} mbar to 2 bar
- Leak rate : $1x10^{-9}$ mbar. l/sec
- Body materials : 304S.S.
- Seal materials : Viton
- Max temperature : Actuator $\leqq$ 60°C / Body $\leqq$ 120°C
- Cycle life* : 1,500,000
  (O-ring on plate is a consumptive material in the butterfly valve, cycle life is 250,000)
- Option : Limit switch , solenoid (For KF40~KF50)
- Compressed air pressure : 4 ~ 6 kg/cm^2
- Compressed air connecter : 2x1/8"NPT (The product does not come with air connector)

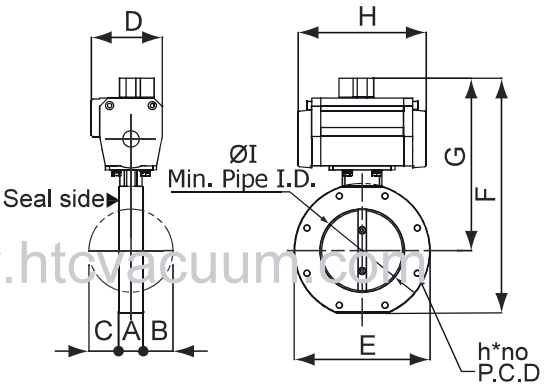
* The Cycle life of valve is apply to room temperature 25°C and clean environment, and the opening action apply to be less than 10 mbar pressure difference. (If the opening action exceeds the pressure difference of 10 mbar, it is not covered by this guarantee.)

Dimension in mm unless otherwise noted

BUTTERFLY VALVE (ISO-F TYPE)

Pneumatically Actuated

air to open, air to close



Features

- Valve size for 2-1/2" (63.5mm) to 8" (203.2mm)
- Flange : ISO-F
- Pressure Range : 10^{-8} mbar to 2 bar
- Leak rate: $1x10^{-9}$ mbar. l /sec
- Body materials : 304 S.S.
- Seal materials : Viton
- Max temperature: Actuator ≦ 60°C, Body ≦ 120°C
- Cycle life*: ISO63-ISO160 1,500,000 ISO200 1,000,000 (O-ring on plate is a consumptive material in the butterfly valve, cycle life is 250,000 for ISO63-160;200,000 for ISO200)
- Option : Limit switch , solenoid
- Compressed air pressure : 4~6 kg/cm^2
- Compressed air connecter : ISO63-2x1/8"NPT ; ISO100~200-2x1/4"NPT (The product does not come with air connector)

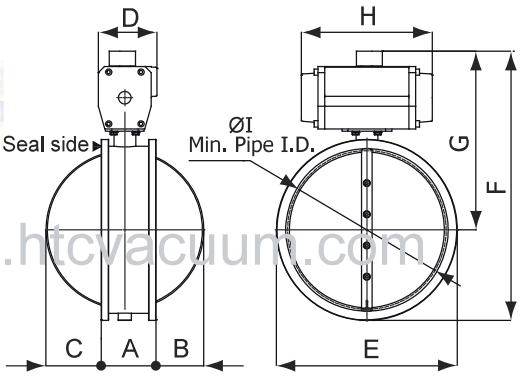
Model No.	A	B	C	D	E	F	G	H	h*No	Thread Depth	P.C.D	I	Parts No.
ISO63BFVP2	30	21	15	75	130	237	177.1	138	M8*4	12	110	63	3202151113213
ISO100BFVP2	30	36	36	86	165	288.5	211.5	155.5	M8*8	12	145	100	3202181113213
ISO160BFVP2	40	55.5	55.5	86	225	351.5	241.5	155.5	M10*8	15	200	150	3202201113213
ISO200BFVP2	50	76	76	104	285	438	299	230	M10*12	15	260	200	3202211113213

* The Cycle life of valve is apply to room temperature 25°C and clean environment, and the opening action apply to be less than 10 mbar pressure difference. (If the opening action exceeds the pressure difference of 10 mbar, it is not covered by this guarantee.)

BUTTERFLY VALVE (ISO-K TYPE)

Pneumatically Actuated

air to open, air to close



Features

- Valve size for 10" (254mm)
- Flange : ISO-K
- Pressure Range : 10^{-8} mbar to 2 bar
- Leak rate: $1x10^{-9}$ mbar. l /sec
- Body materials : 304 S.S.
- Seal materials : Viton
- Max temperature: Actuator ≦ 60°C, Body ≦ 120°C
- Cycle life* : 1,000,000 (O-ring on plate is a consumptive material in the butterfly valve, cycle life is 200,000)
- Option : Limit switch , solenoid
- Compressed air pressure : 4~6kg/cm^2
- Compressed air connecter : 2x1/4"NPT (The product comes with throttle valve)
- Open / Close time : ≤ 5 sec / ≤ 2 sec

Model No.	A	B	C	D	E	F	G	H	I	Parts No.
ISOK250BFVP2	88	82.5	82.5	126	290	457	312	230	251	32022211032136

* The Cycle life of valve is apply to room temperature 25°C and clean environment, and the opening action apply to be less than 10 mbar pressure difference. (If the opening action exceeds the pressure difference of 10 mbar, it is not covered by this guarantee.)

3-Position Butterfly valve

Pneumatic butterfly valve

Main applications

- Compact isolation valve for high conductance clean processes
- Has a 3rd position to change the conductance. One has two functions.

Application process

■ FPD ■ SEMI ■ PVD

Application

Htc 3-position butterfly valve is driven by rotating cylinder valve. Htc 3-position butterfly valve has 3rd position function, easy installation, small size and long life cycles. The 3-position butterfly valve opening can be set from 0-90°. Main application of Htc 3-position butterfly valve will be fully isolated contaminating and aggressive gas in processes. The valve is located between pump and process chamber and 3rd position can be set to change the conductance.

Material		Body	304 S.S.
		Plate	304 S.S.
		Shaft	304 S.S.
		Gate seal	Viton
		Shaft seal	Viton
Cycles life*	cycles	KF40 - KF50	1,500,000
		ISO63 - ISO160	1,500,000
Cycles life for plate O-ring	cycles	KF40 - KF50	250,000
		ISO63 - ISO160	250,000
Helium leak rate at 1 atm differential		mbar-Liter/sec	$< 1 \times 10^{-9}$
Mounting orientation		Any	
3rd position adjustment angle		0-90°	
Pressure range in either direction		1×10^{-8} mbar to 2 bar	
Differential pressure △P in either direction		$\leq$ 2 bar	
Maximum differential pressure during opening		< 1 bar	
Compressed air connection		KF-40~ISO100	2x1/8”NPT+1xM5
		ISO160	2x1/4”NPT+1x1/8”NPT
Compressed air pressure		4 ~ 6 bar	

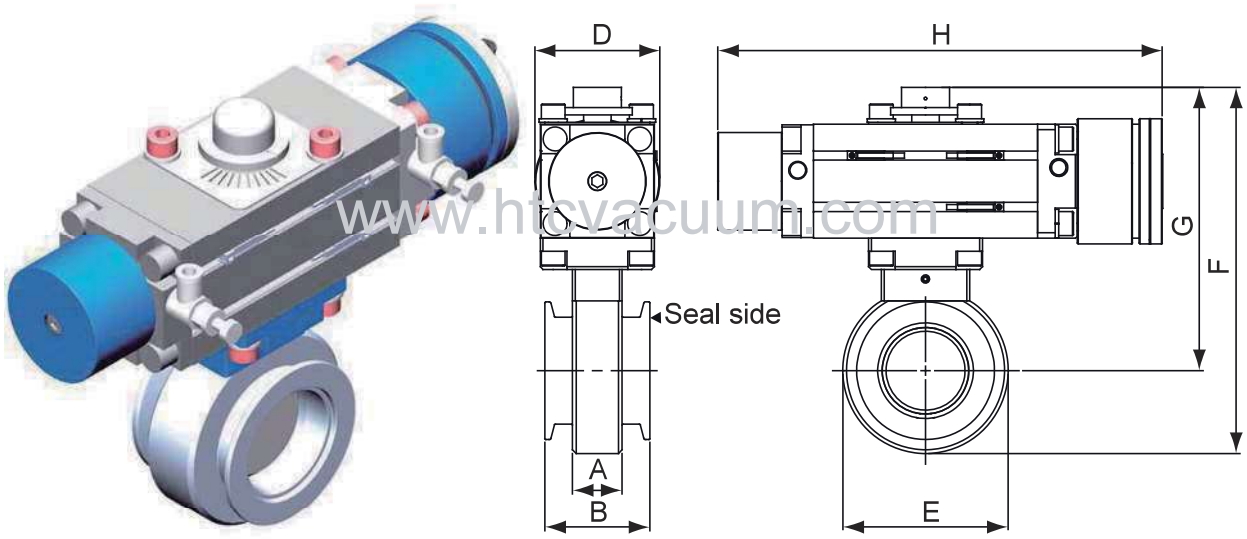
* The Cycle life of valve is apply to room temperature 25°C and clean environment, and the opening action apply to be less than 10 mbar pressure difference. (If the opening action exceeds the pressure difference of 10 mbar, it is not covered by this guarantee.)

Dimension in mm unless otherwise noted

3-Position BUTTERFLY VALVE (KF TYPE)

Pneumatically Actuated

air to open, air to close, air to 3-position



Model No.	A	B	D	E	F	G	H	Parts No.
KF40BFV3P	27	57	68	80	191.5	151.5	242	3202131101217
KF50BFV3P	27	57	68	90	202	157	242	3202141101217

Features

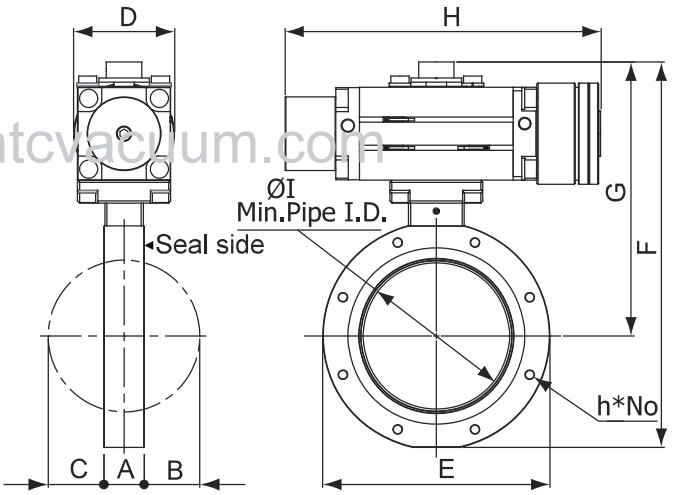
- Valve size for 1"(25.4mm) to 2"(50.8mm)
- Flange : KF
- Pressure Range : 10^{-8} mbar to 2 bar
- Leak rate : $1x10^{-9}$ mbar. l/sec
- Body materials : 304S.S.
- Seal materials : Viton
- Temperature : Actuator ≦ 60°C / Body ≦ 120°C
- Cycle life* : 1,500,000
  (O-ring on plate is a consumptive material in the butterfly valve, cycle life is 250,000)
- Option : Limit switch , solenoid
- Compressed air pressure : 4 ~ 6 kg/cm^2
- Compressed air connecter : 2 x 1/8"NPT+1 x M5 (The product comes with throttle valve and air connector)

* The Cycle life of valve is apply to room temperature 25°C and clean environment, and the opening action apply to be less than 10 mbar pressure difference. (If the opening action exceeds the pressure difference of 10 mbar, it is not covered by this guarantee.)

3-Position BUTTERFLY VALVE (ISO-F TYPE)

Pneumatically Actuated

air to open, air to close, air to 3-position



Model No.	A	B	C	D	E	F	G	H	h*No	Thread Depth	P.C.D	I	Parts No.
ISO63BFV3P	36	15	21	83	130	259	199	268.5	M8*4	12	110	63	3202151113217
ISO100BFV3P	30	36	36	83	165	295	218	268.5	M8*8	12	145	100	3202181113217
ISO160BFV3P	40	55.5	55.5	100	225	385	275	312	M10*8	15	200	150	3202201113217

Features

- Valve size for 1"(25.4mm) to 2"(50.8mm)
- Flange : ISO-F
- Pressure Range : 10^{-8} mbar to 2 bar
- Leak rate : $1x10^{-9}$ mbar. l/sec
- Body materials : 304S.S.
- Seal materials : Viton
- Temperature : Actuator $\leqq$ 60°C / Body $\leqq$ 120°C
- Cycle life* : 1,500,000
  (O-ring on plate is a consumptive material in the butterfly valve, cycle life is 250,000)
- Option : Limit switch , solenoid
- Compressed air pressure : 4 ~ 6 kg/cm^2
- Compressed air connecter : ISO63~100-2x1/8”NPT+1xM5 ; ISO160-2x1/4”NPT+1x1/8”NPT
  (The product comes with throttle valve and air connector)

* The Cycle life of valve is apply to room temperature 25°C and clean environment, and the opening action apply to be less than 10 mbar pressure difference. (If the opening action exceeds the pressure difference of 10 mbar, it is not covered by this guarantee.)

Dimension in mm unless otherwise noted

APC Butterfly valve ModBUS

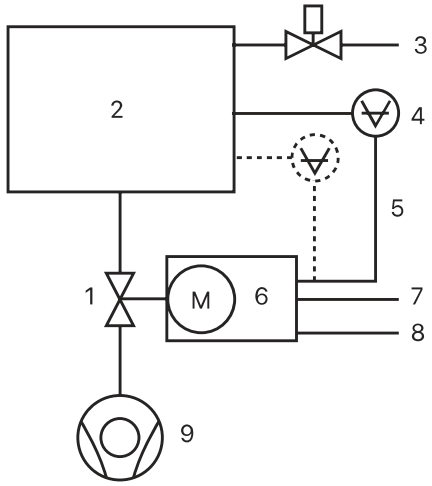
- **Main applications**
  Downstream pressure control and isolation valve.

Application process
■ SEMI ■ FPD ■ Solar ■ CVD

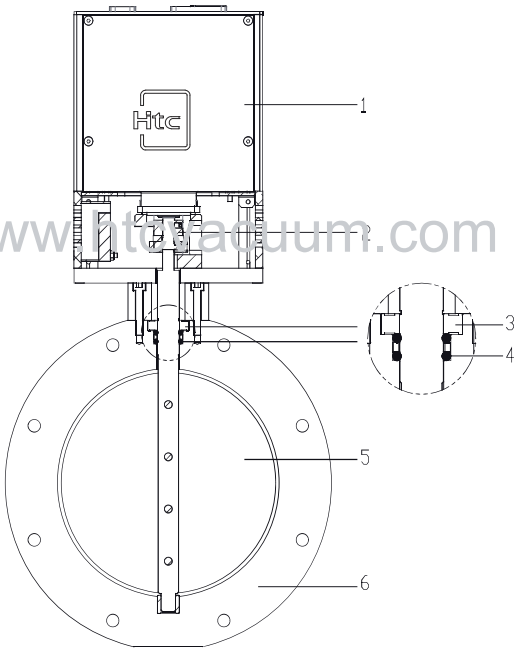
Features

- Integrated pressure controller
- Short response time
- Accurate pressure control
- Friendly user interface
- Compact isolation

APC butterfly valve gate system settings

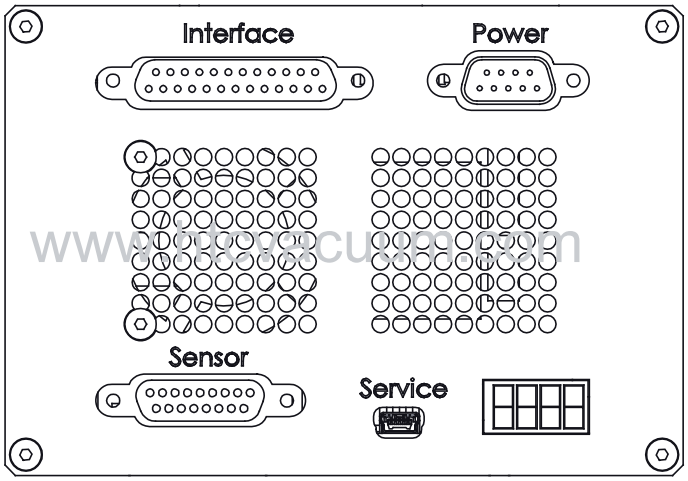


1. Valve
2. Process chamber
3. Gas inlet
4. Pressure sensor(s)
5. Sensor cable(s)
6. Controller and actuator
7. Cable to remote control unit
8. Cable to power supply
9. Pump



No.	Parts	Material	Quantity
1	APC Controller	FR-4 (Main material)	1
2	Couplings	304S.S.	1
3	Bearing	304S.S.	1
4	O-Ring	VITON	2
5	Plate	304S.S.	1
6	Body	304S.S.	1

Butterfly valve control system - ModBUS Controller



Features

- Very fast and accurate pressure control
- Valve position control
- Backup power：
  Yes ,for the valve at power failure
- Sensor supply power：
  24V DC and ±15V DC both have
- Inputs for 2 linear sensors or analog linear physical quantity
- Analog and Digital Easy Control

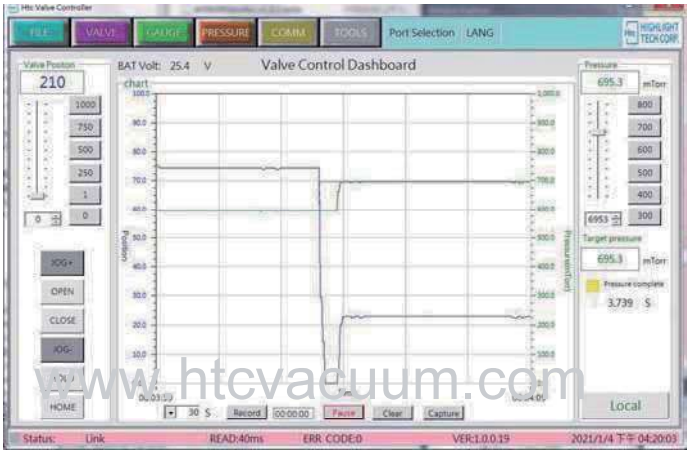
Model	Connection	Connection Type
Power	Power input	DB-9 male
Sensor (Vacuum gauge)	Sensor input Sensor power supply	DB-15 female
Interface	RS232+Logic RS485+Logic	DB-25 female
Service	APC service	Mini USB type B female
Monitor	Show status	Green LED display

- Ambient temperature: ≤ 70°C max.(Controller part -24HR)
- Remote control(for customer optional)
- The valve can be controlled by a host (local) via RS232; For initial adjustment.
- Status and position are displayed by means of green 4 bright digits.

APC software functions

Control via computer by using the APC software offers convenient functions

- Set control tuning parameter : PIN GAIN
- Pressure and position control mode
- Schedule test Mode => 1 cycle schedule
- Set valve open/close speed
- Report APC HW/SW version, serial and model number
- Report valve cycles and run hours
- Set tolerance scope of pressure
- Cycles life and pressure control record
- Controller parameter upload and download
- Power failure protection
- Learning funtion



Dimension in mm unless otherwise noted

Specification:

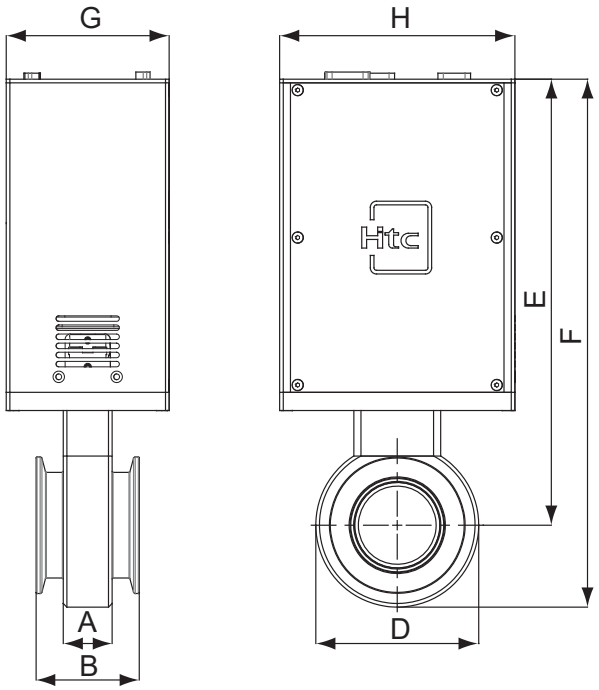
Valve unit		
Material	Body	304S.S. (*1)
	Plate	304S.S. (*1)
	Shaft	304S.S.
	Gate seal	Viton
	Shaft seal	Viton
Flange	KF 、ISO 、CF	
Mounting position	Any	
Cycles until first service	Pressure control	2,000,000(*2)
	Closing / Opening	250,000
Helium leak rate at 1 atm differential	< 1 x 10^{-9} mbar.l/sec	
Pressure range	1×10^{-8} mbar to 1.2 bar	
Operating temperature	Body	10°C to 110°C
Actuator	Step Motor	
Options	a. Communication interface(RS232,RS485) b. Analog input(12bit,24bit)	
Standard accessories	Digital node(4in/4out)	

(*1) Body and Plate material can choose aluminum alloy.
(*2) The Cycle life of valve is apply to room temperature 25°C and clean environment, and the opening action apply to be less than 10 mbar pressure difference. (If the opening action exceeds the pressure difference of 10 mbar, it is not covered by this guarantee.)
(*3) If there is particle issue in the working condition of the valve , please clean the valve plate and body regularly and apply some vacuum grease on these parts.

Control and actuating unit			
Input voltage	+24 VDC		connector: POWER
Power consumption	100W max. (Controller + Motor + Sensor + Power Failure)		connector: POWER
Sensor power supply output	+24 VDC /+-15VDC 、500 mA		connector: SENSOR
Analog input			
Q’ ty of sensors	Independent 2 channel		connector: SENSOR
Input voltage	0-10V DC linear		connector: SENSOR
Resolution	12bit	2.3 mV	connector: SENSOR
	24bit	0.5 mV	
Input resistance	Ri = 21 kΩ		connector: SENSOR
Digital Input/ Output			
Input	Independent 2 channel		connector: INTERFACE
Output	Independent 2 channel		connector: INTERFACE
Ambient temperature	≤ 70° C -24HR		
Control accuracy	0.1% of maximum sensor range		
Backup power	Yes		
KF25,KF40,KF50,CF35			
Controller	<0.85sec		
Control accuracy	<0.85sec		
Position resolution	50kg-cm		
Position resolution	8000 (steps 0-90 rotation)		
ISO63, ISO80, ISO100, CF63, CF100			
Closing time	<0.85sec		
opening time	<0.85sec		
Valve max. torque	50kg-cm		
Position resolution	8000 (steps 0-90 rotation)		
ISO160, CF150			
Closing time	<3.5sec		
opening time	<3.5sec		
Valve max. torque	90kg-cm		
Position resolution	2400 (steps 0-90 rotation)		

Dimension in mm unless otherwise noted

APC BUTTERFLY VALVE (KF TYPE)
ModBUS



Interface: RS232

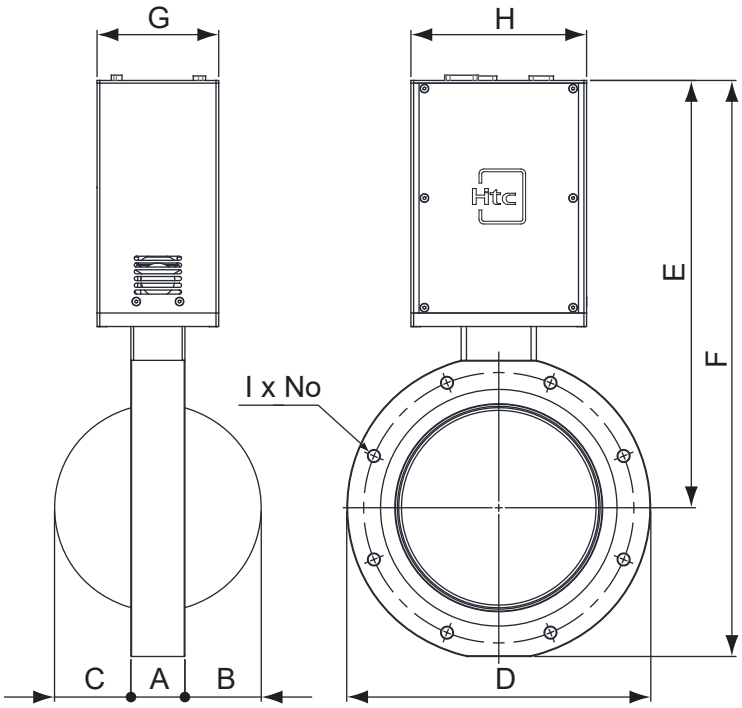
Model No.	Parts No.	A	B	D	E	F	G	H
KF25BFVC/RS232/12bit	3202111101214	27	50	65	231	263.5	90	130
KF25BFVC/RS232/24bit	320211110121E							
KF40BFVC/RS232/12bit	3202131101214	27	57	80	239.5	279.5	90	130
KF40BFVC/RS232/24bit	320213110121E							
KF50BFVC/RS232/12bit	3202141101214	27	57	90	245	290	90	130
KF50BFVC/RS232/24bit	320214110121E							

Interface: RS485

Model No.	Parts No.	A	B	D	E	F	G	H
KF25BFVC/RS485/12bit	3202111101215	27	50	65	231	263.5	90	130
KF25BFVC/RS485/24bit	320211110121F							
KF40BFVC/RS485/12bit	3202131101215	27	57	80	239.5	279.5	90	130
KF40BFVC/RS485/24bit	320213110121F							
KF50BFVC/RS485/12bit	3202141101215	27	57	90	245	290	90	130
KF50BFVC/RS485/24bit	320214110121F							

Dimension in mm unless otherwise noted

APC BUTTERFLY VALVE (ISO-F TYPE)
ModBUS



Interface: RS232

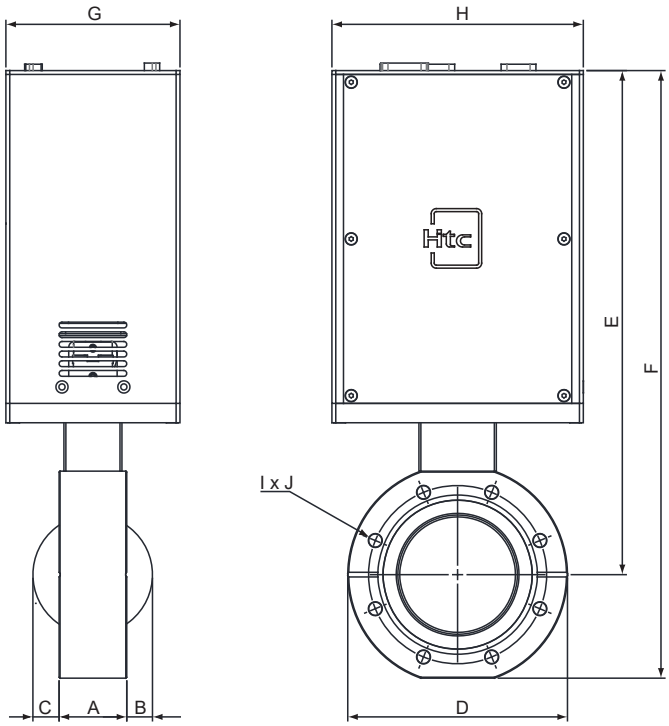
Model No.	Parts No.	A	B	C	D	E	F	G	H	I x No	Thread Depth	P.C.D
ISO63BFVC/RS232/12bit	3202151113214	30	15	21	130	267	327	90	130	M8*4	12	110
ISO63BFVC/RS232/24bit	320215111321E											
ISO80BFVC/RS232/12bit	3202161113214	30	26	26	145	275	344	90	130	M8*8	12	125
ISO80BFVC/RS232/24bit	320216111321E											
ISO100BFVC/RS232/12bit	3202181113214	30	36	36	165	286	363	90	130	M8*8	12	145
ISO100BFVC/RS232/24bit	320218111321E											
ISO160BFVC/RS232/12bit	3202201113214	40	57	57	225	426	536	110	140	M10*8	15	200
ISO160BFVC/RS232/24bit	320220111321E											

Interface: RS485

Model No.	Parts No.	A	B	C	D	E	F	G	H	I x No	Thread Depth	P.C.D
ISO63BFVC/RS485/12bit	3202151113215	30	15	21	130	267	327	90	130	M8*4	12	110
ISO63BFVC/RS485/24bit	320215111321F											
ISO80BFVC/RS485/12bit	3202161113215	30	26	26	145	275	344	90	130	M8*8	12	125
ISO80BFVC/RS485/24bit	320216111321F											
ISO100BFVC/RS485/12bit	3202181113215	30	36	36	165	286	363	90	130	M8*8	12	145
ISO100BFVC/RS485/24bit	320218111321F											
ISO160BFVC/RS485/12bit	3202201113215	40	57	57	225	426	536	110	140	M10*8	15	200
ISO160BFVC/RS485/24bit	320220111321F											

Dimension in mm unless otherwise noted

APC BUTTERFLY VALVE (CF TYPE)
ModBUS



Interface: RS232

Model No.	Parts No.	A	B	C	D	E	F	G	H	I x No	Thread Depth	P.C.D
CF35BFVC/RS232/12bit	3202131102214	30	4.5	4.5	69.5	229	264	90	130	M6*6	12	58.7
CF35BFVC/RS232/24bit	320213110221E											
CF63BFVC/RS232/12bit	3202151102214	35	16.5	16.5	113.6	260.5	314	90	130	M8*8	12	92.1
CF63BFVC/RS232/24bit	320215110221E											
CF100BFVC/RS232/12bit	3202181102214	30	36.5	36.5	151.6	279	351	90	130	M8*16	12	130.3
CF100BFVC/RS232/24bit	320218110221E											
CF150BFVC/RS232/12bit	3202201102214	40	56.6	56.6	202.5	416	514.5	110	140	M8*20	15	181
CF150BFVC/RS232/24bit	320220110221E											

Interface: RS485

Model No.	Parts No.	A	B	C	D	E	F	G	H	I x No	Thread Depth	P.C.D
CF35BFVC/RS485/12bit	3202131102215	30	4.5	4.5	69.5	229	264	90	130	M6*6	12	58.7
CF35BFVC/RS485/24bit	320213110221F											
CF63BFVC/RS485/12bit	3202151102215	35	16.5	16.5	113.6	260.5	314	90	130	M8*8	12	92.1
CF63BFVC/RS485/24bit	320215110221F											
CF100BFVC/RS485/12bit	3202181102215	30	36.5	36.5	151.6	279	351	90	130	M8*16	12	130.3
CF100BFVC/RS485/24bit	320218110221F											
CF150BFVC/RS485/12bit	3202201102215	40	56.6	56.6	202.5	416	514.5	110	140	M8*20	15	181
CF150BFVC/RS485/24bit	320220110221F											

Dimension in mm unless otherwise noted

APC BUTTERFLY VALVE DeviceNET

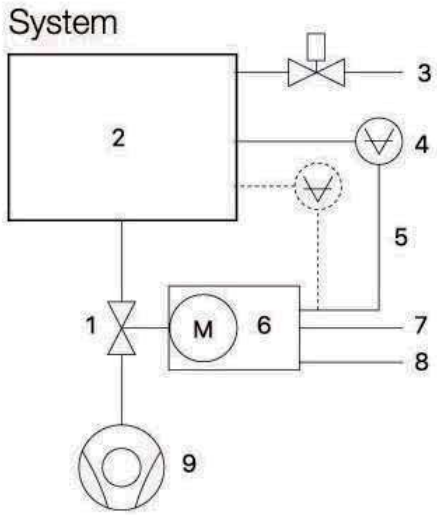
- **Main applications**
  Downstream pressure control and isolation valve.

Application process
■ SEMI ■ FPD ■ Solar ■ CVD

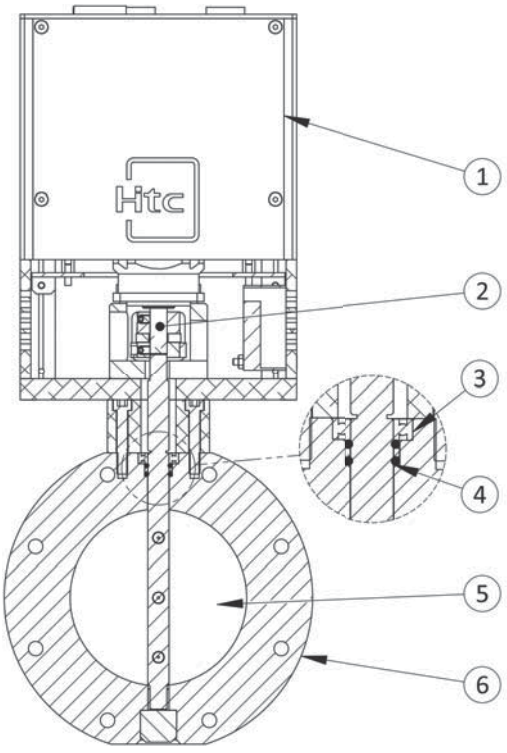
Features

- Integrated pressure controller
- Short response time
- Accurate pressure control
- Friendly user interface
- Compact isolation

APC butterfly valve gate system settings



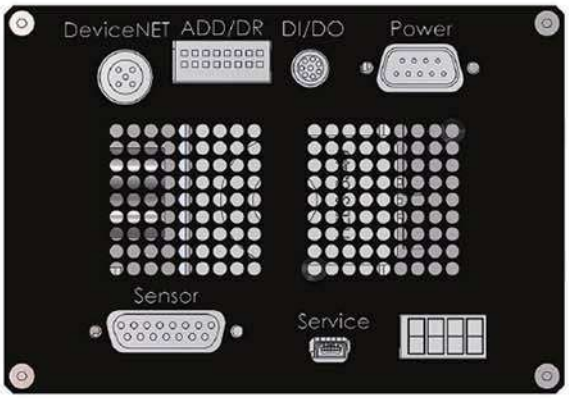
1. Valve
2. Process chamber
3. Gas inlet
4. Pressure sensor(s)
5. Sensor cable(s)
6. Controller and actuator
7. Cable to remote control unit
8. Cable to power supply
9. Pump



No.	Parts	Material	Quantity
1	APC Controller	FR-4 (Main material)	1
2	Couplings	304S.S.	1
3	Bearing	304S.S.	1
4	O-Ring	VITON	2
5	Plate	304S.S.	1
6	Body	304S.S.	1

Dimension in mm unless otherwise noted

Butterfly valve control system - DeviceNET Controller



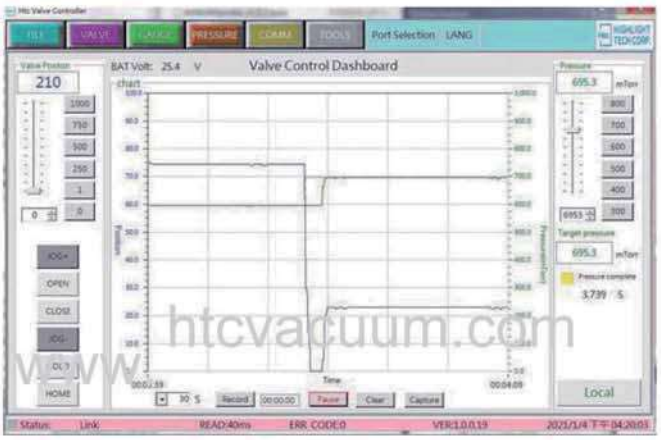
Specifications

- Very fast and accurate pressure control
- Valve position control
- Backup power：Yes,for the valve at power failure
- Sensor supply power：24V DC and ±15V DC both have
- Inputs for 2 linear sensors or analog linear physical quantity
- Analog and Digital Easy Control
- Ambient temperature: ≤70°C max.(Controller part -24HR)
- Remote control (for customer optional)
- The valve can be controlled by a host (local) via RS232; For initial adjustment.
- Status and position are displayed by means of green 4 bright digits.

Model	Connection	Connection Type
Power	Power input	DB-9 male
Sensor (Vacuum gauge)	Sensor input/ Sensor power supply	DB-15 female
Interface	DeviceNET	M-12 male
Digital I/O	DI/DO	M-8 male
Node Address	Address/ Baud rate	8pin DIP switch
Service	APC service	Mini USB female
Monitor	Show status	Green LED display

APC software functions

- Set control tuning parameter : PID GAIN
- Pressure and position control mode
- Schedule test Mode => 1 cycle schedule
- Report APC HW/SW version, serial and model number
- Report valve cycles and run hours
- Set tolerance scope of pressure
- Cycles life and pressure control record
- Controller parameter upload and download
- Power failure protection
- Learning function



APC software functions

Specification:

Valve unit		
Material	Body	304S.S. (*1)
	Plate	304S.S. (*1)
	Shaft	304S.S.
	Gate seal	Viton
	Shaft seal	Viton
Flange	KF 、ISO 、CF	
Mounting position	Any	
Cycles until first service	Pressure control	2,000,000(*2)
	Closing / Opening	250,000
Helium leak rate at 1 atm differential	< 1 x 10^{-9} mbar.l/sec	
Pressure range	1×10^{-8} mbar to 1.2 bar	
Operating temperature	Body	10°C to 110°C
Actuator	Step Motor	
Standard accessories	M12 Single-Ended Cordset, 5 Poles, Female (Straight) to Pigtail by CAN Bus, 2.0 meter in length.*1.(Can optional cable length)	

(*1) Body and Plate material can choose aluminum alloy.
(*2) The Cycle life of valve is apply to room temperature 25°C and clean environment, and the opening action apply to be less than 10 mbar pressure difference. (If the opening action exceeds the pressure difference of 10 mbar, it is not covered by this guarantee.)
(*3) If there is particle issue in the working condition of the valve , please clean the valve plate and body regularly and apply some vacuum grease on these parts.

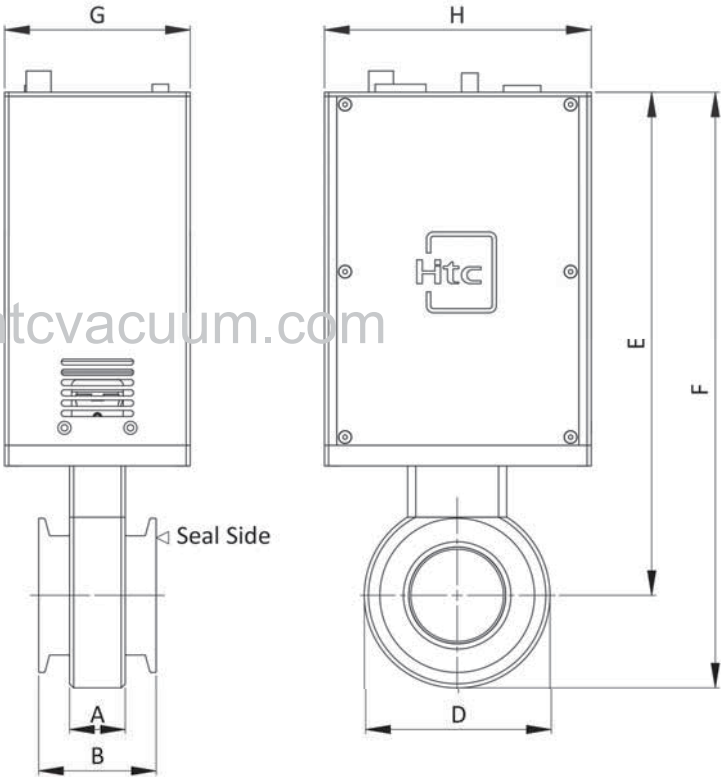
Dimension in mm unless otherwise noted

Control and actuating unit			
Input voltage	+24 VDC		connector: POWER
Power consumption	100W max. (Controller + Motor + Sensor + Power Failure)		connector: POWER
Sensor power supply output	+24 VDC /+-15VDC、500 mA		connector: SENSOR
Analog input			
Q’ty of sensors	Independent 2 channel		connector: SENSOR
Input voltage	0-10V DC linear		connector: SENSOR
Resolution	12bit	2.3 mV	connector: SENSOR
	24bit	0.5 mV	
Input resistance	Ri = 21 kΩ		connector: SENSOR
Digital Input/ Output			
Input	Independent 2 channel		connector: INTERFACE
Output	Independent 2 channel		connector: INTERFACE
Ambient temperature	≤ 70° C -24HR		
Control accuracy	0.1% of maximum sensor range		
Backup power	Yes		
KF25,KF40,KF50,CF35			
Closing time	<0.85sec		
Opening time	<0.85sec		
Position resolution	50kg-cm		
Position resolution	8000 (steps 0-90 rotation)		
ISO63, ISO80, ISO100, CF63, CF100			
Closing time	<0.85sec		
Opening time	<0.85sec		
Valve max. torque	50kg-cm		
Position resolution	8000 (steps 0-90 rotation)		
ISO160, CF150			
Closing time	<3.5sec		
opening time	<3.5sec		
Valve max. torque	90kg-cm		
Position resolution	2400 (steps 0-90 rotation)		

APC BUTTERFLY VALVE (KF TYPE)

Step Motor Actuated

Communication Protocol : DeviceNet



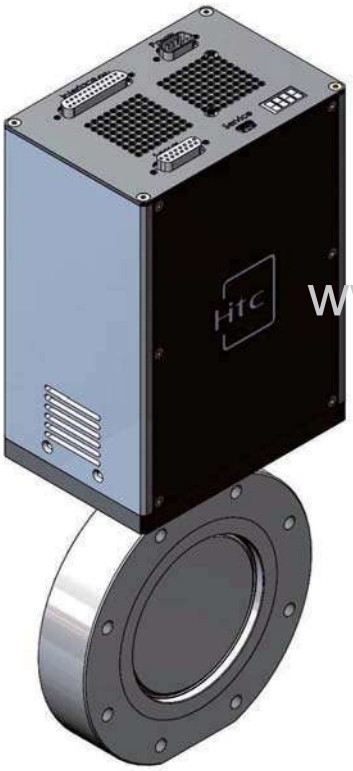
Model No.	Parts No.	A	B	D	E	F	G	H
KF25BFVC/DN/12bit	3202111101216	27	50	65	231	263.5	90	130
KF25BFVC/DN/24bit	320211110121G							
KF40BFVC/DN/12bit	3202131101216	27	57	80	239.5	279.5	90	130
KF40BFVC/DN/24bit	320213110121G							
KF50BFVC/DN/12bit	3202141101216	27	57	90	245	290	90	130
KF50BFVC/DN/24bit	320214110121G							

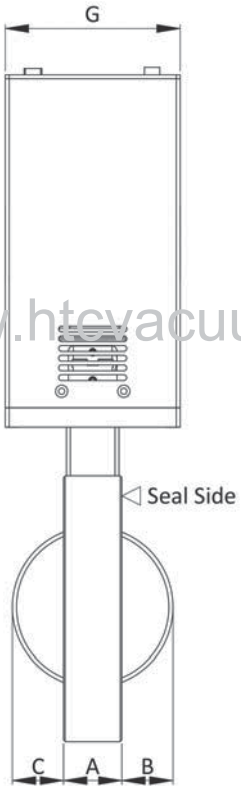
Dimension in mm unless otherwise noted

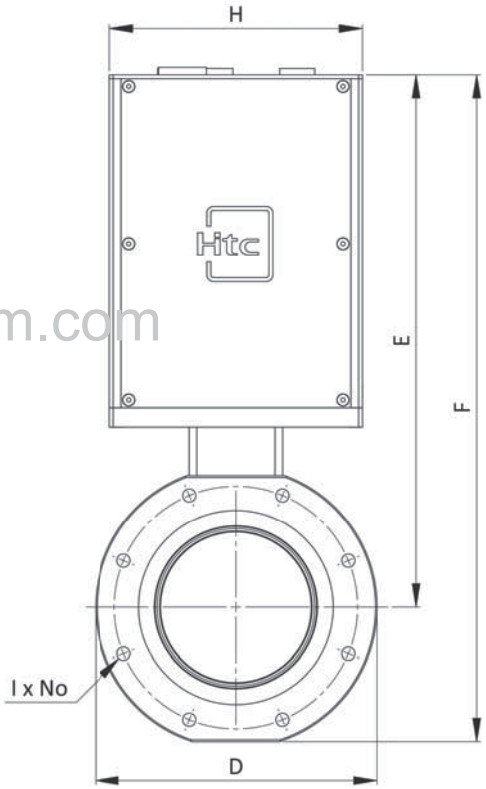
APC BUTTERFLY VALVE (ISO-F TYPE)

Step Motor Actuated

Communication Protocol : DeviceNet







*Unit : mm

Model No.	Parts No.	A	B	C	D	E	F	G	H
ISO63BFVC/DN/12bit	3202151113216	30	15	21	130	267	327	90	130
ISO63BFVC/DN/24bit	320215111321G								
ISO80BFVC/DN/12bit	3202161113216	30	26	26	145	275	344	90	130
ISO80BFVC/DN/24bit	320216111321G								
ISO100BFVC/DN/12bit	3202181113216	30	36	36	165	286	363	90	130
ISO100BFVC/DN/24bit	320218111321G								
ISO160BFVC/DN/12bit	3202201113216	40	57	57	225	426	536	110	140
ISO160BFVC/DN/24bit	320220111321G								

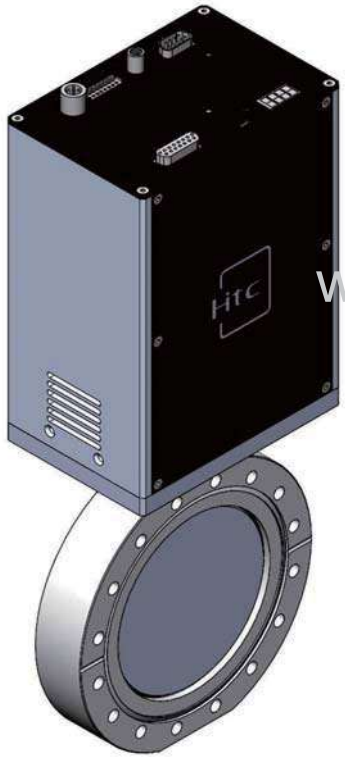
Model No.	Parts No.	I x No	P.C.D	Thread Depth
ISO63BFVC/DN/12bit	3202151113216	M8 x 4	110	12L
ISO63BFVC/DN/24bit	320215111321G			
ISO80BFVC/DN/12bit	3202161113216	M8 x 8	125	12L
ISO80BFVC/DN/24bit	320216111321G			
ISO100BFVC/DN/12bit	3202181113216	M8 x 8	145	12L
ISO100BFVC/DN/24bit	320218111321G			
ISO160BFVC/DN/12bit	3202201113216	M10 x 8	200	15L
ISO160BFVC/DN/24bit	320220111321G			

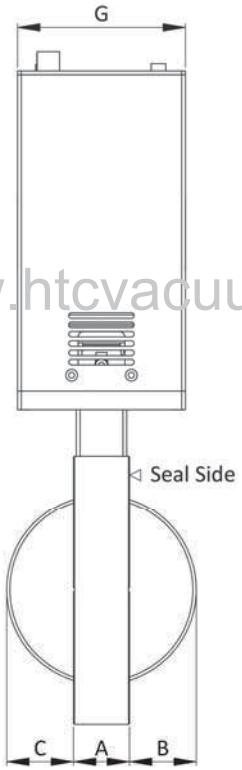
Dimension in mm unless otherwise noted

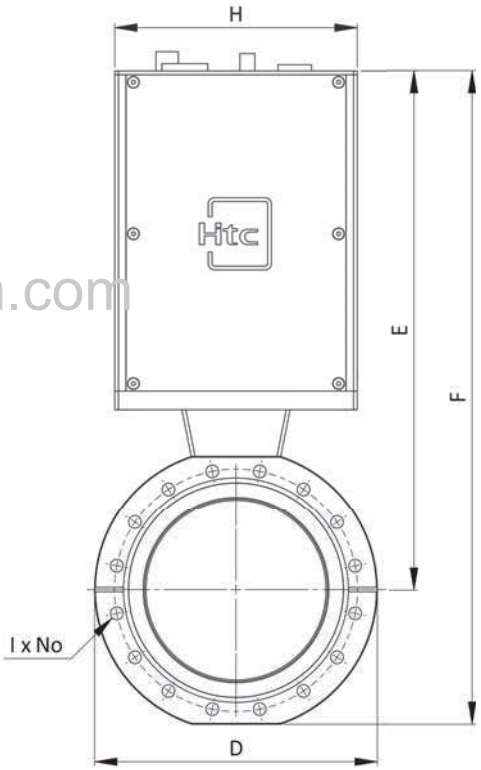
APC BUTTERFLY VALVE (CF TYPE)

Step Motor Actuated

Communication Protocol : DeviceNet







Model No.	Parts No.	A	B	C	D	E	F	G	H
CF35BFVC/DN/12bit	3202131102216	30	4.5	4.5	69.5	229	264	90	130
CF35BFVC/DN/24bit	320213110221G								
CF63BFVC/DN/12bit	3202151102216	35	16	16	113.6	260.5	314	90	130
CF63BFVC/DN/24bit	320215110221G								
CF100BFVC/DN/12bit	3202181102216	30	36.5	36.5	151.6	279	351	90	130
CF100BFVC/DN/24bit	320218110221G								
CF150BFVC/DN/12bit	3202201102216	40	57	57	202.5	416	514.5	110	140
CF150BFVC/DN/24bit	320220110221G								

Model No.	Parts No.	I x No	P.C.D	Thread Depth
CF35BFVC/DN/12bit	3202131102216	M6 x 6	58.7	12L
CF35BFVC/DN/24bit	320213110221G			
CF63BFVC/DN/12bit	3202151102216	M8 x 8	92.1	12L
CF63BFVC/DN/24bit	320215110221G			
CF100BFVC/DN/12bit	3202181102216	M8 x 16	130.3	12L
CF100BFVC/DN/24bit	320218110221G			
CF150BFVC/DN/12bit	3202201102216	M8 x 20	181	15L
CF150BFVC/DN/24bit	320220110221G			

Dimension in mm unless otherwise noted

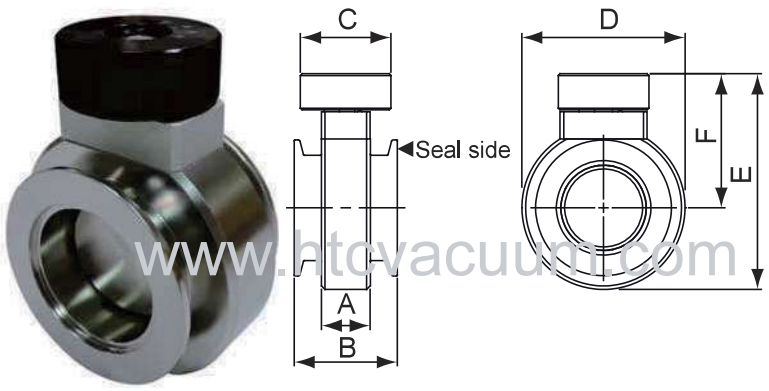
HV Butterfly valve-Manually Operated

Specification:

Material	Body	304 S.S.
	Plate	304 S.S.
	Shaft	304 S.S.
	Gate seal	Viton
	Shaft seal	Viton
Cycles life	100,000	
Helium leak rate at 1 atm differential	mbar.l/sec	$< 1 \times 10^{-9}$
Mounting orientation	Any	
Pressure range in either direction	1×10^{-8} mbar to 1.2 bar	
Differential pressure △P in either direction	≤ 1.2 bar	
Maximum differential pressure during opening	< 1 bar	

HV BUTTERFLY VALVES

Manually Operated, KF TYPE

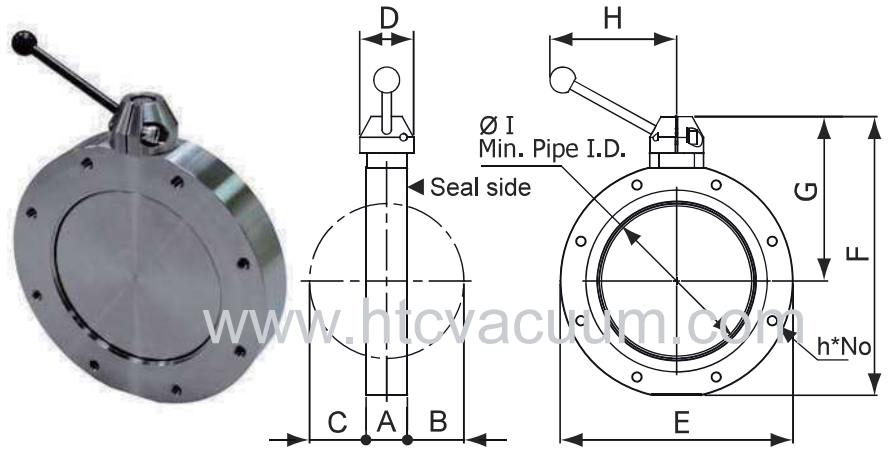


Features

- Valve size for 1" to 2"(25.4mm ~ 50.8mm)
- Flange : KF(NW)
- Pressure Range : 10^{-8} mbar to 1.2 bar
- Leak rate: $1x10^{-9}$ mbar. l /sec
- Body materials : 304 S.S.
- Seal materials : Viton
- Cycle life : 100,000
- Mounting position : Any
- Temperature: Body ≦ 120°C

Model No.	A	B	C	D	E	F	Parts.No
KF25BFVM	27	50	50	65	92.4	59.9	3202111101218
KF40BFVM	27	57	50	80	108.5	68.5	3202131101218
KF50BFVM	27	57	50	90	119	74	3202141101218

Manually Operated, ISO-F TYPE



Features

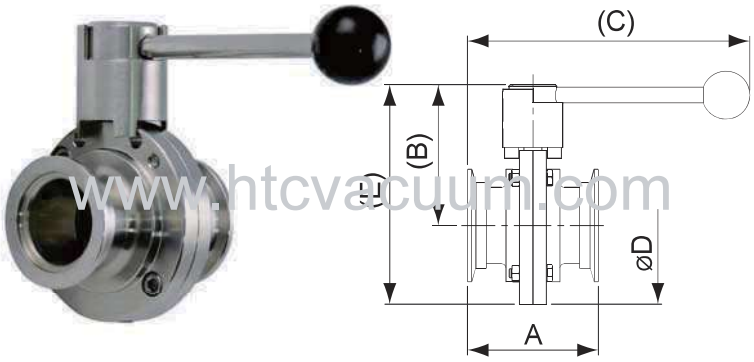
- Valve size for 2.5" to 6" (63.5mm ~ 152.4mm)
- Flange : ISO-F
- Pressure Range : 10^{-8} mbar to 1.2 bar
- Leak rate: $1x10^{-9}$ mbar. l /sec
- Body materials : 304 S.S.
- Seal materials : Viton
- Cycle life : 100,000
- Mounting position : Any
- Temperature: Body ≦ 120°C

Model No.	A	B	C	D	E	F	G	H	h*No	Thread Depth	P.C.D	I	Parts No.
ISO63BFVM	36	15	21	40	130	154	94	103	M8*4	12	110	63	3202151113218
ISO100BFVM	30	36	36	40	165	190	113	103	M8*8	12	145	100	3202181113218
ISO160BFVM	40	55.5	55.5	52	225	268	158	122	M10*8	15	200	150	3202201113218

Dimension in mm unless otherwise noted

LOW VACUUM BUTTERFLY VALVES

Manually Operated, KF TYPE

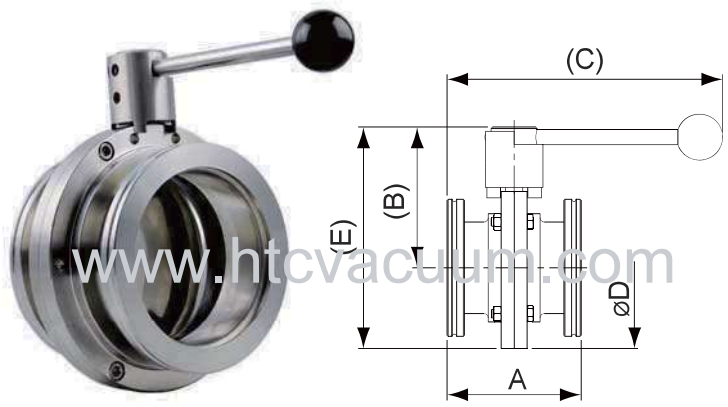


Features

- Valve size for 0.75” to 2” (19.05mm ~ 50.8mm)
- Flange : KF(NW)
- Pressure Range : 1000mbar~1x10^{-4}mbar
- Leak rate: 5x10^{-7} mbar. l /sec
- Body materials : 304 S.S.
- Seal materials : EPDM
- Cycle life : 1,000
- Temperature: Body ≦ 120°C

Model No.	A	B	C	D	E	Connector	Size	Parts No.
KF16BFV	75.6	69.5	157.8	79	109	KF16	0.75"(19.05)	3202092101111
KF25BFV	75.6	69	157.8	80	109	KF25	1”(25.4)	3202112101111
KF40BFV	83.6	75.6	161.8	90	116.6	KF40	1.5”(38.1)	3202132101111
KF50BFV	87.6	79.3	163.8	100	129.3	KF50	2”(50.8)	3202142101111

Manually Operated, ISO-K TYPE



Features

- Valve size for 2.5” to 4” (63.5mm ~ 101.6mm)
- Flange : ISO-K
- Pressure Range : 1000mbar~1x10^{-4}mbar
- Leak rate: 5x10^{-7} mbar. l /sec
- Body materials : 304 S.S.
- Seal materials : EPDM
- Cycle life : 1,000
- Temperature: Body ≦ 120°C

Model No.	A	B	C	D	E	Connector	Size	Parts No.
ISO63BFV	93.2	96.6	191.6	112	152.6	ISO63	2.5”(63.5)	3202152103111
ISO80BFV	95.2	103.8	192.6	125	166.3	ISO80	3.0”(76.2)	3202162103111
ISO100BFV	83.2	113	203.6	160	193	ISO100	4.0”(101.6)	3202182103111

Dimension in mm unless otherwise noted

Ball Valves

In vacuum industry, ball valves are durable and usually work to achieve perfect shutoff. A ball valve is a vacuum 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.

Htc vacuum's ball valves have manual, pneumatic and electric actuators for various customers; custom design is available upon request, please contact us.

Note: Standard voltage 110V, other voltage see note *

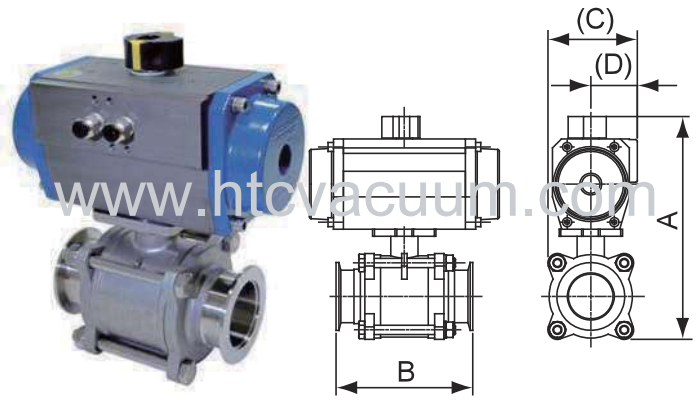
Custom design

Dimension in mm unless otherwise noted

BALL VALVES

Pneumatically Actuated, KF Flange

air to open, air to close



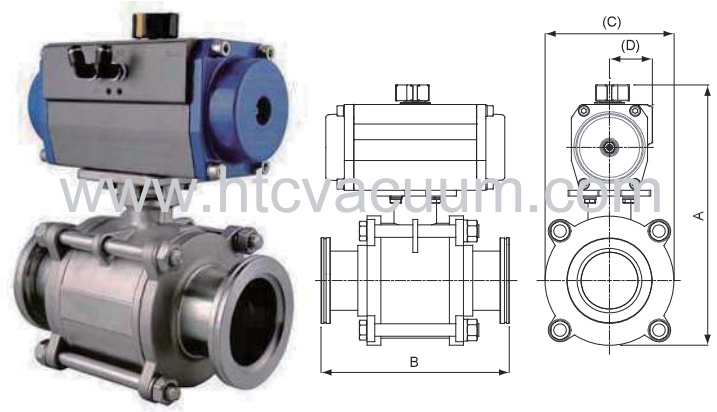
Features

- Valve size for 1” to 2”(25.4mm ~ 50.8mm)
- Flange : KF(NW)
- Pressure Range : 2 bar ~ $1x10^{-4}$ mbar
- Leak rate: $9x10^{-7}$ mbar.l/sec
- Body materials : 316 S.S., PTFE
- Max temperature : Cylinder 80°C/ Body 100°C
- Compressed air connector :
- KF25-2x1/8” NPT, KF40-KF50-2x1/4” NPT
- Option : Limit switch , solenoid

Model No.	A	B	C	D	Connector	Size”(mm)	Parts No.
KF25BV107P2	173	107	71	41.5	KF25	1"(25.4)	3201113101133
KF40BV130P2	216	130	88	48	KF40	1.5"(38.1)	3201133101133
KF50BV151P2	247	151	99	51.5	KF50	2"(50.8)	3201143101133

Pneumatically Actuated , ISO-K Flange

air to open, air to close



Features

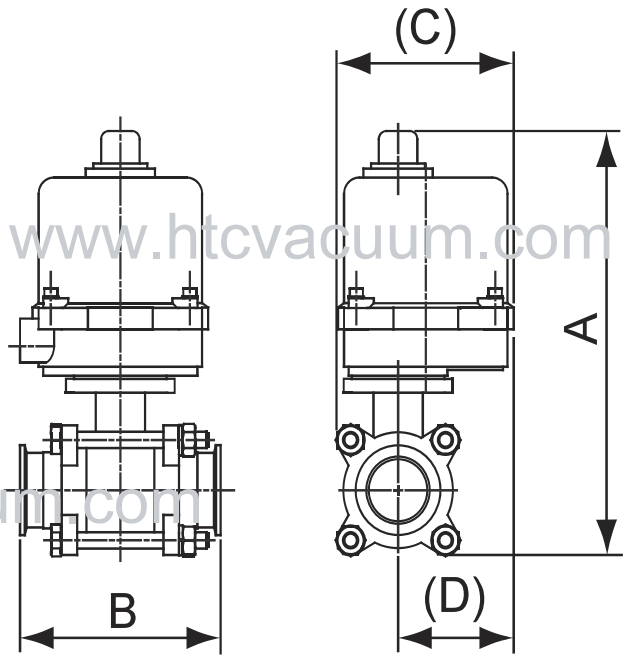
- Flange : ISO-K
- Operation : 1/4 Turn pneumatic open and close
- Pressure Range : 2 bar ~ $1x10^{-4}$ mbar
- Leak rate : $9x10^{-7}$ mbar.l/sec
- Body materials : 316 S.S., PTFE
- Max pressure : 2 bar
- Operating temperature : Cylindr 80°C/ Body 100°C
- Compressed air connecter : 2x 1/4"NPT
- Compressed air pressure : 4-7 kg/cm^2

Model No.	A	B	C	D	Connector	Size”(mm)	Parts No.
ISO80BV242P2	345	242	166	83	ISO80	3"(76.2)	3201163103133
ISO100BV254P2	395	254	223	111.5	ISO100	4"(101.6)	3201183103133

Dimension in mm unless otherwise noted

BALL VALVES

Motor drive



Model No.	A	B	C	D	Connector	Size"(mm)	Parts No.
KF25BV107E	231	107	114	79	KF25	1"(25.4)	320111310113A
KF40BV130E	258	130	119	79	KF40	1.5"(38.1)	320113310113A
KF50BV151E	318	151	114	57	KF50	2"(50.8)	320114310113A

Features

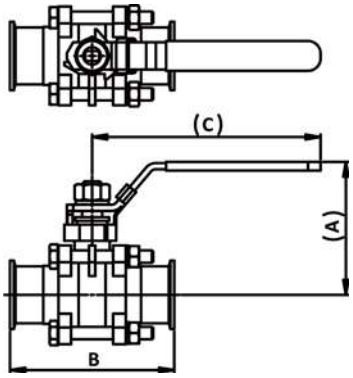
- Valve size for 1" to 2"(25.4mm ~ 50.8mm)
- Flange : KF(NW)
- Pressure Range : 2 bar ~ $1x10^{-4}$ mbar
- Leak rate: $9x10^{-7}$ mbar.l/sec
- Body materials : 316 S.S., PTFE
- Max temperature : Motor drive 80°C/ Body 100°C
- Time to full open : 50Hz-13sec, 60Hz-12sec
- * The last letter of the P/N represents the Motor Voltage :
  A=AC 110V , B= AC 220V ,
  C=AC 220 3Ø , D=AC 380 3Ø
- Option : Limit switch

Note: Standard voltage 110V,other voltage see note*

Dimension in mm unless otherwise noted

BALL VALVES

Manually Operated, KF TYPE

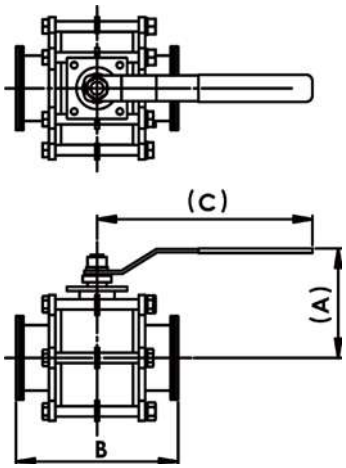


Features

- Flange : KF(NW)
- Operation 1/4 Turn manual open and close
- Pressure Range : 2 bar ~ 1x10^{-4} mbar
- Leak rate: 9x10^{-7} mbar.l/sec
- Wetted materials : 316 S.S., Viton, PTFE
- Max pressure : 2 bar
- Operating temperature : 100°C max

Model No.	A	B	C	Connector	Size"(mm)	Parts No.
KF16BV092	63	92	140	KF16	3/4"(19.05)	3201093101131
KF25BV107	78	107	156	KF25	1"(25.4)	3201113101131
KF40BV130	107	130	181	KF40	1.5"(38.1)	3201133101131
KF50BV151	116	151	181	KF50	2"(50.8)	3201143101131
KF80BV242	155	242	262	KF80	3"(76.2)	3201163101131
KF100BV254	170	254	340	KF100	4"(101.6)	3201183101131

Manually Operated, ISO TYPE



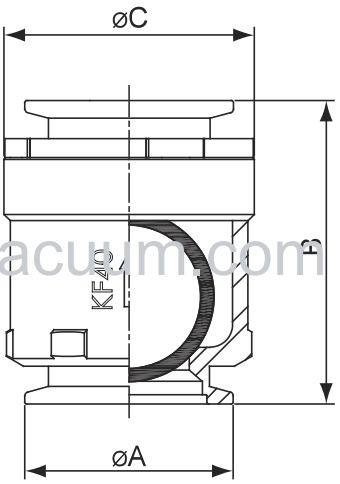
Features

- Flange : ISO
- Operation 1/4 Turn manual open and close
- Pressure Range : 2 bar ~ 1x10^{-4} mbar
- Leak rate: 9x10^{-7} mbar.l/sec
- Materials : 316 S.S., Viton, PTFE
- Max : 2 bar
- Operating temperature : 100°C max

Model No.	A	B	C	Connector	Size"(mm)	Parts No.
ISO80BV242	155	242	262	ISO80	3"(76.2)	3201163103131
ISO100BV254	170	254	340	ISO100	4"(101.6)	3201183103131

CHECK VALVES

Vertical direction

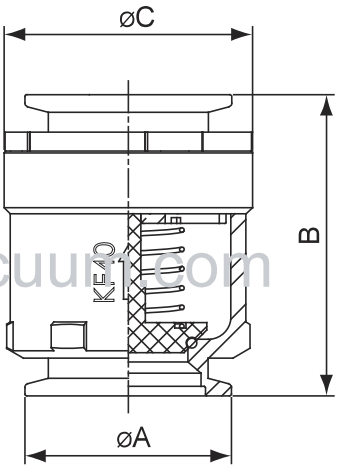


Features

- Flange : KF(NW)
- Material: body : CF8M(316) /Seal : Viton
- Temp rage :-5°C~100°C
- Leak rate : 1x10^{-5} mbar.l/sec
- Pressure range : 1x10^{-4}mbar
- Relief minimum pressure △P : 7mbar
- Peak pumping speed : 10000(L/min)
- Installation position : Vertical

Model No.	A	B	C	Installation	Port	Weight (Kg)	Parts No.
KF40CV80	55	80	66	Vertical	KF40	0.7	34011301100

Any direction



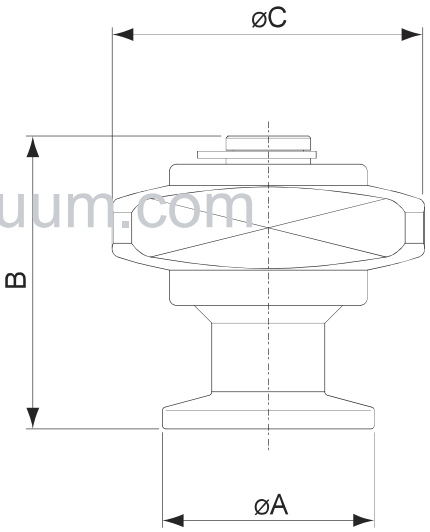
Features

- Flange : KF(NW)
- Material: body : CF8M(316) /Seal : Viton
- Temp rage :-5°C~100°C
- Leak rate : 1x10^{-5} mbar.l/sec
- Pressure range : 1x10^{-4}mbar
- Relief minimum pressure △P : 7mbar
- Pea pumping speed : 10000(L/min)
- Installation position : Any

Model No.	A	B	C	Installation	Port	Weight (Kg)	Parts No.
KF40CV80S	55	80	66	Any	KF40	0.75	34011311100

Dimension in mm unless otherwise noted

VENT VALVES



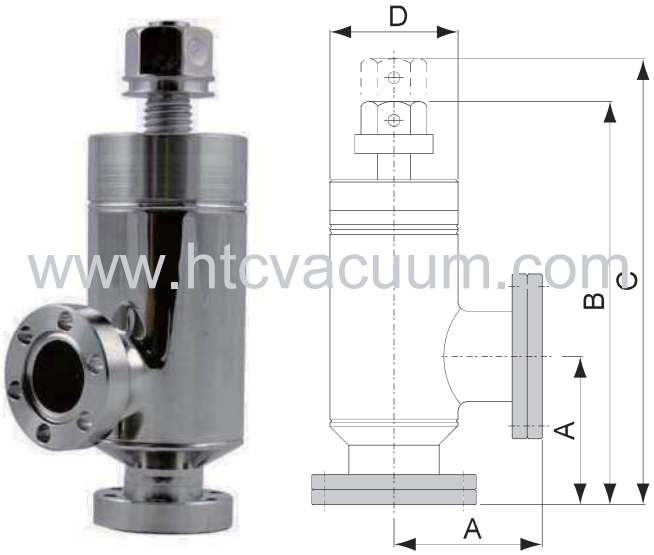
Model No.	A	B	C	Port	Parts No.
KF10VVM	30	41.5	48	KF10	340207011
KF16VVM	30	41.5	48	KF16	340209011
KF25VVM	40	41.5	48	KF25	340211011
KF40VVM	55	41.5	48	KF40	340213011

Features

- Flange:KF(NW)
- Installation Angle: Any
- Valve completely opened: 2 Turns
- Venting Times(50L): 14 Sec
- Pressure Range: 1×10^{-8}mbar ~ 1000mbar
- Leak rate: $1x10^{-9}$ mbar.l/s
- Valve Body: 304S.S.
- Plate: 304S.S.
- Washer: Teflon
- O-ring: Viton
- Screw cap: Aluminum
- Weight: 0.1kg

BAKEABLE ALL-METAL VALVES

Angle Valve

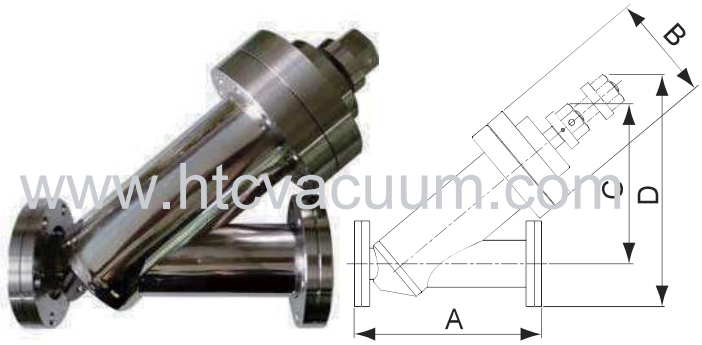


Features

- Temperature operating range:
  Bakeable to: 400°C(open), 300°C(close)
- Pressure Range: $1x10^{-10}$mbar~1000mbar
- All stainless steel construction
- Bellows stem seal
- Leak Rate: $5X10^{-10}$ mbar.l/sec
- Closure Torque:
  CR16 First 150kg-cm, Maximum 250kg-cm
  CR35 First 300kg-cm, Maximum 600kg-cm.
  CR63 First 300kg-cm, Maximum 900kg-cm.
- Life cycle (used for gasket sealing):
  CR16: 300 times in mounting vertical/horizontal direction.
  CR35: 300 times in mounting vertical/horizontal direction.
  CR63: 300 times in mounting the vertical direction / 100 times in mounting the horizontal direction.
- Orientation: Any position

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

Straight-Through Valve



Features

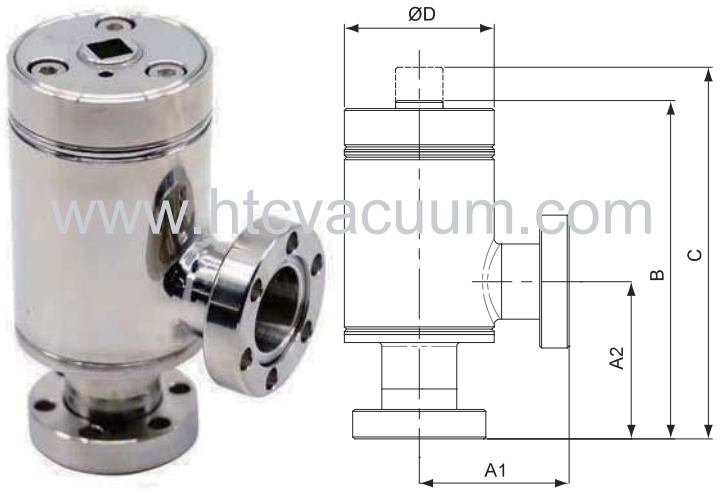
- Temperature operating range:
- Bakeable to: 400°C(open), 300°C(close)
- Pressure Range: $1x10^{-10}$mbar~1000mbar
- All stainless steel construction
- Bellows stem seal
- Leak Rate: $5X10^{-10}$ mbar.l/sec
- Closure Torque:
  CR35 First 300kg-cm, Maximum 600kg-cm.
  CR63 First 300kg-cm, Maximum 900kg-cm.
- Life cycle (used for gasket sealing):
  CR35:300 times in mounting vertical/horizontal direction.
  CR63:300 times in mounting the vertical direction / 100 times in mounting the horizontal direction.
- Orientation: Any position

Model No.	A	B	C	D	O.D.	Parts No.
STVBAK-CR16-M	152.4	86	125	166	19.05/19.05	307509030011
STVBAK-CR35-M	152.4	86	125	184	38.1 / 25.4	307513030011
STVBAK-CR63-M	228.6	113.6	165	247	60.5 / 34	307515030011

Dimension in mm unless otherwise noted

BAKEABLE ALL-METAL VALVES

Angle Valve- Small Mini



Features

- Temperature operating range: Bakeable to : 400°C(open), 300°C(close)
- Pressure Range : 1x10^{-10}mbar~1000mbar
- All stainless steel construction
- Bellows stem seal
- Leak Rate: 5X10^{-10} mbar.l/sec
- Closure Torque : CR16 First 90~120kg-cm, Maximum 200kg-cm.
- Life Cycle(for Gasket Seal) : 1,000
- Orientation : Any position

Model No.	A	A2	B	C	D	O.D.	Parts No.
AVMBAK-CR16-M	38.1	40	85	94.5	38.1	19.05	30050993004A

Valve Name	All-Metal Valve- Small Mini	
leak rates	Seat	5 x 10^{-10} mbar.l/s
Material	Body:316S.S. Gate Seal: OFCH Copper	
Temperature operating rage:Bakeable to	Open	400°C
	Close	300°C
Cryogenic to	-200°C	
Pressure Range	1x10^{-10} mbar ~ 1000 mbar	
Life Cycle(for Gasket Seal)	1,000	
Weight(kg)	0.4	
Closure Torque	First 90kg-cm, Maximum 200kg-cm	
Orientation	Any position	

TEFLON COATING VACUUM VALVE(TCVV)

Technical data

Flanges	KF & ISO
Installation angle	Any position
Pressure range	1atm ~ $1x10^{-7}$ mbar
Leak rate	$1x10^{-7}$ mbar.l/s
Material of valve body	304S.S.
Material of lining	Teflon (Perma Shield Coating)
Poppet seal	Viton(other material available upon request)
Operating air pressure	4 ~ 6.5 kg/cm^2
Solenoid	Option
Reed sensor	Qty:2 (VDC4~24 ; VAC4~240 ; 5~40mA)

Features

1. Teflon coating and Teflon parts inside valve for process gases.
2. Very smooth surface of the coating layer.
3. Continuous use to 120°C in most applications.(The maximum working temperate of the valve INSDIE AND OUTSID is 120 degree)
4. The coating layer is mechanically tough with excellent adhesion and abrasion resistance.
5. The coating layer is inert and will not absorb water or chemicals.
6. Fully opening for improved conductance.
7. Position sensors can be installed on the cylinder for valve open/close indication.
8. FFKM O-ring available upon request.
9. Manual operating or fail safe operating (closes in the event of air pressure loss) available upon request.

Applications

Teflon coating vacuum valve(TCVV) is a fully engineered device of stainless steel vacuum component with its durable and highly chemical resistant coating. The Teflon (Perma Shield Coating) lining is available in a wide range of Htc's standard vacuum valves from 1"(25)valve port diameter to 6"(150)port diameter.

With more options to get the job done than any other vacuum parts manufacturer and the ability to produce customized design valves. TCVV can meet most of your corrosive fume exhaust duct and vent pipe requirements.

TCVV can be applied in the following industries :mining, petrochemical, plastic industries, gas refining, power plant, gas manufacture, electronic industries, pharmaceutical, semiconductor industries, optoelectronic industries, solar cell industries etc.

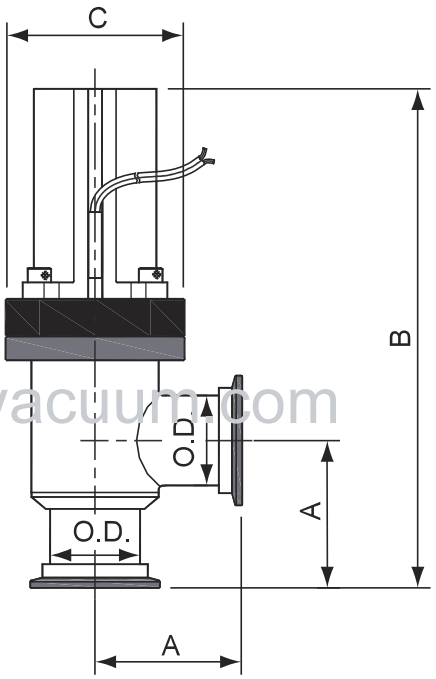
Dimension in mm unless otherwise noted

TEFLON COATING VALVES

Angle valve-Pneumatic

Normally Close

Normally Open



Model No.	A"(mm)	B"(mm)	C"(mm)	O.D. "(mm)	Note	Parts No.
AVTCS-KF25-P	2.03"(51.6)	6.53"(166.6)	2.24"(56.8)	1"(25.4)	Normally Close	300711110250
AVTCS-KF25-P-N0	2.03"(51.6)	6.45"(165.9)	2.24"(56.8)	1"(25.4)	Normally Open	300711410250
AVTCS-KF40-P	2.4"(61)	8.28"(210.2)	2.98"(75.8)	1.5"(38.1)	Normally Close	300713110250
AVTCS-KF40-P-N0	2.4"(61)	8"(203.2)	2.98"(75.8)	1.5"(38.1)	Normally Open	300713410250
AVTCS-KF50-P	3.4"(86.3)	10.5"(267.6)	3.48"(88.4)	2"(50.8)	Normally Close	300714110250
AVTCS-KF50-P-N0	3.4"(86.3)	10.4"(263.5)	3.48"(88.4)	2"(50.8)	Normally Open	300714410250

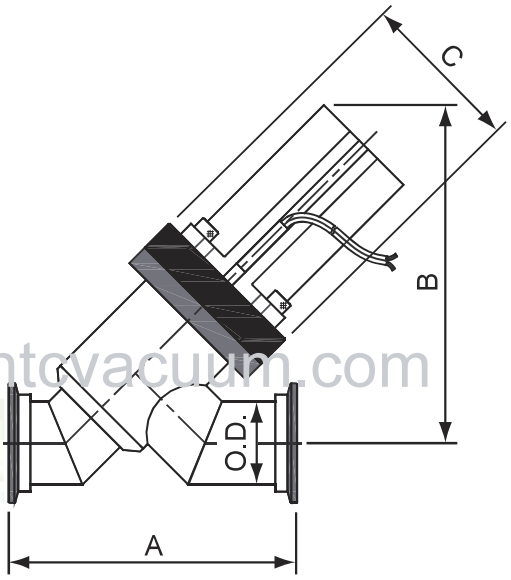
Note:

1. Normally close : spring to close, air to open
   Normally open : spring to open, air to close
2. Dimension in inch(mm) unless otherwise noted

TEFLON COATING VALVES

Y in-line valve-Pneumatic

Normally Close　　Normally Open



Model No.	A"(mm)	B"(mm)	C"(mm)	O.D. "(mm)	Note	Parts No.
YVTCS-KF25-P	4.2"(106.8)	4.76"(120.96)	2.24"(56.8)	1"(25.4)	Normally Close	304711110250
YVTCS-KF25-P-N0	4.2"(106.8)	4.76"(120.96)	2.24"(56.8)	1"(25.4)	Normally Open	304711410250
YVTCS-KF50-P	7"(130)	7.43"(157.83)	3.48"(88.4)	2"(50.8)	Normally Close	304714110250
YVTCS-KF50-P-N0	7"(130)	7.3"(152.88)	3.48"(88.4)	2"(50.8)	Normally Open	304714410250
YVTCS-ISO80-P2	10.5"(268.5)	8.5"(217.22)	4.48"(114)	3"(76.2)	Double-Acting	304716240250
YVTCS-ISO100-P2	13.4"(340.6)	10.4"(264.45)	5.96"(151.6)	4"(101.6)	Double-Acting	304718240250

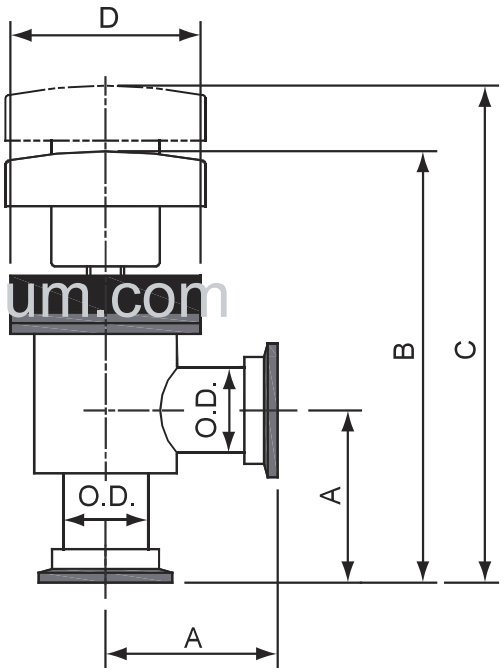
Note:

1. Normally close : spring to close, air to open
   Normally open : spring to open, air to close
   Double-Acting : air to open, air to close
2. Dimension in inch(mm) unless otherwise noted

Dimension in mm unless otherwise noted

TEFLON COATING VALVES

Angle Valve-Mannal



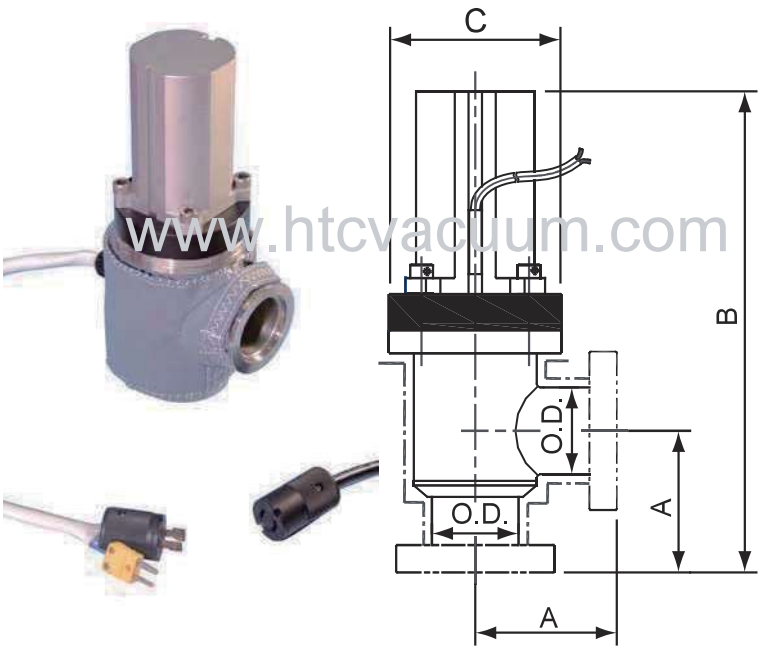
Model No.	A"(mm)	B"(mm)	C"(mm)	D"(mm)	O.D."(mm)	Parts No.
AVTC-KF25-M	2.03"(51.6)	5.27"(133.9)	5.75"(146.2)	2.24"(56.8)	1"(25.4)	300711010050
AVTC-KF40-M	2.4"(61)	6.45"(163.8)	7.2"(183)	2.98"(75.8)	1.5"(38.1)	300713010050
AVTC-KF50-M	3.4"(86.3)	8.15"(207)	9.08"(230.7)	3.48"(88.4)	2"(50.8)	300714010050

Dimension in mm unless otherwise noted

Angle Valves with Heating Jacket

Pneumatic Actuated

With bellows, air to open, air to close



Features

- Voltage : 110/220AVC
- Temperature : 170°C*
- Connecter : K Type Thermocouple & Plug
- Wire Length: 2 m
- Other size of heating jacket could be on request.

*When set up the temperature , it should consider about the material of parts inside the valve

Port Connections: KF & ISO Flange

Model No.	A"(mm)	B"(mm)	C"(mm)	O.D."(mm)	Voltage	Parts No.
HAVBS-KF25-P2	2.03"(51.6)	6.14"(155.9)	2.24"(56.8)	1.00"(25.4)	110	300111710216
HAVBS-KF40-P2	2.40"(61)	7.57"(192.2)	2.98"(75.8)	1.50"(38.1)	110	300113710216
HAVBS-KF50-P2	3.4"(86.3)	9.59"(243.6)	3.48"(88.4)	2.00"(50.8)	110	300114710216
HAVBS-ISO63-P2	3.26"(82.8)	10.85"(275.7)	3.92"(99.5)	2.50"(63.5)	110	300115740216
HAVBS-ISO100-P2	4.47"(113.5)	13.86"(352.1)	5.97"(151.6)	4.00"(101.6)	110	300118740216

Dimension in mm unless otherwise noted

Valves kit

Figure1

Figure2

Figure3

www.htcvacuum.com

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 Bonnet seal x 1 – Viton	1	0.75” / (16) ; 1.00” / (25)
3001130K			1.50” / (40)
3001140K			2.00” / (50)

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

Kit P/N	Content	Figure	For Port Size inches/(MM)
3001115K	Poppet seal x 1 – Viton Bonnet seal x 1 – Viton Shaft seal x 2 – NBR Cylinder seal x 2 – NBR	2	0.75” / (16) ; 1.00” / (25)
3001135K			1.50” / (40)
3001145K			2.00” / (50)

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

Kit P/N	Content	Figure	For Port Size inches/(MM)
3001116K	Poppet seal x 1 – Viton Bonnet seal x 1 – Viton Shaft seal x 2 – NBR Cylinder seal x 2 – NBR	2	0.75” / (16) ; 1.00” / (25)
3001136K			1.50” / (40)
3001146K			2.00” / (50)

Bellows Assembly Kit

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

AL HV Valve Kit

Figure1

Figure2

Figure3

Spare Parts For 16~40 Manual Bellows Type Vacuum Valves

Kit P/N	Content	Figure	For Port Size inches/(MM)
3101090K	Poppet seal x 1 – Viton Bonnet seal x 1 – Viton	1	0.75” / (16)
3101110K			1” / (25)
3101130K			1.50” / (40)

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

Kit P/N	Content	Figure	For Port Size inches/(MM)
3101095K	Poppet seal x 1 – Viton Bonnet seal x 1 – Viton	1	0.75” / (16) ; 1.00” / (25)
3101115K			1.50” / (40)
3101135K			2.00” / (50)

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

Kit P/N	Content	Figure	For Port Size inches/(MM)
3101096K	Poppet seal x 1 – Viton Bonnet seal x 1 – Viton Shaft seal x 2 – NBR Cylinder seal x 2 – NBR	2	0.75” / (16)
3101116K			1.00” / (25)
3101136K			1.50” / (40)

Bellows Assembly Kit

Part No	Content	Figure	For Port Size inches/(MM)
31010911002ABA	Bellows Assembly	3	0.75” / (16)
31011111002ABA			1.00” / (25)
31011311002ABA			1.50” / (40)

Dimension in mm unless otherwise noted

GATE VALVES

Vacuum gate valves manufacturers

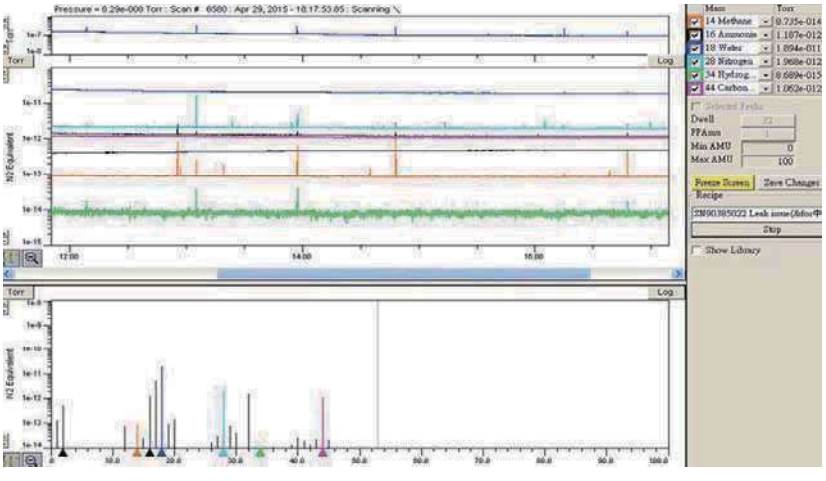
Htc vacuum (HIGHLIGHT TECH CORP.) gate valves are appropriate for both HV and UHV applications and can be operated in pneumatic or in manual modes. Htc gate valves can be used with Cryo-Pumps, Turbomolecular Pumps or in any applications requiring clean, high life cycle, and low maintenance processing. Htc gate valves are available in all flange configurations, KF, ISO, ANSI, JIS, and CF.

Vacuum gate valve advanced service and support

Htc vacuum gate valve are available with various options to allow you to select exactly the features you need for your applications. You can add the roughing and gauge ports on the basic valve style.

Please refer to the left photo :
we added an elbow with a CF flange on the valve body to meet the special requirement of the customer. If you have any unique inquiry please contact us, we can discuss about the details of port type, size and location.

There are some critical applications of valves in Lab and research center which need RGA (Residual Gas Analyzer) data of valves to confirm the outgassing source of the system. Htc has the integrated RGA system with Inficon MPH100M analyzer with industry-leading data collection speed, minimum detectable partial pressure and signal-to-noise ratio. Htc is able to provide customers the RGA report for the price of the fixture and norminal labor charge.



*Note * L type: Linkage mechanism *B type: Ball groove mechanism*

Type \ Size	Shaft sea	HV VALVE												UHV VALVE								
		KF 10	KF 16	KF 25	KF 40	KF 50	ISO 63	ISO 80	ISO 100	ISO 160	ISO 200	ISO 250	ISO 320	CF 16	CF 35	CF 50	CF 63	CF 100	CF 150	CF 200	CF 275	CF 300
GATE VALVES																						
UHV gate valve (L type) (Manual & Pneumatic)	Bellows														●	●					●	●
UHV gate valve (B type) (Manual & Pneumatic)	Bellows																●	●	●	●	●	
UHV 3-position gate valve (B type) (Pneumatic)	Bellows																●	●	●	●		
UHV gate valve limit switch (L type) (Pneumatic)	Bellows														●	●					●	●
UHV gate valve limit switch (B type) (Pneumatic)	Bellows																●	●	●	●		
HV gate valve (L type) (Manual & Pneumatic)	Bellows				●	●						●	●									
HV gate valve (B type) (Manual & Pneumatic)	Bellows						●		●	●	●	●	●									
HV 3-position gate valve(B type) (Pneumatic)	Bellows						●		●	●	●											
HV gate valve limit switch (L type) (Pneumatic)	Bellows				●	●						●	●									
HV gate valve limit switch (B type) (Pneumatic)	Bellows						●		●	●	●											
HV gate valve (Aluminum body) (Pneumatic)	O-ring											●										
PENDULUM VALVES																						
Pneumatic Pendulum Valve	O-ring										●	●	●									
3-position pneumatic Pendulum Valve	O-ring										●	●	●									
APC pneumatic Pendulum Valve	O-ring										●	●	●									

*Note *EP: Electrolytic polishing surface treatment *Hard anodized: Hard anodized surface treatment*

Type \ Size	Shaft seal system	Standard (S.S. body / gate)				Standard (AL body / gate)				Customized
		32x222	46x236	50x336	56x496	32x222	46x236	50x336	56x496	50~200x2000 max
TRANSFER VALVES AND DOORS										
Rectangular Transfer valve(EP)	Bellows	●	●	●	●	●	●	●	●	
Rectangular Transfer valve (Hard anodized)	Bellows					●	●	●	●	upon request
Door valve(EP)		●	●	●	●	●	●	●	●	

Dimension in mm unless otherwise noted

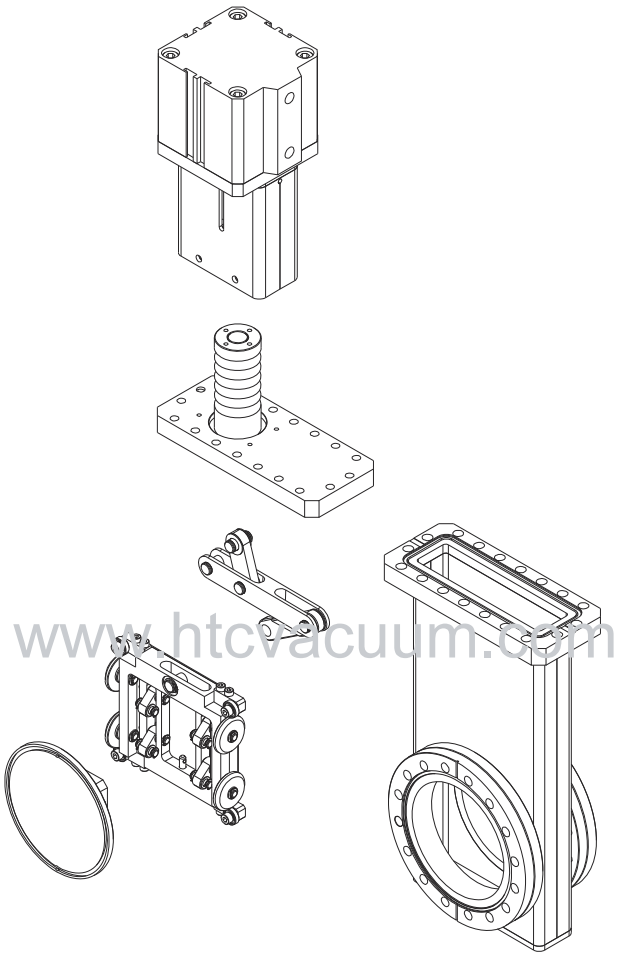
*Note * L type: Linkage mechanism *B type: Ball groove mechanism*

GATE VALVES					
					
CF Manually UHV (L type) Bellows	CF Manually UHV (B type) Bellows	CF Pneumatic UHV (L type) Bellows	CF Pneumatic UHV (L type) Bellows	CF Pneumatic UHV (B type) Bellows	CF 3-position pneumatic UHV (B type) Bellows
GATE VALVES					
					
KF Manually HV (L type) Bellows	ISO Manually HV (B type) Bellows	KF Pneumatic HV (L type) Bellows	ISO Pneumatic HV (L type) Bellows	ISO Pneumatic HV (B type) Bellows	ISO 3-position pneumatic HV (B type) Bellows
GATE VALVES					
					
CF limit switch pneumatic UHV (L type) Bellows	CF limit switch pneumatic UHV (L type) Bellows	CF limit switch pneumatic UHV (B type) Bellows	KF limit switch pneumatic HV (L type) Bellows	ISO limit switch pneumatic HV (L type) Bellows	ISO limit switch pneumatic HV (B type) Bellows

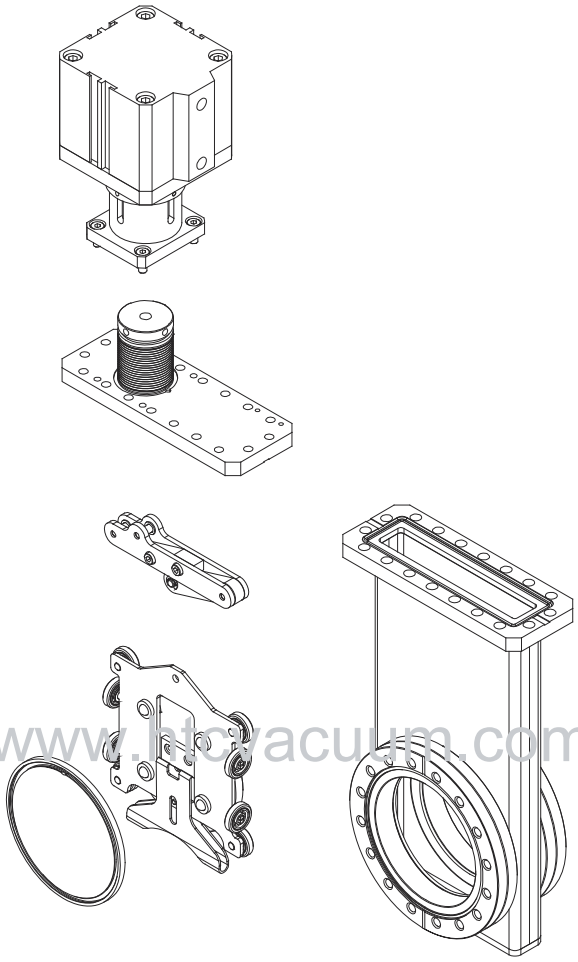
GATE VALVES	PENDULUM VALVES			TRANSFER VALVES AND DOORS		
						
HV Pneumatic (Alumium body) O-ring	Pneumatic Pendulum Valve O-ring	3-position pneumatic Pendulum Valve O-ring	APC pneumatic Pendulum Valve O-ring	Transfer valve EP Bellows	Transfer valve Hard anodized Bellows	Door valve EP Bellows

Gate Valve(Technical Data)

Linkage mechanism



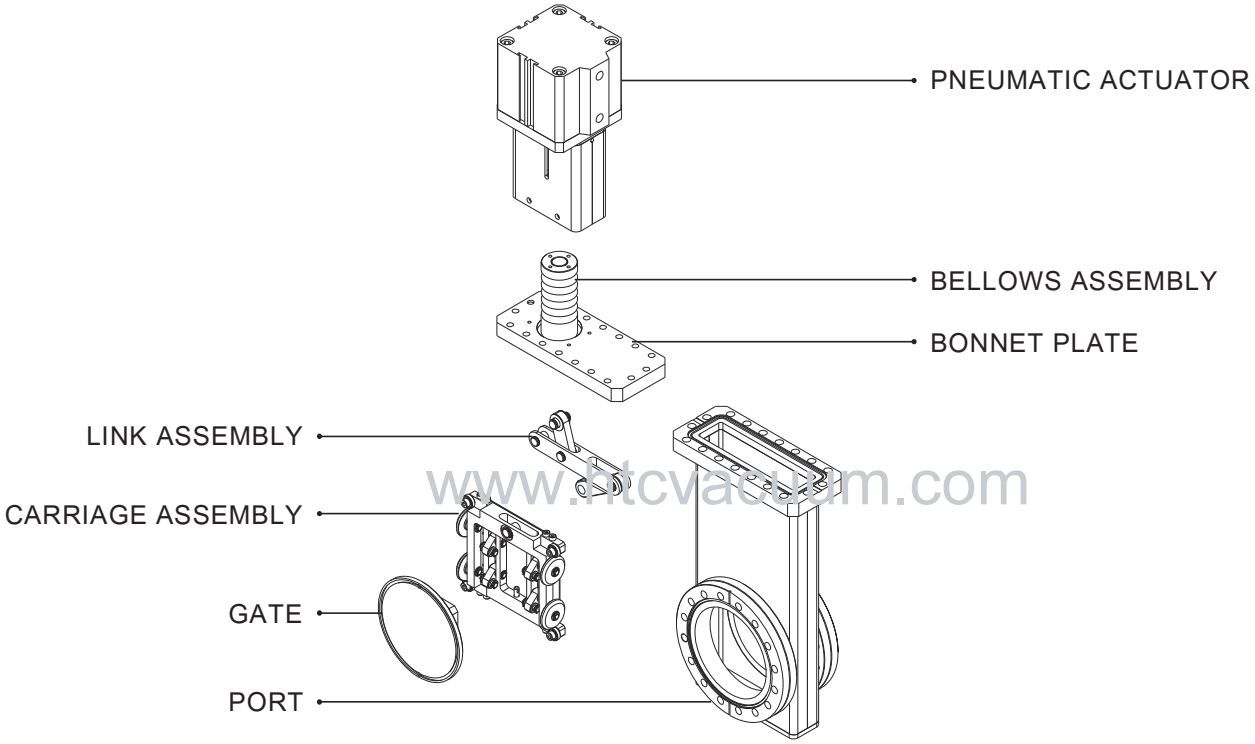
Ball groove mechanism



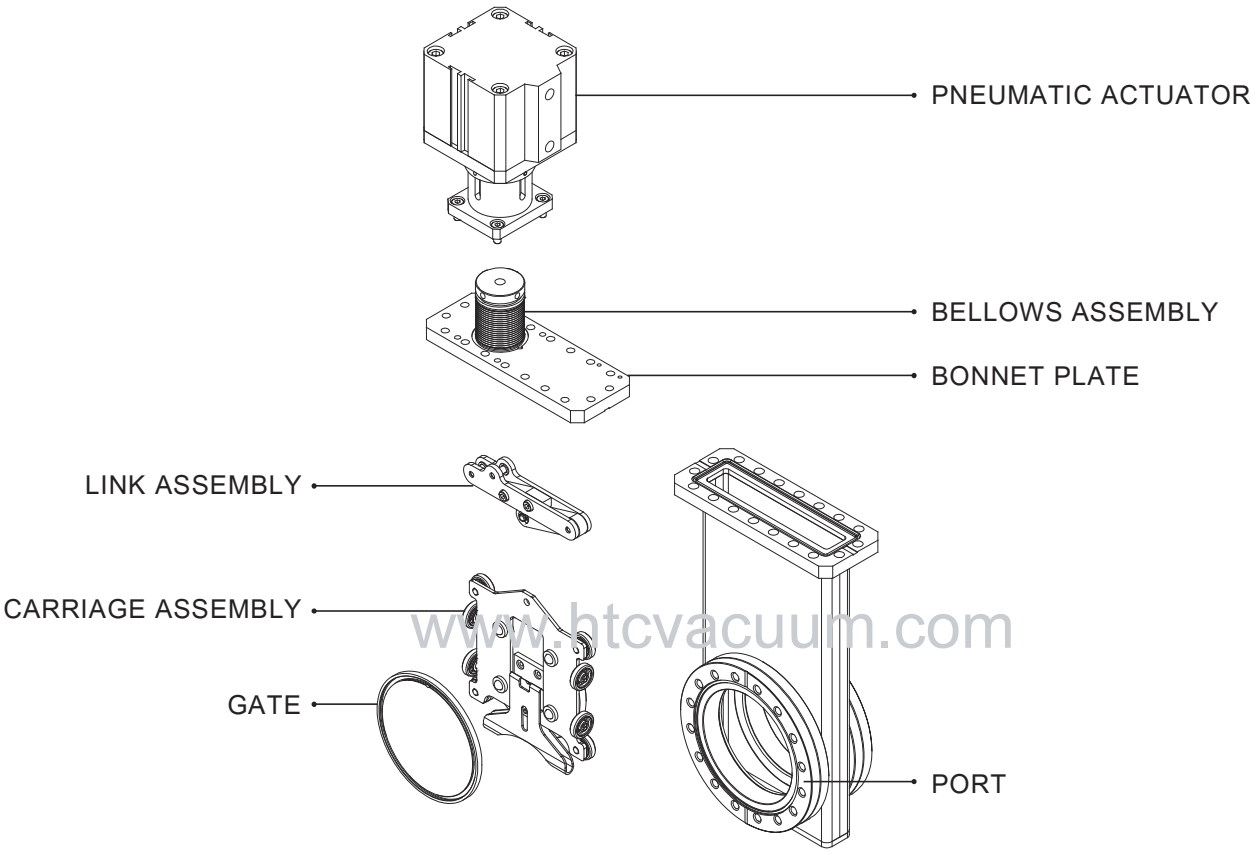
Body Size(Type)	Standard Flange O.D.(Weight)			Air Pressure	Actuated Frequency
	ISO (kg)	CF(kg)	KF(kg)	Kg/cm2	Opening & Closing
1.5” (L)	*	69.5 (2.6)	50 (2.6)	4~6	2 seconds
2” (L)	*	86 (3.6)	75 (4)	4~6	2 seconds
2.5” (B)	130 (7)	113.6 (7)	*	4~6	3 seconds
4” (B)	165 (10)	151.6 (11)	*	4~6	3 seconds
6” (B)	255 (18)	202.5 (17)	*	4~6	5 seconds
8” (B)	285 (27)	253.2 (26)	*	4~6	5 seconds
10” (L)	335 (59)	336.5 (63)	*	4~6	5 seconds
12” (L)	425 (88)	355.6 (77)	*	4~6	7 seconds

Dimension in mm unless otherwise noted

Linkage mechanism

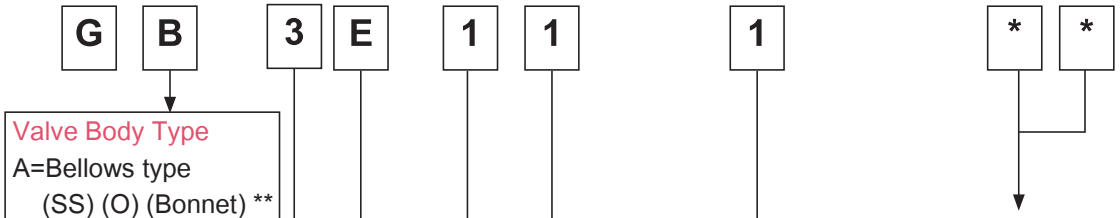


Ball groove mechanism



Numbering System

This numbering system was developed to insure the valve supplied is exactly what you need. It addresses questions concerning available features and options for the valve, and incorporates that information in the valve number.



Valve Body Type
A=Bellows type
(SS) (O) (Bonnet) **
B=Bellows type
(SS) (‘M) (Bonnet) **

Flange Type
1=KF
2= DIN
3=CF
4=ISO
5=ANSI
6=VF
7=VG
A=ANSI (S) *
B=ANSI (O) *
C=VG (S) *
D=VG (O) *

Gate O-Ring Material
1=Viton
2=Buna-N
3=Silicone
4=FFKM
5=HFKM

Type of Actuation
1=Manual
3= Pneumatic
4=Ball groove mechanism (M)
5=Ball groove mechanism (P)
6=3-Position_B type
7=3-Position_L type

Size
A=1.5” (40)
B=2” (50)
C=2.5” (63)
D=3” (80)
E=4” (100)
F=6” (160)
G=8” (200)
H=10” (250) / 275 (13.25”)
J=12” (300_14”)
K=10” (250) Flange OD=304 (12”)
Q=12” (300_14.5”)
L=14” (350)
M=16” (400)
N=20” (500)
P=26” (630)
S=1” (25)

Port Flange Neck Style
1=Tapped Holes
Both Side
2=Neck Flange
Both Side
3=Neck Flange
Seal Side
4=Neck Flange on
Open Side

Solenoid

Type	Voltage	Reed sensor	Limit switch
AA	110VAC		
AB	110VAC	v	
AC	110VAC		v
BA	220VAC		
BB	220VAC	v	
BC	220VAC		v
CA	24VDC		
CB	24VDC	v	
CC	24VDC		v
DA	12VDC		
DB	12VDC	v	
DC	12VDC		v
NA	-	v	
NB	-		v
EA	24VAC(50HZ)		
EB	24VAC(50HZ)	v	
EC	24VAC(50HZ)		v
FA	24VAC(60HZ)		
FB	24VAC(60HZ)	v	
FC	24VAC(60HZ)		v
NC		*1v	

Special

S0~S9	Special type , roughing port
S1	Seal Side 1Kg Pressure difference

Note:
13.25”_14”_12”_14.5” are the sizes CF/CR Flanges.

Note:
* ANSI / VG (S) is flange with o-ring on seal side.
* ANSI / VG (O) is flange with o-ring on open side.
** Bellows type (SS) (M) is bonnet with Metal seal.
** Bellows type (SS) (O) is bonnet with o-ring seal.

Dimension in mm unless otherwise noted

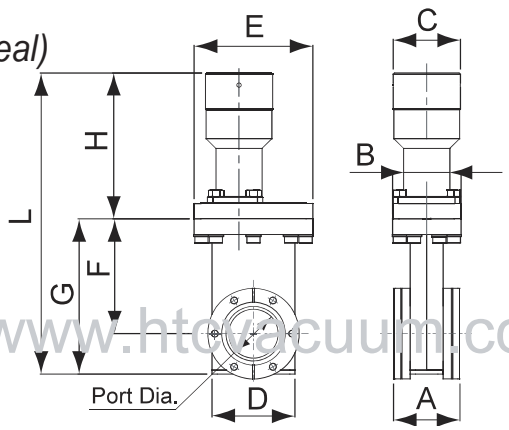
UHV Gate Valve (Unlubricated mechanism)

Material	Body		304 S.S.
	Carriage	Linkage type Ball type Size under 10” Ball type Size above 10”(included)	304 S.S. SUS304 、A6061-T6
	Gate	Linkage type Ball type Size under 10” Ball type Size above 10”(included)	304 S.S. A6061-T6
	Bellows		AM350
Cycle life	size under 4” (included)		100,000
	size above 4”		50,000
Helium leak rates at 1 atm differential	< 5×10^{-10} mbar. l /sec for gasket seal		
Bake Temperature	Valve body (metal bonnet seal)	Open	200°C
		Closed	150°C
	Actuator	Pneumatic	≤ 80 °C
		Manual	≤ 200°C
Pressure Range (mbar)	$1x10^{-10}$ ~1000		
Maximum ΔP (mbar)	27 before opening		
Standard Seal	Gate	Viton O-ring	
	Bonnet	OFHC copper gasket	
Actuator	Pneumatic or Manual		
Compressed air supply Tube connection Pressure range	Ø6 mm 4~6 Kg/cm^2 (overpressure)		
Surface Treatment	Scotch Polished		
Options	a. Position indicator c. Roughing port	b. Pneumatic control solenoid valve d. Other material Gate O-ring seal	

UHV Gate Valve (Linkage mechanism)

CF Flange(Mini)

Manual series (with Bellows, Metal Bonnet Seal)



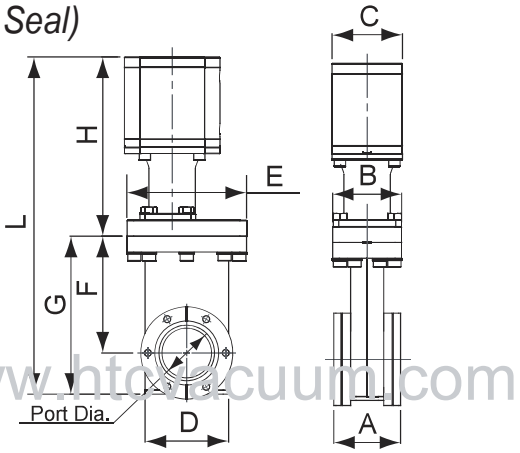
Model No.	Parts No.	Port Dia.	Bonnet seal	Flange O.D.	Bolt P.C.D.	Bolt Size * No.	Torque (kg~cm)	Thread Depth
GVB-SS-CF35-M	GB3A111	37.5	Metal	69.5	58.7	M6*6	170	10
GVB-SS-CF50-M	GB3B111	50	Metal	86	72.4	M8*8	210	10

Model No.	Parts No.	A	B	C	D	E	F	G	H	L
GVB-SS-CF35-M	GB3A111	45.4	52	51	63	90	88	119	113	232
GVB-SS-CF50-M	GB3B111	56	56	51	81	104	123	167	129	296

UHV Gate Valve (Linkage mechanism)

CF Flange(Mini)

Pneumatic series (with Bellows, Metal Bonnet Seal)



Model No.	Parts No.	Port Dia.	Bonnet seal	Flange O.D.	Bolt P.C.D.	Bolt Size * No.	Torque (kg~cm)	Thread Depth
GVB-SS-CF35-P	GB3A311	37.5	Metal	69.5	58.7	M6*6	170	10
GVB-SS-CF50-P	GB3B311	50	Metal	86	72.4	M8*8	210	10

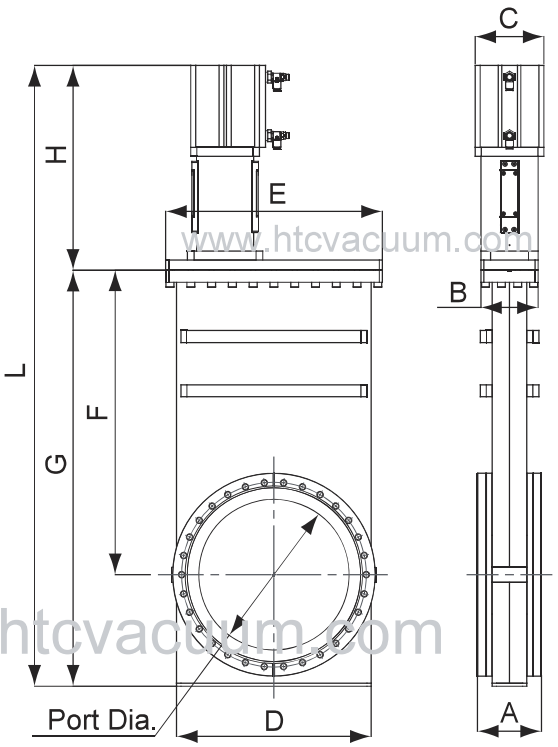
Model No.	Parts No.	A	B	C	D	E	F	G	H	L
GVB-SS-CF35-P	GB3A311	45.4	52	53	63	90	88	119	135	254
GVB-SS-CF50-P	GB3B311	56	56	53	81	104	123	167	154	321

Dimension in mm unless otherwise noted

UHV Gate Valve (Linkage mechanism)

CF Flange(Large)

Pneumatic series (with Bellows, Metal Bonnet Seal)



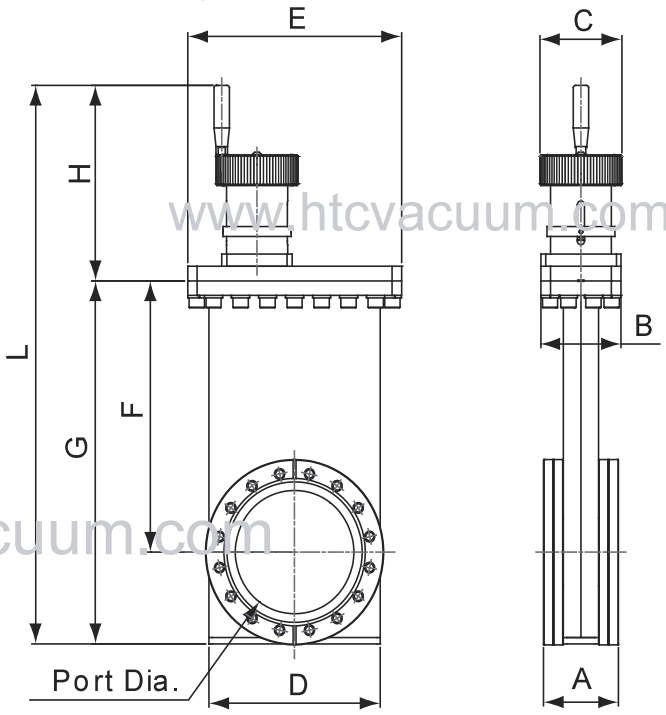
Model No.	Parts No.	Port Dia.	Bonnet seal	Flange O.D.	Bolt P.C.D.	Bolt Size * No.	Torque (kg~cm)	Thread Depth
GVB-SS-CF250-P	GB3K311	250	Metal	304	284	M8*32	360	16
GVB-SS-CF275-P	GB3H311	250	Metal	336.5	306.3	M10*30	360	24
GVB-SS-CF300-P	GB3J311	305	Metal	355.6	325.5	M10*30	360	20

Model No.	Parts No.	A	B	C	D	E	F	G	H	L
GVB-SS-CF250-P	GB3K311	106.4	95	114	323	360	505	690	340	1030
GVB-SS-CF275-P	GB3H311	106.4	95	114	323	360	505	690	340	1030
GVB-SS-CF300-P	GB3J311	112.6	105	140	367	415	554	750	361	1111

UHV Gate Valve (Ball groove mechanism)

CF Flange

Manual series (With Bellows,Metal Bonnet Seal)



Model No.	Parts No.	Port Dia.	Bonnet seal	Flange O.D.	Bolt P.C.D.	Bolt Size * No.	Torque (kg~cm)	Thread Depth
GVBB-SS-CF63-M	GB3C411	63.7	Metal	113.6	92.1	M8*8	210	18
GVBB-SS-CF100-M	GB3E411	102	Metal	151.6	130.3	M8*16	210	20
GVBB-SS-CF150-M	GB3F411	153	Metal	202.5	181	M8*20	210	22
GVBB-SS-CF200-M	GB3G411	200	Metal	253.2	231.8	M8*24	210	24
GVBB-SA-CF250-M	GB3K411	255	Metal	304	284	M8*32	360	28
GVBB-SA-CF275-M	GB3H411	255	Metal	336.5	306.3	M10*30	360	28
GVBB-SA-CF300-M	GB3J411	305	Metal	355.6	325.5	M10*30	360	28

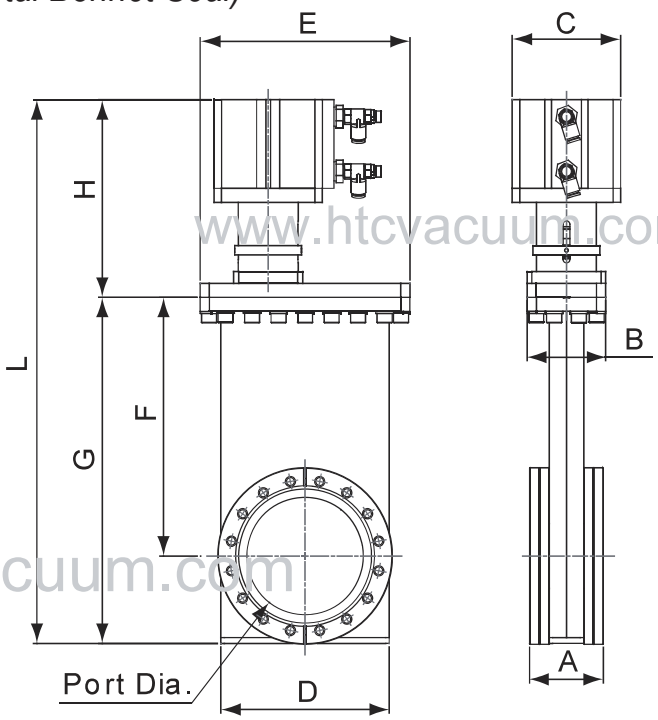
Model No.	Parts No.	A	B	C	D	E	F	G	H	L
GVBB-SS-CF63-M	GB3C411	65	68	70	107	143	158	207	160	367
GVBB-SS-CF100-M	GB3E411	69.6	68	70	146	182	222	297	160	457
GVBB-SS-CF150-M	GB3F411	79	70	78	204	238	306.5	407	183	590
GVBB-SS-CF200-M	GB3G411	84.4	70	78	245	282	382	506	224	730
GVBB-SA-CF250-M	GB3K411	98	75	99	321	360	500	650	340.5	990.5
GVBB-SA-CF275-M	GB3H411	98	75	99	321	360	500	650	340.5	990.5
GVBB-SA-CF300-M	GB3J411	103	85	99	363	400	580	751.5	340.5	1092

Dimension in mm unless otherwise noted

UHV Gate Valve (Ball groove mechinism)

CF Flange

Pneumatic Series (With Bellows,Metal Bonnet Seal)



Model No.	Parts No.	Port Dia.	Bonnet seal	Flange O.D.	Bolt P.C.D.	Bolt Size * No.	Torque (kg~cm)	Thread Depth
GVBB-SS-CF63-P	GB3C511	63.7	Metal	113.6	92.1	M8*8	210	18
GVBB-SS-CF100-P	GB3E511	102	Metal	151.6	130.3	M8*16	210	20
GVBB-SS-CF150-P	GB3F511	153	Metal	202.5	181	M8*20	210	22
GVBB-SS-CF200-P	GB3G511	200	Metal	253.2	231.8	M8*24	210	24
GVBB-SA-CF250-P	GB3K511	255	Metal	304	284	M8*32	360	28
GVBB-SA-CF275-P	GB3H511	255	Metal	336.5	306.3	M10*30	360	28
GVBB-SA-CF300-P	GB3J511	305	Metal	355.6	325.5	M10*30	360	28

Model No.	Parts No.	A	B	C	D	E	F	G	H	L
GVBB-SS-CF63-P	GB3C511	65	68	75	107	143	158	207	159	366
GVBB-SS-CF100-P	GB3E511	69.6	68	94	146	182	222	297	170	467
GVBB-SS-CF150-P	GB3F511	79	70	94	204	238	306.5	407	198	605
GVBB-SS-CF200-P	GB3G511	84.4	70	94	245	282	382	506	260	766
GVBB-SA-CF250-P	GB3K511	98	75	114	321	360	500	650	282.5	932.5
GVBB-SA-CF275-P	GB3H511	98	75	114	321	360	500	650	282.5	932.5
GVBB-SA-CF300-P	GB3J511	103	85	140	363	400	580	751.5	306.5	1058

Dimension in mm unless otherwise noted

UHV 3 - Position Throttle Gate Valve (Ball groove mechinism)

Features

- Use lockable cylinder, gate plate could precisely stop at alternative position.
- Alternative position is set by reed sensor.
- Good reproducibility of gate plate position, tolerance ±1%.
- Procedure control is programmable and flexible.

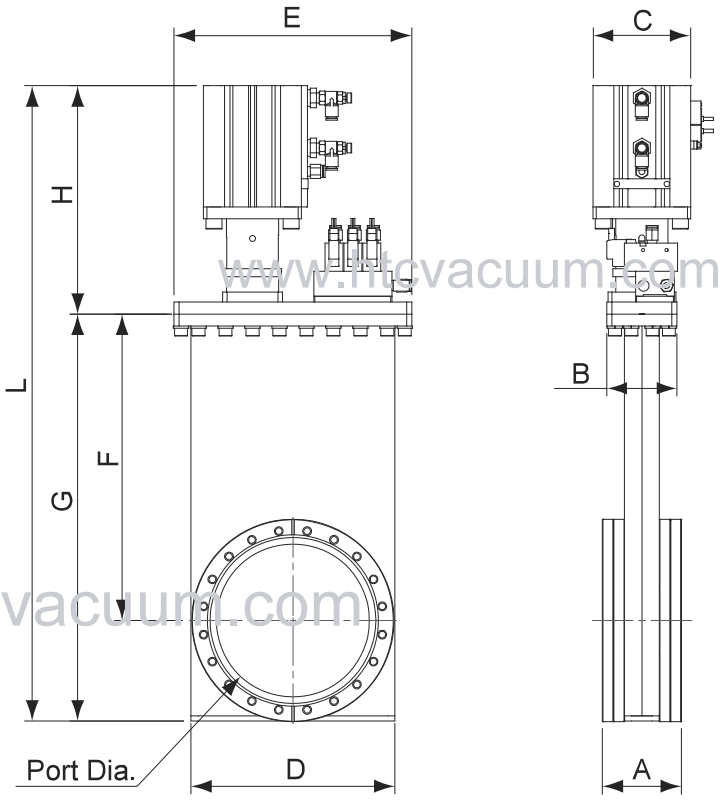
Material	Body		304 S.S.
	Carriage	Linkage type Ball type Size under 10” Ball type Size above 10”(included)	SUS304 SUS304、A6061-T6
	Gate	Linkage type Ball type Size under 10” Ball type Size above 10”(included)	SUS304 A6061-T6
	Bellows		AM350
Cycle life	size under 4” (included)		100,000
	size above 4”		50,000
Helium leak rates at 1 atm differential	< 5×10^{-10} mbar. l /sec for gasket seal		
Bake Temperature	Open		200°C Viton bonnet seal
	Closed		150°C Viton bonnet seal
Pressure Range (mbar)	1×10^{-10} ~1000		
Maximum △P (mbar)	27 before opening		
Standard Seal	Gate		Viton O-ring
	Bonnet		OFHC copper gasket
Actuator	Pneumatic		
Compressed air supply Tube connection Pressure range	Ø6 mm 4~6 Kg/cm^2 (overpressure)		
Surface Treatment	Scotch Polished		
Options	a. Position indicator b. Pneumatic control solenoid valve c. Roughing port d. Other material Gate O-ring seal		

Dimension in mm unless otherwise noted

UHV 3 - Position Throttle Gate Valve

CF Flange

Pneumatic Series



Model No.	Parts No.	Port Dia.	Bonnet seal	Flange O.D.	Bolt P.C.D.	Bolt Size * No.	Torque (kg~cm)	Thread Depth
GVBB3P-SS-CF63-P	GB3C611CB	63.7	Metal	113.6	92.1	M8*8	210	18
GVBB3P-SS-CF100-P	GB3E611CB	102	Metal	151.6	130.3	M8*16	210	20
GVBB3P-SS-CF150-P	GB3F611CB	153	Metal	202.5	181	M8*20	210	22
GVBB3P-SS-CF200-P	GB3G611CB	200	Metal	253.2	231.8	M8*24	210	24

Model No.	Parts No.	A	B	C	D	E	F	G	H	L
GVBB3P-SS-CF63-P	GB3C611CB	65	68	77	107	143	158	207	200.5	407.5
GVBB3P-SS-CF100-P	GB3E611CB	69.6	68	98	146	182	222	297	215	512
GVBB3P-SS-CF150-P	GB3F611CB	79	70	98	204	238	306.5	407	239	646
GVBB3P-SS-CF200-P	GB3G611CB	84.4	70	98	245	282	382	506	320.5	826.5

Standard voltage DC24V with Solenoid reed sensor

HV Gate Valve (Lubricated mechanism)

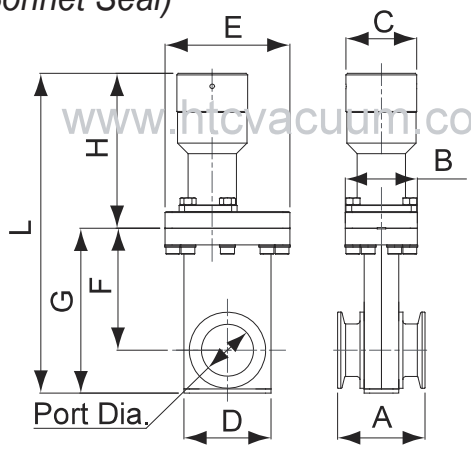
Material	Body		304 S.S.
	Carriage	Linkage type Ball type Size under 10” Ball type Size above 10”(included)	SUS304 SUS304 、A6061-T6
	Gate	Linkage type Ball type Size under 10” Ball type Size above 10”(included)	SUS304 A6061-T6
	Bellows		AM350
Cycle life	size under 8” (included)	L-type	200,000 cycles
		B-type	300,000 cycles
	size above 8”	L-type	50,000 cycles
		B-type	200,000 cycles
Helium leak rates at 1 atm differential	< 2×10^{-9} mbar.l /sec for O-ring seal		
Bake Temperature	Valve body		≦ 150°C
	Manual and pneumatic actuator		≦ 80°C
Pressure Range (mbar)	$1x10^{-8}$ ~1000		
Maximum △P (mbar)	27 before opening		
Standard Seal	Gate		Viton O-ring
	Bonnet		Viton O-ring
Actuator	Pneumatic or Manual		
Compressed air supply **Tube connection** **Pressure range**	Ø6 mm 4~6 Kg/cm^2 (overpressure)		
Surface Treatment	Scotch Polished		
Options	a. Position indicator b. Pneumatic control solenoid valve c. Roughing port d. Other material Gate O-ring seal		

Dimension in mm unless otherwise noted

HV Gate Valve (Linkage mechanism)

KF Flange(Mini)

Manual series (with Bellows, Elastomer Bonnet Seal)

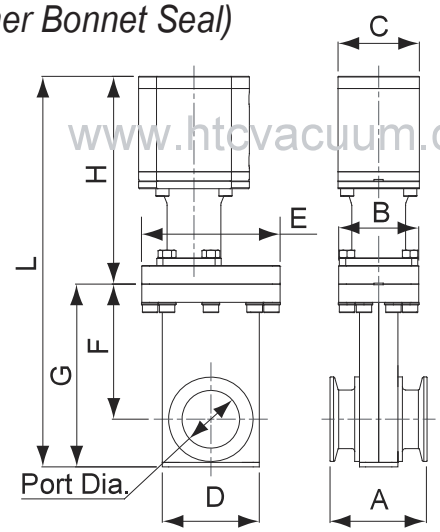


Model No.	Parts No.	Bonnet seal	Flange O.D.	Port Dia.
GVB-SS-KF40-M	GA1A112	Viton	55	38
GVB-SS-KF50-M	GA1B112	Viton	75	50

Model No.	Parts No.	A	B	C	D	E	F	G	H	L
GVB-SS-KF40-M	GA1A112	50	52	51	63	90	88	119	113	232
GVB-SS-KF50-M	GA1B112	59	56	51	81	104	123	167	129	296

KF Flange(Mini)

Pneumatic series (with Bellows, Elastomer Bonnet Seal)



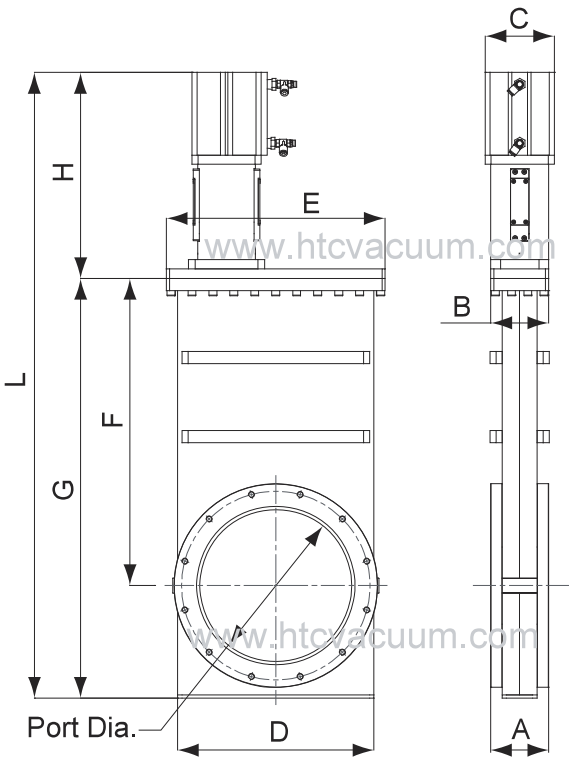
Model No.	Parts No.	Port Dia.	Bonnet seal	Flange O.D.
GVB-SS-KF40-P	GA1A312	38	Viton	55
GVB-SS-KF50-P	GA1B312	50	Viton	75

Model No.	Parts No.	A	B	C	D	E	F	G	H	L
GVB-SS-KF40-P	GA1A312	50	52	53	63	90	88	119	135	254
GVB-SS-KF50-P	GA1B312	59	56	53	81	104	123	167	154	321

HV Gate Valve (Linkage mechanism)

ISO Flange(Large)

Pneumatic series (with Bellows, Elastomer Bonnet Seal)



Model No.	Parts No.	Port Dia.	Bonnet seal	Flange O.D.	Bolt P.C.D.	Bolt Size * No.	Torque (kg~cm)	Thread Depth
GVB-SS-ISO250-P	GA4H311	250	Viton	335	310	M10*12	150	19
GVB-SS-ISO320-P	GA4J311	305	Viton	425	395	M12*12	150	20

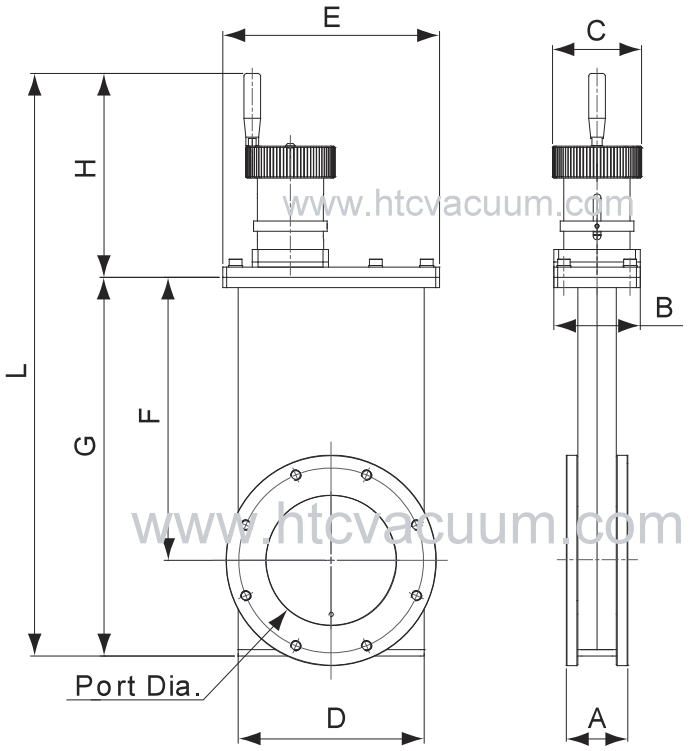
Model No.	Parts No.	A	B	C	D	E	F	G	H	L
GVB-SS-ISO250-P	GA4H311	95.4	95	114	323	360	505	690	339	1029
GVB-SS-ISO320-P	GA4J311	103.6	105	140	367	415	554	750	361	1111

Dimension in mm unless otherwise noted

HV Gate Valve (Ball groove mechanism)

ISO Flange

Manual series



Model No.	Parts No.	Port Dia.	Bonnet seal	Flange O.D.	Bolt P.C.D.	Bolt Size * No.	Torque (kg~cm)	Thread Depth
GVBB-SS-ISO63-M	GA4C411	63.7	Viton	130	110	M8*4	100	12
GVBB-SS-ISO100-M	GA4E411	102	Viton	165	145	M8*8	100	12
GVBB-SS-ISO160-M	GA4F411	153	Viton	225	200	M10*8	100	16
GVBB-SS-ISO200-M	GA4G411	200	Viton	285	260	M10*12	150	16
GVBB-SA-ISO250-M	GA4H411	255	Viton	335	310	M10*12	150	19
GVBB-SA-ISO320-M	GA4J411	305	Viton	425	395	M12*12	200	20

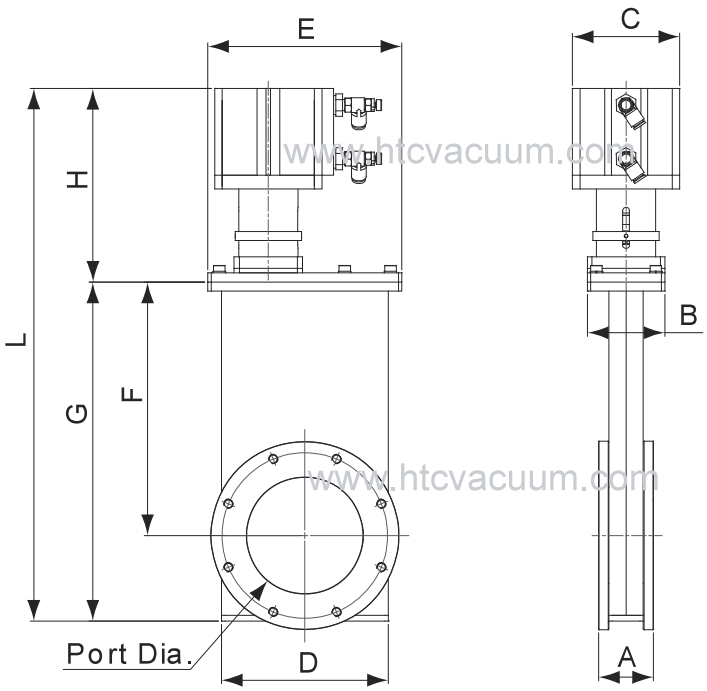
Model No.	Parts No.	A	B	C	D	E	F	G	H	L
GVBB-SS-ISO63-M	GA4C411	53	68	70	107	128	158	207	160	367
GVBB-SS-ISO100-M	GA4E411	53.6	68	70	146	170	222	297	160	457
GVBB-SS-ISO160-M	GA4F411	67	68	78	204	220	306.5	407	183	590
GVBB-SS-ISO200-M	GA4G411	67	70	78	245	267	383	507	224	731
GVBB-SA-ISO250-M	GA4H411	80	75	99	321	340	500	650	340.5	990.5
GVBB-SA-ISO320-M	GA4J411	86	85	99	363	395	580	751.5	340.5	1092

Dimension in mm unless otherwise noted

HV Gate Valve (Ball groove mechinism)

ISO Flange

Pneumatic series



Model No.	Parts No.	Port Dia.	Bonnet seal	Flange O.D.	Bolt P.C.D.	Bolt Size * No.	Torque (kg~cm)	Thread Depth
GVBB-SS-ISO63-P	GA4C511	63.7	Viton	130	110	M8*4	100	12
GVBB-SS-ISO100-P	GA4E511	102	Viton	165	145	M8*8	100	12
GVBB-SS-ISO160-P	GA4F511	153	Viton	225	200	M10*8	100	16
GVBB-SS-ISO200-P	GA4G511	200	Viton	285	260	M10*12	150	16
GVBB-SA-ISO250-P	GA4H511	255	Viton	335	310	M10*12	150	19
GVBB-SA-ISO320-P	GA4J511	305	Viton	425	395	M12*12	200	20

Model No.	Parts No.	A	B	C	D	E	F	G	H	L
GVBB-SS-ISO63-P	GA4C511	53	68	75	107	128	158	207	159	366
GVBB-SS-ISO100-P	GA4E511	53.6	68	94	146	170	222	297	170	467
GVBB-SS-ISO160-P	GA4F511	67	68	94	204	220	306.5	407	198	605
GVBB-SS-ISO200-P	GA4G511	67	70	94	245	267	383	507	260	767
GVBB-SA-ISO250-P	GA4H511	80	75	114	321	340	500	650	282.5	932.5
GVBB-SA-ISO320-P	GA4J511	86	85	140	363	395	580	751.5	306.5	1058

Dimension in mm unless otherwise noted

HV 3-Position Throttle Gate Valve (Ball groove mechanism)

Features

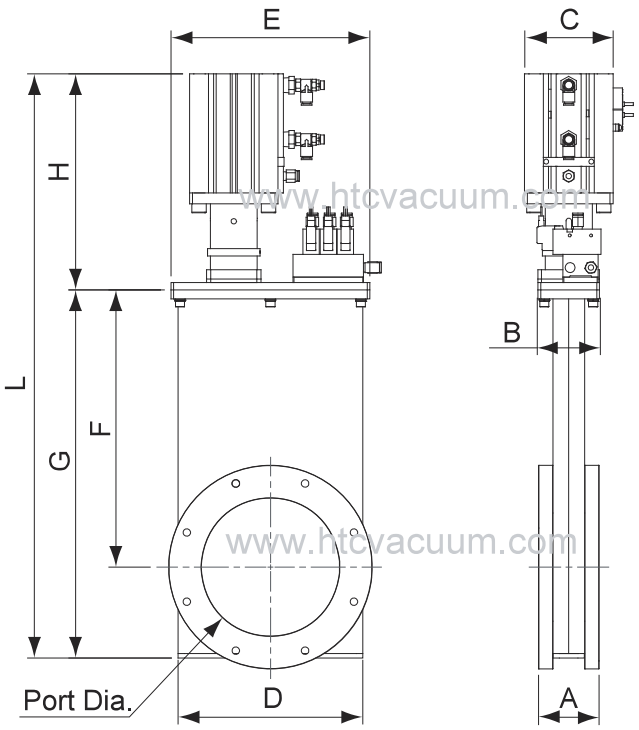
- Use lockable cylinder, gate plate could precisely stop at alternative position.
- Alternative position is set by reed sensor.
- Good reproducibility of gate plate position, tolerance ±1%.
- Procedure control is programmable and flexible.

Material	Body		SUS304
	Carriage	Linkage type Ball type Size under 10” Ball type Size above 10”(included)	SUS304 SUS304、A6061-T6
	Gate	Linkage type Ball type Size under 10” Ball type Size above 10”(included)	SUS304 A6061-T6
	Bellows		AM350
Cycle life	size under 8” (included)		300,000
	size above 8”		200,000
Helium leak rates at 1 atm differential	< 2×10^{-9} mbar. l /sec for O-ring		
Bake Temperature	Open		200°C Viton bonnet seal
	Closed		150°C Viton bonnet seal
Pressure Range (mbar)	$1x10^{-8}$ ~1000		
Maximum △P (mbar)	27 before opening		
Standard Seal	Gate		Viton O-ring
	Bonnet		Viton O-ring
Actuator	Pneumatic		
Compressed air supply Tube connection Pressure range	Ø6 mm 4~6 Kg/cm^2 (overpressure)		
Surface Treatment	Scotch Polished		
Options	a. Position indicator b. Pneumatic control solenoid valve c. Roughing port d. Other material Gate O-ring seal		

HV 3-Position Throttle Gate Valve

ISO Flange

Pneumatic series



Model No.	Parts No.	Port Dia.	Bonnet seal	Flange O.D.	Bolt P.C.D.	Bolt Size * No.	Torque (kg~cm)	Thread Depth
GVBB3P-SS-ISO63-P	GA4C611CB	63.7	Viton	130	110	M8*4	100	12
GVBB3P-SS-ISO100-P	GA4E611CB	102	Viton	165	145	M8*8	100	12
GVBB3P-SS-ISO160-P	GA4F611CB	153	Viton	225	200	M10*8	100	16
GVBB3P-SS-ISO200-P	GA4G611CB	200	Viton	285	260	M10*12	150	16

Model No.	Parts No.	A	B	C	D	E	F	G	H	L
GVBB3P-SS-ISO63-P	GA4C611CB	53	68	77	107	128	158	207	200.5	407.5
GVBB3P-SS-ISO100-P	GA4E611CB	53.6	68	98	146	170	222	297	215	512
GVBB3P-SS-ISO160-P	GA4F611CB	67	68	98	204	220	306.5	407	239	646
GVBB3P-SS-ISO200-P	GA4G611CB	67	70	98	245	267	383	507	320.5	827.5

Standard voltage DC24V with Solenoid & reed sensor.

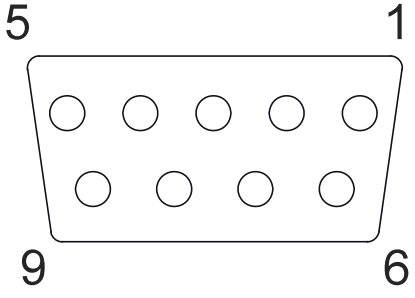
Dimension in mm unless otherwise noted

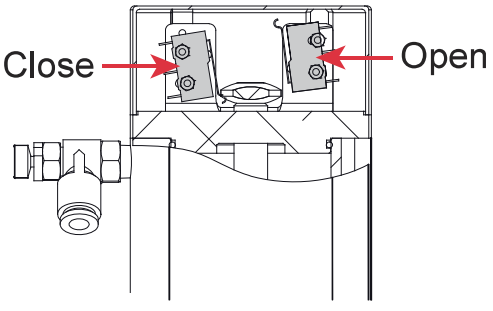
UHV Gate Valve - Limit Switch

Material	Body		SUS304
	Carriage	Linkage type Ball type Size under 10” Ball type Size above 10”(included)	SUS304 SUS304、A6061-T6
	Gate	Linkage type Ball type Size under 10” Ball type Size above 10”(included)	SUS304 A6061-T6
	Bellows		AM350
Cycle life	size under 4” (included)		100,000
	size above 4”		50,000
Helium leak rates at 1 atm differential	< 5×10^{-10} mbar. l /sec for gasket seal		
Bake Temperature	Valve body (metal bonnet seal)	Open	200°C
		Closed	150°C
	Actuator	Pneumatic	≤ 80 °C
Pressure Range (mbar)	$1x10^{-10}$ ~1000		
Maximum △P (mbar)	27 before opening		
Standard Seal	Gate	Viton O-ring	
	Bonnet	OFHC copper gasket	
Compressed air supply tube connection pressure range	Ø6 mm 4~6Kg/cm^2 (overpressure)		
Actuator	Pneumatic		
Connector	D-sub Female 9 pins Current Rating	3A 110VAC	
		5A 24VDC	
Surface Treatment	Scotch Polished		
Options	a. Pneumatic control solenoid valve b. Roughing port c. Other material Gate O-ring seal		

Wiring

- Pin definition
  1:COM(Close)
  2:N.O(Close)
  3:N.C(Close)
  4:Empty
  5:Empty
  6:COM(Open)
  7:N.O(Open)
  8:N.C(Open)
  9:Empty

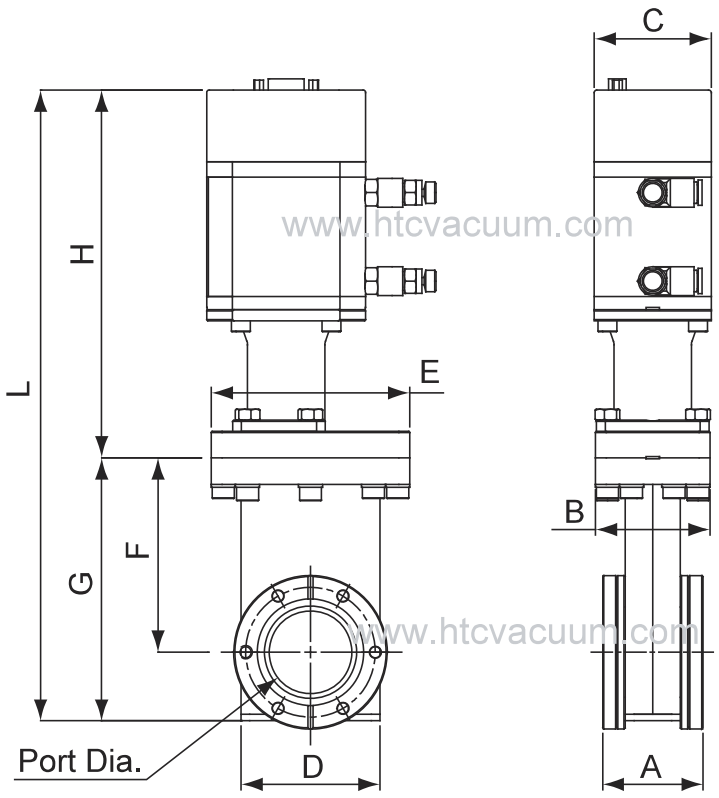




UHV Gate Valve (Linkage mechanism)-Limit Switch

CF Flange(Mini)

Pneumatic series (with Bellows, Metal Bonnet Seal)



Model No.	Parts No.	Port Dia.	Bonnet seal	Flange O.D.	Bolt P.C.D.	Bolt Size * No.	Torque (kg~cm)	Thread Depth
GVBLS-SS-CF35-P	GB3A311NB	37.5	Metal	69.5	58.7	M6*6	170	10
GVBLS-SS-CF50-P	GB3B311NB	50	Metal	86	72.4	M8*8	210	10

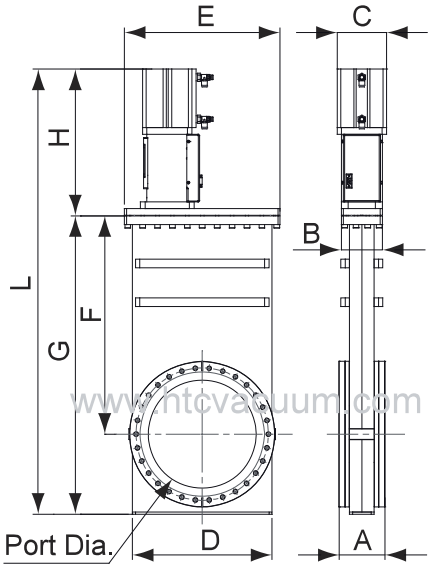
Model No.	Parts No.	A	B	C	D	E	F	G	H	L
GVBLS-SS-CF35-P	GB3A311NB	45.4	52	53	63	90	88	119	166.5	285.5
GVBLS-SS-CF50-P	GB3B311NB	56	56	53	81	104	123	167	185.5	352.5

Dimension in mm unless otherwise noted

UHV Gate Valve (Linkage mechanism) - Limit Switch

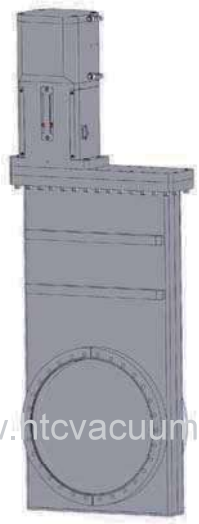
CF Flange(Large)

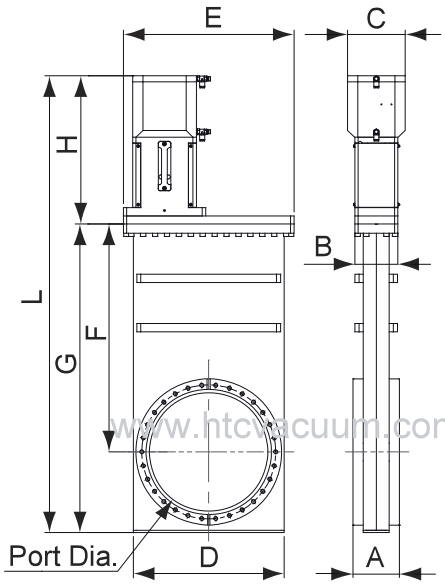
Pneumatic series (with Bellows, Metal Bonnet Seal)



Model No.	Parts No.	Port Dia.	Bonnet seal	Flange O.D.	Bolt P.C.D.	Bolt Size * No.	Torque (kg~cm)	Thread Depth
GVBLS-SS-CF275-P	GB3H311NB	250	Metal	336.5	306.5	M10*30	360	24

Model No.	Parts No.	A	B	C	D	E	F	G	H	L
GVBLS-SS-CF275-P	GB3H311NB	106.4	95	114	323	360	505	690	340	1030





Model No.	Parts No.	Port Dia.	Bonnet seal	Flange O.D.	Bolt P.C.D.	Bolt Size * No.	Torque (kg~cm)	Thread Depth
GVBLS-SS-CF300-P	GB3J311NB	305	Metal	355.6	325.7	M10*30	360	20

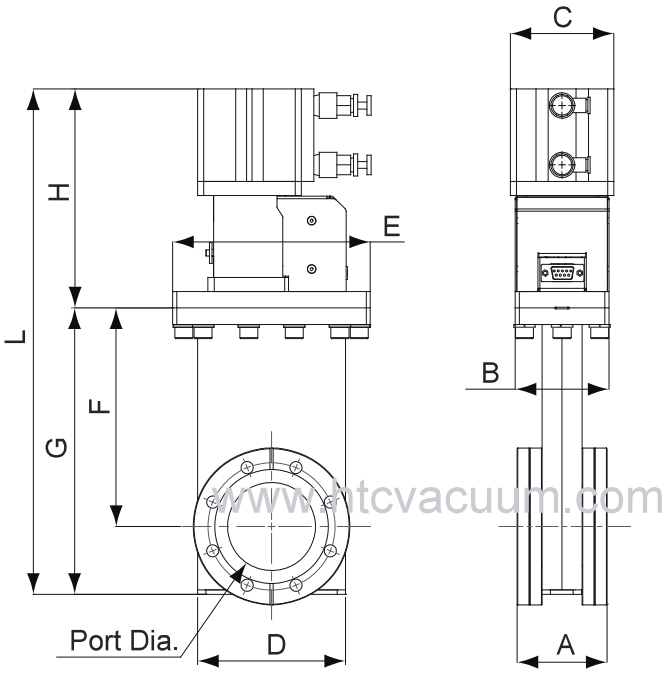
Model No.	Parts No.	A	B	C	D	E	F	G	H	L
GVBLS-SS-CF300-P	GB3J311NB	112.6	105	140	367	415	554	750	361	1111

Dimension in mm unless otherwise noted

UHV Gate Valve (Ball groove mechinism) - Limit Switch

CF Flange

Pneumatic series



Model No.	Parts No.	Port Dia.	Bonnet seal	Flange O.D.	Bolt P.C.D.	Bolt Size * No.	Torque (kg~cm)	Thread Depth
GVBBLS-SS-CF63-P	GB3C511NB	63.7	Metal	113.6	92.1	M8*8	210	18
GVBBLS-SS-CF100-P	GB3E511NB	102	Metal	151.6	130.3	M8*16	210	20
GVBBLS-SS-CF150-P	GB3F511NB	153	Metal	202.5	181	M8*20	210	22
GVBBLS-SS-CF200-P	GB3G511NB	200	Metal	253.2	231.8	M8*24	210	24

Model No.	Parts No.	A	B	C	D	E	F	G	H	L
GVBBLS-SS-CF63-P	GB3C511NB	65	68	75	107	143	158	207	159	366
GVBBLS-SS-CF100-P	GB3E511NB	69.6	68	94	146	182	222	297	170	467
GVBBLS-SS-CF150-P	GB3F511NB	79	70	94	204	238	306.5	407	198	605
GVBBLS-SS-CF200-P	GB3G511NB	84.4	70	94	245	282	382	506	260	766

Dimension in mm unless otherwise noted

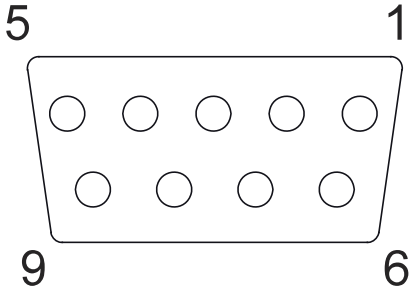
HV Gate Valve - Limit switch

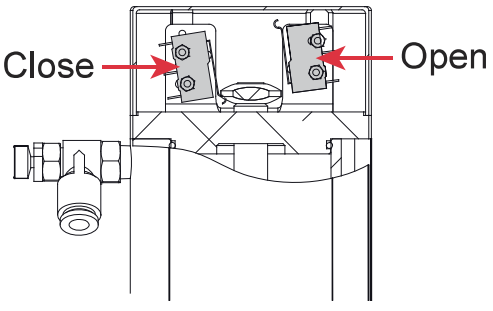
(lubricated mechanism)

Material	Body		SUS304
	Carriage	Linkage type Ball type Size under 10" Ball type Size above 10"(included)	SUS304 SUS304、A6061-T6
	Gate	Linkage type Ball type Size under 10" Ball type Size above 10"(included)	SUS304 A6061-T6
	Bellows		AM350
Cycle life	size under 8" (included)		300,000
	size above 8"		50,000
Helium leak rates at 1 atm differential	< 2×10^{-9} mbar. l /sec for O-ring seal		
Bake Temperature	Valve body	Open	150°C
		Closed	150°C
	Actuator	Pneumatic	≦ 80 °C
Pressure Range (mbar)	$1x10^{-8}$ ~1000		
Maximum △P (mbar)	27 before opening		
Standard Seal	Gate	Viton O-ring	
	Bonnet	Viton O-ring	
Compressed air supply tube connection pressure range	Ø6 mm		
	4~6Kg/cm^2 (overpressure)		
Actuator	Pneumatic		
Connector	D-sub Female 9 pins Current Rating	3A 110VAC	
		5A 24VDC	
Surface Treatment	Scotch Polished		
Options	a. Pneumatic control solenoid valve b. Roughing port c. Other material Gate O-ring seal		

Wiring

- Pin definition
  1:COM(Close)
  2:N.O(Close)
  3:N.C(Close)
  4:Empty
  5:Empty
  6:COM(Open)
  7:N.O(Open)
  8:N.C(Open)
  9:Empty



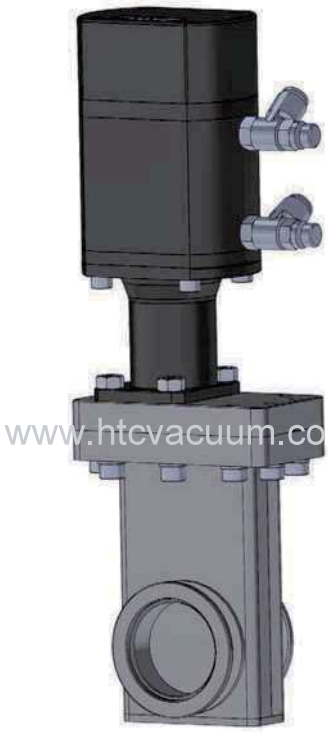


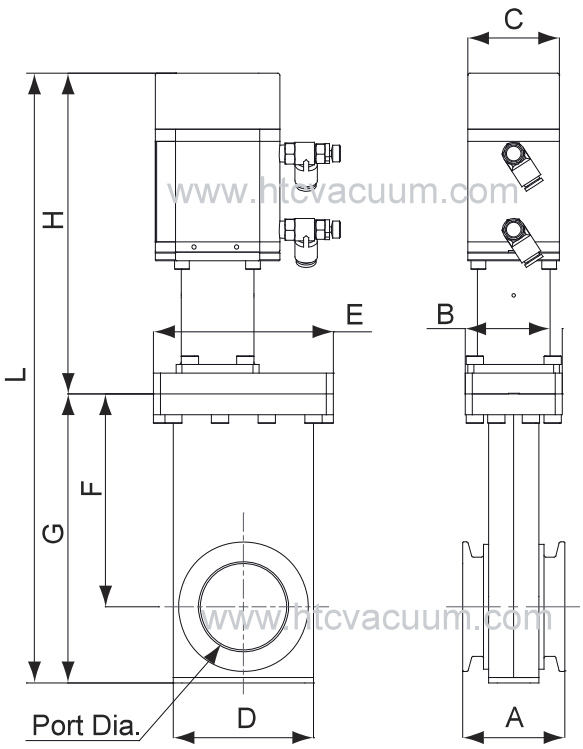
Dimension in mm unless otherwise noted

HV Gate Valve(Linkage mechanism)-Limit Switch

KF Flange (Mini)

Pneumatic Series (with Bellows, Elastomer Bonnet Seal)





Model No.	Parts No.	Port Dia.	Bonnet seal	Flange O.D.
GVBLS-SS-KF40-P	GA1A312NB	38	Viton	55
GVBLS-SS-KF50-P	GA1B312NB	50	Viton	75

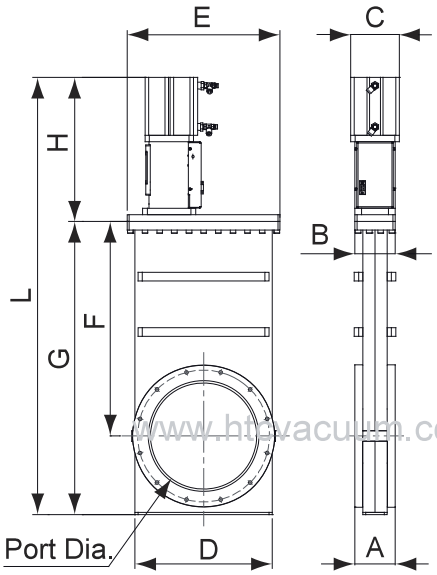
Model No.	Parts No.	A	B	C	D	E	F	G	H	L
GVBLS-SS-KF40-P	GA1A312NB	50	52	53	63	90	88	119	166.5	285.5
GVBLS-SS-KF50-P	GA1B312NB	59	56	53	81	104	123	167	185.5	352.5

Dimension in mm unless otherwise noted

HV Gate Valve (Linkage mechanism)-Limit Switch

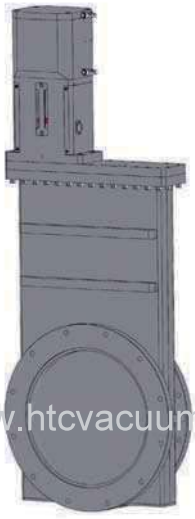
ISO Flange (Large)

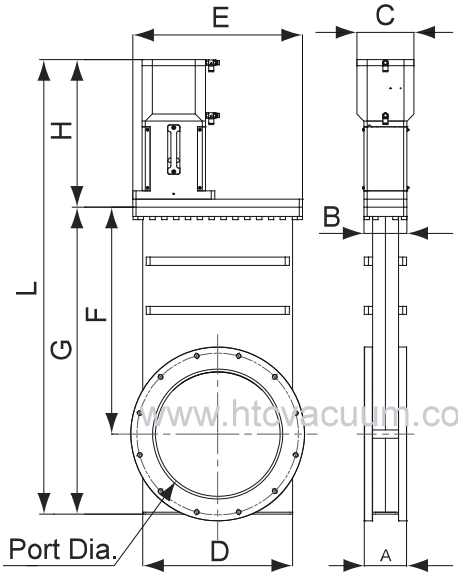
Pneumatic Series (with Bellows, Elastomer Bonnet Seal)



Model No.	Parts No.	Port Dia.	Bonnet seal	Flange O.D.	Bolt P.C.D.	Bolt Size * No.	Torque (kg~cm)	Thread Depth
GVBLS-SS-ISO250-P	GA4H311NB	250	Viton	335	310	M10*12	150	19

Model No.	Parts No.	A	B	C	D	E	F	G	H	L
GVBLS-SS-ISO250-P	GA4H311NB	95.4	95	114	323	360	505	690	340	1030





Model No.	Parts No.	Port Dia.	Bonnet seal	Flange O.D.	Bolt P.C.D.	Bolt Size * No.	Torque (kg~cm)	Thread Depth
GVBLS-SS- ISO320-P	GA4J311NB	305	Viton	425	395	M12*12	150	20

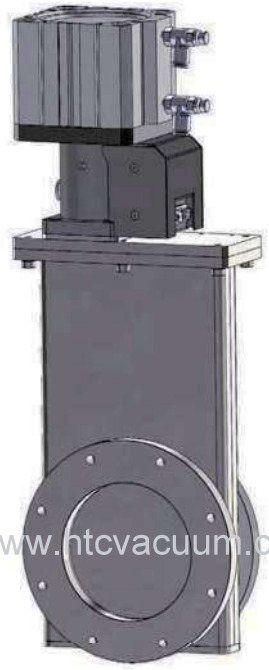
Model No.	Parts No.	A	B	C	D	E	F	G	H	L
GVBLS-SS-ISO320-P	GA4J311NB	103.6	105	140	367	415	554	750	361	1111

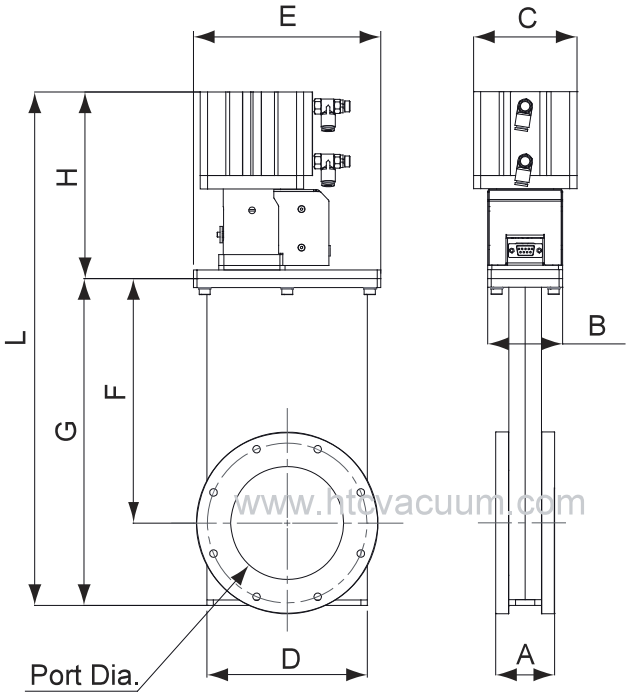
Dimension in mm unless otherwise noted

HV Gate Valve (Ball groove mechinism) - Limit Switch

ISO Flange

Pneumatic Series (with Bellows, Elastomer Bonnet Seal)





Model No.	Parts No.	Port Dia.	Bonnet seal	Flange O.D.	Bolt P.C.D.	Bolt Size * No.	Torque (kg~cm)	Thread Depth
GVBBLS-SS-ISO63-P	GA4C511NB	63.7	Viton	130	110	M8*4	100	12
GVBBLS-SS-ISO100-P	GA4E511NB	102	Viton	165	145	M8*8	100	12
GVBBLS-SS-ISO160-P	GA4F511NB	153	Viton	225	200	M10*8	100	16
GVBBLS-SS-ISO200-P	GA4G511NB	200	Viton	285	260	M10*12	150	16

Model No.	Parts No.	A	B	C	D	E	F	G	H	L
GVBBLS-SS-ISO63-P	GA4C511NB	53	68	75	107	128	158	207	159	366
GVBBLS-SS-ISO100-P	GA4E511NB	53.6	68	94	146	170	222	297	170	467
GVBBLS-SS-ISO160-P	GA4F511NB	67	68	94	204	220	306.5	407	198	605
GVBBLS-SS-ISO200-P	GA4G511NB	67	70	94	245	267	383	507	260	767

Dimension in mm unless otherwise noted

Gate Valve Kit

Ball Groove Mechanism

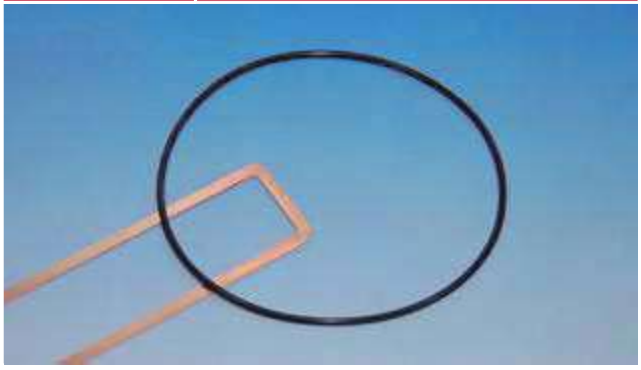
Type	Size	Actuation	Kit No.	Content
ISO	63	M	GA4C411K	Figure 1
		P/LS	GA4C511K	
		3P	GA4C611K	
	100	M	GA4E411K	
		P/LS	GA4E511K	
		3P	GA4E611K	
	160	M	GA4F411K	
		P/LS	GA4F511K	
		3P	GA4F611K	
	200	M	GA4G411K	
		P/LS	GA4G511K	
		3P	GA4G611K	
	250	M	GA4H411K	
		P	GA4H511K	
	320	M	GA4J411K	
		P	GA4J511K	
CF	63	M	GB3C411K	Figure 2
		P/LS	GB3C511K	
		3P	GB3C611K	
	100	M	GB3E411K	
		P/LS	GB3E511K	
		3P	GB3E611K	
	150	M	GB3F411K	
		P/LS	GB3F511K	
		3P	GB3F611K	
	200	M	GB3G411K	
		P/LS	GB3G511K	
		3P	GB3G611K	
	250	M	GB3K411K	
		P	GB3K511K	
	275	M	GB3H411K	
		P	GB3H511K	
	300	M	GB3J411K	
		P	GB3J511K	

Linkage Mechanism

Type	Size	Actuation	Kit No.	Content
KF	40	M	GA1A112K	Figure 1
		P	GA1A312K	
	50	M	GA1B112K	
		P	GA1B312K	
ISO	250	P/LS	GA4H311K	
	320	P/LS	GA4J311K	
CF	35	M	GB3A111K	Figure 2
		P/LS	GB3A311K	
	50	M	GB3B111K	
		P/LS	GB3B311K	
	250	P	GB3K311K	
	275	P/LS	GB3H311K	
	300	P/LS	GB3J311K	

Figure 1	Gate seal x 1 (Viton) Bonnet seal x 1 (Viton)

Figure 2	Gate seal x 1 (Viton) Bonnet seal x 1 (OFHC Copper)



M : Manual	LS : Limit Switch
P : Pneumatic	3P : 3 Position

Dimension in mm unless otherwise noted

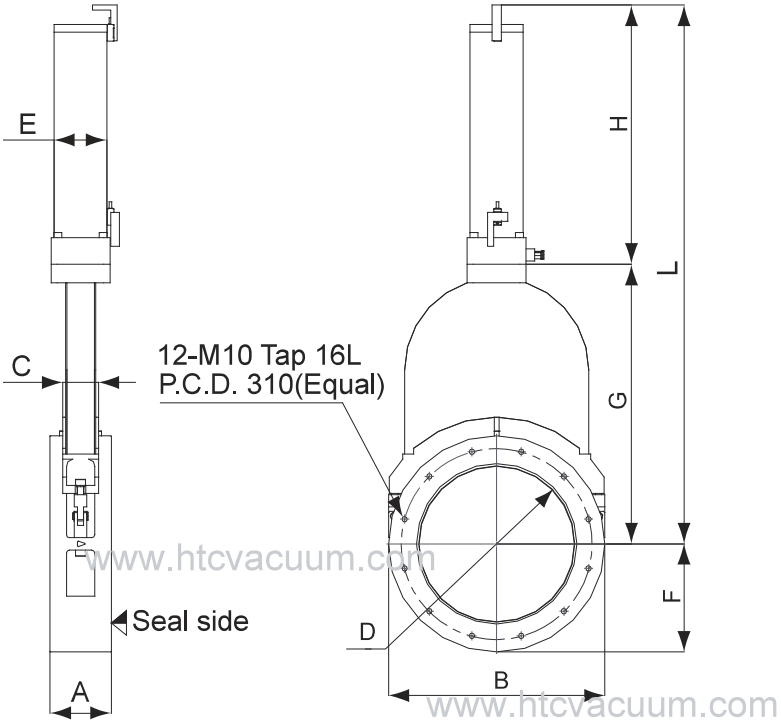
HV Aluminum Gate Valve

Specification

- Model : ISO-F 250 GV
- Pressure Range:10^{-7} mbar to 1 bar
- Leak rate : <$2x10^{-8}$ mbar. l/sec
- Differential pressure on the plate: ≤1 bar
- Differential pressure at opening: ≤30 mbar
- Material:
  Top valve body : 304S.S.
  Bottom valve body : 6061-T6 aluminum
  Shaft : 304S.S.
  Carriage : 6061-T6 aluminum
  Bonnet / gate / shaft seals : Viton
- Max temperature : Cylinder ≤ 80°C
- Body ≤ 120°C
- Compressed air : 4-7 bar
- Compressed air connection : M5
- Mounting position : Any
- Conductance : 22,000 l/s
- Closing time : 5.0 s
- Opening time : 5.0 s
- Cycle until first service : 100,000
- Weight : 27.0 Kg

HV TYPE

Aluminum Body, without bellows



Model No.	Parts No.	Sensor	A	B	C	D	E	F	G	H	L
GVBS-AA-ISO250-P	G14H511NA	YES	100	Ø352	58.5	261	86	176	455	422	877

Accessory	Description	Parts No.
Solenoid (Optional)	DC24V AC110V VAC220V	1000C0F202 1000C0F203 1000C0F204
Sensor (Standard)	DC4-24(V) or AC4-240(V), 5-40 mA	60010021

Dimension in mm unless otherwise noted

PENDULUM VALVES

HTC vacuum pendulum valve is to install a large throttle valve between the process vacuum chamber and the turbine molecular pump inlet. The current pendulum valve design are constructed of body material blank or hard anodized for corrosion resistant and less dust. It's vailable with ISO200,ISO 250,ISO320 flanges in sizes 8",10",12" and can be operated in pneumatic,3-Position or APC mode. This vacuum valve is usually designed as a gate valve or a pendulum valve, applications include OLED, FPD, and PV industries manufacturing systems.

Pneumatic pendulum valve

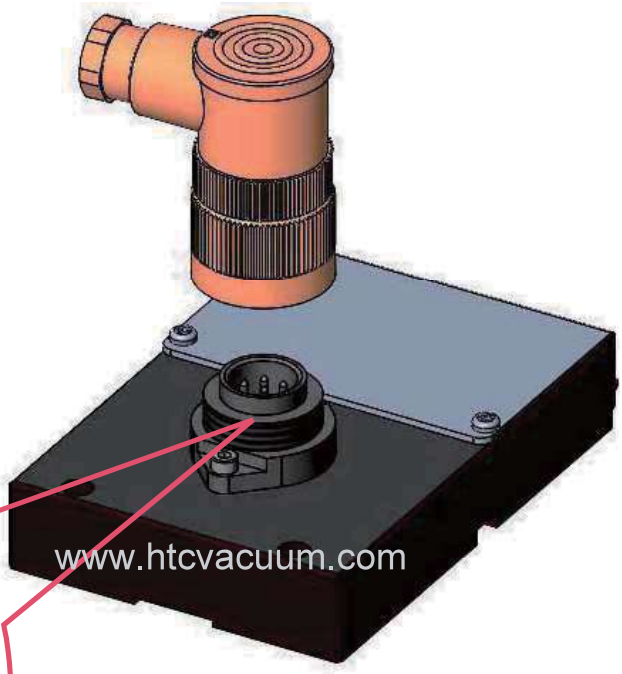
Design principle / features :

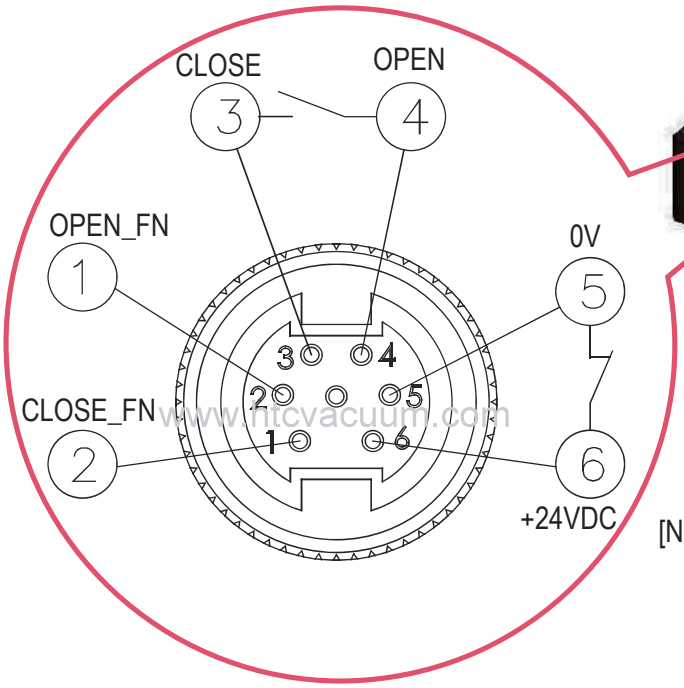
- Low Vibration
- Corrosion resistant
- Less dust
- Easy disassembly
- More Differential pressure

Material	Body	A6061-T6	
	Gate	A6061-T6	
Life Cycle	200,000 cycles		
Helium leak rates at 1 atm differential	Body Aluminum		$<1\times10^{-9}$ mbar .l /sec
	Body Aluminum ,hard anodized		$<1\times10^{-5}$ mbar .l /sec
Bake Temperature	Body	$\leq$ 120°C	
	Actuator	$\leq$ 80°C	
	Solenoid valve	$\leq$ 50°C	
Pressure Range	Aluminum	1×10^{-8} mbar to 1.2 bar	
	Aluminum, Hard anodized	1×10^{-6} mbar to 1.2 bar	
Maximum ΔP	1.2 bar		
Maximum ΔP during opening	$\leq$ 5 mbar		
Compressed air pressure	4 ~ 6 Kg/cm^2		
Opening / Closing time	ISO 200	ISO 250	ISO 320
	1.2/1.2	1.2/1.2	2.0/2.0
Standard Seal	Gate	Viton O-ring	
	Bonnet	Viton O-ring	
Actuator	Electro-Pneumatic		
Weight	ISO 200	ISO 250	ISO 320
	21Kg	31Kg	51Kg
Mounting position	Horizontal & Vertical		
Options	a. Other material of Gate O-ring seal b. Heater		

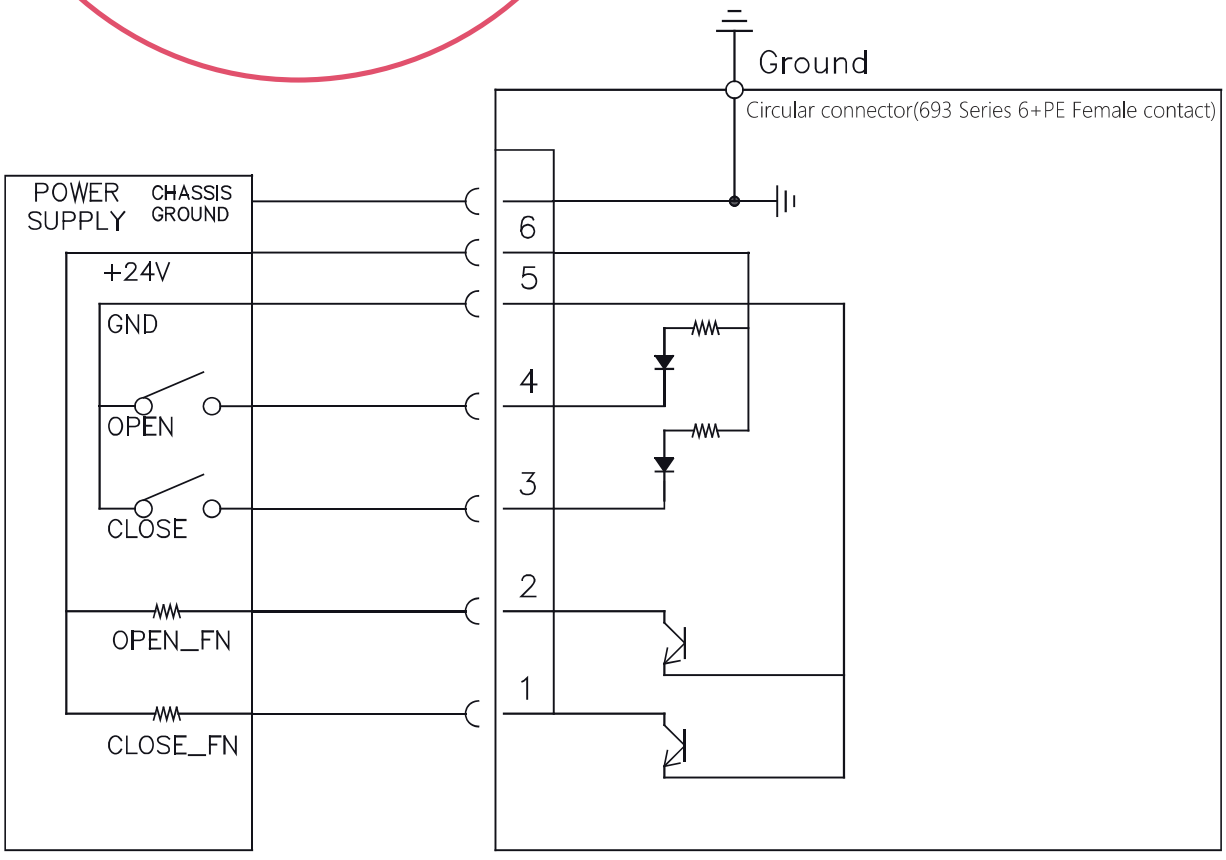
Dimension in mm unless otherwise noted

Control Wiring Externa





[Note] 24AWG wire is recommended.

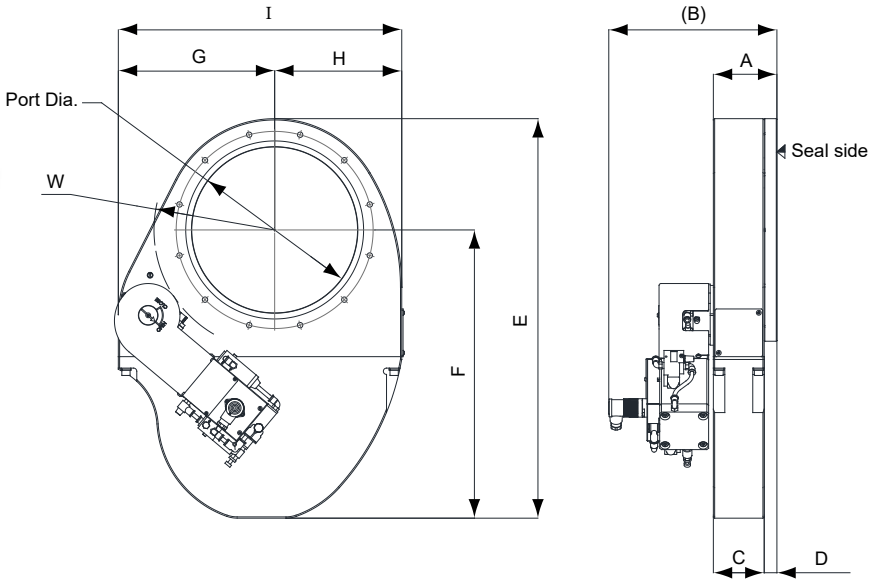


Dimension in mm unless otherwise noted

PENDULUM VALVE

Pneumatically Actuated

Attached Reed Sensor & Solenoid



Model No.	Part No.	Port Dia.	Bonnet Seal	Flange O.D.	Bolt P.C.D.	Bolt Size*No	Thread Depth
PVSSV-A-ISO200-P2/24VDC	GP113A214CB	200	Viton	300	260	M10*12	16
PVSSV-A-ISO250-P2/24VDC	GP114A214CB	254	Viton	335	310	M10*12	16
PVSSV-A-ISO320-P2/24VDC	GP115A214CB	318	Viton	428	395	M12*12	18

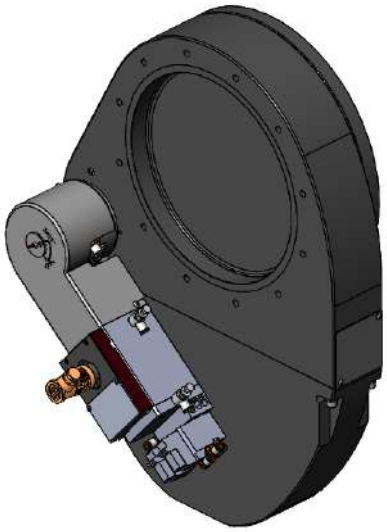
Model No.	A	B	C	D	E	F	G	H	I	W
PVSSV-A-ISO200-P2/24VDC	88	171.5	72	16	510	360	208	160	368	R150
PVSSV-A-ISO250-P2/24VDC	100	264	80	20	628	453	246	200	446	R190
PVSSV-A-ISO320-P2/24VDC	120	284	96	24	752	538	231	302	533	R230

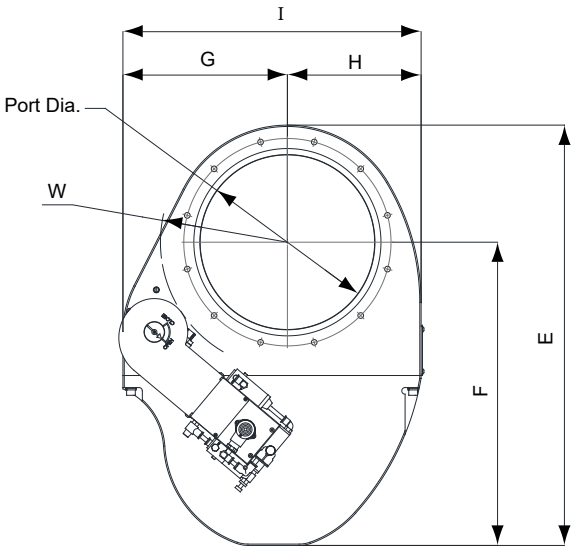
** with reed sensors , with standard solenoid voltage DC24V*

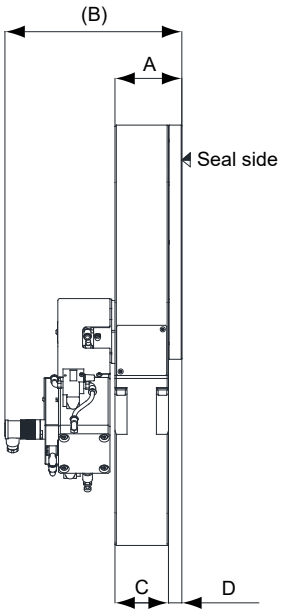
Pneumatically Actuated

Attached Reed Sensor & Solenoid

Standard Surface Treatment: hard anodized







Model No.	Part No.	Port Dia.	Bonnet Seal	Flange O.D.	Bolt P.C.D.	Bolt Size*No	Thread Depth
PVSSV-HA-ISO200-P2/24VDC	GP113A213CB	200	Viton	300	260	M10*12	16
PVSSV-HA-ISO250-P2/24VDC	GP114A213CB	254	Viton	335	310	M10*12	16
PVSSV-HA-ISO320-P2/24VDC	GP115A213CB	318	Viton	428	395	M12*12	18

Model No.	A	B	C	D	E	F	G	H	I	W
PVSSV-HA-ISO200-P2/24VDC	88	171.5	72	16	510	360	208	160	368	R150
PVSSV-HA-ISO250-P2/24VDC	100	264	80	20	628	453	246	200	446	R190
PVSSV-HA-ISO320-P2/24VDC	120	284	96	24	752	538	231	302	533	R230

with reed sensors , with standard solenoid voltage DC24V

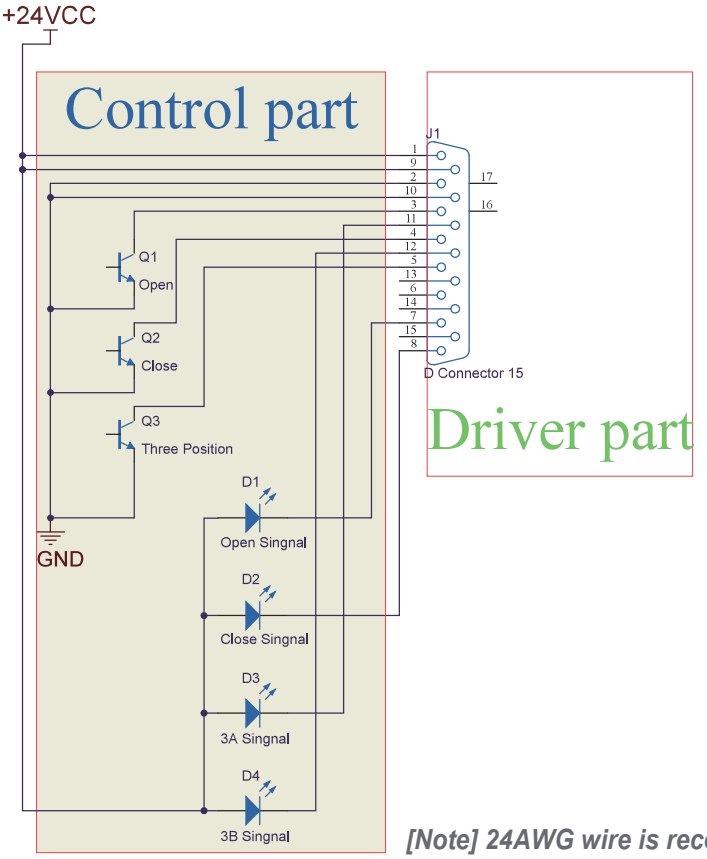
Surface Treatment :hard anodized

Dimension in mm unless otherwise noted

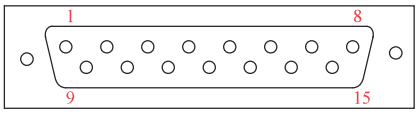
3-POSITION PENDULUM VALVE

Material	Body	A6061-T6	
	Gate	A6061-T6	
Life Cycle	200,000 cycles		
Helium leak rates at 1 atm differential	Body Aluminum	<1×10^{-9} mbar .l /sec	
	Body Aluminum ,hard anodized	<1×10^{-5} mbar .l /sec	
Bake Temperature	Body	≤ 120°C	
	Actuator	≤ 80°C	
	Solenoid valve	≤ 50°C	
Pressure Range	Aluminum	1×10^{-8} mbar to 1.2 bar	
	Aluminum, Hard anodized	1×10^{-6} mbar to 1.2 bar	
Maximum ΔP	1.2 bar		
Maximum ΔP during opening	≤ 5 mbar		
Compressed air pressure	4 ~ 6 Kg/cm^2		
Opening / Closing time	ISO 200	ISO 250	ISO 320
	1.2/1.2	1.2/1.2	2.0/2.0
Standard Seal	Gate	Viton O-ring	
	Bonnet	Viton O-ring	
Actuator	Electro-Pneumatic		
Weight	ISO 200	ISO 250	ISO 320
	22Kg	32Kg	52Kg
Mounting position	Horizontal & Vertical		
Options	a. Other material of Gate O-ring seal b. Heater		

Control Wiring Extern



DA-15 Male D-Sub miniatures



[Note] 24AWG wire is recommended.

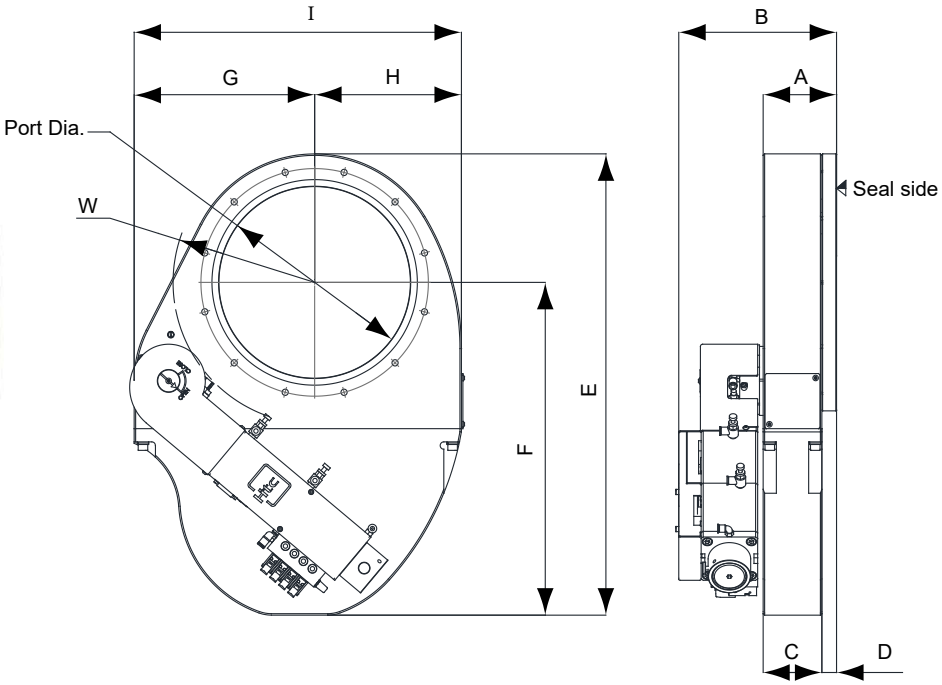
Pin	Function	Status
1	Power supply 24VDC	P
2	Power GROUND	P
3	Open signal input	I
4	Close signal input	I
5	Three-segment signal input	I
6	Reserved	X
7	Open signal output	0
8	Close signal output	0
9	Power supply 24VDC	P
10	Power GROUND	P
11	Three-segmentA signal output	0
12	Three-segmentB signal output	0
13	Reserved	X
14	Reserved	X

Dimension in mm unless otherwise noted

3-POSITION PENDULUM VALVE

Pneumatically Actuated

Attached Reed Sensor & Solenoid



Model No.	Part No.	Port Dia.	Bonnet Seal	Flange O.D.	Bolt P.C.D.	Bolt Size*No	Thread Depth
PV3P-A-ISO200-P2/24VDC	GP113C214CB	200	Viton	300	260	M10*12	16
PV3P-A-ISO250-P2/24VDC	GP114C214CB	254	Viton	335	310	M10*12	16
PV3P-A-ISO320-P2/24VDC	GP115C214CB	318	Viton	428	395	M12*12	18

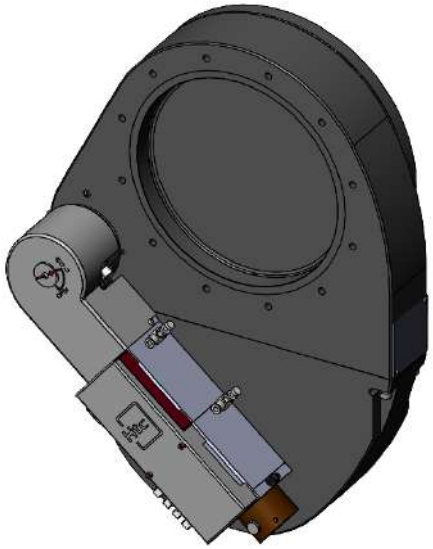
Model No.	A	B	C	D	E	F	G	H	I	W
PV3P-A-ISO200-P2/24VDC	88	171.5	72	16	510	360	208	160	368	R150
PV3P-A-ISO250-P2/24VDC	100	215	80	20	628	453	246	200	446	R190
PV3P-A-ISO320-P2/24VDC	120	235	96	24	752	538	231	302	533	R230

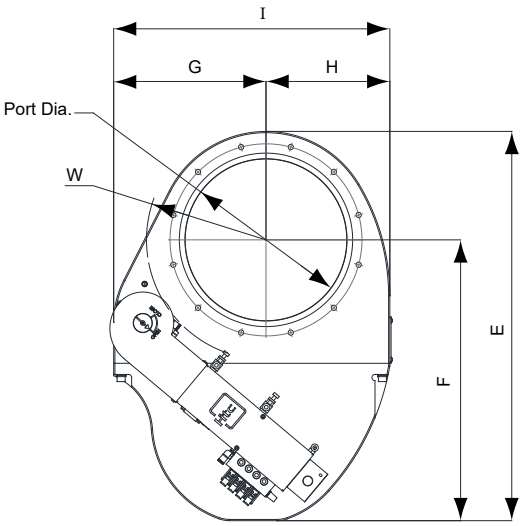
With reed sensors , with standard solenoid voltage DC24V

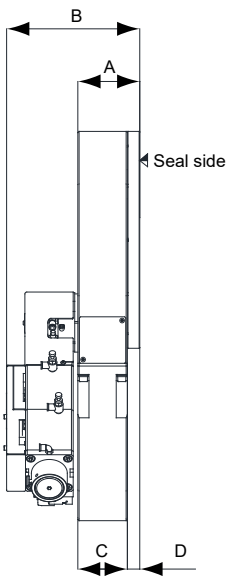
Pneumatically Actuated

Attached Reed Sensor & Solenoid

Standard Surface Treatment: hard anodized







Model No.	Part No.	Port Dia.	Bonnet Seal	Flange O.D.	Bolt P.C.D.	Bolt Size*No	Thread Depth
PV3P-HA-ISO200-P2/24VDC	GP113C213CB	200	Viton	300	260	M10*12	16
PV3P-HA-ISO250-P2/24VDC	GP114C213CB	254	Viton	335	310	M10*12	16
PV3P-HA-ISO320-P2/24VDC	GP115C213CB	318	Viton	428	395	M12*12	18

Model No.	A	B	C	D	E	F	G	H	I	W
PV3P-HA-ISO200-P2/24VDC	88	171.5	72	16	510	360	208	160	368	R150
PV3P-HA-ISO250-P2/24VDC	100	215	80	20	628	453	246	200	446	R190
PV3P-HA-ISO320-P2/24VDC	120	235	96	24	752	538	231	302	533	R230

With reed sensors , with standard solenoid voltage DC24V

Surface Treatment :hard anodized

Dimension in mm unless otherwise noted

APC PENDUMLUM VALVE

Main applications

Downstream pressure control and isolation valve.

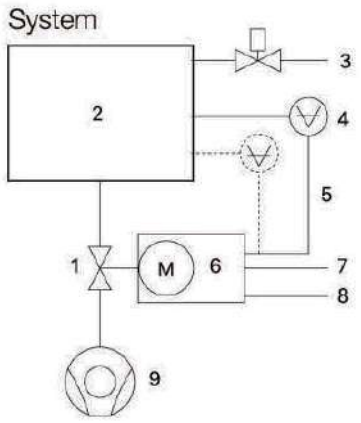
Application process

- SEMI • FPD • Solar • CVD

Features

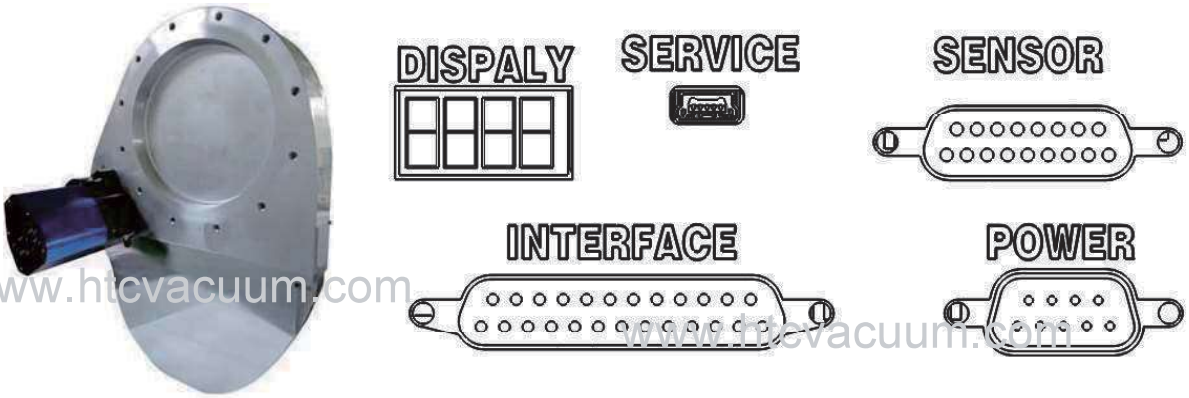
- Integrated pressure controller
- Accurate pressure control
- Compact isolation
- Short response time
- Friendly user interface

APC valve gate system settings



1. Valve
2. Process chamber
3. Gas inlet
4. Pressure sensor(s)
5. Sensor cable(s)
6. Controller and actuator
7. Cable to remote control unit
8. Cable to power supply
9. Pump

Pendulum valve control system - Controller



Specification

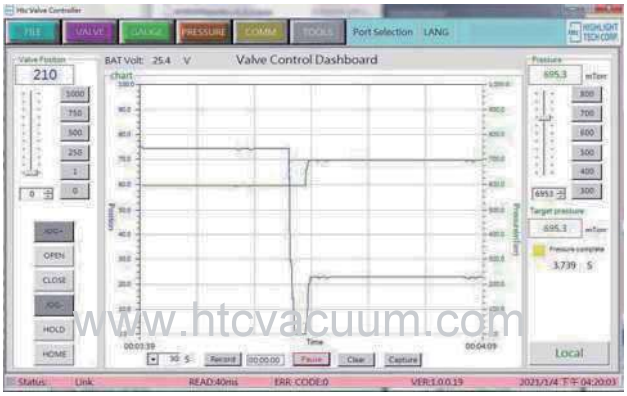
- Sensor supply : 24V DC or ±15V DC
- Backup power : Yes
- Sensor input
  - — Q'ty of sensors : 2 pcs
  - — Vacuum gauge : Linear / Exponent
  - — Signal voltage : 0-10V DC linear with pressure
  - — Input resistance : Ri=21kΩ
  - — Resolution : 2.3 mV
  - — Sample rate : 1ms
- Control accuracy : 0.1% of maximum sensor range
- Analog\Digital Easy Control
- Position resolution : 8000 (step 0-75° rotation)
- Ambient temperature: 70°C max(Controller part -24HR)

Model	Connection	Type
Power	Power input	DB-9 male
Sensor (Vacuum Gauge)	Sensor input/ Sensor power supply	DB-15 female
Interface	RS232 RS485(Option)	DB-25 female
Service	APC service	Mini USB type B female
Monitor	Show status	Green LED display

APC software functions

Control via computer by using the APC software offers convenient functions

- Set control tuning parameter : GAIN
- Pressure and position control mode
- Schedule test Mode => 1 cycle schedule
- Set valve open/close speed
- Report APC HW/SW version, serial and model number
- Report valve cycles and run hours
- Set tolerance scope of pressure
- Cycles life and pressure control record
- Controller parameter upload and download
- Power failure protection
- Learning function



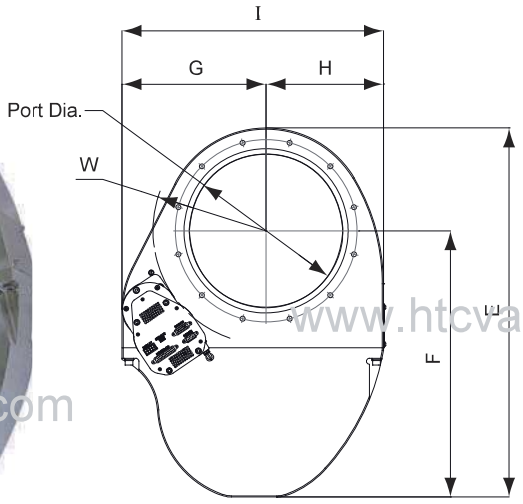
Control and actuating unit		
Input voltage	+24 VDC(±10%)	connector: POWER
Power consumption	150W(controller + motor)	connector: POWER
Sensor power supply output	+24 VDC /+-15VDC, 500 mA	connector: SENSOR
Analog input		
Q'ty of sensors	Independent 2 channel	connector: SENSOR
Input voltage	0-10V DC linear	connector: SENSOR
Resolution	2.3 mV	connector: SENSOR
Input resistance	Ri>=21kΩ	connector: SENSOR
Analog output		
Q'ty of sensors	Independent 2 channel	connector: INTERFACE
Outputs voltage	0-10V DC linear	connector: INTERFACE
Digital Input/ Output		
Input	Independent 2 channel	connector: INTERFACE
Output	Independent 2 channel	connector: INTERFACE
Admissible operating temperature		
Valve	120°C	
Controller	70°C	
Control accuracy	0.1% of maximum sensor range	
Position resolution	8000 (step 0-90° rotation)	
Backup power	Yes	
ISO 200		
Open --> Close	3 sec	
Close --> Open	4 sec	
Operating time for throttling	0.9 sec	
ISO 250		
Open --> Close	3 sec	
Close --> Open	4 sec	
Operating time for throttling	0.9 sec	
ISO 320		
Open --> Close	4 sec	
Close --> Open	5 sec	
Operating time for throttling	1.3 sec	

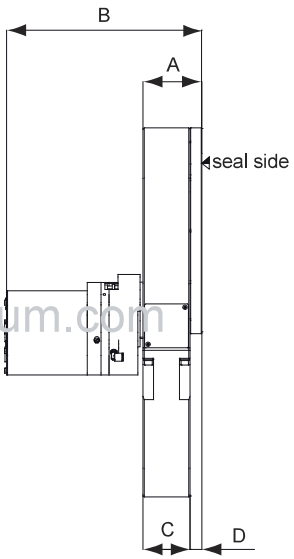
Dimension in mm unless otherwise noted

Technical Data			
Material	Body	A6061-T6	
	Gate	A6061-T6	
Life Cycle	Closing/Opening	200,000 cycles	
	Pressure Control	1,000,000 cycles	
Helium leak rates at 1 atm differential	Body Aluminum		$<1\times10^{-9}$ mbar .l /sec
	Body Aluminum ,hard anodized		$<1\times10^{-5}$ mbar .l /sec
Bake Temperature	Body	$\leq$ 120°C	
	Actuator	$\leq$ 70°C	
	Solenoid valve	$\leq$ 70°C	
Pressure Range	Aluminum	1×10^{-8} mbar to 1.2 bar	
	Aluminum ,hard anodized	1×10^{-6} mbar to 1.2 bar	
Maximum ΔP	1.2 bar		
Maximum ΔP during opening	$\leq$ 5 mbar		
Compressed air pressure	4 ~ 6 Kg/cm^2		
Standard Seal	Gate	Viton O-ring	
	Bonnet	Viton O-ring	
Actuator	Electro-Pneumatic		
Weight	ISO 200	ISO 250	ISO 320
	22Kg	31Kg	51Kg
Actuator	Step Motor		
Mounting position	Horizontal & vertical		
Options	Other material of Gate O-ring		

APC PENDULUM VALVE

Step Motor Actuated





Model No.	Part No.	Port Dia.	Bonnet Seal	Flange O.D.	Bolt P.C.D.	Bolt Size*No	Thread Depth
PVSSV-A-ISO200-C/RS232	GP113B214PA	200	Viton	300	260	M10*12	16
PVSSV-A-ISO200-C/RS485	GP113B214PB						
PVSSV-A-ISO250- C/RS232	GP114B214PA	254	Viton	335	310	M10*12	16
PVSSV-A-ISO250- C/RS485	GP114B214PB						
PVSSV-A-ISO320- C/RS232	GP115B214PA	318	Viton	428	395	M12*12	18
PVSSV-A-ISO320- C/RS485	GP115B214PB						

Model No.	A	B	C	D	E	F	G	H	I	W
PVSSV-A-ISO200-C	88	321	72	16	510	360	208	160	368	R150
PVSSV-A-ISO250-C	100	333	80	20	360	453	246	200	446	R194
PVSSV-A-ISO320-C	120	353	96	24	752	538	302	231	533	R230

Input voltage DC24V

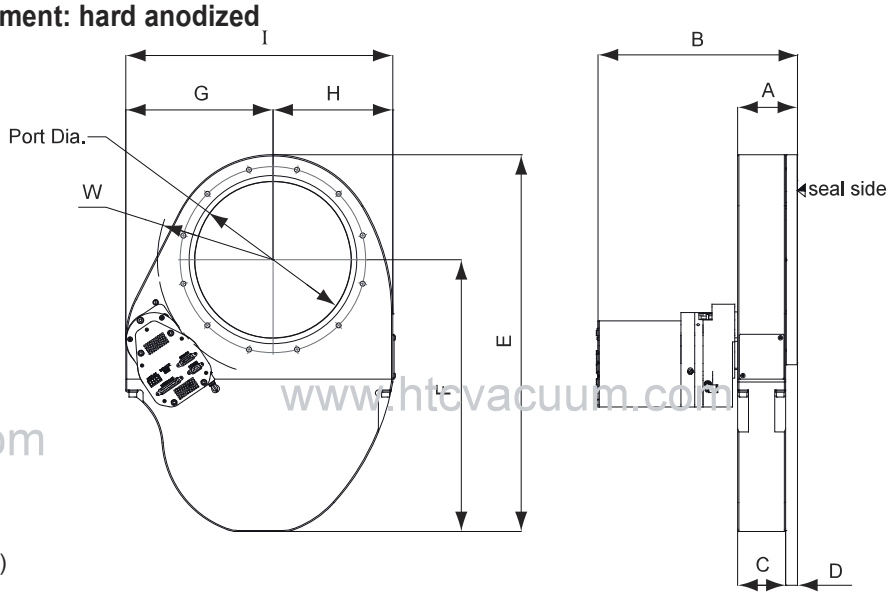
Dimension in mm unless otherwise noted

APC PENDULUM VALVE

Step Motor Actuated

Standard Surface Treatment: hard anodized

(Option: Heater with insulation)



Model No.	Part No.	Port Dia.	Bonnet Seal	Flange O.D.	Bolt P.C.D.	Bolt Size*No	Thread Depth
PVSSV-HA-ISO200-C/RS232	GP113B213PA	200	Viton	300	260	M10*12	16
PVSSV-HA-ISO200-C/RS485	GP113B213PB						
PVSSV-HA-ISO250- C/RS232	GP114B213PA	254	Viton	335	310	M10*12	16
PVSSV-HA-ISO250- C/RS485	GP114B213PB						
PVSSV-HA-ISO320- C/RS232	GP115B213PA	318	Viton	428	395	M12*12	18
PVSSV-HA-ISO320- C/RS485	GP115B213PB						

Model No.	A	B	C	D	E	F	G	H	I	W
PVSSV-HA-ISO200-C	88	321	72	16	510	360	208	160	368	R150
PVSSV-HA-ISO250-C	100	333	80	20	360	453	246	200	446	R194
PVSSV-HA-ISO320-C	120	353	96	24	752	538	302	231	533	R230

Surface Treatment :hard anodized

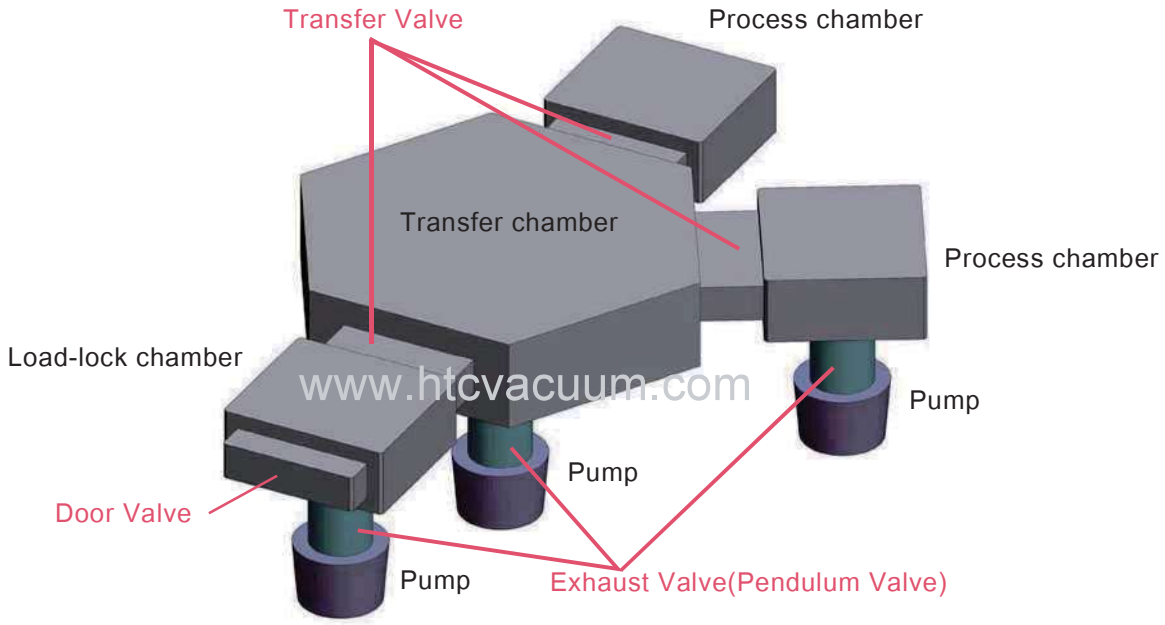
Input voltage DC24V

Transfer valves and doors

Htc vacuum rectangular valves use directly actuating technology. Valve body is appropriate size and compact design. All moving parts are located in atmospheric side that could reduce the particle occur in vacuum side and raise the life cycle. Other advantages include self-lock of gate seal upon air pressure loss, easy gate disassembly for maintenance etc.

Vacuum rectangular transfer valves are used widely in coaters of semiconductor, optoelectronics industry. Most of the valves are installed on load-lock chamber, between load-lock chamber and transfer chamber, also transfer chamber and process chamber. Enable transferring and processing being isolated for vacuum by the valves.

Example of vacuum rectangular valves install on cluster chamber



Design principle / feature

- Low vibration and low particles.
- Cam mechanism and spring enable sealing motion.
- Twin air-cylinders, single forcing shaft.
- Actuator shaft push auxiliary.
- Self-lock seal protection upon air pressure loss.
- Seal gate quick dismantling, easy for O-ring change.
- One million life cycles.

Classify

- Standard Rectangular Transfer valves
- Rectangular doors
- Large rectangular transfer valves
- Large rectangular doors

Body material

- Aluminum or Stainless Steel

Body Surface treatment

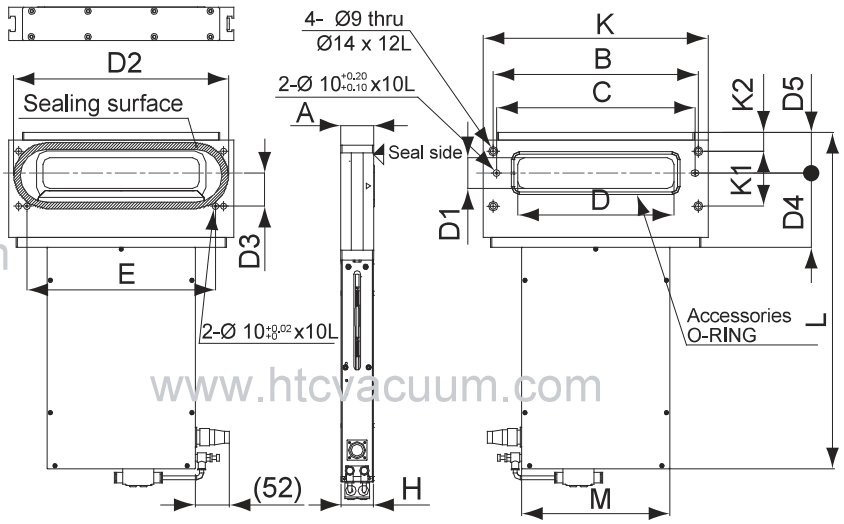
- Electrolytic polishing : Aluminum or Stainless Steel
- Hard anodized : Aluminum

Dimension in mm unless otherwise noted

Rectangular transfer valve

Pneumatic (with bellows)

Electrolytic polishing



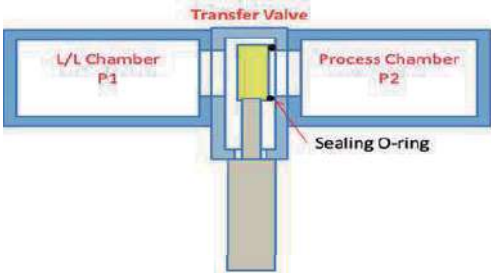
Model No.	Parts No.	Body	Gate	Actuated time	Gate seal	Cycle Life	Weight
GRB-A-32222	GR01A213	A6061-T6	A6061-T6	open<=1 close<=1	Viton	1 million*	15kg
GRB-A-46236	GR02A213	A6061-T6	A6061-T6	open<=1 close<=1	Viton	1 million*	16kg
GRB-A-50336	GR03A213	A6061-T6	A6061-T6	open<=1 close<=1	Viton	2 million*	21kg
GRB-A-56496	GR04A213	A6061-T6	A6061-T6	open<=2 close<=3.5	Viton	1 million*	29kg
GRB-S-32222	GR01A113	304S.S.	304S.S.	open<=1 close<=1	Viton	1 million*	20kg
GRB-S-46236	GR02A113	304 S.S.	304 S.S.	open<=1 close<=1	Viton	1 million*	22kg
GRB-S-50336	GR03A113	304 S.S.	304 S.S.	open <=1 close<=1	Viton	2 million*	34kg
GRB-S-56496	GR04A113	304 S.S.	304 S.S.	open<=2 close<=3.5	Viton	1 million*	49kg

Model No.	Parts No.	D	D1	D2	D3	D4	D5	A	B	C	E	H	K	K1	K2	L	M
GRB-A-32222	GR01A213	222	32	311	50	105	61.5	50	310	300	285	49	340	83	28.5	501.5	224
GRB-A-46236	GR02A213	236	46	325	50	112	61.5	50	310	300	285	49	340	83	28.5	508.5	224
GRB-A-50336	GR03A213	336	50	422	50	112	63	60	410	400	385	59	440	83	30	475	250
GRB-A-56496	GR04A213	496	56	540	61	117.5	66	70	570	560	545	69	600	94	33	513.5	282
GRB-S-32222	GR01A113	222	32	311	50	105	61.5	50	310	300	285	49	340	83	28.5	501.5	224
GRB-S-46236	GR02A113	236	46	325	50	112	61.5	50	310	300	285	49	340	83	28.5	508.5	224
GRB-S-50336	GR03A113	336	50	422	50	112	63	60	410	400	385	59	440	83	30	475	250
GRB-S-56496	GR04A113	496	56	540	61	117.5	66	70	570	560	545	69	600	94	33	513.5	282

* The Cycle life of valve is apply to room temperature 25°C and clean environment, and the opening action apply to be less than 10 mbar pressure difference. (If the opening action exceeds the pressure difference of 10 mbar, it is not covered by this guarantee.)

Rectangular transfer valve Technical Data (for Electrolytic polishing valve boby)

Spindle sealing	Bellows	
Leak rates	Body	1 x 10^{-9} mbar.l/s
	Seat	1 x 10^{-9} mbar.l/s
Surface Treatment (Body)	Electrolytic polishing	
Bakeable Temperature	Body	<90°C
	Driving module	<60°C
Differential pressure on the gate (Note *)	Forward pressure difference	≤ 1.2 bar
	Reverse pressure difference	≤ 1.0 bar
Differential pressure at opening (Note)**	<10 mbar	
Pressure Range	1* 10^{-8} mbar to 1.0 bar	
Driving pressure	5~7 Kg/cm^2	
Compressed air connection	Ø 6 mm	
Standard Seal	Gate	Viton O'ring
Position sensor (Standard)	DC4-24(V) or AC4-240(V), 5-40 mA	
Solenoid (Optional)	DC24(V) ,AC24(V),AC110(V),AC220(V)	
Mounting position	Actuator up, down	



Note :

* Differential pressure on the gate
Forward and reverse pressure difference definitions:
Forward pressure difference (P1 > P2) = P1-P2
Reverse pressure difference (P1 < P2) = P2-P1
** Differential pressure at opening = P1 – P2 < 10 mbar

Accessories :

32x222 M8x50L
46x236 M8x50L
50x336 M8x60L
46x496 M8x70L

PIN
Ø10x15L

Clamp single clamp AL
Part No:2121A211

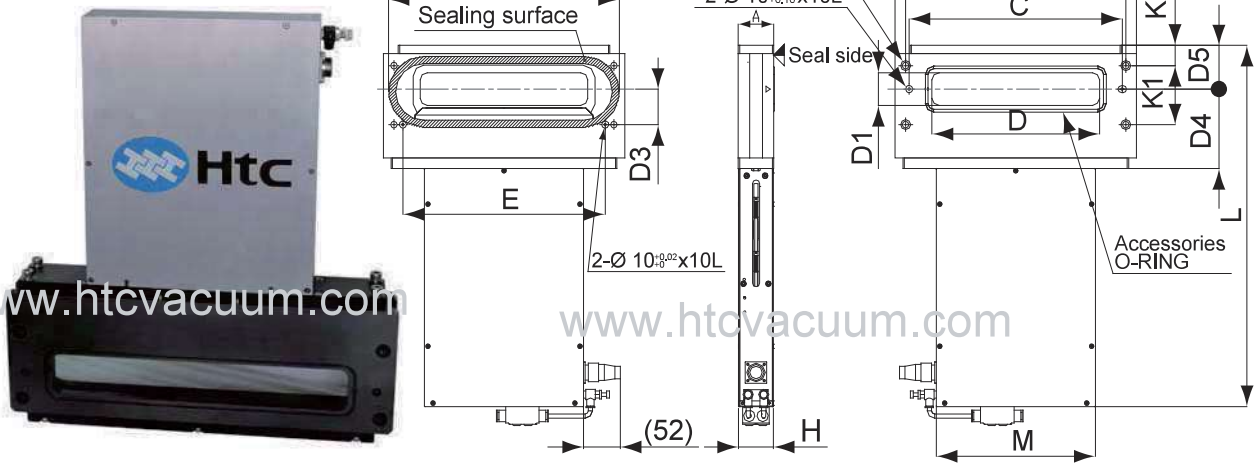
Fixture for maintenance
Part No: GR03A213323

Dimension in mm unless otherwise noted

Rectangular transfer valve

Pneumatic (with bellows)

Hard anodized



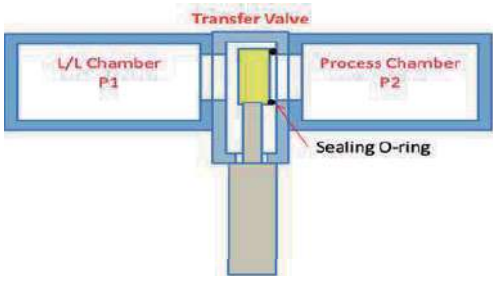
Model No.	Parts No.	Body	Gate	Actuated time	Gate seal	Cycle Life	Weight
GRB-HA-32222	GR01A713	A6061-T6	A6061-T6	open<=1 close<=1	Viton	1 million*	15kg
GRB-HA-46236	GR02A713	A6061-T6	A6061-T6	open<=1 close<=1	Viton	1 million*	16kg
GRB-HA-50336	GR03A713	A6061-T6	A6061-T6	open<=1 close<=1	Viton	2 million*	21kg
GRB-HA-56496	GR04A713	A6061-T6	A6061-T6	open<=2 close<=3.5	Viton	1 million*	29kg

Model No.	Parts No.	D	D1	D2	D3	D4	D5	A	B	C	E	H	K	K1	K2	L	M
GRB-HA-32222	GR01A713	222	32	311	50	105	61.5	50	310	300	285	49	340	83	28.5	501.5	224
GRB-HA-46236	GR02A713	236	46	325	50	112	61.5	50	310	300	285	49	340	83	28.5	508.5	224
GRB-HA-50336	GR03A713	336	50	422	50	112	63	60	410	400	385	59	440	83	30	475	250
GRB-HA-56496	GR04A713	496	56	540	61	117.5	66	70	570	560	545	69	600	94	33	513.5	282

* The Cycle life of valve is apply to room temperature 25°C and clean environment, and the opening action apply to be less than 10 mbar pressure difference. (If the opening action exceeds the pressure difference of 10 mbar, it is not covered by this guarantee.)

Rectangular transfer valve Technical Data (for hard anodized valve boby)

Spindle sealing	Bellows	
Leak rates	Body	5 x 10^{-6} mbar.l/s
	Seat	5 x 10^{-5} mbar.l/s
Surface Treatment (Body)	Hard anodized	
Bakeable Temperature	Body	<90°C
	Driving module	<60°C
Differential pressure on the gate (Note *)	Forward pressure difference	≤ 1.2 bar
	Reverse pressure difference	≤ 1.0 bar
Differential pressure at opening (Note)**	<10 mbar	
Pressure Range	1* 10^{-6} mbar to 1.0 bar	
Driving Pressure	5~7 Kg/cm^2	
Compressed air connection	Ø 6 mm	
Standard Seal	Gate	Viton O'ring
Position sensor (Standard)	DC4-24(V) or AC4-240(V), 5-40 mA	
Solenoid (Optional)	DC24(V) ,AC24(V),AC110(V),AC220(V)	
Mounting position	Actuator up, down	



Note :

* Differential pressure on the gate
Forward and reverse pressure difference definitions:
Forward pressure difference (P1 > P2) = P1-P2
Reverse pressure difference (P1 < P2) = P2-P1

** Differential pressure at opening = P1 – P2 < 10 mbar

32x222 M8x50L
46x236 M8x50L
50x336 M8x60L
46x496 M8x70L

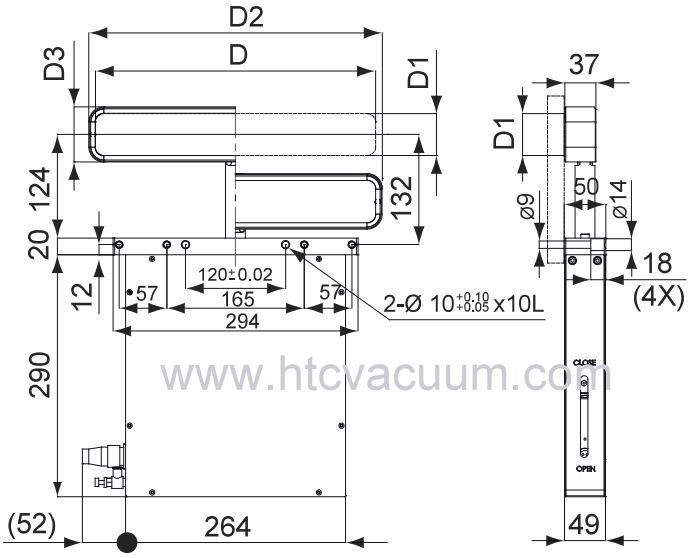
PIN
Ø10x15L

Clamp single
clamp AL
Part No:2121A211

Fixture for maintenance
Part No:GR03A213323

Dimension in mm unless otherwise noted

Rectangular doors valve



Model No.	Parts No.	Gate	D	D1	D2	D3	Actuated time	Gate seal	Weight (Kg)
GR-A-32222-D	GR014514	A6061-T6	222	32	239	48	open<=1 close<=1	Viton	9kg
GR-A-46236-D	GR024514	A6061-T6	236	46	253	62	open<=1 close<=1	Viton	9.5kg
GR-A-50336-D	GR034514	A6061-T6	336	50	352	66	open<=1 close<=1	Viton	10kg
GR-A-56496-D	GR044514	A6061-T6	496	56	512	72	open<=2 close<=2	Viton	11.5kg
GR-S-32222-D	GR014614	304S.S	222	32	239	48	open<=1 close<=1	Viton	11kg
GR-S-46236-D	GR024614	304S.S	236	46	253	62	open<=1 close<=1	Viton	12kg
GR-S-50336-D	GR034614	304S.S	336	50	352	66	open<=1 close<=1	Viton	14kg
GR-S-56496-D	GR044614	304S.S	496	56	512	72	open<=2 close<=2	Viton	18kg

Rectangular doors valve Technical Data

Cycle Life(*)	1 million	
Leak rates	1 x 10^{-9} mbar.l/s	
Bakeable Temperature	Driving modul	<60°C
Pressure Range	1* 10^{-8} mbar to 1.0 bar	
Driving pressure	5~7 Kg/cm²	
Compressed air connection	Ø 6 mm	
Standard Seal	Gate	Viton O'ring
Position sensor (Standard)	DC4-24(V) or AC4-240(V), 5-40 mA	
Solenoid (Optional)	DC24(V) ,AC24(V),AC110(V),AC220(V)	
Mounting position	Actuator up, down	

* The Cycle life of valve is apply to room temperature 25°C and clean environment, and the opening action apply to be less than 10 mbar pressure difference. (If the opening action exceeds the pressure difference of 10 mbar, it is not covered by this guarantee.)

Accessories :

M8x45L

PIN Ø10x15L

Dimension in mm unless otherwise noted