

ADVANTORR

K[®]L KING LAI
GROUP

AdvanTorr[®]

VACUUM PRODUCTS



INTRODUCTION

AdvanTorr provides high quality vacuum products ranging from conflat flanges, fittings, valves and chambers to various other system components.

AdvanTorr products are manufactured by King Lai Hygienic (Taiwan) who have more than 25 years' experience of supplying high quality vacuum products to several market sectors including, **research institutes, semiconductor, display, LED lighting, thin film solar cell and vacuum coating industries.**

Vacuum is primarily focussed on thin film technologies such as evaporation, sputtering, PECVD, MOCVD and ALD, although surface analysis technologies and ion implant systems are also catered for.

All products are manufactured using the finest grades of stainless steel including SUS304L as standard, which due to the low carbon content has a much lower outgassing rate than that of inferior SS304 material often used by other vendors. High quality 'forged' SS316LN material is also available upon request.

All manufacturing is certified to ISO 9001 and ISO 14001 exacting standards, with full material traceability and certification available to ensure total quality assurance.

All bored and weld flanges related to fabrication components meet 3A standard tube sizes. For European and Japanese standards, please refer to other sections throughout the catalogue for further details.



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Flanges & Fittings

CF		CF Flanges & Fittings	87~105
KF DN		KF Flanges & Fittings DN Flanges & Fittings	109~132
ISO NW		ISO Flanges & Fittings NW Flanges & Fittings	135~150
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Vacuum Valves

Vacuum
Valves

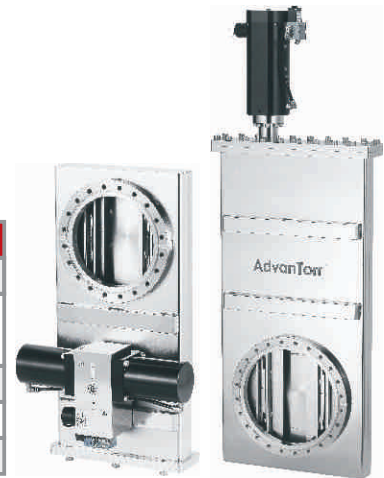


Transfer Slit Valves

Transfer Slit Valves										
Lock system	ARM lock system									
Vacuum level	UHV grade			HV grade						
Valve body material	Stainless steel 304L		Aluminum alloy				Stainless steel 304L			
Aperture	32x222mm	46x236mm	32x222mm	46x236mm	50x336mm	70x500mm	32x222mm	46x236mm	50x336mm	70x500mm

Isolation Valves

SMART Gate Valves			
Lock system	SMART lock system		In - Axis with SMART lock system
Actuator orientation	Side-mounted actuator		Top-mounted actuator
Actuator type	Manual lever / Pneumatic		Manual wheel / Pneumatic
Vacuum level	HV grade		UHV grade HV grade
Flange types	CF / ISO-F Flanges		CF Flanges CF / ISO-F Flanges



Kompact Gate Valves

Lock system	SMART lock system
Vacuum level	UHV Grade
Actuator type	Manuall wheel / Pneumatic
Flange type	CF Flanges



Aluminum Gate Valves

Lock system	SMART lock system
Vacuum level	HV Grade
Actuator type	Pneumatic
Flange type	ISO-F Flanges





Isolation Poppet Valves									
Actuator type	Manual wheel				Pneumatic				
Valve body types	Angle	Y shape	Y shape Z shape		Angle	Heating Angle	Y shape	Y shape Z shape	
Vacuum level	UHV grade	HV grade	UHV grade	HV grade	UHV grade	HV grade	HV grade	UHV grade	HV grade
Flange types	CF Flanges	CF / KF / ISO-K Flanges	CF Flanges	CF / KF / ISO-K Flanges	CF Flanges	CF / KF / ISO-K Flanges	KF Flanges	CF Flanges	CF / KF / ISO-K Flanges

★ Tube ends type available

Isolation Ball Valves		
Actuator type	Manual lever	Pneumatic
Valve body types	Casting	
Flange types	KF Flanges / Tube ends	





Transfer Slit Valves

•Email: info@kinglai.com.tw

•Website: www.advantorr.com



Product Introduction

The **Transfer Slit Valve (TSV)** is designed to connect two sealed chambers as a 'gate' with the object of transferring from one chamber to the other.

The **Transfer Slit Valve** is designed for single axis motion with no vibration and smooth, particle free motion. The special 'ARM LOCK' motion ensures that the gate is securely sealed in the closed position when the power and air supply fail during operation.

The **Transfer Slit Valve** is designed for durable, maintenance-free operation of up to 5 million cycles and due to its simple modular design, is exceptionally easy to service if required.

Product Features

ARM LOCK

Auto

Relocation

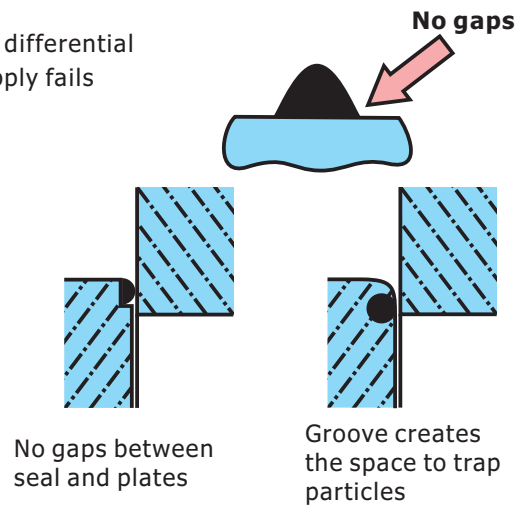
Mechanism

- Will stay in the closed position even against a larger pressure differential
- Maintains the closed position whenever the power and air supply fails
- Vulcanized seal for repeatable, maintenance free operation
- >5 million cycles between maintenance
- For SEMI applications handling wafers up to 450mm

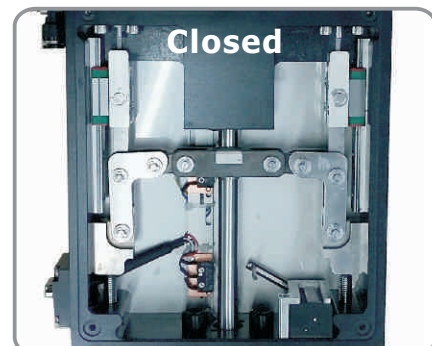
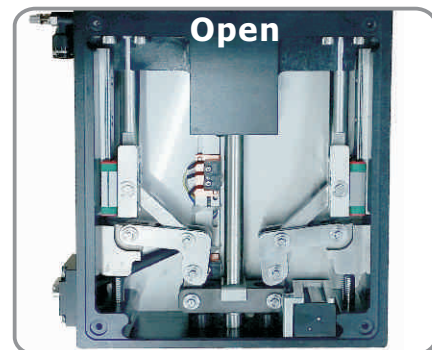
ARM Feature

- Patented mechanism
- Low maintenance cost
- No gears, no need for relocation
- High reliability
- Particle free seal

Vulcanised seal
Particle free sealing technology



ARM Lock System

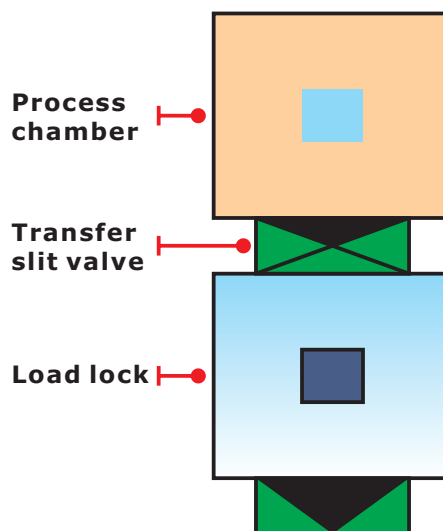


Product's Application

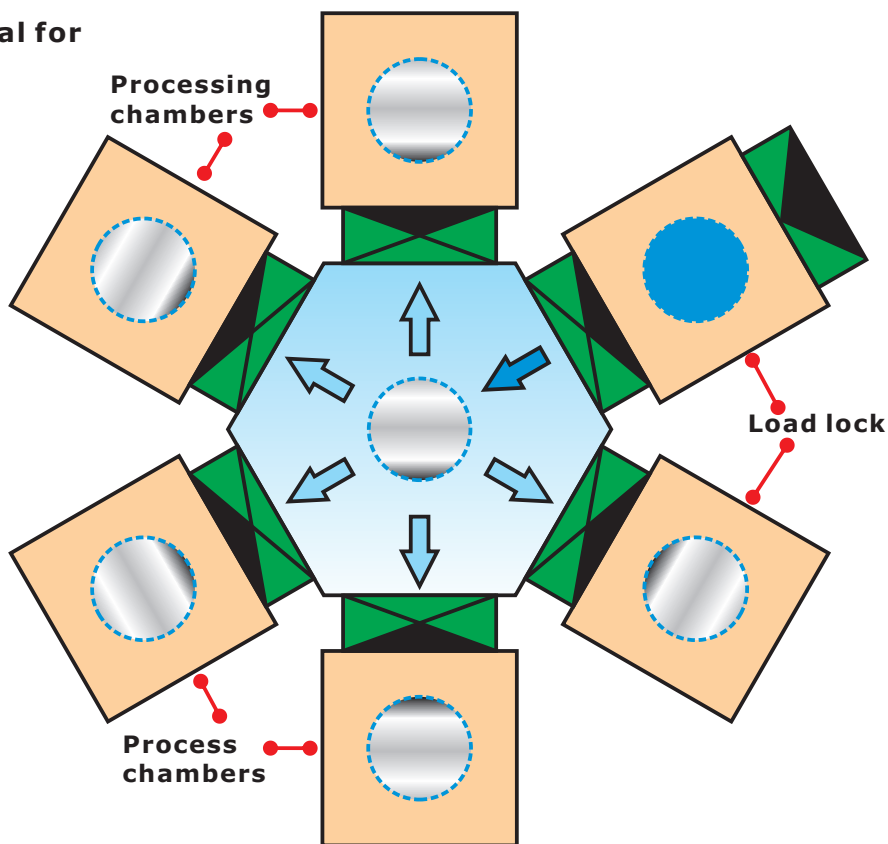
Layout for inline process system.

Object transfer: from load lock to process chamber.

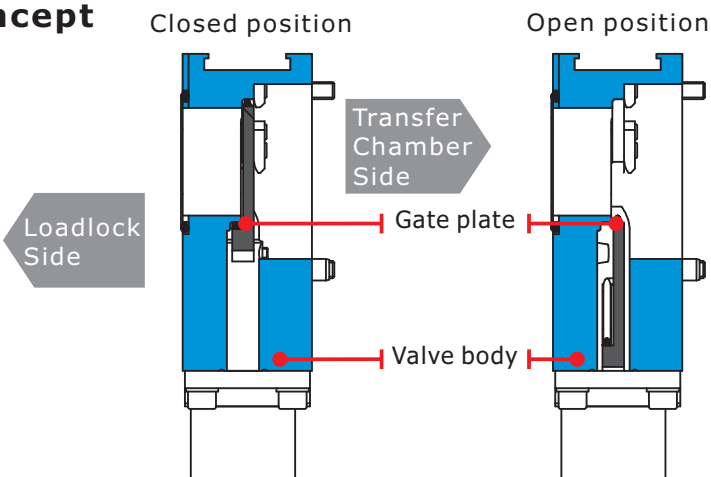
The Transfer Slit Valve offers superior performance over circular gate valves with smooth reliable operation and no vibration.



Transfer Slit Valve : Ideal for multiple process chamber systems.

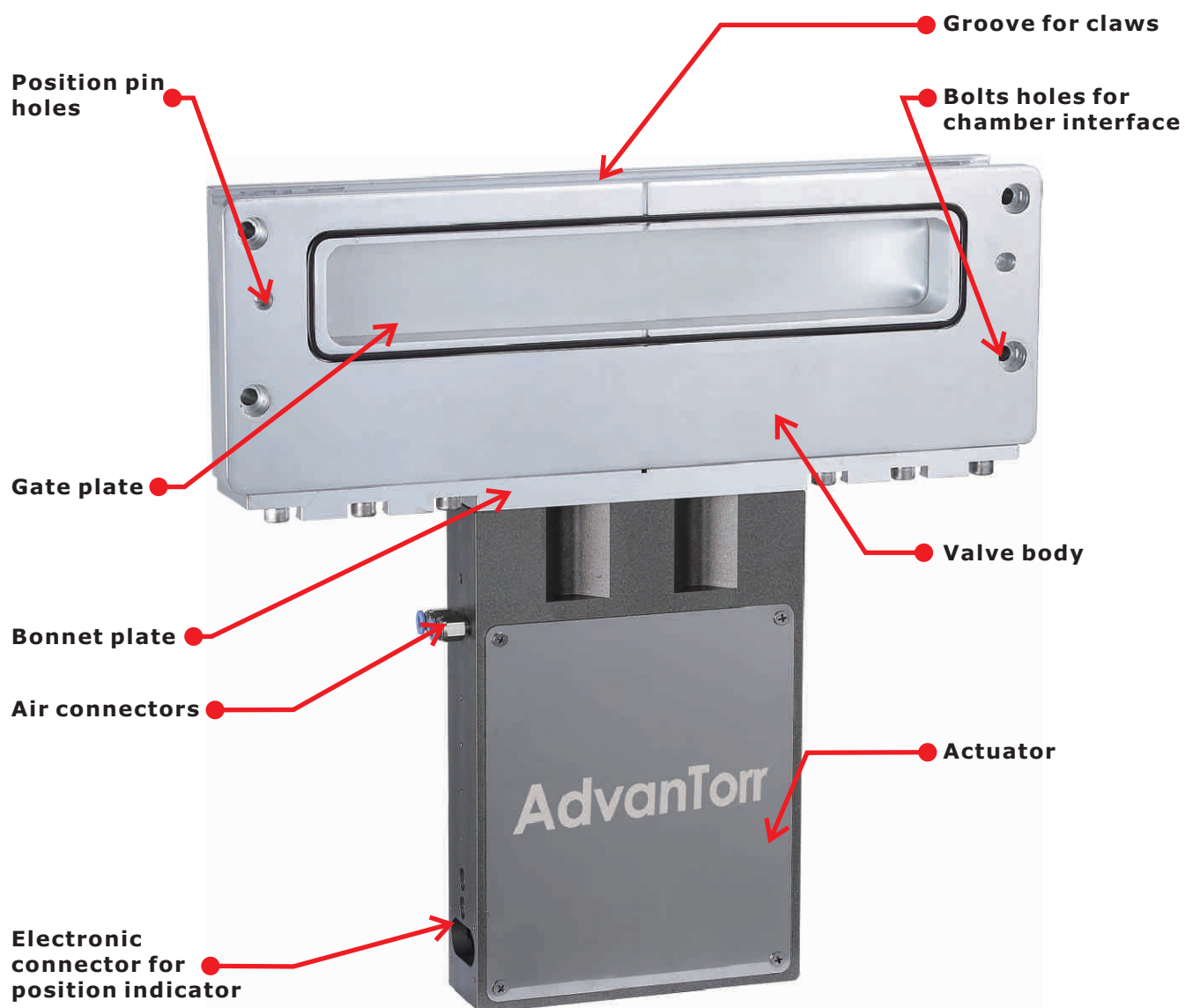


Valve's operation concept



Key Valve Parts

Vacuum
Valves



Technical Data

Technical Data for Transfer Slit Valves

	Ultra High Vacuum	High Vacuum
Feedthrough	Welded bellows in AM350	Welded bellows in AM350
Gate seal	FKM vulcanized ring with bonding on the metal (Optional for FFKM)	FKM vulcanized ring with bonding on the metal (Optional for FFKM)
Bonnet seal	OFHC metal gasket	FKM vulcanized ring
Operate pressure range	760 Torr ~ 1×10^{-10} Torr 1,000 mbar ~ 1.33×10^{-10} mbar 100 kPa ~ 1.13×10^{-11} kPa	760 Torr ~ 1×10^{-8} Torr 1,000 mbar ~ 1.33×10^{-8} mbar 100 kPa ~ 1.13×10^{-9} kPa
Leak rate	1×10^{-10} Torr l/s, He 1.33×10^{-10} mbar l/s, He 1.13×10^{-11} kPa l/s, He	1×10^{-9} Torr l/s, He 1.33×10^{-9} mbar l/s, He 1.13×10^{-10} kPa l/s, He
Cycle life	>5,000,000 Cycles(ATM)	
Temperature for valve body	Aluminum version: 150°C (302°F) open and close Stainless steel version= 200°C (392°F) open and close	
Temperature for actuator	100°C (212°F)	
Temperature for solenoid / position indicator	80°C 176°F	
Bake temperature	200°C (392°F) for FKM gate seal	100°C (212°F) for FKM gate seal
Valve body material	SS304L (Optional for SS316L)	SS304L (Optional for SS316L and Aluminum)
Mechanism material	Steel and Aluminum	
Actuator material	Aluminum	
Mouting position	Any	

Vacuum Valves

Valve operation data

Pneumatic operating pressure	3 bar~5 bar 300 kPa~500 kPa 43 psi~72 psi
Position indicator (included as standard)	Micro switch with 9 pin connector
Cycles counter (included as standard)	Micro switch with visual 7 digital numbers
Solenoid (optional)	Optional for 24V DC, standard
Failure protection (included as standard)	ARM lock system (valve closed position remain and locked)

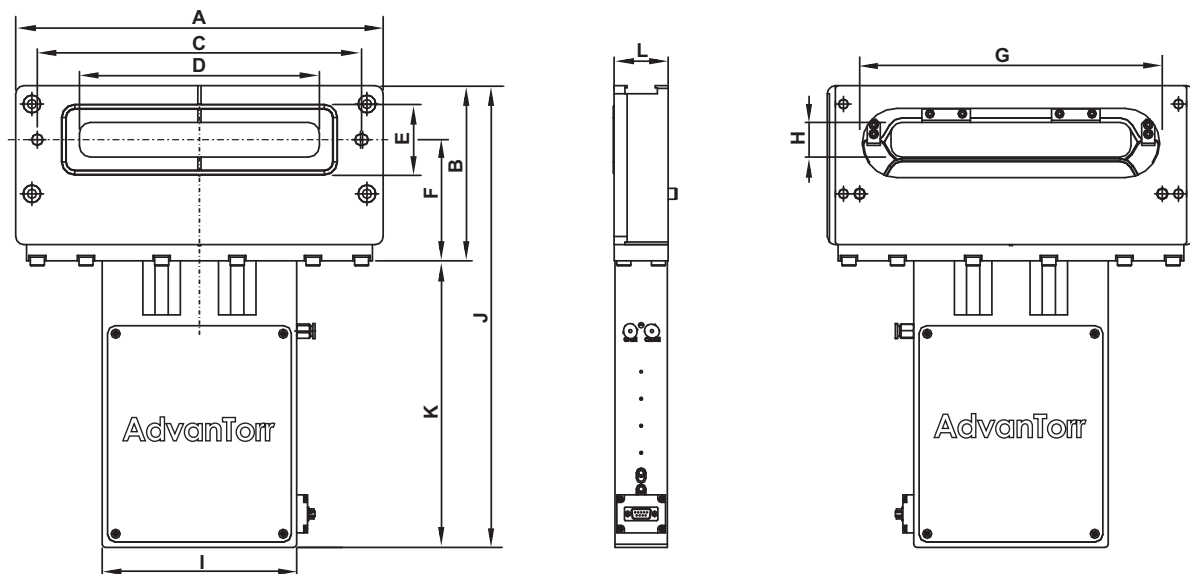
Valve's performance data

	32x222mm	46x236mm	50x336mm	70x500mm
Maximum differential pressure against gate	<900 Torr <1,200 mbar <120 kpa			
Maximum differential pressure at opening	<22.5 Torr <30 mbar < 3kpa			
Pneumatic valve open / close time	0.5(s)	0.5(s)	0.7(s)	0.9(s)
Valve's conductance (Molecular flow)	1,590(l/s)	3,340(l/s)	5,000(l/s)	10,400(l/s)

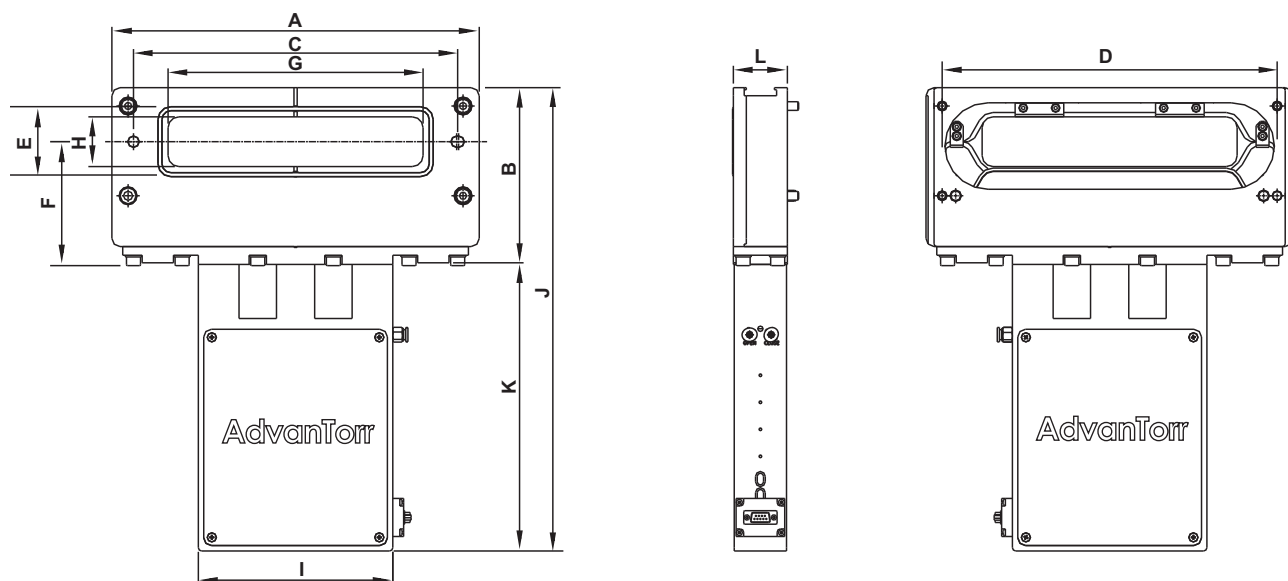
Product Order Information

Vacuum
Valves

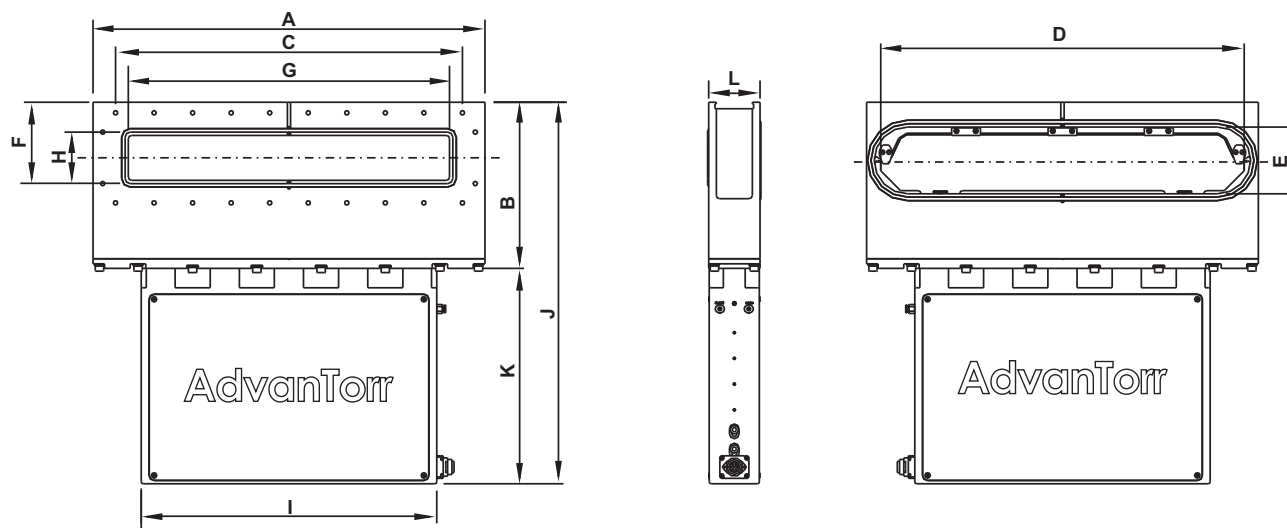
◆ Figure 1



◆ Figure 2



◆ Figure 3



Product Order Information

◆ Transfer Slit Valves, UHV, SS 304L

Dimension in mm

Part Number	Size	Figure	A	B	C	D	E	F	G	H	I	J	K	L
TSV-UHV-32x222	32 x 222	1	340	162	300	222	61	112	222	32	180	429	267	50
TSV-UHV-46x236	46 x 236	2	340	162	300	305	80	112	236	46	180	429	267	50

Vacuum
Valves

◆ Transfer Slit Valves, SS 304L

Dimension in mm

Part Number	Size	Figure	A	B	C	D	E	F	G	H	I	J	K	L
TSV-HV-32x222	32 x 222	1	340	162	300	222	61	112	222	32	180	429	267	50
TSV-HV-46x236	46 x 236	2	340	162	300	305	80	112	236	46	180	429	267	50
TSV-HV-50x336	50 x 336	2	440	162	400	405	81	112	336	50	180	429	267	60
TSV-HV-70x500	70 x 500	3	610	259	540	586	104	127	500	70	460	594	335	80

◆ Transfer Slit Valves, Aluminum

Dimension in mm

Part Number	Size	Figure	A	B	C	D	E	F	G	H	I	J	K	L
TSV-HV-32x222-AL	32 x 222	1	340	162	300	222	61	112	222	32	180	429	267	50
TSV-HV-46x236-AL	46 x 236	2	340	162	300	305	80	112	236	46	180	429	267	50
TSV-HV-50x336-AL	50 x 336	2	440	162	400	405	81	112	336	50	180	429	267	60
TSV-HV-70x500-AL	70 x 500	3	610	259	540	586	104	127	500	70	460	594	335	80





Lock System

Position locked when the valve is open or closed

SMART Vacuum Gate Valves

•Email: info@kinglai.com.tw

•Website: www.advantorr.com



Product Introduction

Vacuum gate valves are used primarily for the protection of high vacuum pumps but can also be used to 'valve-off' two connecting chambers.

The next generation of gate valves using the latest **S.M.A.R.T. technology sealing mechanism**, is designed for both superior performance and smooth, vibration free operation.

S.M.A.R.T.

Soft-shut **Mechanism with Auto-Rail Transportation Technology.**

Vacuum
Valves

SMART Gate Valves are designed to significantly reduce any vibration during operation, hence minimising particle generation and are therefore ideal for vacuum systems that require a clean environment.

SMART Gate Valves are available in two actuator orientation options; a side-mounted manual or pneumatic actuator (SGV part codes), or the **In-Axis option (AGP part codes) which has a vertically mounted pneumatic only actuator and is ideal for applications** where a small footprint is necessary. Both actuator orientations are available with the **SMART lock system** as standard.

Product Features

- No springs!

Less wear and strain means longer life

- Shock free 'soft shut' SMART technology. ■ S.M.A.R.T

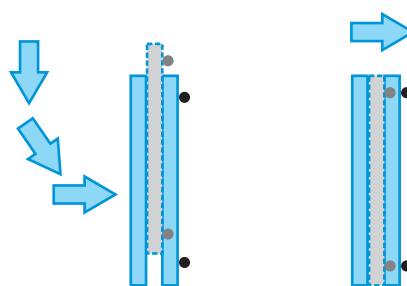
The lowest vibration of any gate valve on the market

- Vulcanized seal for repeatable, maintenance free operation

- Optional welded bellows feedthrough for cleanliness and improved service life

- Fail safe locking mechanism.

Locks in both the open and closed positions

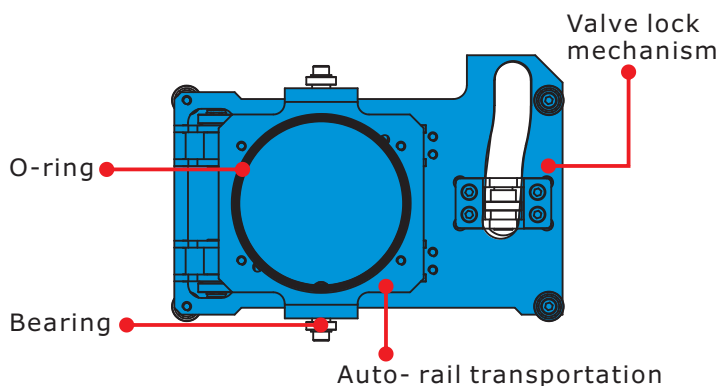


SMART mechanism seal plate operates with no vibration, ensuring particle free operation.

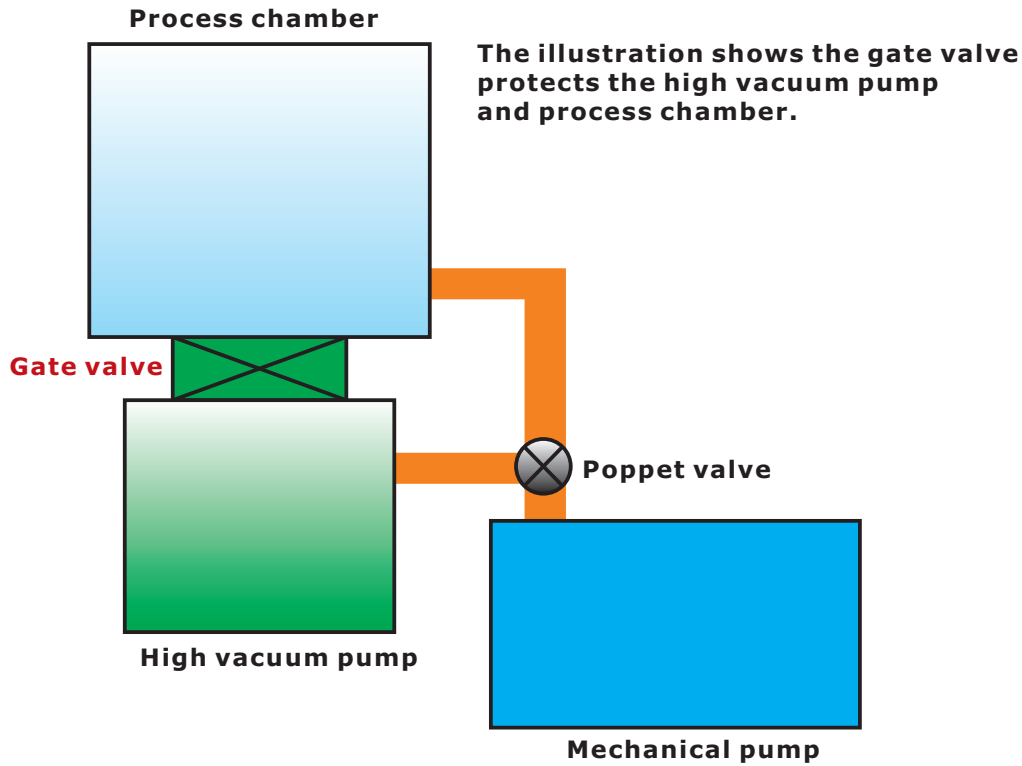
Conventional seal plate designs that use a spring mechanism can be susceptible to vibration during operation.

■ SMART lock system

Position locked when the valve is open or closed.

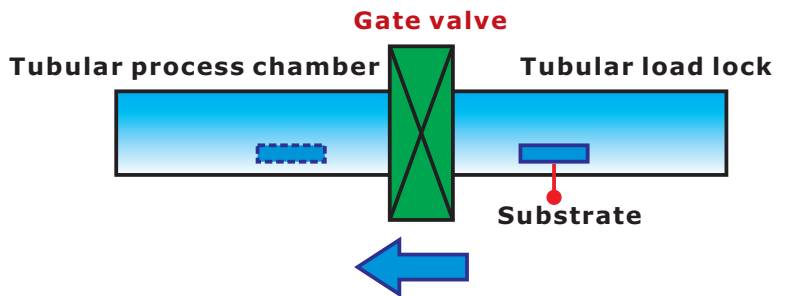


Product's Application



Vacuum Valves

Schematic illustrating the gate valve in position between the two tubular chambers.

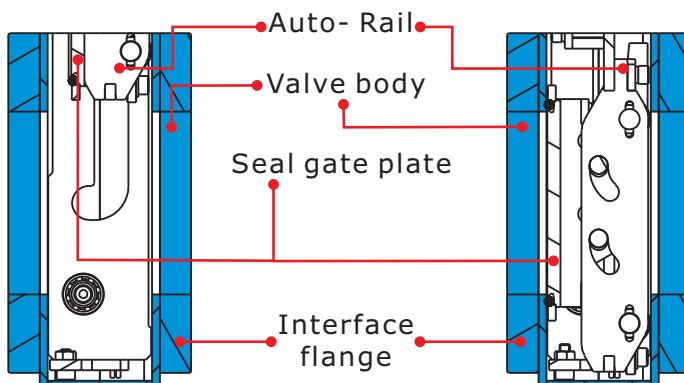


Substrate transfer from tubular load lock to tubular process chamber.

Valve's operation concept

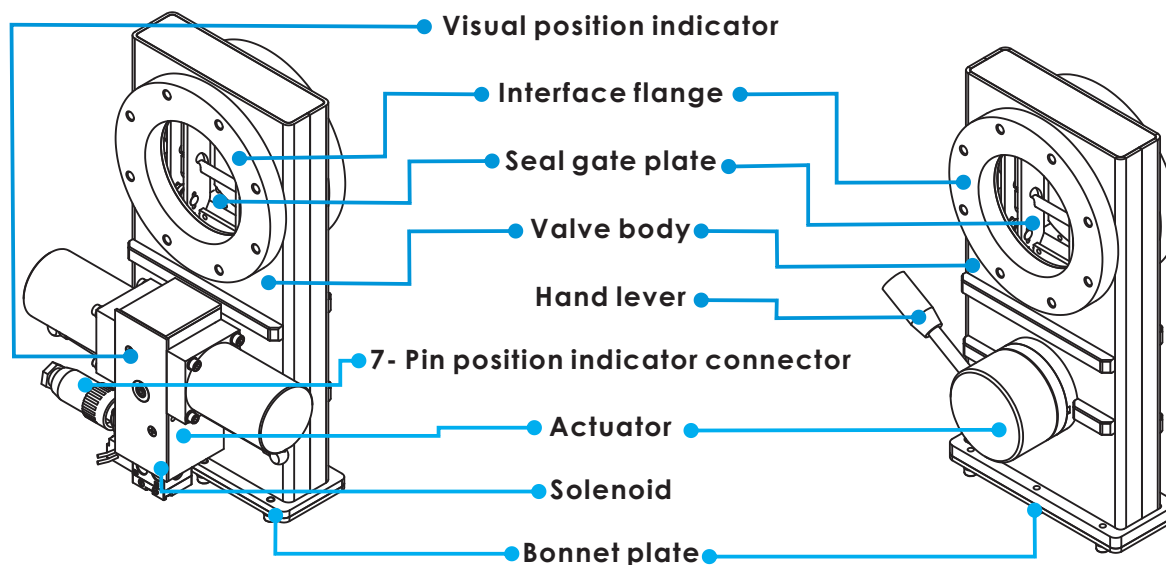
Open position

Closed position



Key Valve Parts

Vacuum Valves



Technical Data for SMART Gate Valve

	High Vacuum
Feedthrough	Rotary type feedthrough
Gate seal	FKM o-ring (Optional for FFKM)
Bonnet seal	FKM O-ring
Operate pressure range	760 Torr ~ 1×10^{-8} Torr 1,000 mbar ~ 1.33×10^{-8} mbar 100 kPa ~ 1.13×10^{-9} kPa
Leak rate	1×10^{-9} Torr l/s, He 1.33×10^{-9} mbar l/s, He 1.13×10^{-10} kPa l/s, He
Cycle life	>200,000 Cycles
Temperature for valve body	250°C (482°F) Open, 200°C (392°F) Closed
Temperature for actuator	200°C
Temperature for solenoid / position indicator	80°C 176°F
Bake temperature	100°C (212°F) for FKM gate seal
Valve body material	SS304L (Optional for SS316L)
Mechanism material	SS304L
Actuator material	SS304L, Aluminum
Mounting position	Any

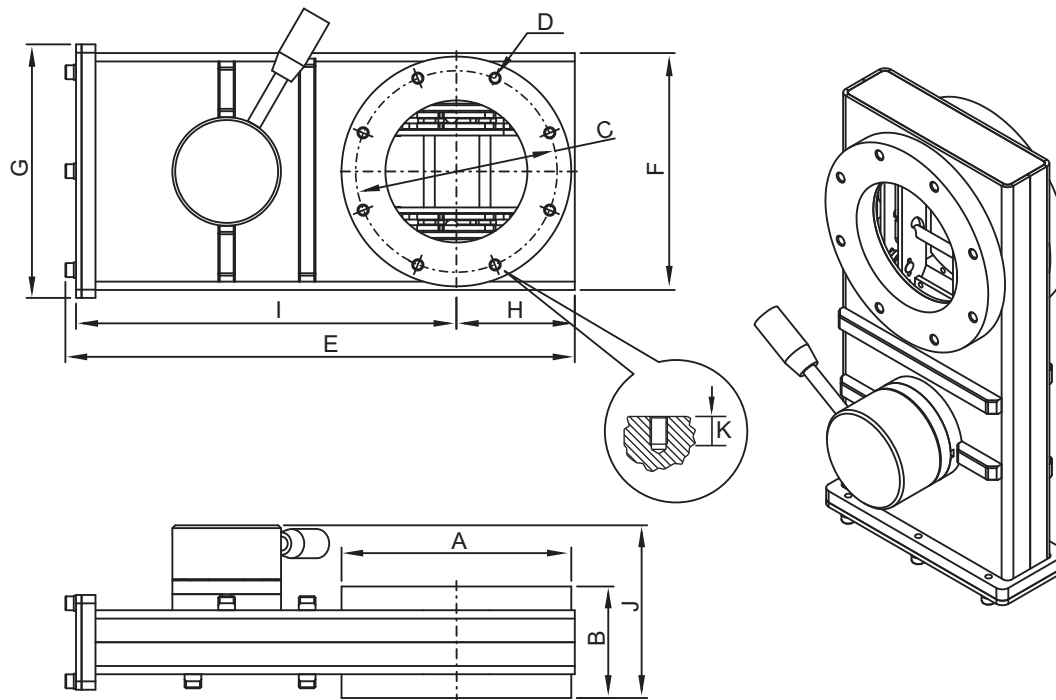
Valve's operation data

Manual lever	180 degree angle
Pneumatic operating pressure	4 bar ~ 8 bar
Position indicator (included as standard)	Visual indicator and micro switch with 7-pin connector
Solenoid (included as standard)	24V DC, standard option for 12V DC, 110V AC and 220V AC
Failure protection (included as standard)	SMART lock system (valve position remains and locked)

Valve's performance data

	CF6"/ISO-F100	CF8"/ISO-F160	CF10"/ISO-F200	CF12"/ISO-F250
Maximum differential pressure against gate	< 1,500 Torr < 2,100 mbar < 200kpa			
Maximum differential pressure at opening	< 22.5 Torr < 30 mbar < 3 kpa	< 18.7 Torr < 25 mbar < 2.5 kpa	< 15 Torr < 20 mbar < 2 kpa	< 11.2 Torr < 15 mbar < 1.5 kpa
Pneumatic valve open / close time	1.5(s)	2(s)	2.5(s)	3(s)
Valve's conductance (Molecular flow)	1,700(l/s)	5,100(l/s)	12,000(l/s)	22,000(l/s)

Product Order Information



Vacuum
Valves

♦ Manual Lever SMART Gate Valves, HV, CF Flange

Dimension in mm

Nominal I.D.	Part Number - Inch	Thread D	Part Number - Metric	Thread D	A	B	C	E	F	G	H	I	J	K
DN 63 (2.5")	SGVM-HV-CF450T	8x5/16- 24	SGVM-HV-CF450M	8xM 8	114	80	92	304	142	164	71	226	159	12
DN 100 (4")	SGVM-HV-CF600T	16x5/16- 24	SGVM-HV-CF600M	16xM 8	152	80	130	369	170	192	85	277	166	12
DN 160 (6")	SGVM-HV-CF800T	20x5/16- 24	SGVM-HV-CF800T M	20xM 8	202	80	181	511	234	266	117	385	185	15
DN 200 (8")	SGVM-HV-CF1000T	24x5/16- 24	SGVM-HV-CF1000M	24xM 8	253	90	232	693	316	334	158	525	217	15
DN 250 (10")	SGVM-HV-CF1200T	32x5/16- 24	SGVM-HV-CF1200M	32xM 8	304	110	284	792	368	390	184	597	234	18

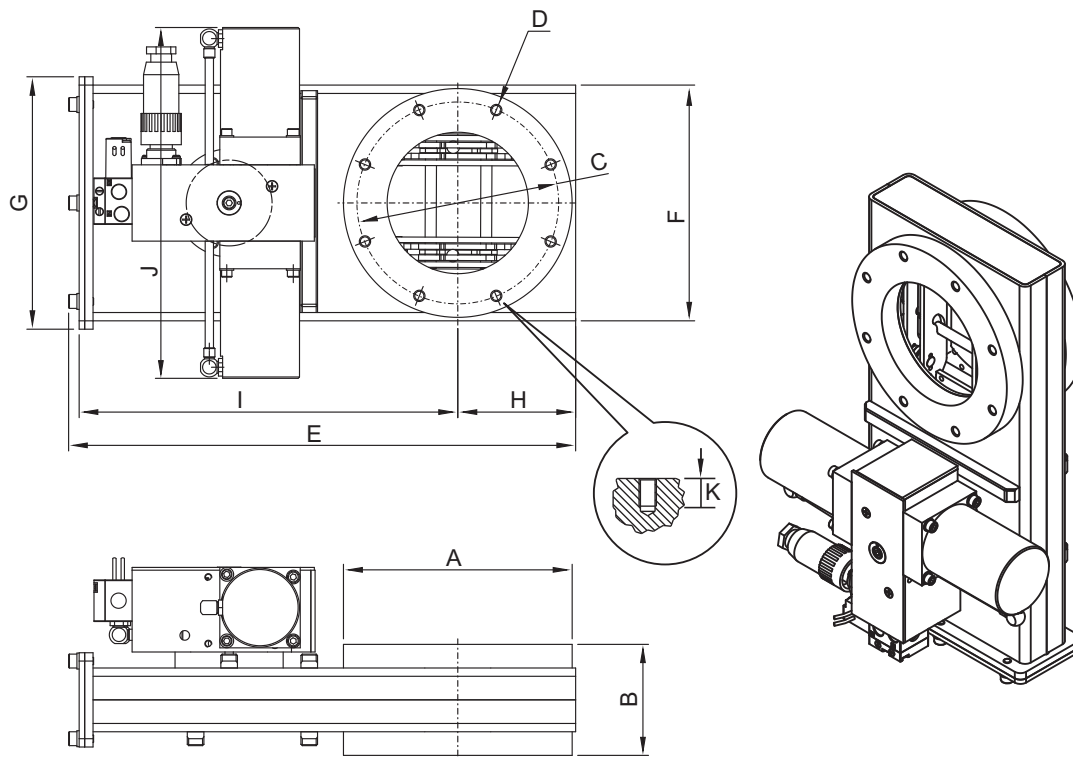
♦ Manual Lever SMART Gate Valves, HV, ISO-F Flange

Dimension in mm

Nominal I.D.	Part Number - Metric	Thread D	A	B	C	E	F	G	H	I	J	K
DN 63 (2.5")	SGVM-HV-ISOF63	4xM8	130	80	110	300	142	154	71	222	118	12
DN 100 (4")	SGVM-HV-ISOF100	8xM8	165	80	145	366	170	182	85	273	119	12
DN 160 (6")	SGVM-HV-ISOF160	8xM10	225	80	200	504	234	250	117	378	138	15
DN 200 (8")	SGVM-HV-ISOF200	12xM10	285	90	260	692	316	334	158	525	169	15
DN 250 (10")	SGVM-HV-ISOF250	12xM10	335	110	310	792	368	390	184	597	186	18

Product Order Information

Vacuum Valves



◆ Pneumatic SMART Gate Valves, HV, CF Flange

Dimension in mm

Nominal I.D.	Part Number- Inch	Thread D	Part Number- Metric	Thread D	A	B	C	E	F	G	H	I	J	K
DN 63 (2.5")	SGVP-HV-CF450T	8x5/16-24	SGVP-HV-CF450M	8xM8	114	80	92	300	142	154	71	222	230	12
DN 100 (4")	SGVP-HV-CF600T	16x5/16-24	SGVP-HV-CF600M	16xM8	152	80	130	366	170	182	85	273	253	12
DN 160 (6")	SGVP-HV-CF800T	20x5/16-24	SGVP-HV-CF800M	20xM8	202	80	181	504	234	250	117	378	299	15
DN 200 (8")	SGVP-HV-CF1000T	24x5/16-24	SGVP-HV-CF1000M	24xM8	253	90	232	693	316	334	158	525	388	15
DN 250 (10")	SGVP-HV-CF1200T	32x5/16-24	SGVP-HV-CF1200M	32xM8	304	110	284	792	368	390	184	597	386	18

◆ Pneumatic SMART Gate Valves, HV, ISO-F Flange

Dimension in mm

Nominal I.D.	Part Number- Metric	Thread D	A	B	C	E	F	G	H	I	J	K
DN 63 (2.5")	SGVP-HV-ISOF63	4xM8	130	80	110	300	142	154	71	222	230	12
DN 100 (4")	SGVP-HV-ISOF100	8xM8	165	80	145	366	170	182	85	273	253	12
DN 160 (6")	SGVP-HV-ISOF160	8xM10	225	80	200	504	234	250	117	378	299	15
DN 200 (8")	SGVP-HV-ISOF200	12xM10	285	90	260	692	316	334	158	525	388	15
DN 250 (10")	SGVP-HV-ISOF250	12xM10	335	110	310	792	368	390	184	597	386	18

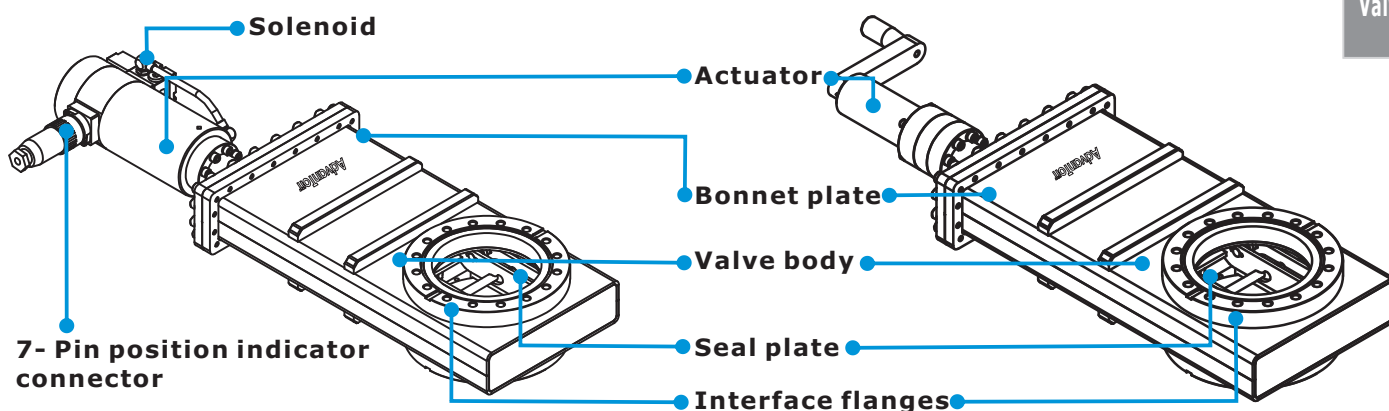
Key Valve Parts

"In-Axis" is **Advantorr's** range of SMART gate valves that offers pneumatic only actuation with vertical orientation of the drive mechanism, making them ideal for when a small footprint is required within a system.

Features

- * In-Axis gate valve with integrated S.M.A.R.T. lock system.
- * Welded bellows feedthrough for longer life and ease of service.
- * Low particle generation for clean and sensitive environments.
- * Softshut gate mechanism, ideal for clean processes.

Vacuum Valves



Technical Data for In- Axis Gate Valve

	Ultra High Vacuum	High Vacuum
Feedthrough	Welded bellows in AM350	Welded bellows in AM350
Gate seal	FKM o-ring (Optional for FFKM)	FKM o-ring (Optional for FFKM)
Bonnet seal	OFHC metal gasket	FKM O-ring
Operate pressure range	760 Torr ~ 1×10^{-10} Torr 1,000 mbar ~ 1.33×10^{-10} mbar 100 kPa ~ 1.13×10^{-11} kPa	760 Torr ~ 1×10^{-8} Torr 1,000 mbar ~ 1.33×10^{-8} mbar 100 kPa ~ 1.13×10^{-9} kPa
Leak rate	1×10^{-10} Torr l/s, He 1.33×10^{-10} mbar l/s, He 1.13×10^{-11} kPa l/s, He	1×10^{-9} Torr l/s, He 1.33×10^{-9} mbar l/s, He 1.13×10^{-10} kPa l/s, He
Cycle life	>50,000 Cycles	>200,000 Cycles
Temperature for valve body	250°C (482°F) Open, 200°C (392°F) Closed	
Temperature for actuator	100°C (212°F)	
Temperature for solenoid / position indicator	80°C 176°F	
Bake temperature	200°C (392°F) for FKM gate seal	100°C (212°F) for FKM gate seal
Valve body material	SS304L (Optional for SS316L)	
Mechanism material	SS304L	
Actuator material	SS304L, Aluminum	
Mounting position	Any	

Valve's operation data

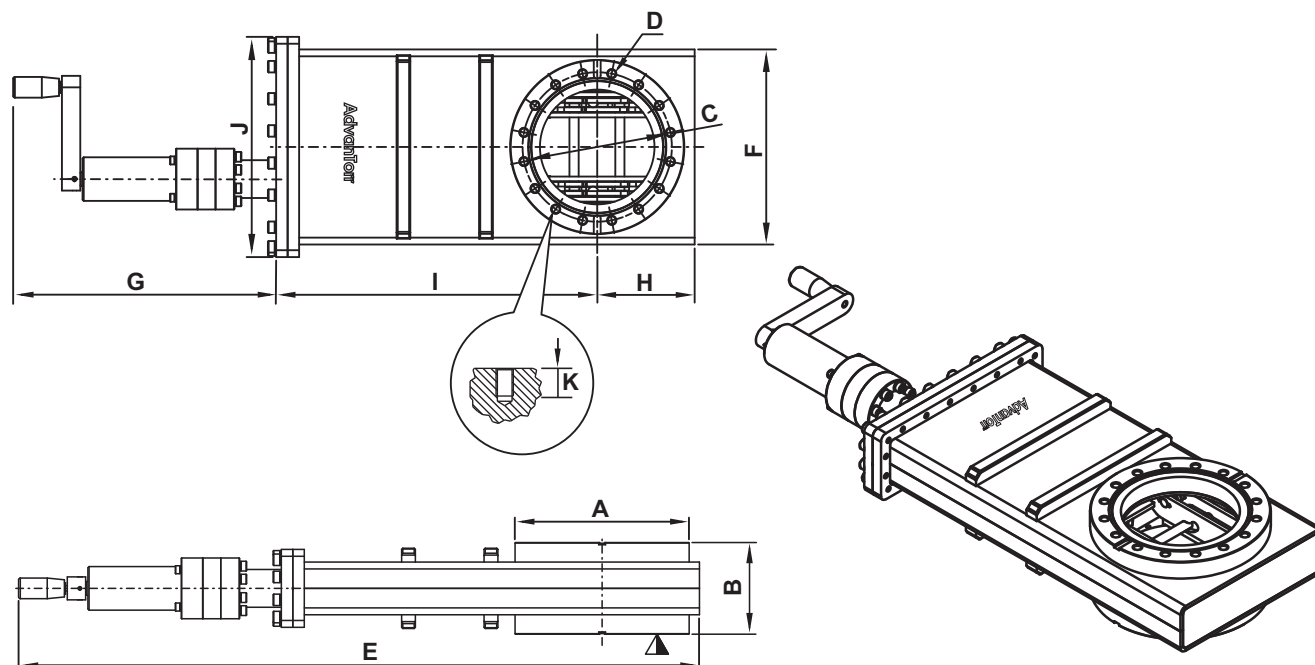
Pneumatic operating pressure	4 bar ~ 8 bar 400 kpa ~ 800 kpa 58psi ~ 116 psi
Position indicator (included as standard)	Visual indicator and micro switch with 7-pin connector
Solenoid (included as standard)	24V DC, standard option for 12V DC, 110V AC and 220V AC
Failure protection (included as standard)	SMART lock system (valve position remains and locked)

Valve's performance data

	CF6"/ISO-F100	CF8"/ISO-F160	CF10"/ISO-F200	CF12"/ISO-F250
Maximum differential pressure against gate	<825 Torr <1,100 mbar < 109kpa			
Maximum differential pressure at opening	<22.5 Torr <30 mbar <3 kpa	<18.7 Torr <25 mbar <2.5 kpa	<15 Torr <20 mbar <2 kpa	<11.2 Torr <15 mbar <1.5 kpa
Pneumatic valve open / close time	1.5(s)	2(s)	2.5(s)	3(s)
Valve's conductance (Molecular flow)	1,700(l/s)	5,100(l/s)	12,000(l/s)	22,000(l/s)

Product Order Information

Vacuum Valves



Manual In- Axis Gate Valves, UHV, CF Flange

Dimension in mm

Nominal I.D.	Part Number- Inch	Thread D	Part Number- Metric	Thread D	A	B	C	E	F	G	H	I	J	K
DN 63 (2.5")	AGVM-UHV-CF450T	8x5/16-24	AGVM-UHV-CF450M	8xM8	114	80	92	530	142	231	71	228	164	12
DN 100 (4")	AGVM-UHV-CF600T	16x5/16-24	AGVM-UHV-CF600M	16xM8	152	80	130	594	170	229	85	280	192	12
DN 160 (6")	AGVM-UHV-CF800T	20x5/16-24	AGVM-UHV-CF800M	20xM8	202	80	181	758	234	263	117	378	266	10
DN 200 (8")	AGVM-UHV-CF1000T	24x5/16-24	AGVM-UHV-CF1000M	24xM8	253	90	232	961	316	282	158	521	344	15
DN 250 (10")	AGVM-UHV-CF1200T	32x5/16-24	AGVM-UHV-CF1200M	32xM8	304	110	284	1142	368	356	184	603	402	18

Manual In- Axis Gate Valves, HV, CF Flange

Dimension in mm

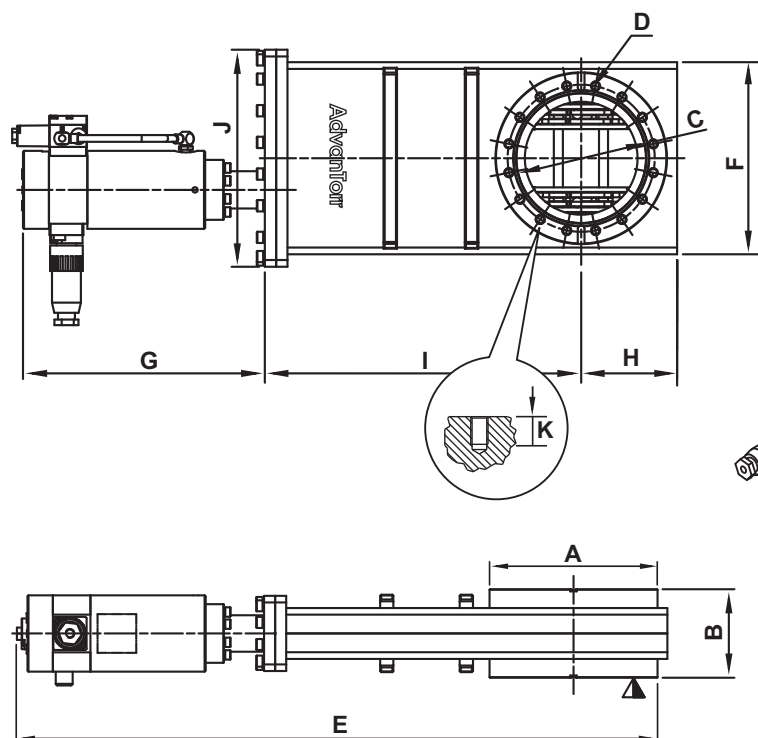
Nominal I.D.	Part Number- Inch	Thread D	Part Number- Metric	Thread D	A	B	C	E	F	G	H	I	J	K
DN 63 (2.5")	AGVM-HV-CF450T	8x5/16-24	AGVM-HV-CF450M	8xM8	114	80	92	495	142	196	71	228	154	12
DN 100 (4")	AGVM-HV-CF600T	16x5/16-24	AGVM-HV-CF600M	16xM8	152	80	130	560	170	193	85	282	182	12
DN 160 (6")	AGVM-HV-CF800T	20x5/16-24	AGVM-HV-CF800M	20xM8	202	80	181	758	234	265	117	376	250	10
DN 200 (8")	AGVM-HV-CF1000T	24x5/16-24	AGVM-HV-CF1000M	24xM8	253	90	232	940	316	263	158	519	334	15
DN 250 (10")	AGVM-HV-CF1200T	32x5/16-24	AGVM-HV-CF1200M	32xM8	304	110	284	1142	368	355	184	603	402	18

Manual In- Axis Gate Valves, HV, ISO-F Flange

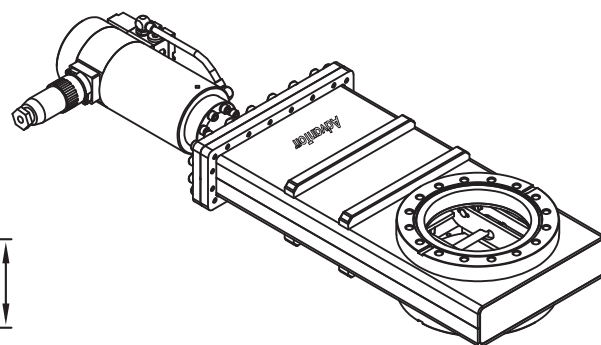
Dimension in mm

Nominal I.D.	Part Number- Metric	Thread D	A	B	C	E	F	G	H	I	J	K
DN 63 (2.5")	AGVM-HV-ISOF63	4xM8	130	80	110	495	142	196	71	228	154	12
DN 100 (4")	AGVM-HV-ISOF100	8xM8	165	80	145	560	170	193	85	282	182	12
DN 160 (6")	AGVM-HV-ISOF160	8xM10	225	80	200	758	234	265	117	376	250	10
DN 200 (8")	AGVM-HV-ISOF200	12xM10	285	90	260	940	316	263	158	519	334	15
DN 250 (10")	AGVM-HV-ISOF250	12xM10	335	110	310	1142	368	355	184	603	402	18

Product Order Information



Vacuum Valves



◆ Pneumatic In- Axis Gate Valves, UHV, CF Flange

Dimension in mm

Nominal I.D.	Part Number- Inch	Thread D	Part Number- Metric	Thread D	A	B	C	E	F	G	H	I	J	K
DN 63 (2.5")	AGVP-UHV-CF450T	8x5/16-24	AGVP-UHV-CF450M	8xM8	114	80	92	527	142	227	71	229	164	12
DN 100 (4")	AGVP-UHV-CF600T	16x5/16-24	AGVP-UHV-CF600M	16xM8	152	80	130	589	170	224	85	280	192	12
DN 160 (6")	AGVP-UHV-CF800T	20x5/16-24	AGVP-UHV-CF800M	20xM8	202	80	181	746	234	254	117	378	266	10
DN 200 (8")	AGVP-UHV-CF1000T	24x5/16-24	AGVP-UHV-CF1000M	24xM8	253	90	232	948	316	269	158	521	344	15
DN 250 (10")	AGVP-UHV-CF1200T	32x5/16-24	AGVP-UHV-CF1200M	32xM8	304	110	284	1131	368	345	184	602	402	18

◆ Pneumatic In- Axis Gate Valves, HV, CF Flange

Dimension in mm

Nominal I.D.	Part Number- Inch	Thread D	Part Number- Metric	Thread D	A	B	C	E	F	G	H	I	J	K
DN 63 (2.5")	AGVP-HV-CF450T	8x5/16-24	AGVP-HV-CF450M	8xM8	114	80	92	492	142	192	71	228	154	12
DN 100 (4")	AGVP-HV-CF600T	16x5/16-24	AGVP-HV-CF600M	16xM8	152	80	130	555	170	188	85	282	182	12
DN 160 (6")	AGVP-HV-CF800T	20x5/16-24	AGVP-HV-CF800M	20xM8	202	80	181	746	234	253	117	376	250	10
DN 200 (8")	AGVP-HV-CF1000T	24x5/16-24	AGVP-HV-CF1000M	24xM8	253	90	232	927	316	250	158	519	334	15
DN 250 (10")	AGVP-HV-CF1200T	32x5/16-24	AGVP-HV-CF1200M	32xM8	304	110	284	1131	368	345	184	603	402	18

◆ Pneumatic In- Axis Gate Valves, HV, ISO-F Flange

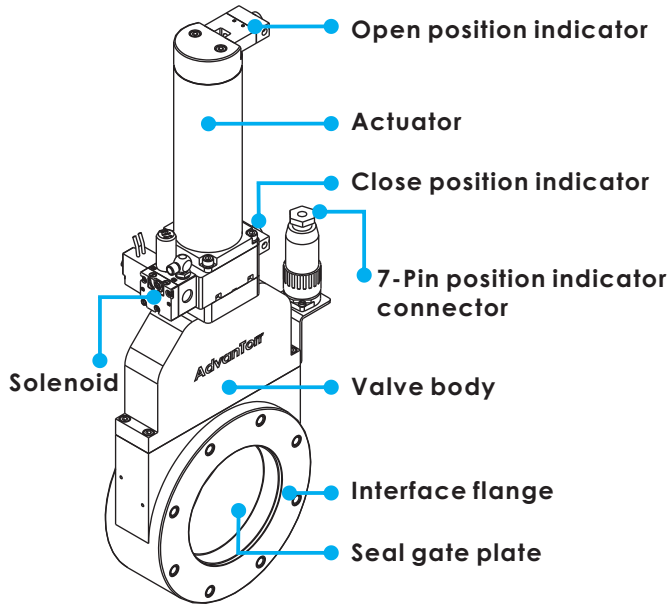
Dimension in mm

Nominal I.D.	Part Number- Metric	Thread D	A	B	C	E	F	G	H	I	J	K
DN 63 (2.5")	AGVP-HV-ISOF63	4xM8	130	80	110	491	142	192	71	228	154	12
DN 100 (4")	AGVP-HV-ISOF100	8xM8	165	80	145	555	170	188	85	282	182	12
DN 160 (6")	AGVP-HV-ISOF160	8xM10	225	80	200	746	234	253	117	376	250	10
DN 200 (8")	AGVP-HV-ISOF200	12xM10	285	90	260	927	316	250	158	519	334	15
DN 250 (10")	AGVP-HV-ISOF250	12xM10	335	110	310	1131	368	345	184	603	402	18

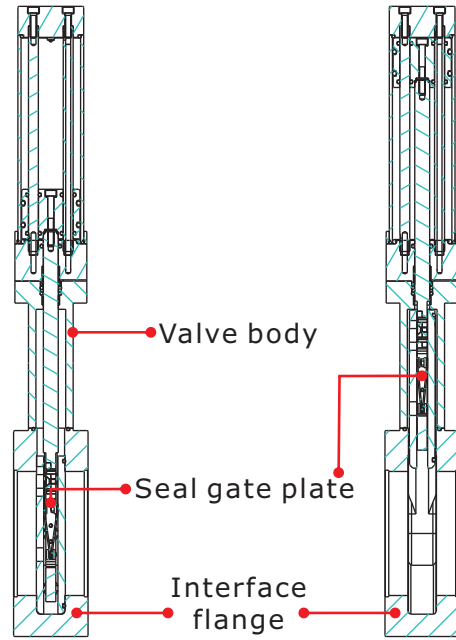
Aluminum Gate Valves

Vacuum Valves

Key Valve Parts



Valve's operation concept



Closed position

Open position

Technical Data for Aluminum Gate Valve

	High Vacuum
Feedthrough	Rotary type feedthrough
Gate seal	FKM o-ring (Optional for FFKM)
Bonnet seal	FKM O-ring
Operate pressure range	DN100~DN200 1×10^{-7} mbar to 1.6 bar Dn250 1×10^{-7} mbar to 1.2 bar
Leak rate	1×10^{-9} mbar l/s ⁻¹
Cycle life	200,000 / 100,000 Cycles
Temperature for valve body	$\leq 120^\circ\text{C}$ (248°F)
Temperature for actuator	$\leq 80^\circ\text{C}$ (176°F)
Temperature for solenoid / position indicator	$\leq 50^\circ\text{C}$ (122°F)
Bake temperature	100°C (212°F) for FKM gate seal
Valve body material	Aluminum
Mechanism material	SS304L, SS303L, SS420L, Aluminum
Actuator material	Aluminum
Mounting position	Any

Valve's operation data

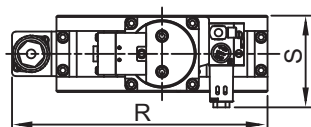
Pneumatic operating pressure	4 bar~7 bar
Position indicator (included as standard)	Visual indicator and micro switch with 7-pin connector
Solenoid (included as standard)	24V DC, standard option for 12V DC, 110V AC and 220V AC
Failure protection (included as standard)	Roller Lock (valve position remains and locked)

Valve's performance data

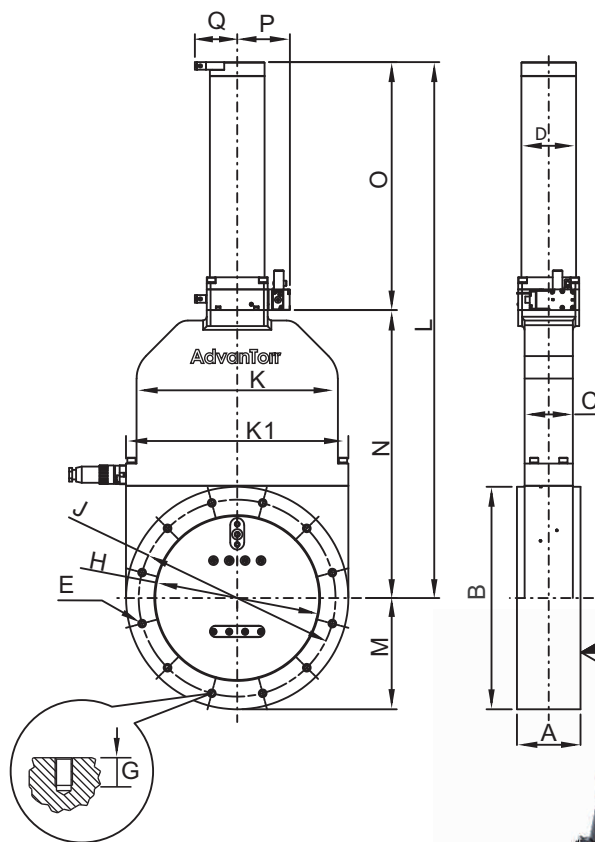
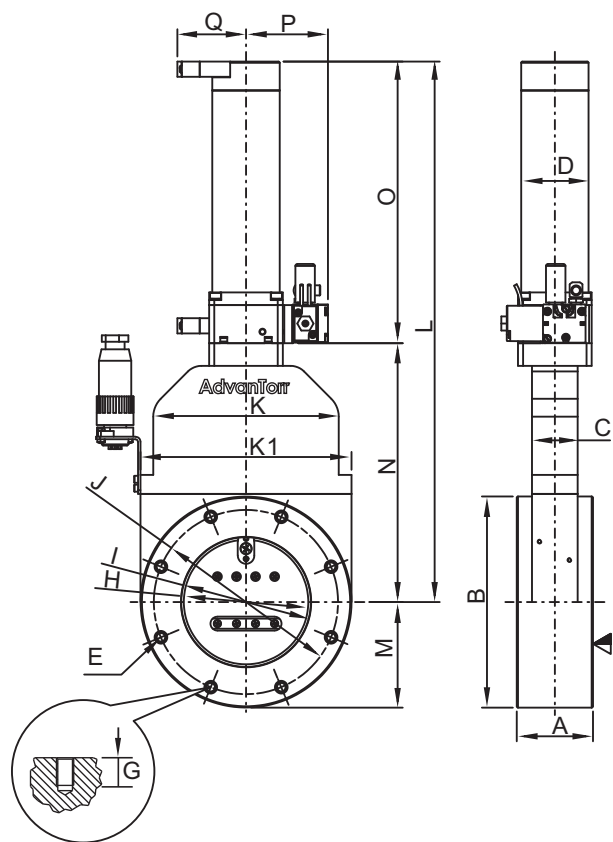
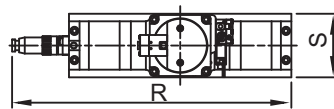
	ISO-F100	ISO-F160	ISO-F200	ISO-F250
Maximum differential pressure against gate	<1,200 Torr <1,600mbr <160kPa	<900 Torr <1,200mbr <120kPa	<900 Torr <1,200mbr <120kPa	<900 Torr <1,200mbr <120kPa
Maximum differential pressure at opening	<22.5 Torr <30mbr <3kPa			
Pneumatic valve open / close time	2(s)	2(s)	3(s)	5(s)
Valve's conductance (Molecular flow)	2,000 (l/s)	6,000 (l/s)	12,000 (l/s)	22,000 (l/s)

Product Order Information

◆ Figure 1



◆ Figure 2



Vacuum Valves



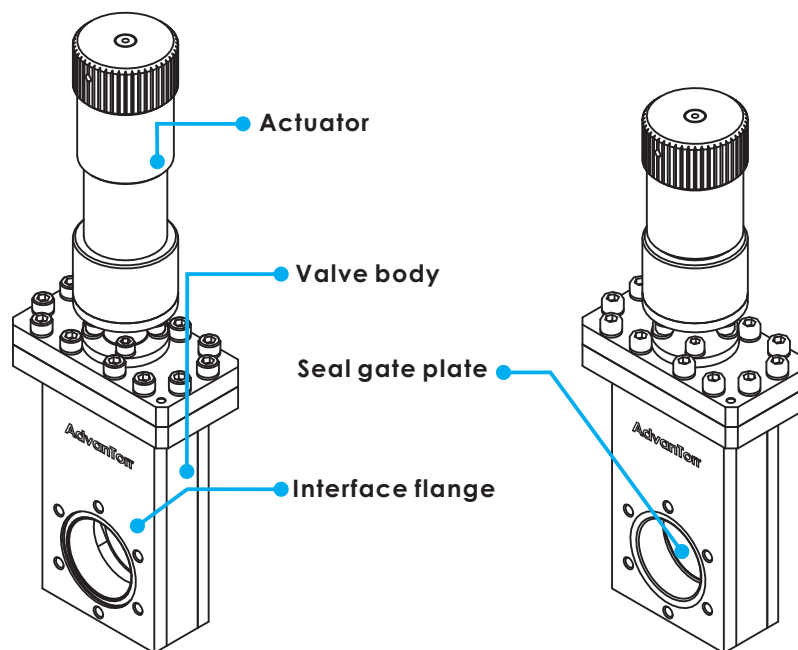
◆ Pneumatic Aluminum Gate Valves

Dimension in mm

Part Number	Tube OD	Figure	A	B	C	D	Thread E	G	H	I	J
AGV-HV-ISOF100	4"	1	60	166	36	53	8xM8	12	100	102	145
AGV-HV-ISOF160	6"	1	70	237	58	65	8xM10	16	150	153	200
AGV-HV-ISOF200	8"	1	80	288	66	75	12xM10	16	200	213	260
AGV-HV-ISOF250	10"	2	100	350	76	86	12xM10	16	261	-	310

K	K1	L	M	N	O	P	Q	R	S
146	166	425	83	204	222	65	54	201	72
192	237	547	119	280	267	70	60	319	78
243	288	688	144	364	325	72	62	323	83
317	350	843	175	453	390	83	67	440	100

Key Valve Parts



Vacuum
Valves

Technical Data for Kompact Gate Valve

	Ultra High Vacuum
Feedthrough	Weld-bellows in AM350
Gate seal	FKM o-ring with bonding on the metal
Bonnet seal	Metal gasket
Operate pressure range	1x10 ⁻¹⁰ mbar to 2 bar(abs)
Leak rate (body/ valve seat)	1 x 10 ⁻¹⁰ Torr l/s, He 1.33x10 ⁻¹⁰ mbar l/s, He 1.13x10 ⁻¹¹ kPa l/s, He
Cycle life	>50,000 Cycles
Temperature for valve body	≤250°C(482°F) open, ≤200°C(392°F) closed
Temperature for actuator	≤200°C(392°F)
Temperature for solenoid / position indicator	≤50°C(122°F) / ≤80°C(176°F)
Bake temperature	200°C (392°F) for FKM gate (bonding) seal
Valve body material	Optional for SS304L and SS316L
Mechanism material	Stainless steel, Aluminum
Actuator material	Aluminum
Mounting position	Any

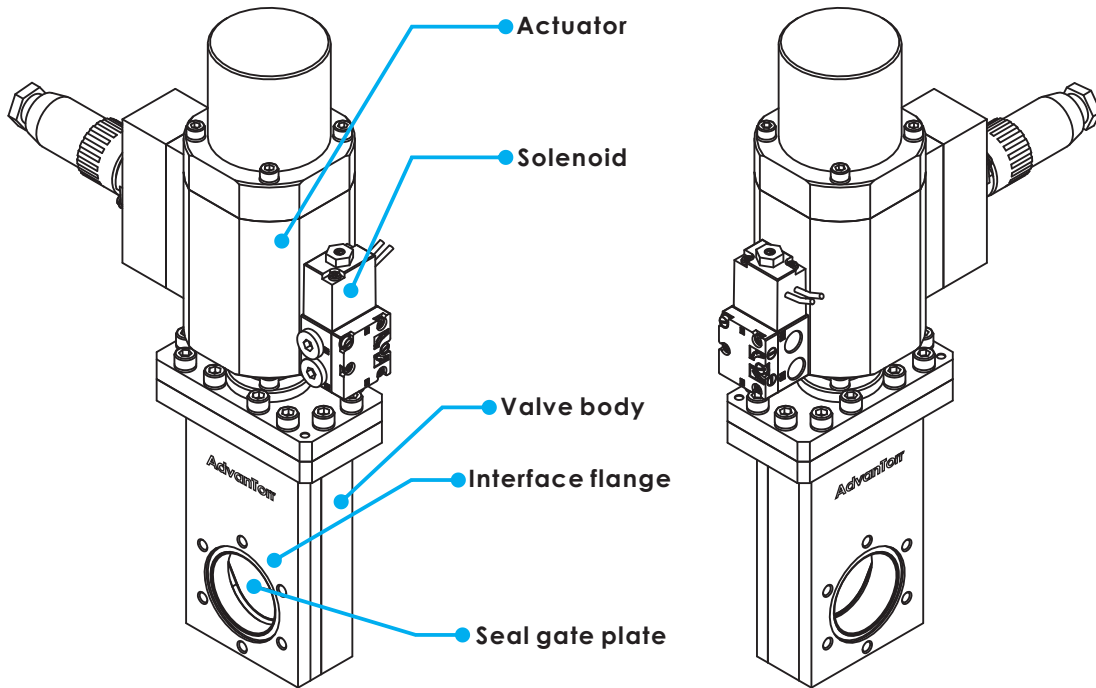
Valve's operation data

Pneumatic operating pressure	1x10 ⁻¹⁰ mbar to 2 bar(abs)
Compressed air pressure min.- max. Overpressure.	5~7 bar
Position indicator (included as standard)	Visual indicator and micro switch with 7-pin connector
Solenoid (included as standard)	24V DC, standard option for 12V DC, 110V AC and 220V AC
Failure protection (included as standard)	Build in SMART lock system (Valve position remain and locked)

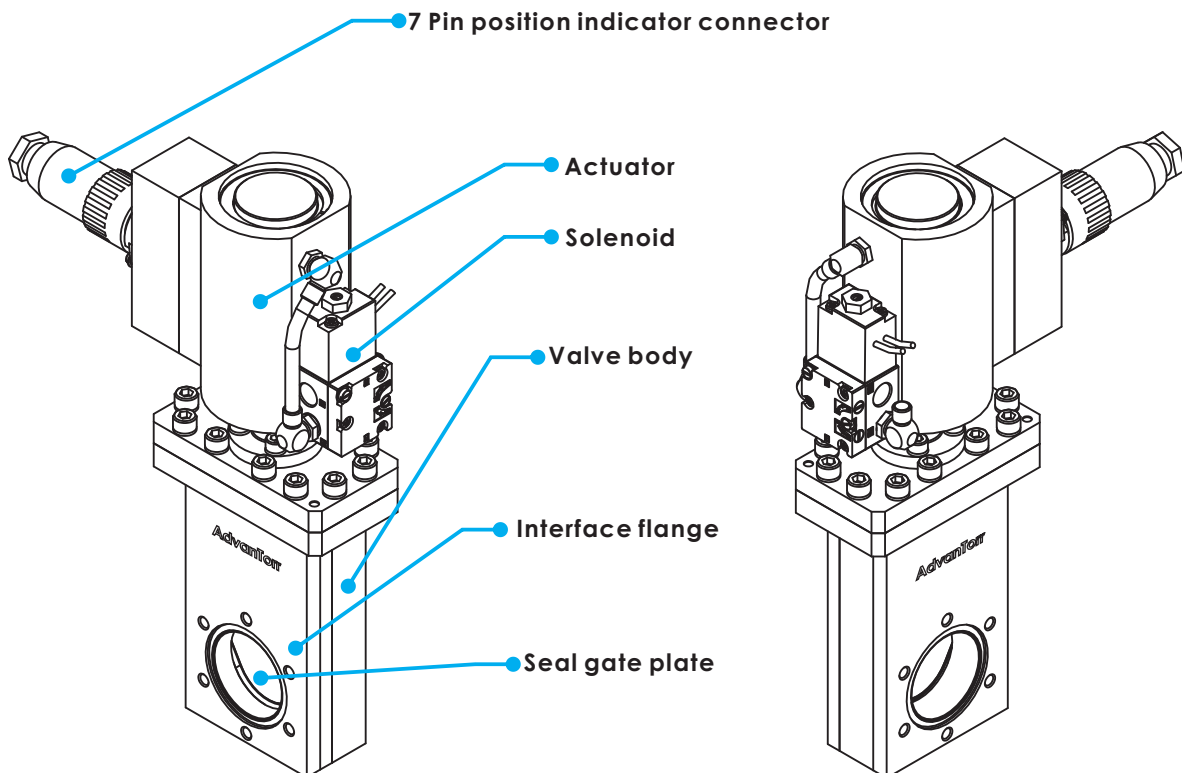
Valve's performance data

	CF2.75
Maximum differential pressure against gate	≤2 bar
Maximum differential pressure at opening	≤30 mbar
Pneumatic valve open / close time	0.7 (s)
Valve's conductance (Molecular flow)	220 (l/s)

Key Valve Parts of Gate Valve- Single Acting

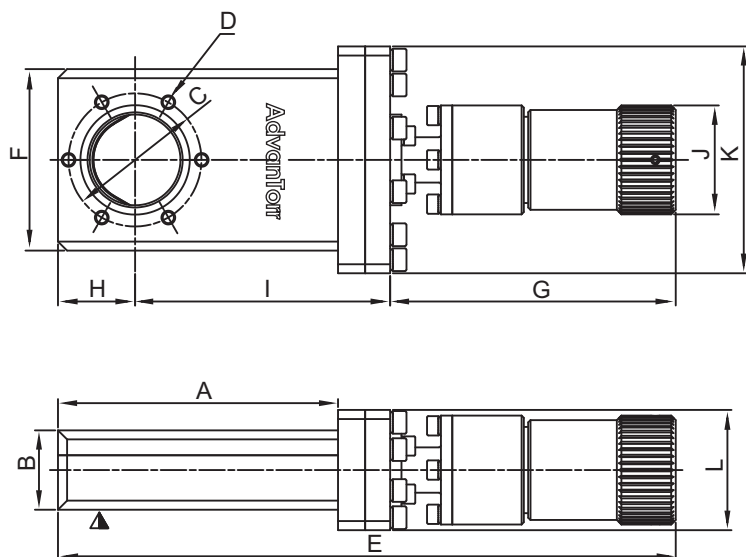


Key Valve Parts of Gate Valve- Double Acting



Product Order Information

Vacuum Valves



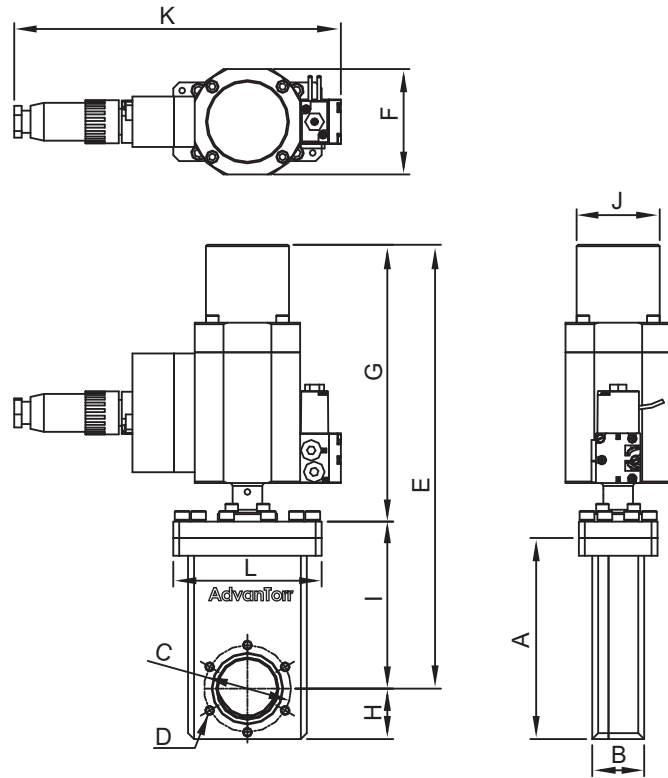
◆ UHV Manual Kompact Gate Valves

Dimension in mm

Part Number	Tube OD	A	B	C	D	E	F	G	H	I	J	K	L
KGM-UHV-CF-275	40	124	35	59	6xM6	273	80	126	34	113	48	100	53

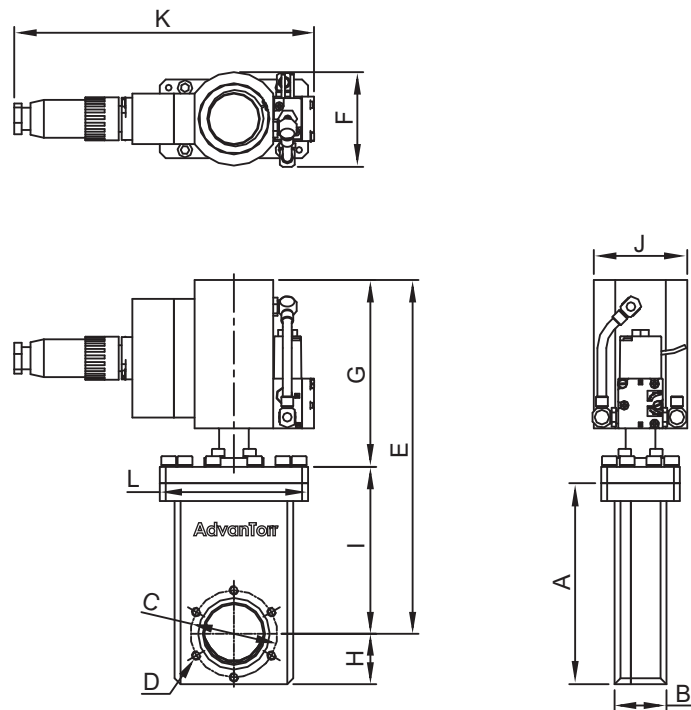
Product Order Information

Figure 1- Single Acting



Vacuum Valves

Figure 2- Double Acting



◆ UHV Pneumatic Kompact Gate Valves

Dimension in mm

Part Number	Tube OD	Figure	A	B	C	D	E	F	G	H	I	J	K	L
KGP-UHV-CF-275-S	40	1	136	35	59	6xM6	299	71	187	34	113	56	220	100
KGP-UHV-CF-275-D	40	2	136	35	59	6xM6	239	64	126	34	113	63	202	100



Vacuum Poppet Valves

•Email: info@kinglai.com.tw

•Website: www.advantorr.com



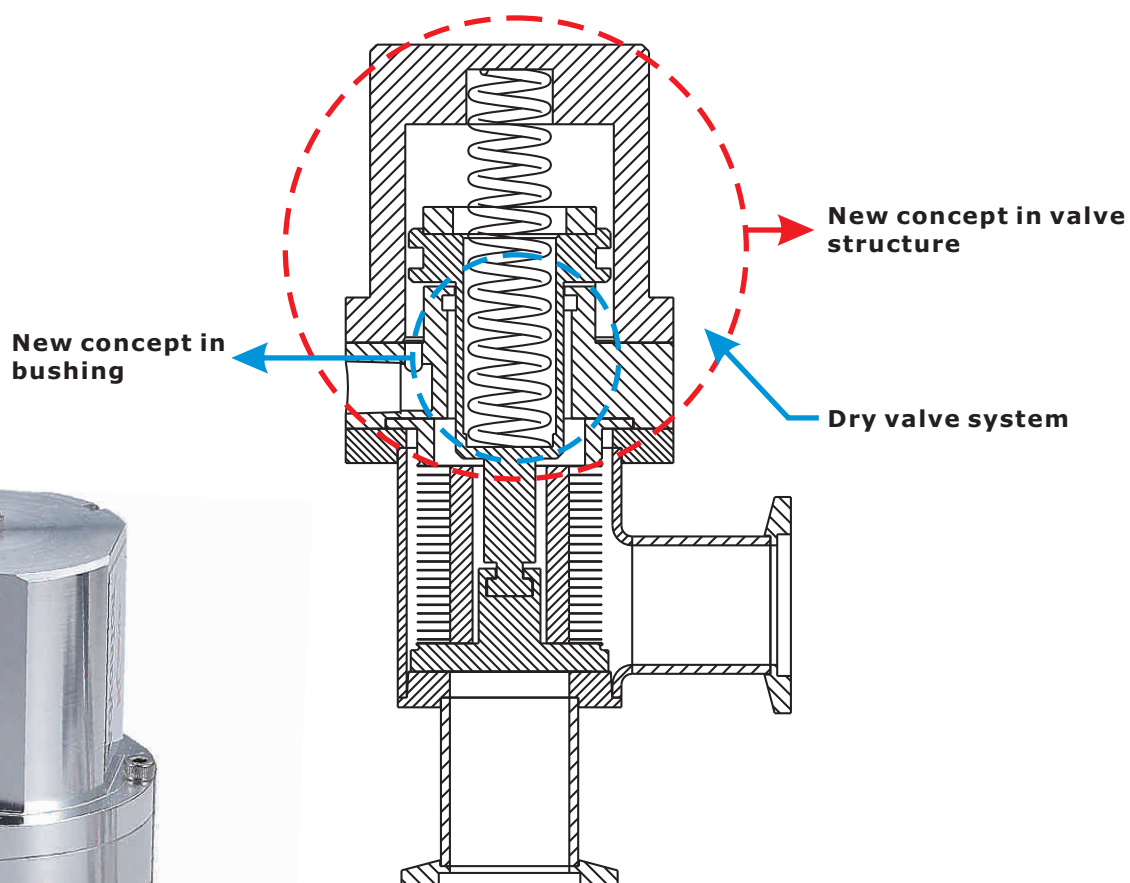
Product Introduction

Isolation Poppet Valves are typically used as 'shut-off' devices and are installed in roughing and fore lines where most applications connect to an exhaust system and there is a potential risk of contamination. In addition, special design 'dry valves' offer the necessary protection for vacuum systems when back streaming occurs. The Poppet Valves use edge welded bellows as standard and provide optimum conductance with a small footprint design.

Vacuum
Valves

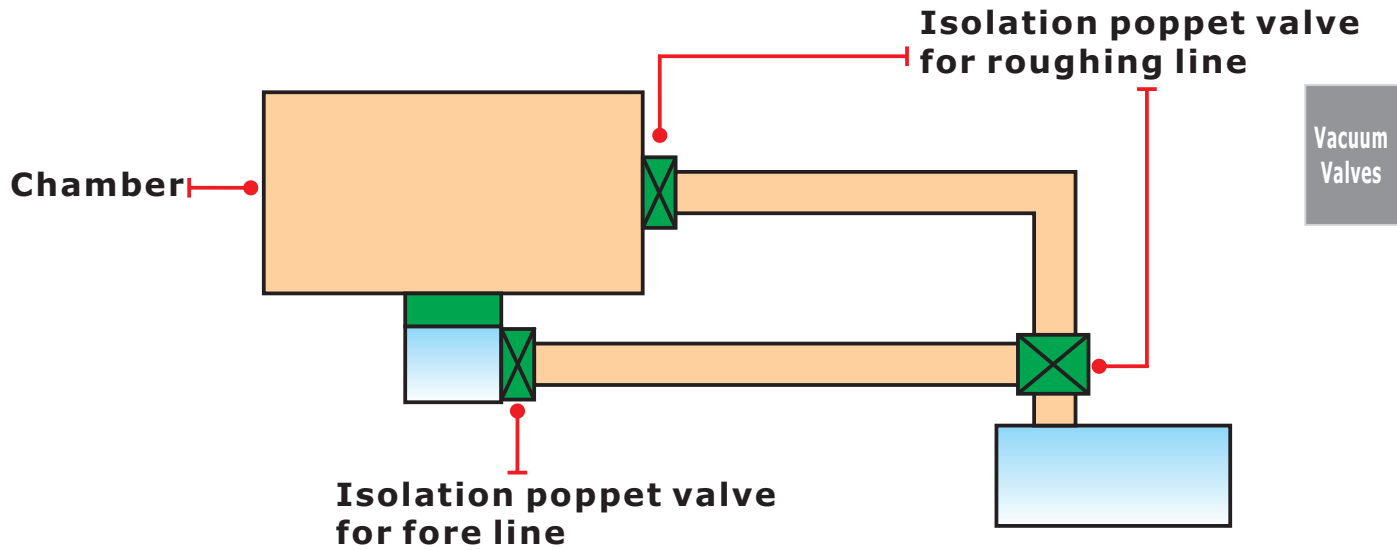
Product Features

- Available in a wide range of sizes from 3/4" to 2" orifice.
- > 1 million cycles between service intervals.
- Compact, low profile, small footprint design.
- Spring returned to 'closed' during power / air failure.
- High purity, dry valve system with a self-lubricating mechanism, significantly reduces particle generation.

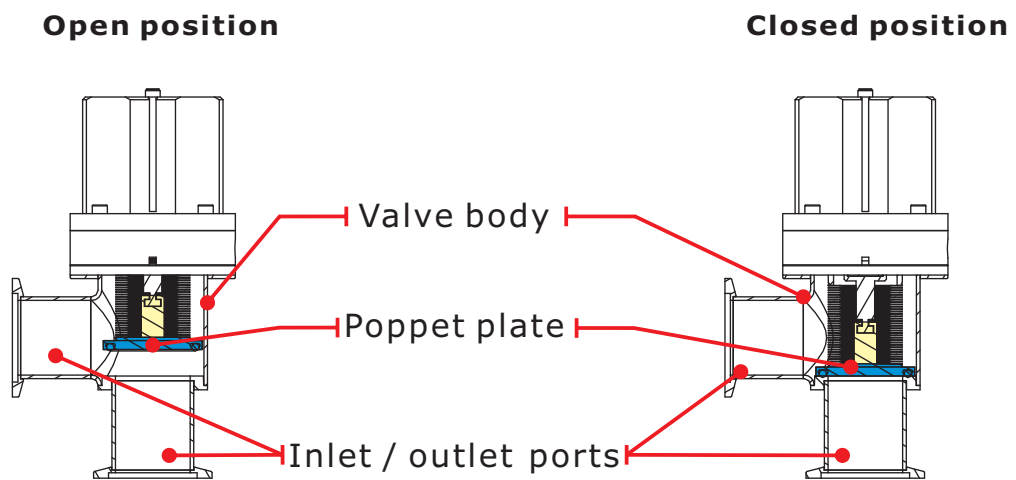


Product's Application

Poppet valves in roughing and fore lines.

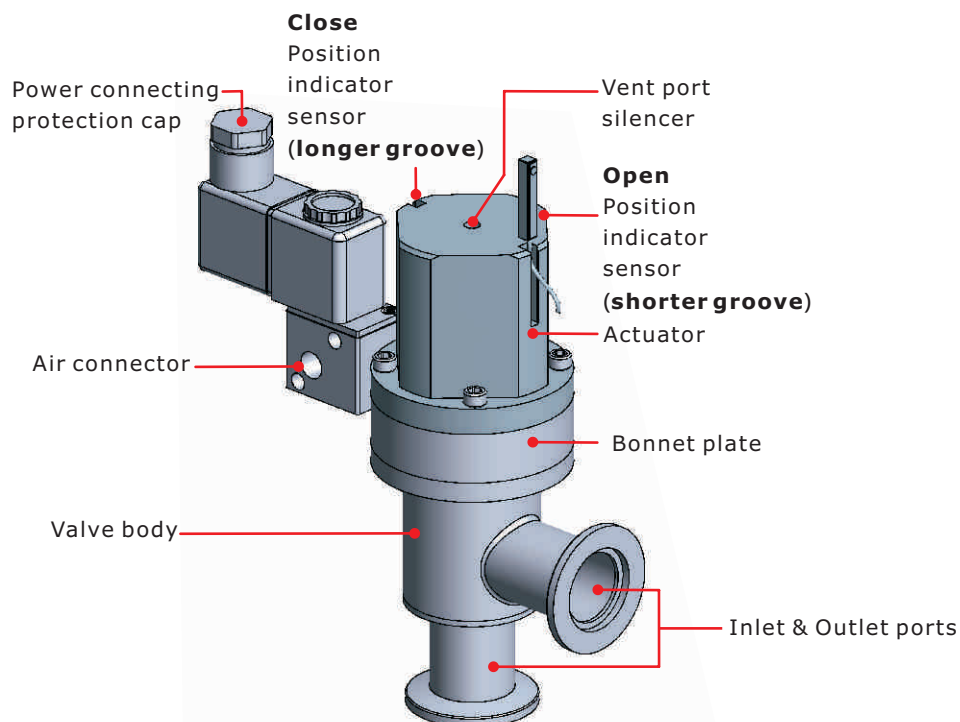


Valve's operation concept



Key Valve Parts

Key parts of poppet valve- single acting



Technical data for poppet angle / inline valves

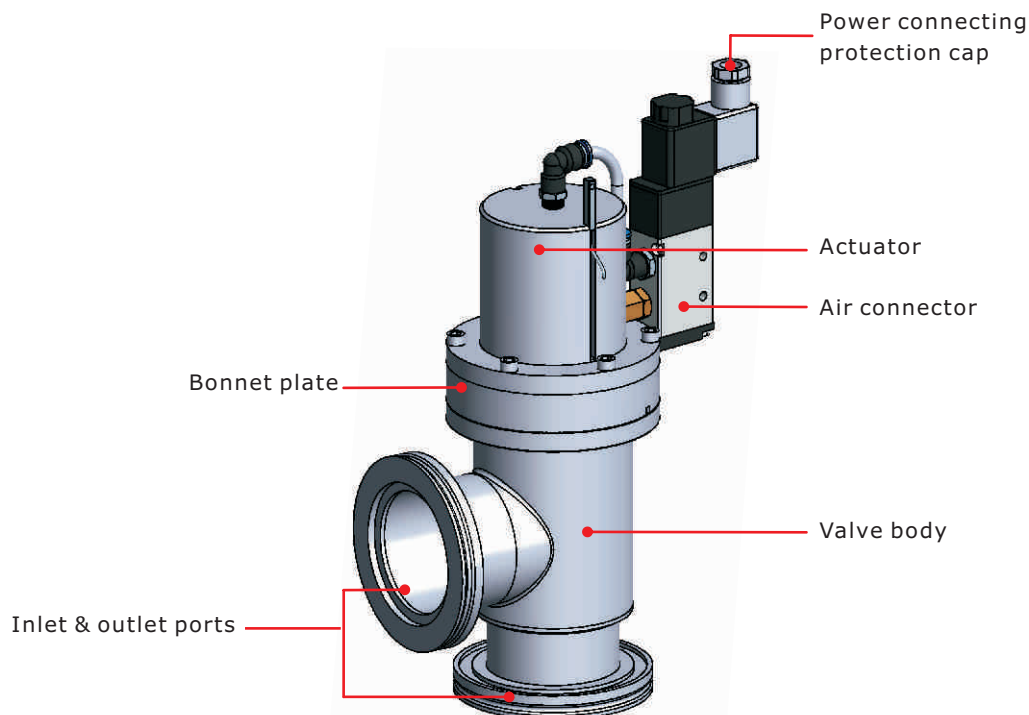
	Ultra High Vacuum	High Vacuum
Feedthrough	Welded bellows in AM350	Welded bellows in AM350
Gate seal	FKM o-ring (Optional for FFKM)	FKM o-ring (Optional for FFKM)
Bonnet seal	OFHC metal gasket	FKM
Operate pressure range	2,500 Torr ~ 1×10^{-10} Torr 2,000 mbar ~ 1.33×10^{-10} mbar 200 kPa ~ 1.13×10^{-11} kPa	2,500 Torr ~ 1×10^{-8} Torr 2,000 mbar ~ 1.33×10^{-8} mbar 200 kPa ~ 1.13×10^{-9} kPa
Leak rate	1×10^{-10} Torr l/s, He 1.33×10^{-10} mbar l/s, He 1.13×10^{-11} kPa l/s, He	1×10^{-9} Torr l/s, He 1.33×10^{-9} mbar l/s, He 1.13×10^{-10} kPa l/s, He
Cycle life	>1,000,000 Cycles	
Temperature for valve body	250°C (482°F) Open, 200°C (392°F) Closed	
Temperature for actuator	100°C (212°F)	
Temperature for solenoid / position indicator	80°C 176°F	
Bake temperature	200°C (392°F) for FKM gate seal	100°C (212°F) for FKM gate seal
Valve body material	SS304L (Optional for SS316L)	
Mechanism material	SS304L	
Actuator material	Aluminum	
Mounting position	Any	

Valve's operation data

Pneumatic operating pressure	4 bar ~ 5.5 bar 400 kPa ~ 550 kPa 58 psi ~ 80 psi
Position indicator (Optional)	Optional magnetic sensor with wire end
Solenoid (optional)	Optional for 24V DC, standard
Failure protection (included as standard)	Spring closed for KF16, KF25, KF40, KF50, CF1.33", CF2.75"

Key Valve Parts

Key parts of Poppet Valve- double acting



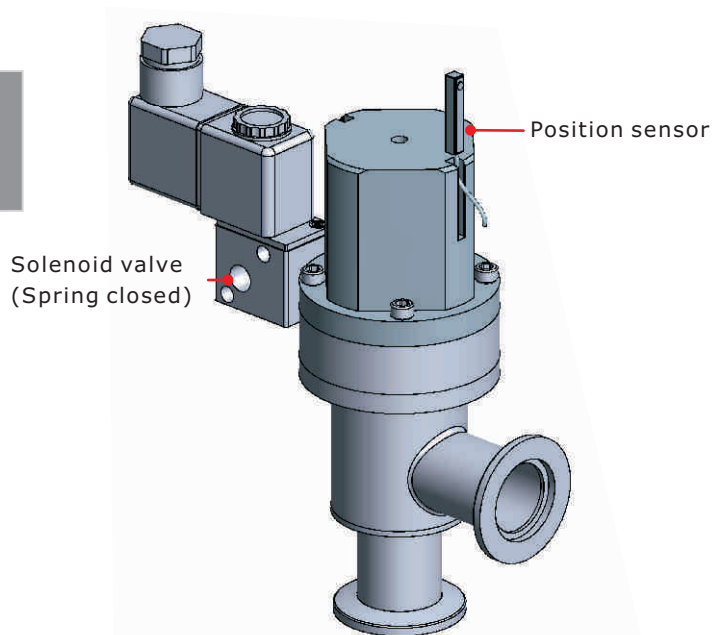
Valve's performance data	KF16/CF1.33"	KF25/CF2.12"	KF40/CF2.75"	KF50/CF3.38"	ISO-K63/CF4.5"
Maximum differential pressure against gate	2,025 Torr 2,700 mbar 270 kpa	1,800 Torr 2,400 mbar 240 kpa	1,725 Torr 2,300 mbar 230 kpa	1,500 Torr 2,000 mbar 200 kpa	2,925 Torr 3,900 mbar 390 kpa
Maximum differential pressure at opening	1,500 Torr 2,000 mbar 200 kpa				
Pneumatic valve open / close time	0.5(s)	0.6(s)	0.8(s)	0.9(s)	0.7(s)
Valve's conductance angle type (molecular flow)	6(l/s)	15(l/s)	48(l/s)	82(l/s)	170(l/s)
Valve's conductance inline type (molecular flow)	5(l/s)	12(l/s)	44(l/s)	66(l/s)	135(l/s)

	ISO-K 80	ISO-K 100/CF6"	ISO-K 160/CF8"	ISO-K 200	ISO-K 250
Maximum differential pressure against gate	2,925 Torr 3,900 mbar 391 kpa	2,925 Torr 3,900 mbar 392 kpa	3,300 Torr 4,400 mbar 440 kpa	3,300 Torr 4,400 mbar 441 kpa	3,300 Torr 4,400 mbar 442 kpa
Maximum differential pressure at opening	1,500 Torr 2,000 mbar 200 kpa				
Pneumatic valve open / close time	0.7(s)	0.8(s)	1.5(s)	2.5(s)	2.8(s)
Valve's conductance angle type (molecular flow)	220(l/s)	490(l/s)	1090(l/s)	1,600(l/s)	2,650(l/s)
Valve's conductance inline type (molecular flow)	184(l/s)	406(l/s)	N/A	N/A	N/A

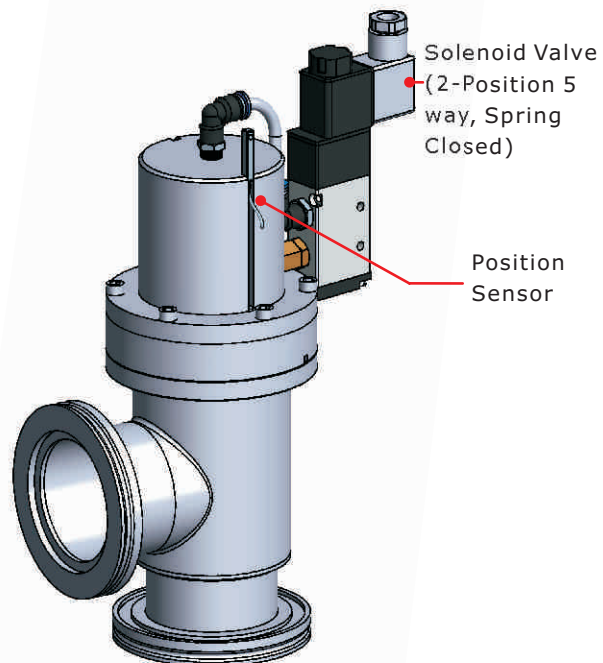
Product Order Information

Vacuum Valves

Single acting



Double acting



ACCESSORIES

Position Sensor with LED Light Indication

Part Number	Size	Specification
PS-A-R	KF10~KF50 ISO63~ISO250	Reed type with trim assembly
PS-A-N	KF10~KF50 ISO63~ISO250	NPN
PS-A-P	KF10~KF50 ISO63~ISO250	PNP



Solenoid Valve Kit

Part Number	Size	Specification
SVK-DC12-KF	KF10~KF50	
SVK-DC12-ISO63100	ISO63~ISO100	DC 12V, 50/60 Hz
SVK-DC12-ISO160250	ISO160~ISO250	
SVK-DC24-KF	KF10~KF50	
SVK-DC24-ISO63100	ISO63~ISO100	DC 24V, 50/60 Hz
SVK-DC24-ISO160250	ISO160~ISO250	
SVK-AC110-KF	KF10~KF50	
SVK-AC110-ISO63100	ISO63~ISO100	AC 110V, 50/60 Hz
SVK-AC110-ISO160250	ISO160~ISO250	
SVK-AC220-KF	KF10~KF50	
SVK-AC220-ISO63100	ISO63~ISO100	AC 220V, 50/60 Hz
SVK-AC220-ISO160250	ISO160~ISO250	



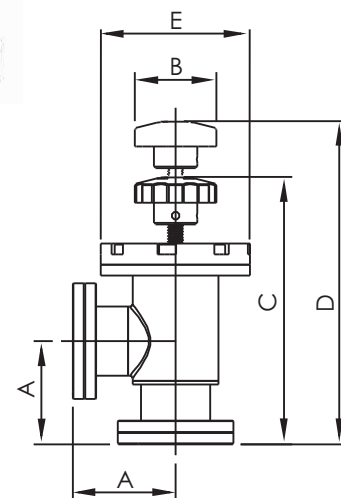
Product Order Information



Vacuum Valves

Manual angle poppet valves, UHV, CF Flange

Part Number	Tube OD	A	B	C	D	E
MAV-UHV-CF-133	3/4"	41	60	124	148	70
MAV-UHV-CF-133-1	3/4"	55	60	139	163	70
MAV-UHV-CF-212	1"	53	60	133	157	70
MAV-UHV-CF-275	1 1/2"	63	60	162	186	86
MAV-UHV-CF-275-1	1 1/2"	67	60	193	217	86
MAV-UHV-CF-338	2"	76	60	197	238	110
MAV-UHV-CF-338-1	2"	78	60	199	240	110
MAV-UHV-CF-450	2 1/2"	91	60	210	252	122
MAV-UHV-CF-450-1	2 1/2"	86	60	204	246	122

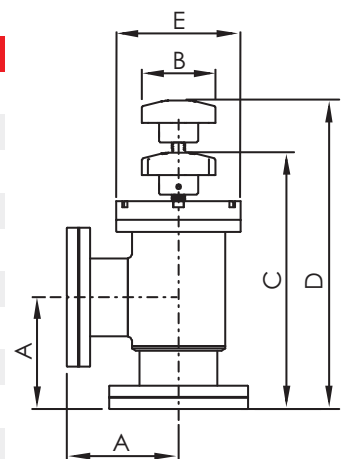


* Bonnet sealed via OFHC gasket



Manual angle poppet valves, HV, CF Flange

Part Number	Tube OD	A	B	C	D	E
MAV-HV-CF-133	3/4"	41	60	124	148	61
MAV-HV-CF-133-1	3/4"	55	60	138	162	61
MAV-HV-CF-212	1"	50	60	131	155	61
MAV-HV-CF-212-1	1"	53	60	133	157	61
MAV-HV-CF-275	1 1/2"	63	60	162	186	77
MAV-HV-CF-275-1	1 1/2"	67	60	165	189	77
MAV-HV-CF-338	2"	72	60	193	234	85
MAV-HV-CF-338-1	2"	78	60	199	240	85
MAV-HV-CF-450	2 1/2"	91	60	210	252	102
MAV-HV-CF-450-1	2 1/2"	86	60	204	246	102



* Bonnet sealed via FKM O-Ring

Product Order Information

Vacuum Valves



Figure 1

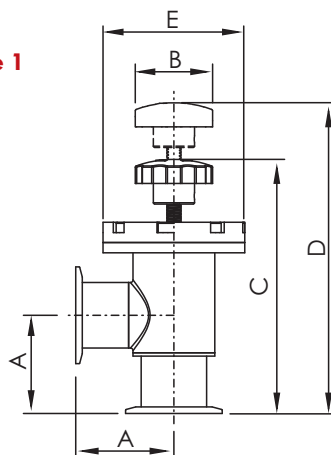
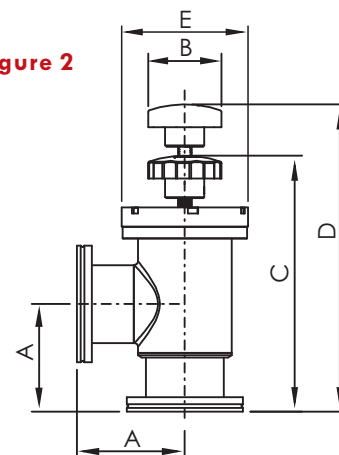
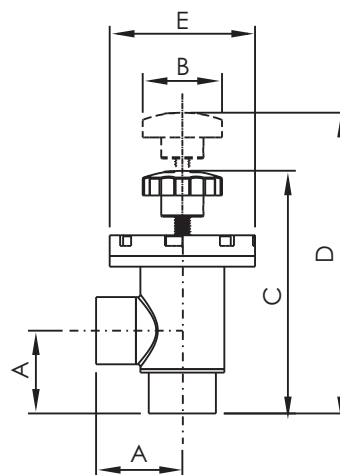


Figure 2



Manual angle poppet valves, HV, KF / ISO Flanges

Part Number	Tube OD	Figure	A	B	C	D	E
MAV-HV-KF-16	3/4"	1	40	60	123	147	61
MAV-HV-KF-16-1	3/4"	1	55	60	138	162	61
MAV-HV-KF-25	1"	1	50	60	130	154	61
MAV-HV-KF-25-1	1"	1	52	60	132	156	61
MAV-HV-KF-40	1 1/2"	1	65	60	164	188	77
MAV-HV-KF-50	2"	1	70	60	191	232	85
MAV-HV-KF-50-1	2"	1	76	60	198	239	85
MAV-HV-ISOK-63	2 1/2"	2	88	60	209	251	102
MAV-HV-ISOK-63-1	2 1/2"	2	83	60	204	246	102



Manual angle poppet valves, HV Tube Ends

Part Number	Tube OD	A	B	C	D	E
MAV-HV-BW-075	3/4"	51	60	134	158	61
MAV-HV-BW-100	1"	48	60	128	153	61
MAV-HV-BW-150	1 1/2"	61	60	160	184	77
MAV-HV-BW-200	2"	72	60	194	235	85

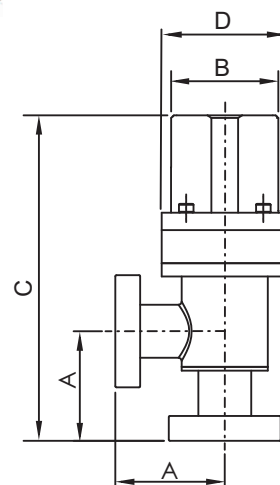
Product Order Information



Vacuum Valves

Pneumatic angle poppet valves, UHV, CF Flange

Part Number	Tube OD	Acting	A	B	C	D
PAV-UHV-CF-133	¾"	Single acting	41	52	147	70
PAV-UHV-CF-133-1	¾"	Single acting	55	52	162	70
PAV-UHV-CF-212	1"	Single acting	53	52	156	70
PAV-UHV-CF-275	1½"	Single acting	63	65	174	86
PAV-UHV-CF-275-1	1½"	Single acting	67	65	178	86
PAV-UHV-CF-338	2"	Single acting	72	67	234	110
PAV-UHV-CF-338-1	2"	Single acting	78	67	240	110
PAV-UHV-CF-450	2½"	Double acting	91	70	251	122
PAV-UHV-CF-450-1	2½"	Double acting	86	70	246	122
PAV-UHV-CF-600	4"	Double acting	113	89	342	171
PAV-UHV-CF-600-1	4"	Double acting	118	89	348	171

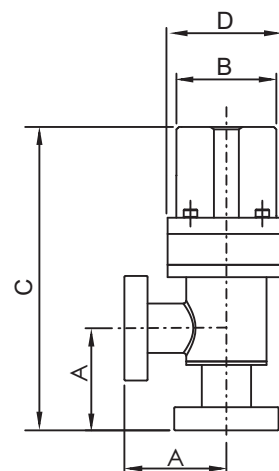


*Bonnet sealed via OFHC gasket



Pneumatic angle poppet valves, HV, CF Flange

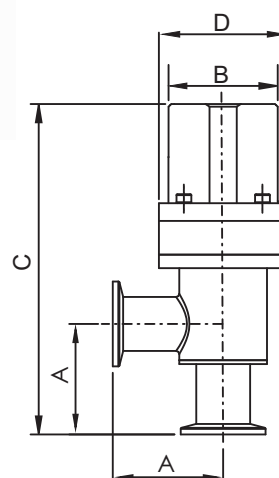
Part Number	Tube OD	Acting	A	B	C	D
PAV-HV-CF-133	¾"	Single acting	41	52	147	61
PAV-HV-CF-133-1	¾"	Single acting	55	52	162	61
PAV-HV-CF-212	1"	Single acting	50	52	154	61
PAV-HV-CF-212-1	1"	Single acting	53	52	156	61
PAV-HV-CF-275	1½"	Single acting	63	65	174	77
PAV-HV-CF-275-1	1½"	Single acting	67	65	178	77
PAV-HV-CF-338	2"	Single acting	72	67	234	85
PAV-HV-CF-338-1	2"	Single acting	78	67	240	85
PAV-HV-CF-450	2½"	Double acting	91	70	251	102
PAV-HV-CF-450-1	2½"	Double acting	86	70	246	102
PAV-HV-CF-600	4"	Double acting	113	89	342	165
PAV-HV-CF-600-1	4"	Double acting	118	89	348	165
PAV-HV-CF-800	6"	Double acting	144	140	449	227
PAV-HV-CF-800-1	6"	Double acting	165	140	469	227



Product Order Information

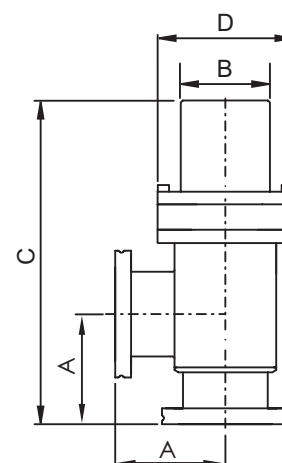
Vacuum
Valves

Pneumatic angle poppet valves, HV, KF Flange Single acting



Part Number	Tube OD	A	B	C	D
PAV-HV-KF-16	¾"	40	52	147	61
PAV-HV-KF-16-1	¾"	55	52	161	61
PAV-HV-KF-25	1"	50	52	154	61
PAV-HV-KF-25-1	1"	52	52	156	61
PAV-HV-KF-40	1½"	65	65	176	77
PAV-HV-KF-50	2"	70	67	232	85
PAV-HV-KF-50-1	2"	76	67	238	85

Pneumatic angle poppet valves, HV, ISO-K Flange Double acting



Part Number	Tube OD	A	B	C	D
PAV-HV-ISOK-63	2½"	88	70	248	102
PAV-HV-ISOK-63-1	2½"	83	70	243	102
PAV-HV-ISOK-80	3"	90	82	284	132
PAV-HV-ISOK-80-1	3"	89	82	283	132
PAV-HV-ISOK-100	4"	108	89	338	165
PAV-HV-ISOK-100-1	4"	114	89	344	165
PAV-HV-ISOK-160	6"	138	140	442	227
PAV-HV-ISOK-160-1	6"	159	140	463	227
PAV-HV-ISOK-200	8"	178	140	648	285
PAV-HV-ISOK-200-1	8"	210	140	659	285
PAV-HV-ISOK-250	10"	208	202	668	353
PAV-HV-ISOK-250-1	10"	260	202	720	353

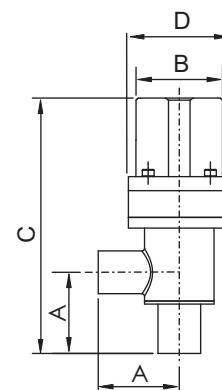
Product Order Information



Vacuum
Valves

Pneumatic angle poppet valves, Tube Ends

Part Number	Tube OD	A	B	C	D	Acting
PAV-HV-BW-075	3/4"	51	61	156	61	Single acting
PAV-HV-BW-100	1"	48	61	152	61	Single acting
PAV-HV-BW-150	1 1/2"	61	77	173	77	Single acting
PAV-HV-BW-200	2"	72	85	243	85	Single acting
PAV-HV-BW-250	2 1/2"	76	102	236	102	Double acting
PAV-HV-BW-300	3"	83	132	277	132	Double acting
PAV-HV-BW-400	4"	112	151	332	165	Double acting
PAV-HV-BW-600	6"	126	228	478	227	Double acting
PAV-HV-BW-800	8"	162	249	578	285	Double acting
PAV-HV-BW-1000	10"	201	311	636	353	Double acting



Product Order Information

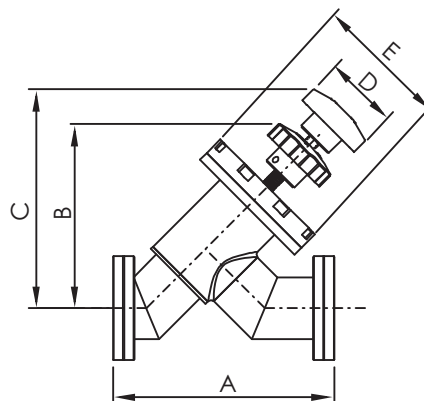
Vacuum
Valves



Manual inline poppet valves, UHV, CF Flange

Part Number	Tube OD	A	B	C	D	E
MIV-UHV-CF-133	3/4"	119	100	117	60	70
MIV-UHV-CF-212	1"	113	97	115	60	70
MIV-UHV-CF-275	1 1/2"	133	123	140	60	86
MIV-UHV-CF-338	2"	182	151	180	60	100
MIV-UHV-CF-450	2 1/2"	216	158	188	60	122

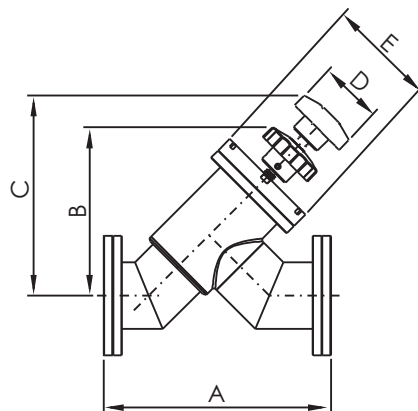
* Bonnet sealed via OFHC gasket



Manual inline poppet valves, HV, CF Flange

Part Number	Tube OD	A	B	C	D	E
MIV-HV-CF-133	3/4"	119	100	117	60	61
MIV-HV-CF-212	1"	107	97	114	60	61
MIV-HV-CF-275	1 1/2"	133	123	140	60	77
MIV-HV-CF-338	2"	182	152	181	60	85
MIV-HV-CF-450	2 1/2"	216	160	190	60	102

* Bonnet sealed via FKM O-Ring



Product Order Information

Vacuum Valves



Figure 1

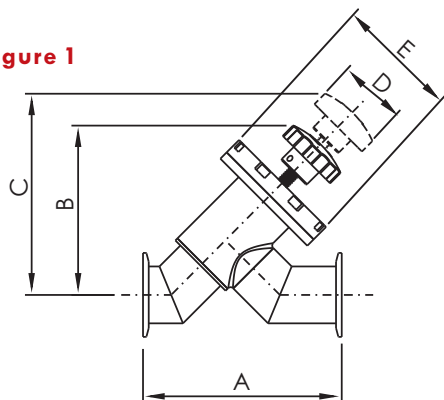
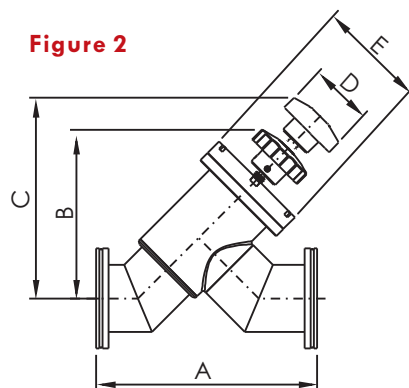
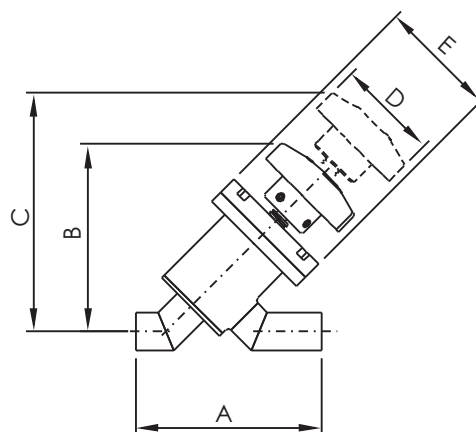


Figure 2



Manual inline poppet valves, HV, KF / ISO Flange

Part Number	Tube OD	Figure	A	B	C	D	E
MIV-HV-KF-16	3/4"	1	102	100	117	60	61
MIV-HV-KF-25	1"	1	107	97	114	60	61
MIV-HV-KF-40	1 1/2"	1	130	123	140	60	77
MIV-HV-KF-50	2"	1	178	152	180	60	85
MIV-HV-ISOK-63	2 1/2"	2	209	160	190	60	102

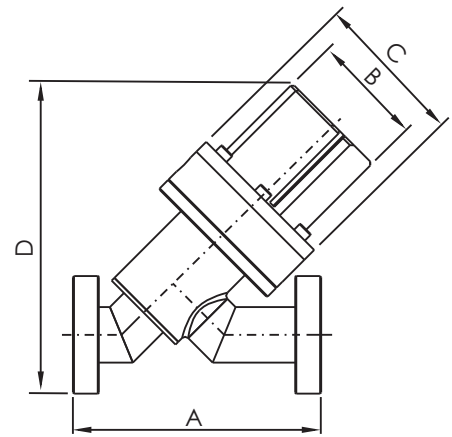


Manual inline poppet valves, HV Tube Ends

Part Number	Tube OD	A	B	C	D	E
MIV-HV-BW-075	3/4"	94	100	117	60	61
MIV-HV-BW-100	1"	99	97	114	60	61
MIV-HV-BW-150	1 1/2"	123	123	140	60	77
MIV-HV-BW-200	2"	170	152	180	60	85

Product Order Information

Vacuum
Valves

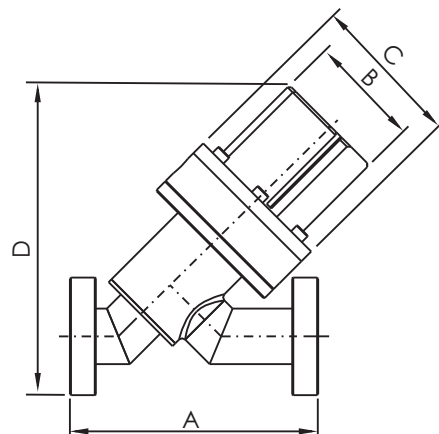


Pneumatic inline poppet valves, UHV, CF Flange

Part Number	Tube OD	A	B	C	D	Acting
PIV-UHV-CF-133	¾"	119	52	70	133	Single acting
PIV-UHV-CF-212	1"	114	52	70	141	Single acting
PIV-UHV-CF-275	1½"	133	65	86	171	Single acting
PIV-UHV-CF-338	2"	182	66	110	228	Single acting
PIV-UHV-CF-450	2½"	216	70	122	251	Double acting
PIV-UHV-CF-600	4"	355	89	171	367	Double acting

* Bonnet sealed via OFHC gasket

Product Order Information



Vacuum Valves

Pneumatic inline poppet valves, HV, CF Flange

Part Number	Tube OD	A	B	C	D	Acting
PIV-HV-CF-133	¾"	119	52	61	135	Single acting
PIV-HV-CF-212	1"	107	52	61	141	Single acting
PIV-HV-CF-275	1½"	133	65	77	171	Single acting
PIV-HV-CF-338	2"	182	67	85	228	Single acting
PIV-HV-CF-450	2½"	216	70	102	251	Double acting
PIV-HV-CF-600	4"	355	89	165	367	Double acting
PIV-HV-CF-800	6"	394	140	227	489	Double acting

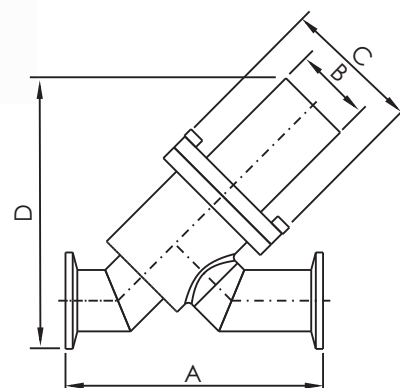
Product Order Information

Vacuum
Valves



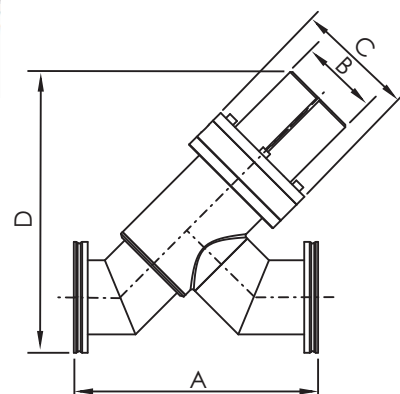
**Pneumatic inline poppet valves, HV, KF Flange
Single acting**

Part Number	Tube OD	A	B	C	D
PIV-HV-KF-16	¾"	102	52	61	132
PIV-HV-KF-25	1"	107	52	61	134
PIV-HV-KF-40	1½"	130	65	77	162
PIV-HV-KF-50	2"	178	67	85	223



**Pneumatic inline poppet valves, HV, ISO-K Flange
Double acting**

Part Number	Tube OD	A	B	C	D
PIV-HV-ISOK-63	2½"	209	70	102	242
PIV-HV-ISOK-80	3"	268	82	132	280
PIV-HV-ISOK-100	4"	345	89	165	357
PIV-HV-ISOK-160	6"	381	140	227	477

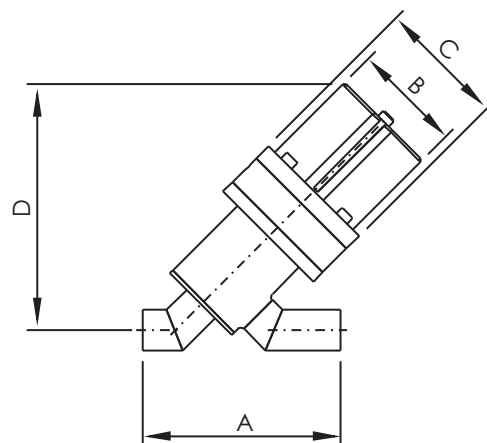


Product Order Information

Vacuum Valves

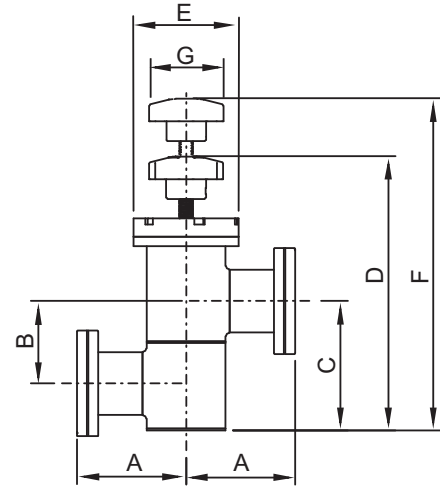
Pneumatic inline poppet valves, HV Tube Ends

Part Number	Tube OD	A	B	C	D
PIV-HV-BW-075	¾"	94	52	61	117
PIV-HV-BW-100	1"	99	52	61	114
PIV-HV-BW-150	1½"	123	65	77	135
PIV-HV-BW-200	2"	170	67	85	185



Product Order Information

Vacuum Valves



Manual inline poppet valves, Z- type, HV, CF Flang

Part Number	Tube OD	A	B	C	D	E	F	G
MZV-HV-CF-133	3/4"	55	29	47	132	61	180	60
MZV-HV-CF-212	1"	52	35	54	134	61	182	60
MZV-HV-CF-275	1 1/2"	62	48	74	172	77	208	60
MZV-HV-CF-338	2"	88	67	105	222	85	263	60
MZV-HV-CF-450	2 1/2"	86	79	125	239	102	282	60



Figure 1

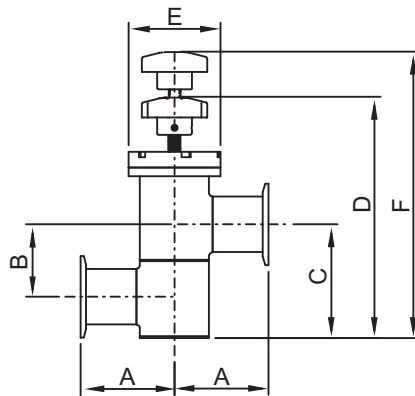
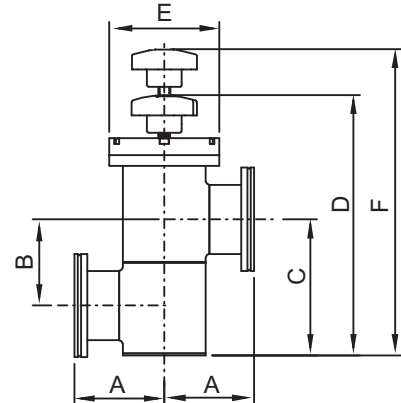


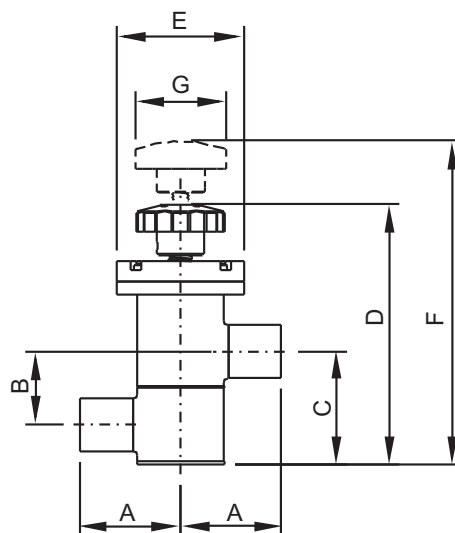
Figure 2



Manual inline poppet valves, Z- type, HV, KF / ISO Flanges

Part Number	Tube OD	Figure	A	B	C	D	E	F	G
MZV-HV-KF-16	3/4"	1	55	29	47	132	61	180	60
MZV-HV-KF-25	1"	1	52	35	54	134	61	182	60
MZV-HV-KF-40	1 1/2"	1	61	48	74	172	77	208	60
MZV-HV-KF-50	2"	1	86	67	105	222	85	263	60
MZV-HV-ISOK-63	2 1/2"	2	83	79	125	239	102	282	60

Product Order Information



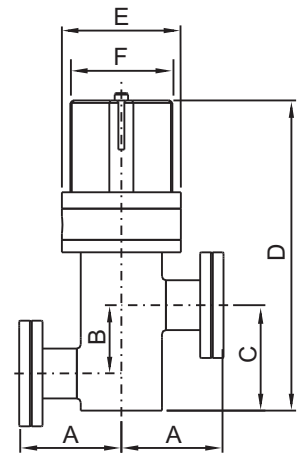
Vacuum Valves

Manual inline poppet valves, Z- type, HV Tube Ends

Part Number	Tube OD	A	B	C	D	E	F	G
MZV-HV-BW-075	3/4"	51	29	47	132	61	180	60
MZV-HV-BW-100	1"	48	35	54	134	61	182	60
MZV-HV-BW-150	1 1/2"	57	48	74	172	77	208	60
MZV-HV-BW-200	2"	83	67	105	222	85	263	60

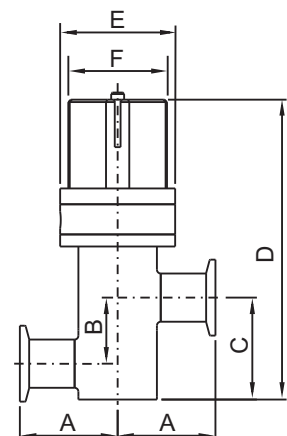
Product Order Information

Vacuum
Valves



Pneumatic inline poppet valves, Z- type, HV, CF Flange

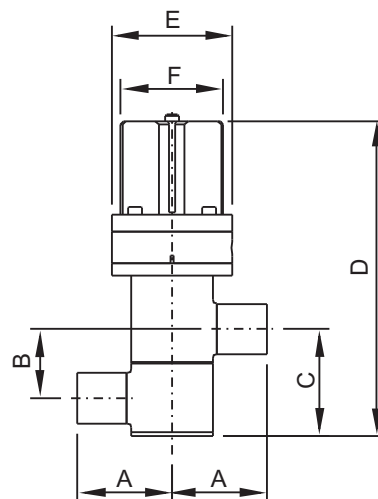
Part Number	Tube OD	A	B	C	D	E	F	Acting
PZV-HV-CF-133	3/4"	55	29	47	156	61	52	Single acting
PZV-HV-CF-212	1"	52	35	54	158	61	52	Single acting
PZV-HV-CF-275	1 1/2"	62	48	74	184	77	65	Single acting
PZV-HV-CF-338	2"	88	67	105	262	85	67	Single acting
PZV-HV-CF-450	2 1/2"	86	79	125	281	102	70	Double acting



Pneumatic inline poppet valves, Z- type, HV, KF Flange

Part Number	Tube OD	A	B	C	D	E	F	Acting
PZV-HV-KF-16	3/4"	55	29	47	156	61	52	Single acting
PZV-HV-KF-25	1"	52	35	54	158	61	52	Single acting
PZV-HV-KF-40	1 1/2"	61	48	74	184	77	65	Single acting
PZV-HV-KF-50	2"	86	67	105	262	85	67	Single acting
PZV-HV-ISOK-63	2"	83	79	125	281	102	70	Double acting

Product Order Information



Vacuum Valves

Pneumatic inline poppet valves, Z- type, HV Tube Ends

Part Number	Tube OD	A	B	C	D	E	F
PZV-HV-BW-075	3/4"	51	29	47	156	61	52
PZV-HV-BW-100	1"	48	35	54	158	61	52
PZV-HV-BW-150	1 1/2"	57	48	74	184	77	65
PZV-HV-BW-200	2"	83	67	105	262	85	67

Product Order Information

Vacuum Valves

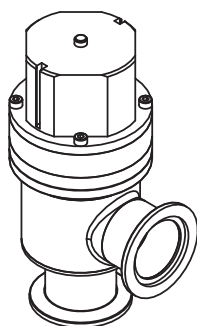


Figure 1

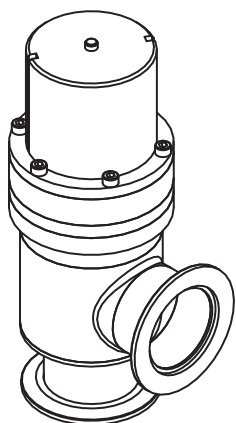
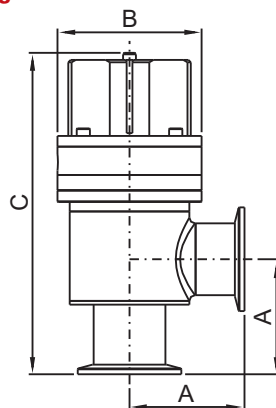
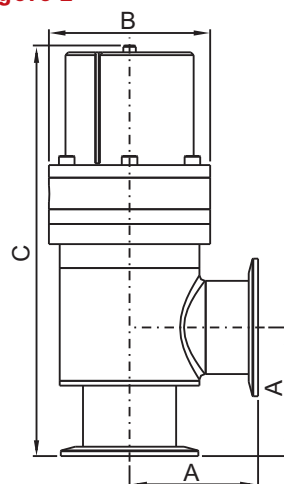


Figure 2



Heating angle poppet valves, HV, KF Flange

Part Number	Tube OD	Figure	A	B	C
HAV-HV-KF-40	1½"	1	61	77	170
HAV-HV-KF-50	2"	2	70	88	224





Vacuum Ball Valves

•Email: info@kinglai.com.tw

•Website: www.advantorr.com



Product Information

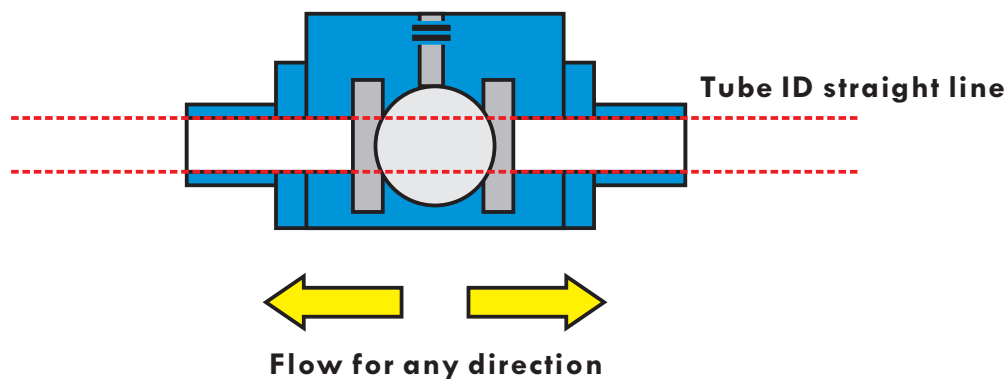
Vacuum Ball Valves are ideal for high and coarse vacuum applications, one of which is the exhaust section of a system where it's designed to protect against harsh processes involving particles or even powder. The valve's main body is manufactured from a single billet of stainless steel, whereas the inlet and outlet sections are manufactured from forged metal.

Vacuum
Valves

Vacuum Ball Valves are ideal for high-chemical or high-temperature environments since they are manufactured using high-grade SS 316L or SS 316Ti materials. Optional materials for the gate seal are also available including FKM, FFKM and Teflon.

Product Features

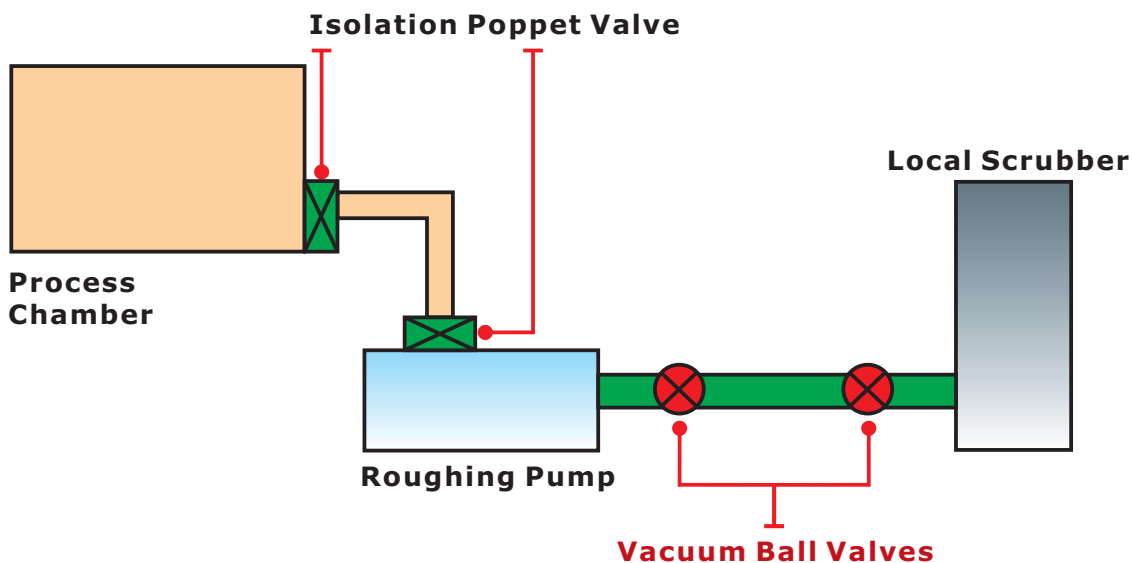
- Ideal for high or coarse vacuum.
- Available in a range of sizes from KF16 to KF50.
- Can protect systems from harsh environments.
- Simple valve body design with three casting pieces.
- Option for high-chemical resistance.



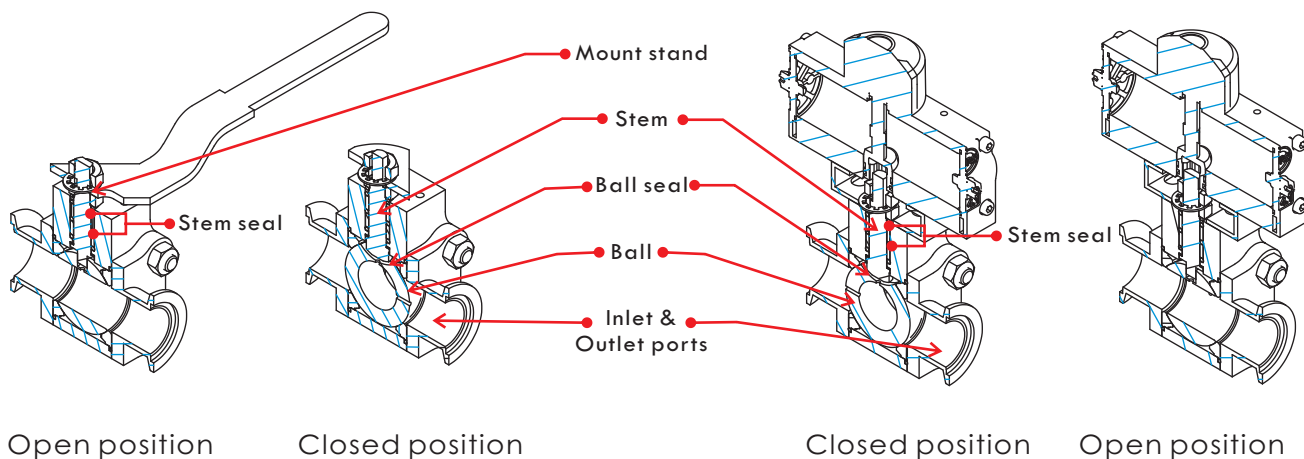
Product's Application

Layout for Process System

Vacuum Ball Valves are positioned within the Scrubber Line



Valve's Operation Concept



Technical Data

Technical Data for Vacuum Ball Valve

	Medium Vacuum
Feedthrough	FKM o-ring
Gate seal	PTFE packing
Bonnet seal	FKM
Operate pressure range	4,500 Torr~ 1×10^{-5} Torr 6,000 mbar~ 1.33×10^{-5} mbar 600 kpa~ 1.33×10^{-6} kpa
Leak rate	1×10^{-8} Torr l/s, He 1.33×10^{-8} mbar l/s, He 1.33×10^{-9} kpa l/s, He
Cycle life	>30,000 Cycles
Temperature for valve body	200°C (392°F) Open and Close
Temperature for actuator	150°C 302°F
Temperature for solenoid / position indicator	80°C 176°F
Bake temperature	100°C (212°F) for FKM gate seal
Valve body material	Casting SS316L
Mechanism material	SS316L
Actuator material	Pneumatic version = Aluminum Manual version = SS304L Handle with plastic cover
Mounting position	Any

Valve operation data

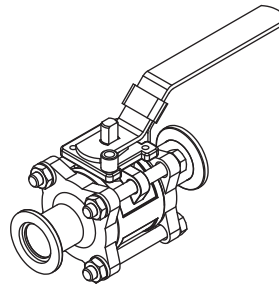
Pneumatic operating pressure	4 bar~8 bar 400 kPa~800 kPa 58 psi~116 psi
Position indicator (included as standard for pneumatic version)	Integrated visual indicator
Solenoid (optional)	Optional for 24V DC, standard
Failure protection (included as standard)	Integrated handle hook with manual version (Open/ Closed position locked)

Valve's Performance data

	KF16	KF25	KF40	KF50
Maximum differential pressure against gate	4,500 Torr 6,000 mbar 600 kpa			
Maximum differential pressure at opening	4,500 Torr 6,000 mbar 600kpa			
Pneumatic valve open / close time	2(s)	3(s)	3(s)	4(s)
Valve's conductance inline type (Molecular flow)	5(l/s)	12(l/s)	33(l/s)	54(l/s)

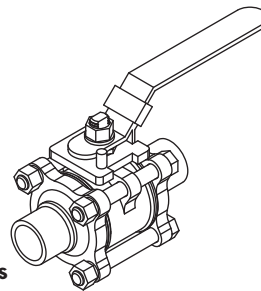
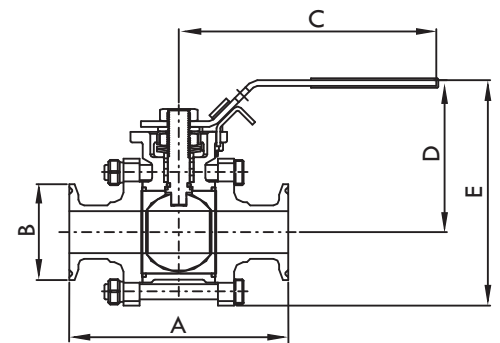
Product Order Information

Vacuum
Valves



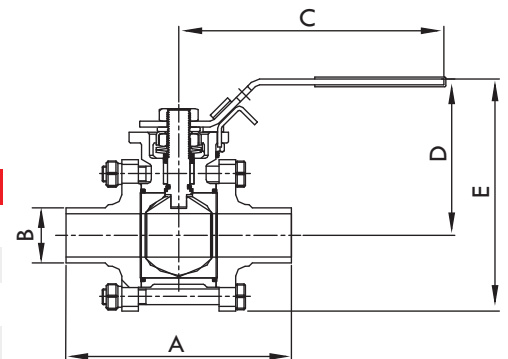
Manual Casting Ball Valves, SUS316L, KF Flange

Part Number	Tube OD	A	B	C	D	E
MBV-CT-KF-16	3/4"	110	30	138	70	98
MBV-CT-KF-25	1"	123	40	138	79	108
MBV-CT-KF-40	1 1/2"	148	55	191	97	137
MBV-CT-KF-50	2"	166	75	191	107	154



Manual Casting Ball Valves, SUS316L, Tube Ends

Part Number	Tube OD	A	B	C	D	E
MBV-CT-075	3/4"	103	19	138	70	98
MBV-CT-100	1"	115	25	138	79	108
MBV-CT-150	1 1/2"	140	38	191	97	137
MBV-CT-200	2"	158	51	191	107	154

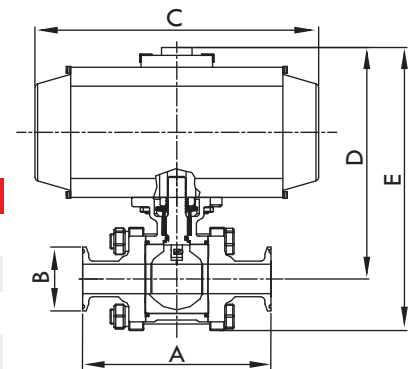


Product Order Information

Vacuum
Valves

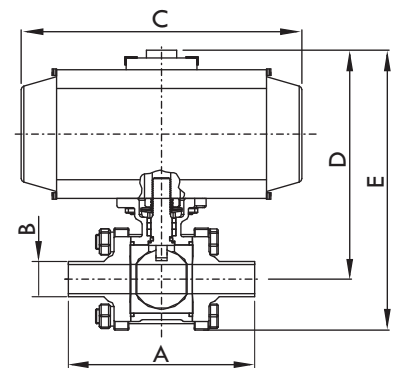
Pneumatic Casting Ball Valves, SUS316L

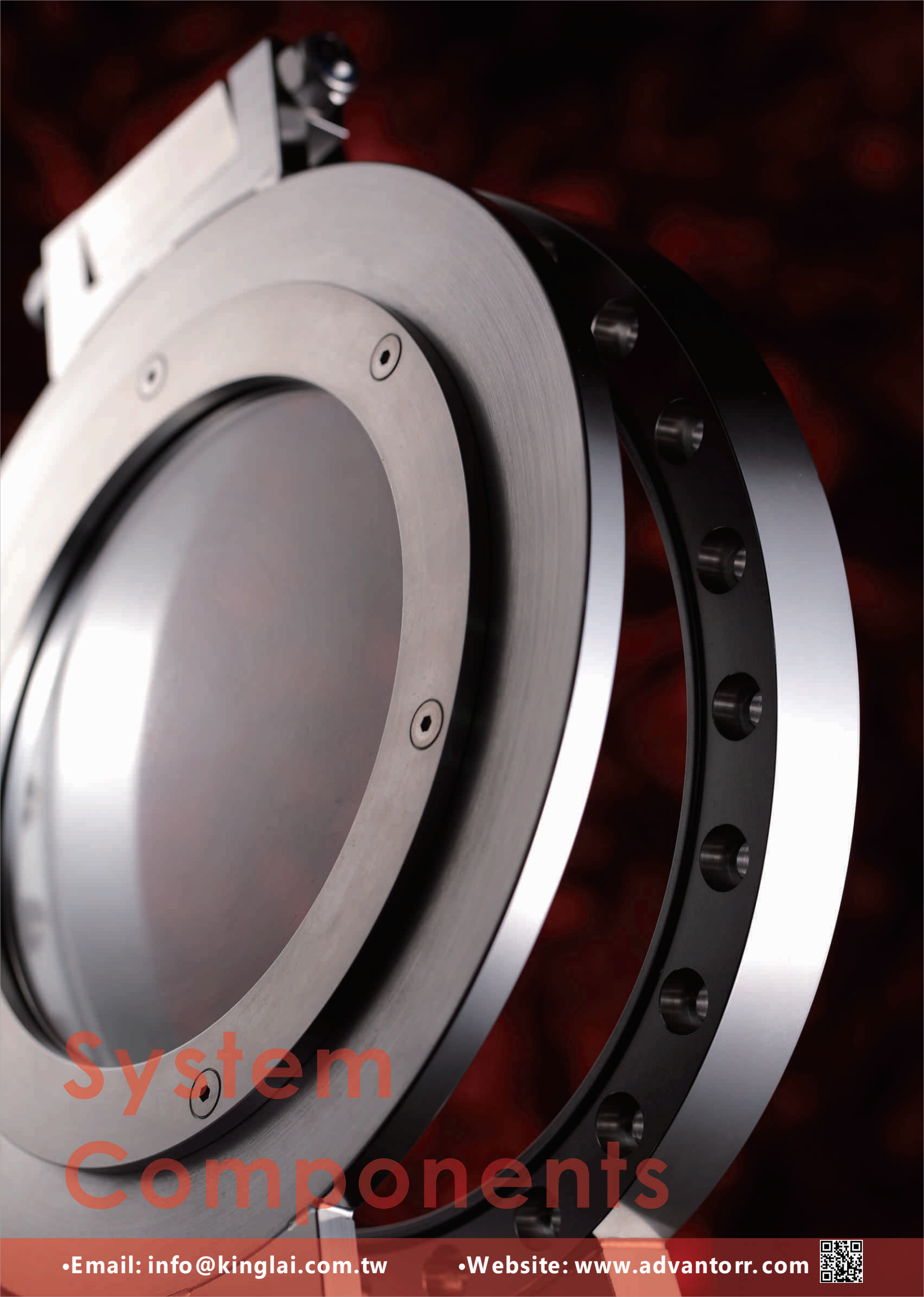
Part Number	Tube OD	A	B	C	D	E
PBV-CT-KF-16	3/4"	110	30	147	136	164
PBV-CT-KF-25	1"	123	40	147	145	174
PBV-CT-KF-40	1 1/2"	148	55	168	173	213
PBV-CT-KF-50	2"	166	75	184	195	243



Pneumatic Casting Ball Valves, SUS316L

Part Number	Tube OD	A	B	C	D	E
PBV-CT-075	3/4"	103	19	147	136	164
PBV-CT-100	1"	115	25	147	145	174
PBV-CT-150	1 1/2"	140	38	168	173	213
PBV-CT-200	2"	158	51	184	195	243





System Components

•Email: info@kinglai.com.tw

•Website: www.advantorr.com



System Components



System Components

Vacuum Chambers				
Geometry	D Type	Box Type	Tall Cylinder Type	
Vacuum level	HV grade	HV grade	HV grade	UHV grade
Materials	SS 304L/316L	SS 304L/316L	SS 304L/316L	SS 304L/316L

Vacuum Chambers				
Geometry	Short Cylinder Type		Spherical Type	Bell Type
Vacuum level	HV grade	UHV grade	UHV grade	UHV grade
Materials	SS 304L/316L	SS 304L/316L	SS 304L/316L	SS 304L/316L

Electrical Power Feedthrough		
Conductor Material	SS304	OFHC
Flange type	CF/KF Flanges	CF/KF Flanges



Vacuum Quick Access Doors		
Door type	Viewport	Blank flange
Flange type	CF Flanges	CF Flanges



Vacuum Viewports							
Vacuum level	UHV grade			HV grade			
Viewport materials	Kodial	Fuse silica	Sapphire	Kodial		Fuse silica	Sapphire
Viewport bonding method	Brazed	Brazed	Brazed	Brazed	O-ring sealed	Brazed	Brazed
Flange type	CF Flanges	CF Flanges	CF Flanges	KF/ ISO-K Flanges	ISO-K Flanges	KF Flanges	KF Flanges

Viewport LED Light	
Body Material	Aluminum
Flange type	CF Flanges



Vacuum Viewport Shutters	
Vacuum level	UHV grade
Flange type	CF Flange



Product Information

King Lai utilizes state-of-the-art manufacturing and inspection equipment which is dedicated solely to our vacuum chamber department. We can fabricate chambers in a range of shapes and sizes up to 6 meters x 2.5 meters x 1.8 meters but in addition, we hold a large inventory of raw material in SS 304, SS 316L and aluminium alloy which are commonly used throughout the fabrication of HV and UHV chambers.

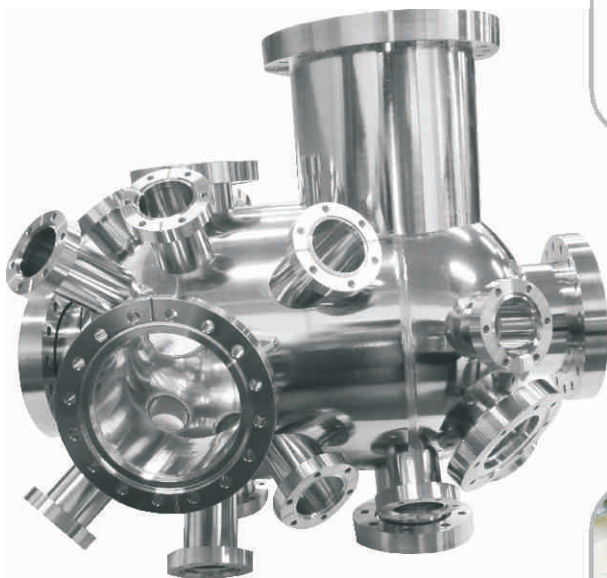
In addition to a standard range of vacuum chambers, we can also accommodate bespoke designs to meet customer's specific requirements in a range of sizes and materials. Through thorough communication, our team of designers are able to understand the exact requirements of our customers, and with careful control during each production process, coupled with rigorous inspection, we aim to provide vacuum chambers that go above and beyond the customers' expectation.

System
Components

Please contact us for further information.

Key Processes

- Water-Jet Cutting
- 5-Axis Machining Centre
- Bridge-Type Machining Centre
- Welding Platform
- CATIA 3D / Solid Works 3D
- Electro-polishing
- TIG Welding
- Class 10,000 Clean Room
- Ultrasonic Cleaning with DI Water

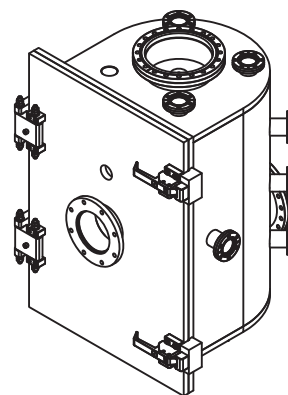


Vacuum Chambers

Product Order Information

D Type Stainless Steel Chambers

- Optional SS304 / SS316L material
- 100mm Viewport with o-ring seal
- Customized port configuration CF/KF/ISO
- Optional water cooling
- Optional inner shielding plates
- Customized designs available on request
- Body wall thickness 6mm/10mm, Plate wall thickness 20mm

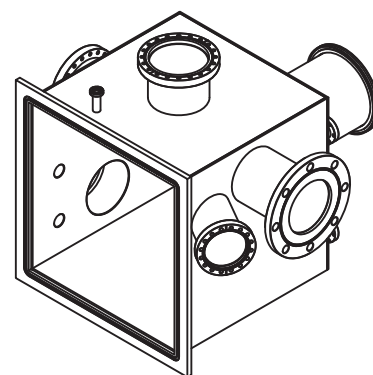


System
Components

Part Number	Size	Product Description
DCH-500x450-X-X	500mm x 450mm	D-Chamber H500xW450
DCH-750x450-X-X	750mm x 450mm	D-Chamber H750xW450
DCH-1000x450-X-X	1000mm x 450mm	D-Chamber H1000xW450

Box Type Stainless Steel Chambers

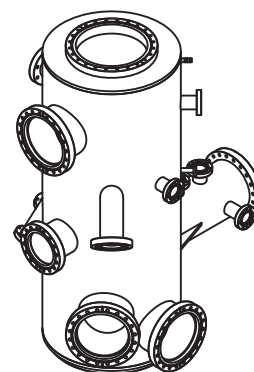
- Optional SS304 / SS316L material
- 100mm Viewport with o-ring seal
- Customized port configuration CF/KF/ISO
- Optional water cooling
- Optional inner shielding plates
- Customized designs available on request
- Body wall thickness 6mm/10mm, Plate wall thickness 20mm



Part Number	Size	Product Description
BCH-500x450-X-X	500mm x 450mm	Box Chamber H500xW450
BCH-750x450-X-X	750mm x 450mm	Box Chamber H750xW450
BCH-1000x450-X-X	1000mm x 450mm	Box Chamber H1000xW450

Tall Cylinder Type Stainless steel Chambers

- Optional SS304 / SS316L material
- Customized port configuration
- Optional water cooling (double Wall)
- Optional LN2 Cold Trap
- Customized designs available on request
- Body wall thickness 6mm/10mm, top and bottom zero length flanges.

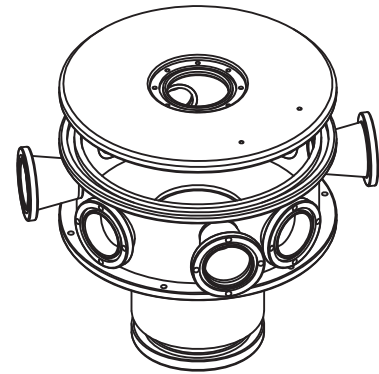


Part Number	Size	Product Description
TCCH-254x500-X-X	OD10" x 500mm	Tall Cylinder Type Stainless Steel Chamber 10" X 500mm
TCCH-254x750-X-X	OD10" x 750mm	Tall Cylinder Type Stainless Steel Chamber 10" X 750mm
TCCH-305x750-X-X	OD12" x 750mm	Tall Cylinder Type Stainless Steel Chamber 12" X 750mm
TCCH-305x1000-X-X	OD12" x 1000mm	Tall Cylinder Type Stainless Steel Chamber 12" X 1000mm
TCCH-356x750-X-X	OD14" x 750mm	Tall Cylinder Type Stainless Steel Chamber 14" X 750mm
TCCH-356x1000-X-X	OD14" x 1000mm	Tall Cylinder Type Stainless Steel Chamber 14" X 1000mm

Product Order Information

Short Cylinder Type Stainless Steel Chambers

- Optional SS304 / SS316L material
- Customized port configuration CF/KF/ISO
- Customized designs available on request (Up to 900mm OD, 500mm height)
- Body wall thickness 6mm / 10mm, top and bottom flanges are both gasket seal or o-ring seal.

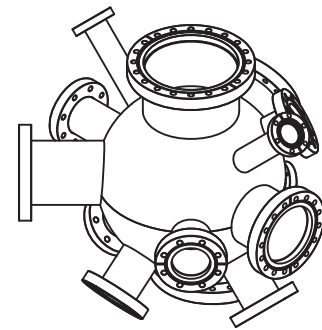


System Components

Part Number	Size	Product Description
SCCH-254x100	OD10" x 100mm	Short Cylinder Type Stainless Steel Chamber 10"x100mm
SCCH-305x200	OD12" x 200mm	Short Cylinder Type Stainless Steel Chamber 12"x200mm
SCCH-356x200	OD14" x 200mm	Short Cylinder Type Stainless Steel Chamber 14"x200mm
SCCH-457x250	OD18" x 250mm	Short Cylinder Type Stainless Steel Chamber 18"x250mm
SCCH-610x250	OD24" x 250mm	Short Cylinder Type Stainless Steel Chamber 24"x250mm

Spherical Type Stainless Steel Chambers

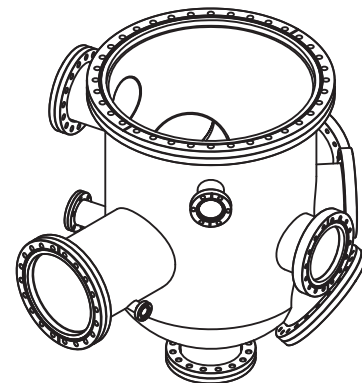
- Optional SS304 / SS316L material
- Customized port configuration
- Customized designs available on request
- Body wall thickness 6mm / 10mm



Part Number	Size	Product Description
SCH-254	10" Spherical	Spherical Type Stainless Steel Chamber 10"
SCH-300	12" Spherical	Spherical Type Stainless Steel Chamber 12"
SCH-457	18" Spherical	Spherical Type Stainless Steel Chamber 18"

Bell Type Stainless Steel Chambers

- Optional SS304 / SS316L material
- Customized port configuration
- Optional water cooling (double Wall)
- Optional LN2 Cold Trap
- Customized designs available on request
- Body wall thickness 6mm / 10mm



Part Number	Size	Product Description
BLCH-305x500-X-X	OD12" x 500mm	Bell Type Stainless Steel Chamber OD12" x 500mm
BLCH-305x750-X-X	OD12" x 750mm	Bell Type Stainless Steel Chamber OD12" x 750mm
BLCH-356x750-X-X	OD14" x 750mm	Bell Type Stainless Steel Chamber OD14" x 750mm
BLCH-356x1000-X-X	OD14" x 1000mm	Bell Type Stainless Steel Chamber OD14" x 1000mm

Product Information

In application, EPF (Electrical Power Feedthrough) is transmitting high voltage or high current from atmosphere into vacuum chamber.

EPF is the key component for subtract heating device, E-beam evaporator or other devices which need high voltage and current.

The sealing technology is bonding the ceramic based material and metal alloy.

Ceramic is excellent insulation material applied in vacuum electrical power feedthrough.

For different requirement on the voltage and current, we offer metal alloys such as:

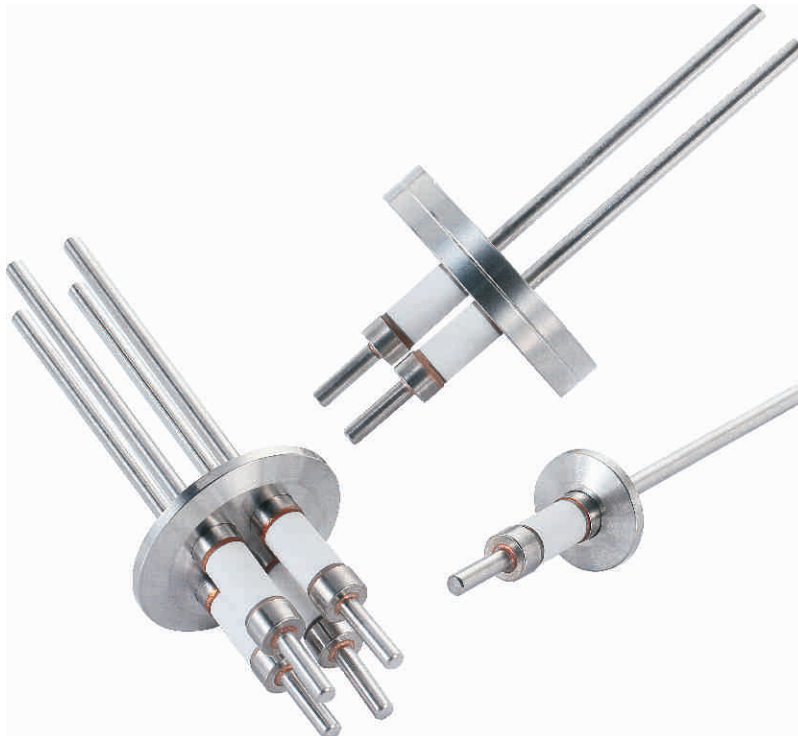
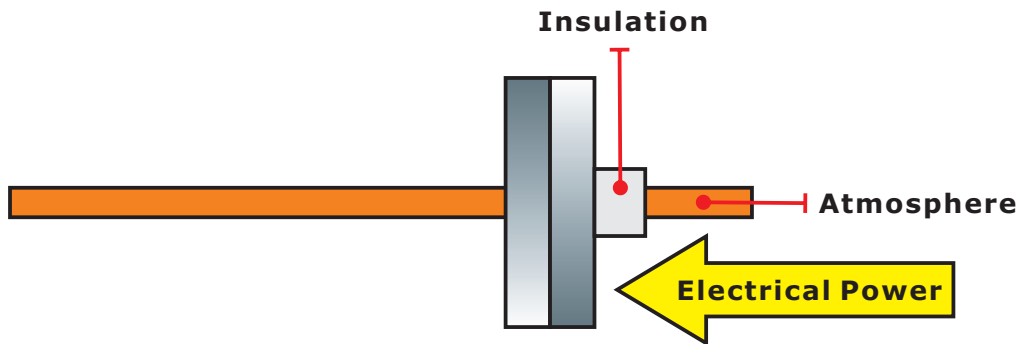
Stainless steel

Copper

Nickle

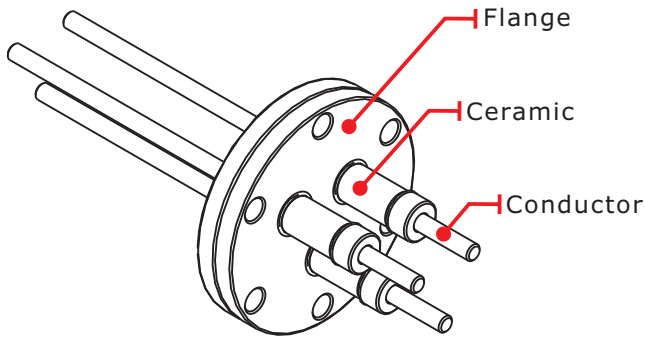
System
Components

Product's Application

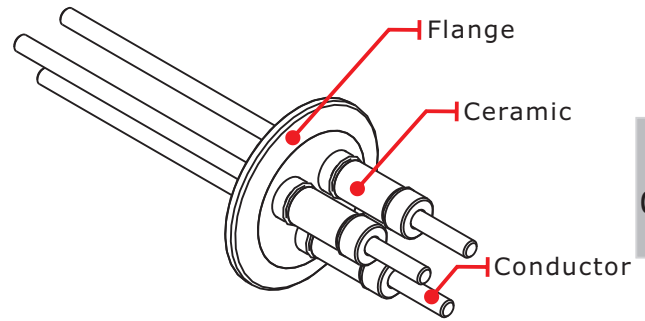


Key Product Parts

Feedthrough- CF Type



Feedthrough- KF Type



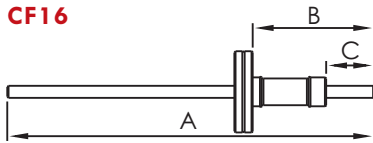
System Components

Technical Data for Feedthrough

Conductor	SS304	OFHC
Voltage (V)	5000	5000
Current (A)	7	180
Baseplate	SS304	SS304
Insulation	Alumina ceramic	Alumina ceramic
Operate pressure range	760 Torr ~ 1×10^{-8} Torr 1,000 mbar ~ 1.33×10^{-8} mbar 100 kPa ~ 1.13×10^{-9} kPa	760 Torr ~ 1×10^{-8} Torr 1,000 mbar ~ 1.33×10^{-8} mbar 100 kPa ~ 1.13×10^{-9} kPa
Temperature rang	-100°C(-148°F) to 500°C(932°F)	-100°C(-148°F) to 500°C(932°F)
Bake temperature	500°C(932°F)	500°C(932°F)

Product Order Information

CF16



CF35

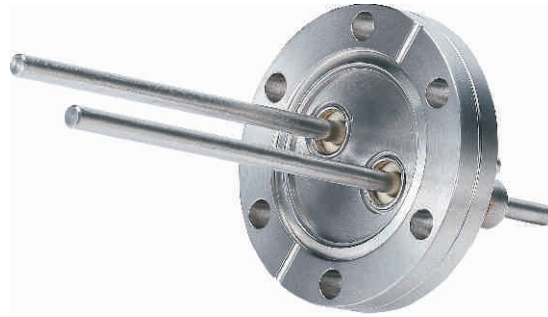
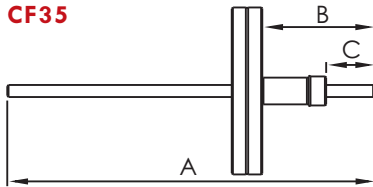


Figure 1

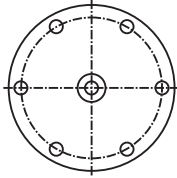


Figure 2

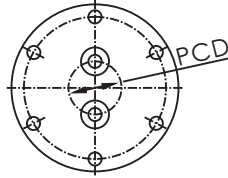


Figure 3

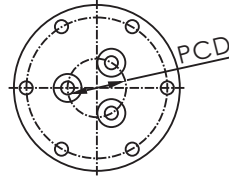
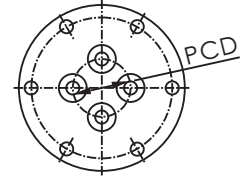


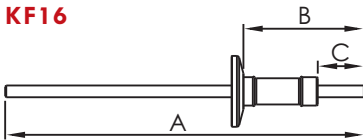
Figure 4



Feedthrough - CF Type

Part Number- OFHC	Part Number- SS	Flange Size	Figure	A	B	C	PCD
FT-CF-133-1-OFHC	FT-CF-133-1-SS	CF16	1	152	51	20	N/A
FT-CF-275-1-OFHC	FT-CF-275-1-SS	CF35	1	152	47	20	N/A
FT-CF-275-2-OFHC	FT-CF-275-2-SS	CF35	2	152	47	20	22
FT-CF-275-3-OFHC	FT-CF-275-3-SS	CF35	3	152	47	20	24
FT-CF-275-4-OFHC	FT-CF-275-4-SS	CF35	4	152	47	20	24

KF16



KF40

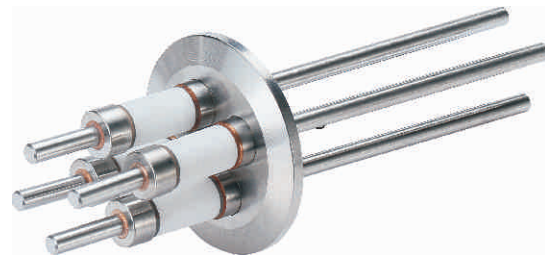
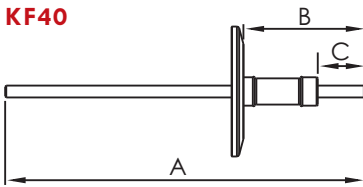


Figure 1

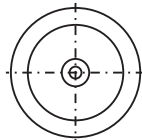


Figure 2

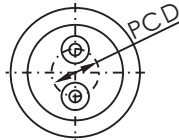


Figure 3

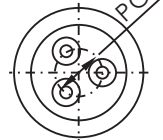
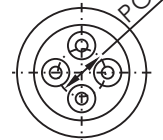


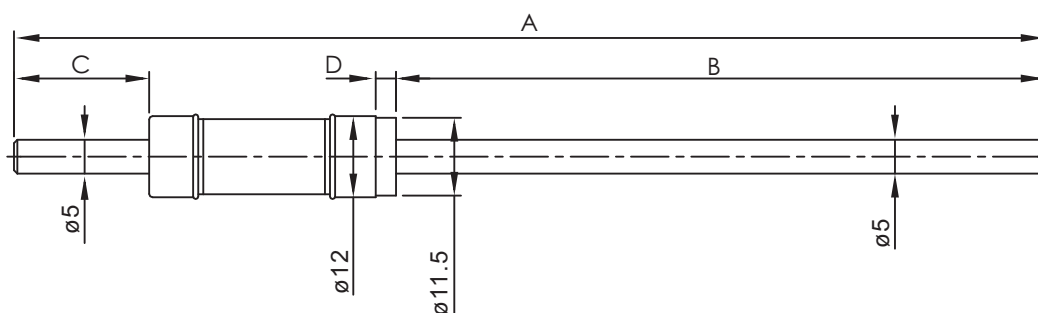
Figure 4



Feedthrough - KF Type

Part Number- OFHC	Part Number- SS	Flange Size	Figure	A	B	C	PCD
FT-KF-16-1-OFHC	FT-KF-16-1-SS	KF16	1	152	52	20	N/A
FT-KF-40-1-OFHC	FT-KF-40-1-SS	KF40	1	152	52	20	N/A
FT-KF-40-2-OFHC	FT-KF-40-2-SS	KF40	2	152	52	20	20
FT-KF-40-3-OFHC	FT-KF-40-3-SS	KF40	3	152	52	20	20
FT-KF-40-4-OFHC	FT-KF-40-4-SS	KF40	4	152	52	20	22

Product Order Information



System Components

Feedthrough-Single Pin

Part Number- OFHC	Part Number- SS	A	B	C	D
FT-SP-OFHC	FT-SP-SS	152	96	20	3

Product Information

Vacuum Quick Access Doors are designed to gain immediate access to load locks and chambers to load and unload substrates. **AdvanTorr** offers two styles including a blank door only or a door with integrated viewport to allow for viewing access.

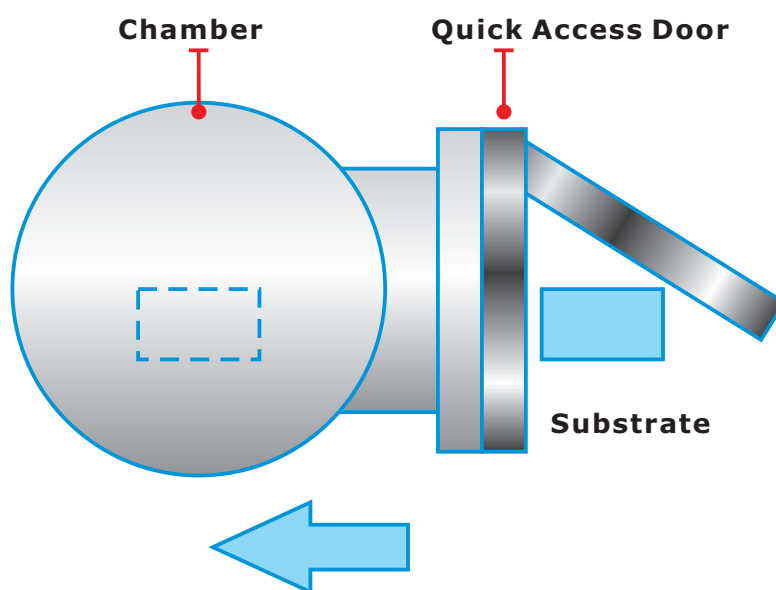
Optional high-grade SS316L material is available where higher purity with a low outgassing rate is required.

Product Features

System Components

- Available in a range of flange sizes with and without integrated viewport.
- SS304L material as standard with option for higher-grade SS316L.
- Precision hinged door with reliable FKM O-ring seal.
- CF port mounts.
- Can be installed in any position.

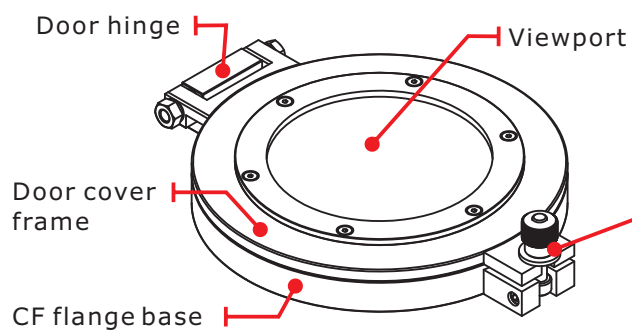
Product Application



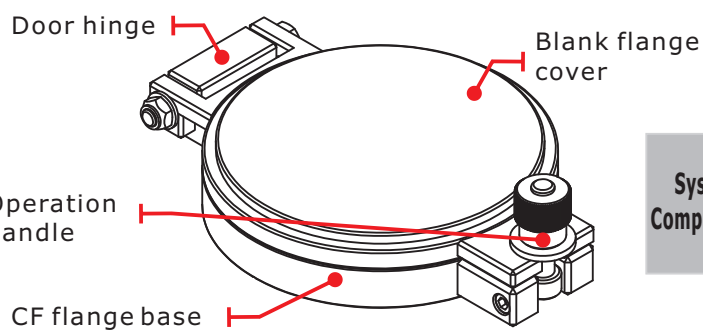
Substrate can transfer from atmosphere to vacuum chamber via quick access door

Key Product Parts

Viewport type



Blank flange type



System Components

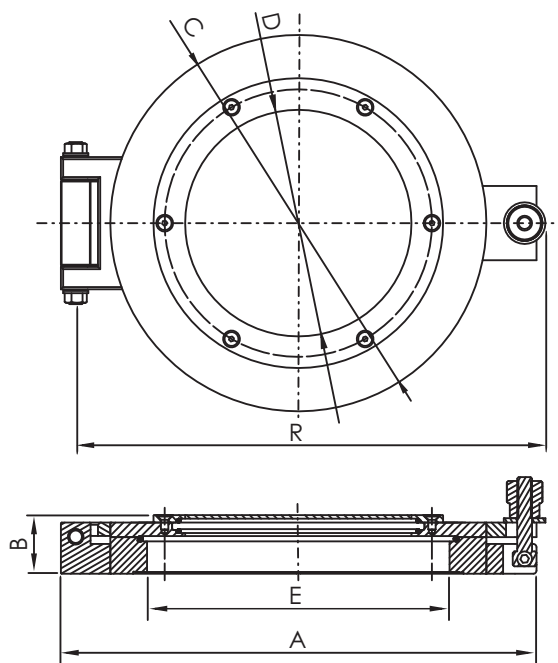
Technical Data for Quick Access Doors

Door seal	FKM
Mounting seal	OFHC gasket
Operate pressure range	760 Torr ~ 1×10^{-8} Torr 1,000 mbar ~ 1.33×10^{-8} mbar 100 kPa ~ 1.13×10^{-9} kPa
Leak rate	1×10^{-9} Torr l/s, He 1.33×10^{-9} mbar l/s, He 1.13×10^{-10} kPa l/s, He
Temperature range	-20°C (-4°F) ~ 150°C (302°F)
Bake temperature	100°C (212°F)
Body material	SS304L
Hinge material	Optional high-grade SS31 6L material
Viewport material	Glass (only with viewport version)
Mounting position	Any



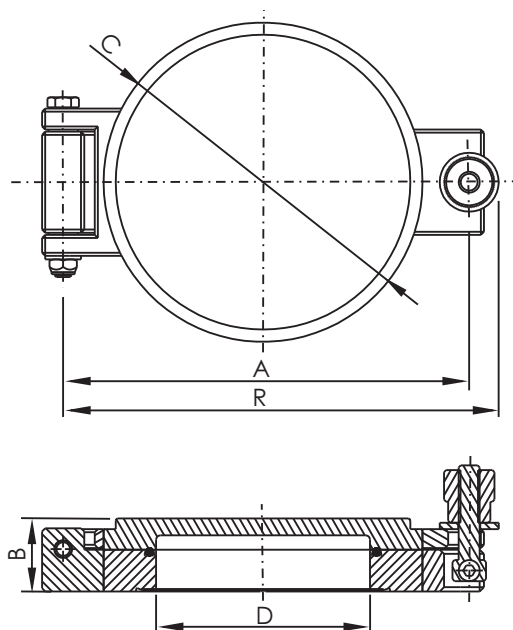
Product Order Information

System Components



Quick Access Door - Viewport Type

Part Number	Flange Size	A	B	C	D	E
QDV-CF-450	CF4.5"	177	32	114	64	64
QDV-CF-600	CF6"	215	35	152	102	102
QDV-CF-800	CF8"	276	37	202	152	153
QDV-CF-1000	CF10"	326	39	253	152	204



Quick Access Door - Blank Flange Type

Part Number	Flange Size	A	B	C	D
QDB-CF-450	CF4.5"	177	32	114	64
QDB-CF-600	CF6"	217	35	152	102
QDB-CF-800	CF8"	276	37	202	153
QDB-CF-1000	CF10"	326	39	253	204

Product Information

AdvanTorr offers a range of HV and UHV viewports used for process observation in the visible spectrum and for optical guidance. All viewports are manufactured to ISO 9001-2008 standards in contamination-free, class 10,000 clean room conditions, using the highest quality materials available.

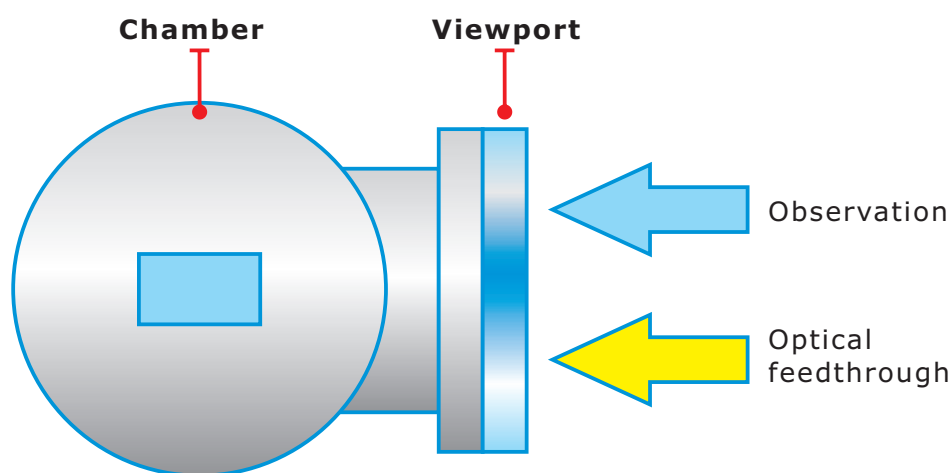
Most viewports within the range are of zero-length profile which not only provides an excellent angle of view, but do not protrude beyond the mounting flange making them less susceptible to damage.

System
Components

Product Features

- Both HV and UHV viewports offered in a wide range of CF, KF & ISO flange sizes.
- Available optic material: Kodial (visible spectrum), Fused Silica (Infra-red), Sapphire (Ultra-violet).
- UHV viewports offered in SS304L material as standard with option for high-grade SS316LN.
- HV viewports sealed via O-ring, UHV viewports vacuum brazed for high-temperature operation.
- Custom designs available on request.

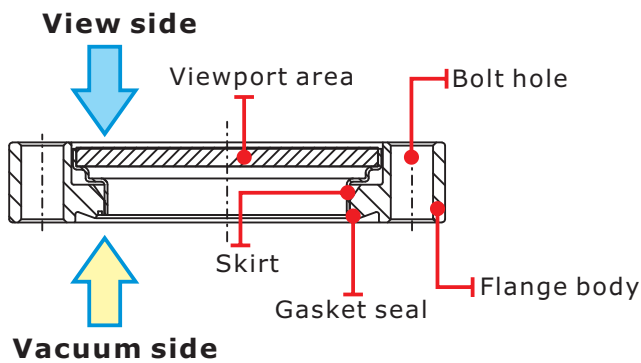
Product Application



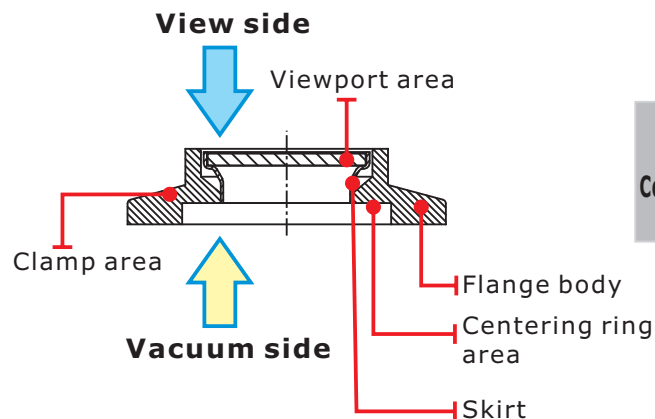
UHV Viewports

Key Product Parts

UHV Viewport

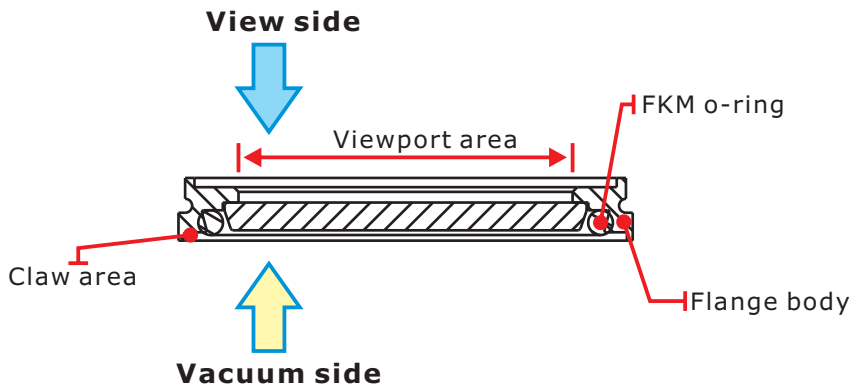


HV KF Viewport

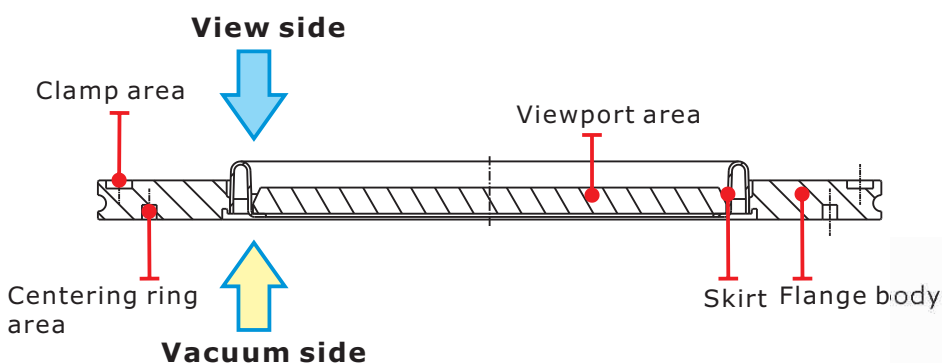


System Components

HV ISO-K Viewport Type I



HV ISO-K Viewport Type II



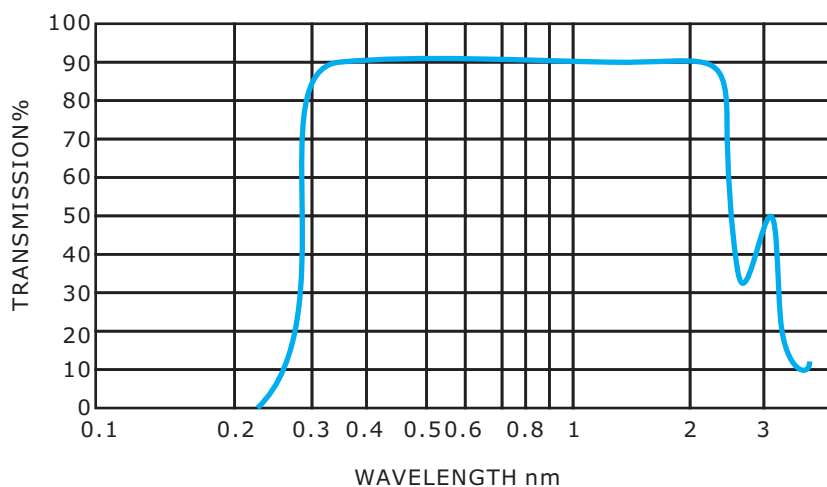
Technical Data

Technical Data for Viewport

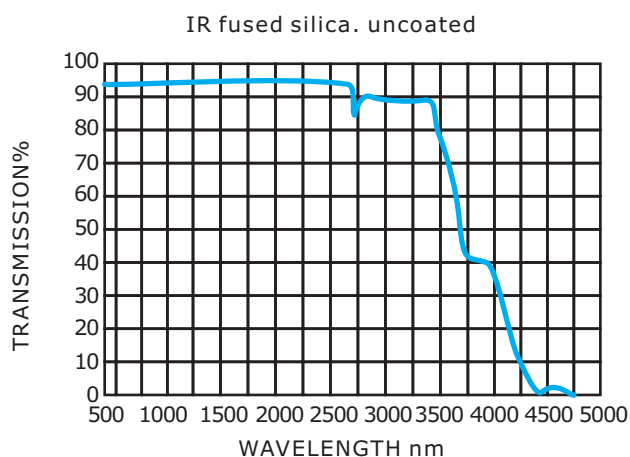
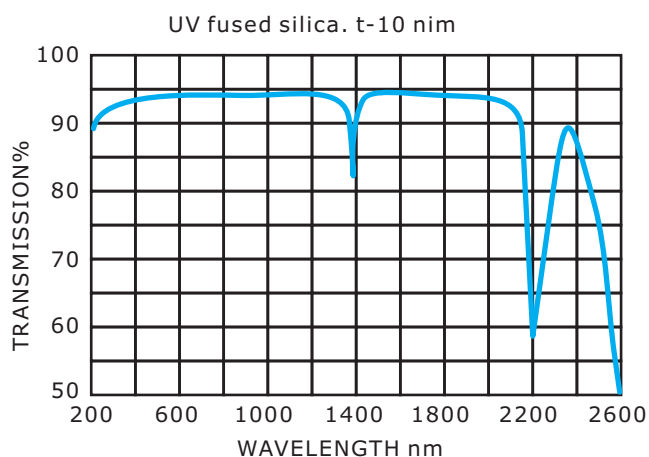
	UHV Kodial	UHV Fused Silica
Viewport seal	Metal skirt	Fused
Mounting seal	OFHC gasket	OFHC gasket
Operate pressure range	760 Torr \sim 1×10^{-10} Torr 1,000 mbar \sim 1.33×10^{-10} mbar 100 kPa \sim 1.13×10^{-11} kPa	760 Torr \sim 1×10^{-10} Torr 1,000 mbar \sim 1.33×10^{-10} mbar 100 kPa \sim 1.13×10^{-11} kPa
Leak rate	1×10^{-10} Torr l/s, He 1.33×10^{-10} mbar l/s, He 1.13×10^{-11} kPa l/s, He	1×10^{-10} Torr l/s, He 1.33×10^{-10} mbar l/s, He 1.13×10^{-11} kPa l/s, He
Temperature range	-20°C (-4°F) \sim 350°C (662°F)	-20°C (-4°F) \sim 200°C (392°F)
Bake temperature	300°C (572°F)	150°C (302°F)
Maximum temperature change per minute	3°C (5.4°F)	3°C (5.4°F)
Body material	SS304L	SS304L
Viewport material	Kodial	Fused
Mounting position	Any	Any

System Components

Transmission Curve Kodial



Transmission Curve Fused Silica

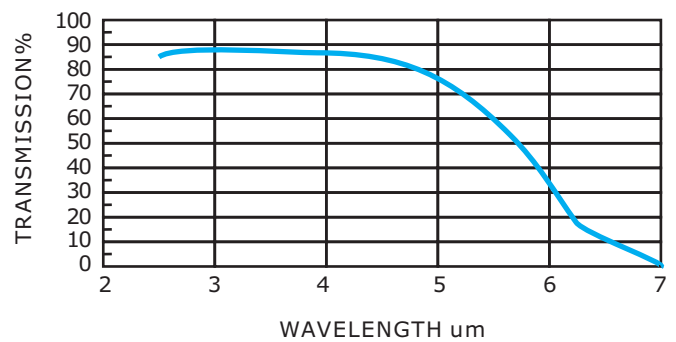
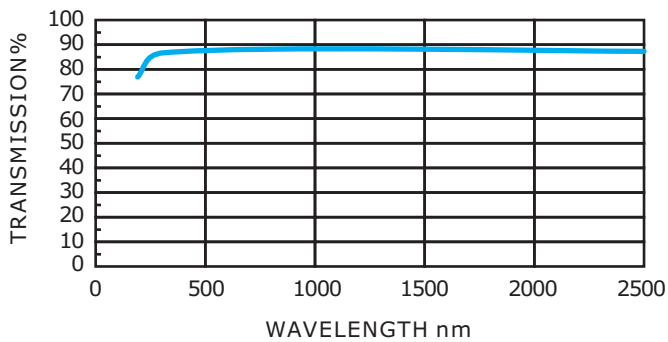


Technical Data

	UHV Sapphire	HV Kodial
Viewport seal	Metal skirt	Metal skirt / O-ring seal
Mounting seal	OFHC gasket	Centering ring
Operate pressure range	760 Torr ~ 1×10^{-10} Torr 1,000 mbar ~ 1.33×10^{-10} mbar 100 kPa ~ 1.13×10^{-11} kPa	760 Torr ~ 1×10^{-8} Torr 1,000 mbar ~ 1.33×10^{-8} mbar 100 kPa ~ 1.13×10^{-9} kPa
Leak rate	1×10^{-10} Torr l/s, He 1.33×10^{-10} mbar l/s, He 1.13×10^{-11} kPa l/s, He	1×10^{-9} Torr l/s, He 1.33×10^{-9} mbar l/s, He 1.13×10^{-10} kPa l/s, He
Temperature range	-20°C (-4°F) ~ 200°C (392°F)	-20°C (-4°F) ~ 200°C (392°F)
Bake temperature	150°C (302°F)	150°C (302°F)
Maximum temperature change per minute	3°C (5.4°F)	3°C (5.4°F)
Body material	SS304L	SS304L
Viewport material	Sapphire	Kodial
Mounting position	Any	Any

System Components

Transmission Curve Sapphire



Product Order Information

◆ UHV Viewports

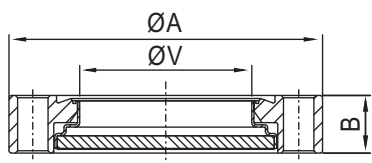


Figure 1

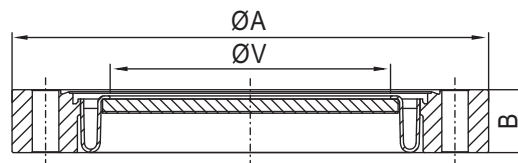


Figure 2

UHV Kodial Viewports, CF Flanges, SS304L

Part Number	Flange Size	Figure	A	B	V
VP-KD-CF-133	CF1.33"	1	34	8	16
VP-KD-CF-275	CF2.75"	1	69	13	38
VP-KD-CF-450	CF4.5"	1	114	17	64
VP-KD-CF-600	CF6"	2	152	20	89
VP-KD-CF-800	CF8"	2	202	22	137
VP-KD-CF-1000	CF10"	2	253	25	137

UHV Kodial Viewports, CF Flanges, SS316LN

Part Number	Flange Size	Figure	A	B	V
VP-KD-CF-133-6LN	CF1.33"	1	34	8	16
VP-KD-CF-275-6LN	CF2.75"	1	69	13	38
VP-KD-CF-450-6LN	CF4.5"	1	114	17	64
VP-KD-CF-600-6LN	CF6"	2	152	20	89
VP-KD-CF-800-6LN	CF8"	2	202	22	137

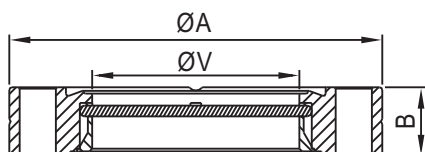


Figure 1

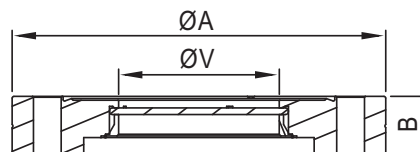


Figure 2

UHV Fused Silica Viewports, CF Flanges, SS304L

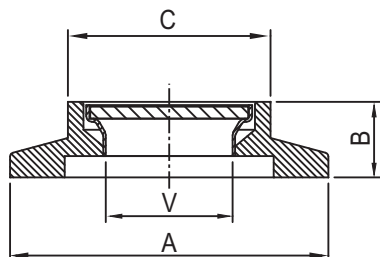
Part Number	Flange Size	Figure	A	B	V
VP-QZ-CF-133	CF16	1	34	12	16
VP-QZ-CF-275	CF40	1	69	13	38
VP-QZ-CF-450	CF63	1	114	18	73
VP-QZ-CF-600	CF100	1	152	20	110
VP-QZ-CF-800	CF160	1	202	22	110

UHV Sapphire Viewports, CF Flanges, SS304L

Part Number	Flange Size	Figure	A	B	V
VP-SH-CF-275	CF40	1	69	13	24
VP-SH-CF-275-1	CF40-1	1	69	13	39
VP-SH-CF-450	CF63	2	114	18	49
VP-SH-CF-450-1	CF63-1	1	114	18	73

Product Order Information

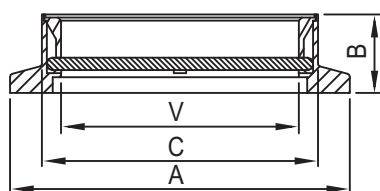
♦ HV KF Viewports



HV Kodial Viewports, KF Flanges, SS304L

Part Number	Flange Size	A	B	C	V
VP-KD-KF-25	KF25	40	9	25	16
VP-KD-KF-50	KF50	75	14	52	38

System
Components



HV Fused Silica Viewports, KF Flanges, SS304L

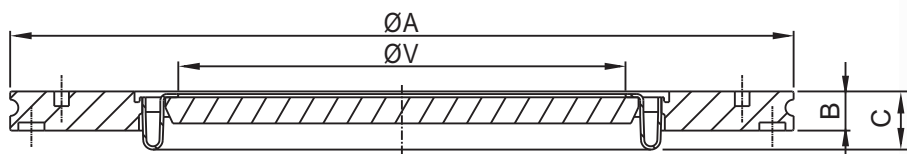
Part Number	Flange Size	A	B	V	C
VP-QZ-KF-25	KF25	40	13	24	29
VP-QZ-KF-40	KF40	55	13	39	45
VP-QZ-KF-50	KF50	75	13	49	57

HV Sapphire Viewports, KF Flanges, SS304L

Part Number	Flange Size	A	B	V	C
VP-SH-KF-25	KF25	40	13	24	29
VP-SH-KF-40	KF40	55	13	39	45
VP-SK-KF-50	KF50	75	13	49	57

Product Order Information

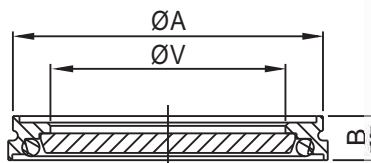
◆ Welding Sealed HV ISO-K Viewports



ISO-K Welded Zero Length Viewports, SS304L

Part Number	Flange Size	A	B	C	V
VP-KD-ISOK-63	ISO-K 63	95	12	12	38
VP-KD-ISOK-100	ISO-K 100	130	12	15	64
VP-KD-ISOK-160	ISO-K 160	180	12	18	89
VP-KD-ISOK-200	ISO-K 200	240	12	18	137
VP-KD-ISOK-250	ISO-K 250	290	12	19	137

◆ O-ring Sealed HV ISO-K Viewports

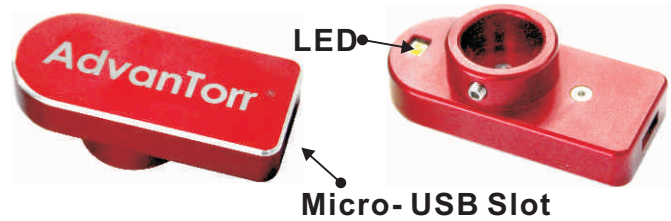
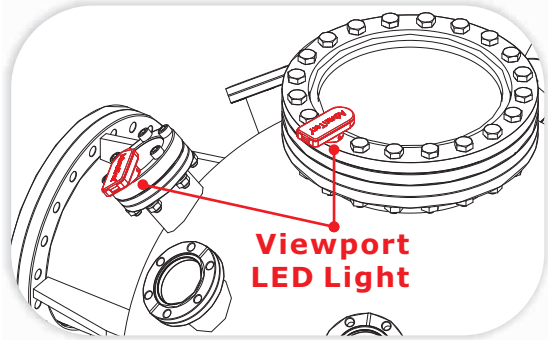


ISO-K O-ring Zero Length Viewports, SS304L

Part Number	Flange Size	A	B	V
VP-KD-ISOK-63-O	ISO-K 63	95	14	72
VP-KD-ISOK-100-O	ISO-K 100	130	16	104
VP-KD-ISOK-160-O	ISO-K 160	180	17	153

Product Order Information

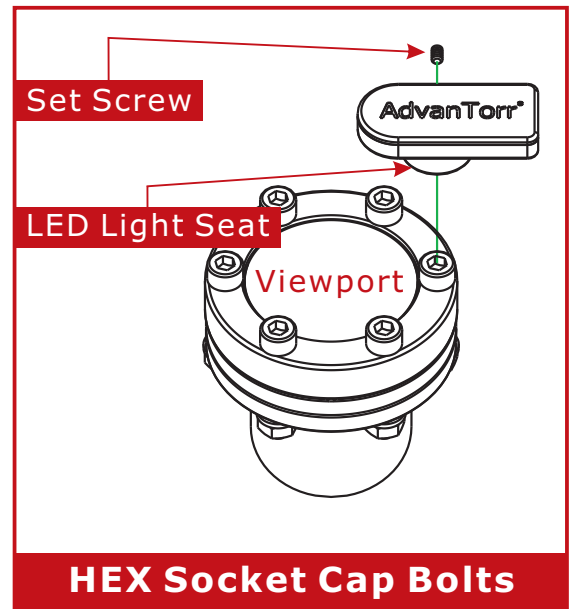
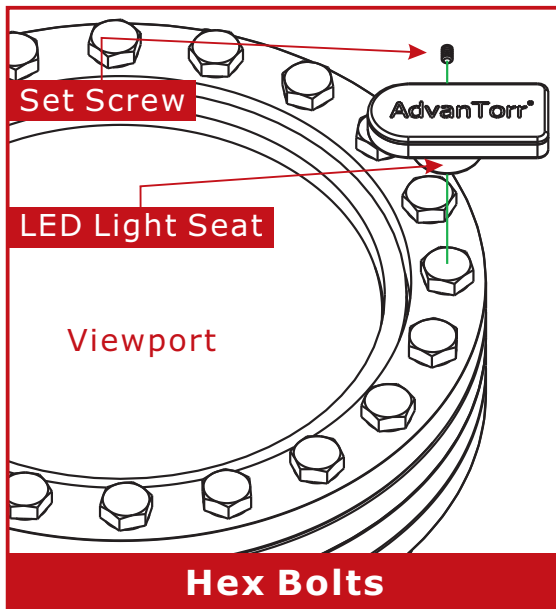
Viewport LED Light is designed for quick installation.
No software and complicated preparation for operation.
Just need one Micro-USB cable to operate.



System Components

Features:

- Lightweight design with aluminum alloy body.
- Long life cycle.
- Easy installation



Product Specification:

Description	Specification
Input Power	5V +/-5%
Current of LED light	150mA +/-25%
Temperature of LED light	5,000K (4,745~5,310K)
Brightness of LED light	50~83 lm
Operating Temperature	-40~85°C
Storage Temperature	-40~100°C
Life Cycle	6,000 hrs (keep in below 55°C)

Product Information

Vacuum Viewport Shutters are used in both HV and UHV coating applications to protect the viewport from the deposition of materials.

All shutters incorporate a double-sided flange so that they can be mounted in between the chamber and viewport which they are protecting. The swing mechanism, which is operated via a magnetic rotary drive, can 'swing' through 0° to 90° but can easily be locked at a set angle via a thumbscrew on the back of the drive.

The viewport shutter can also easily be cleaned by bead-blasting the shutter plate.

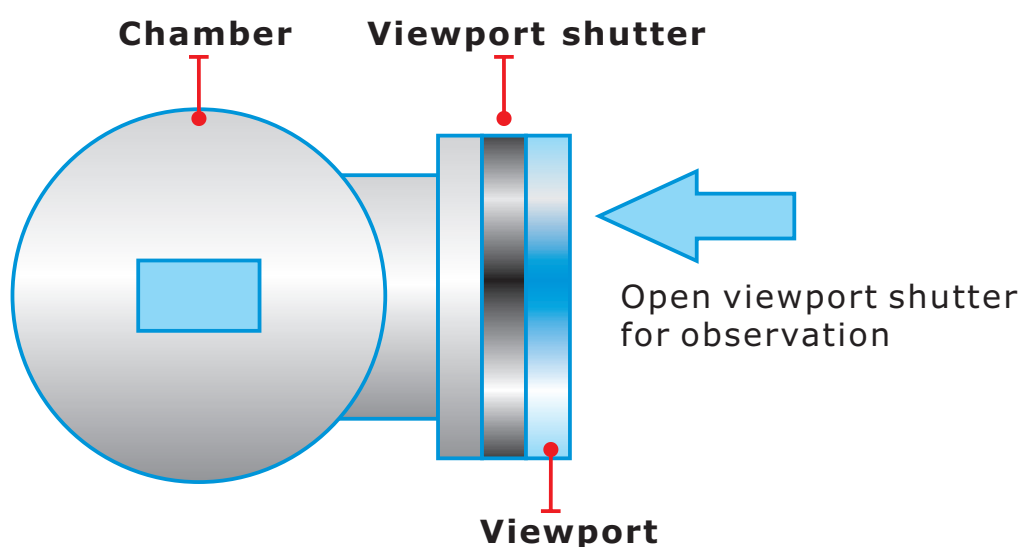
System
Components

Product Features

- Range of CF flange sizes from 2.75" to 10" OD.
- Double-sided flange mount.
- UHV grade rotary drive with thumbscrew for discrete angle positioning.
- Bakeable to 250°C.
- Wide range observation area.
- Easy installation in any orientation.

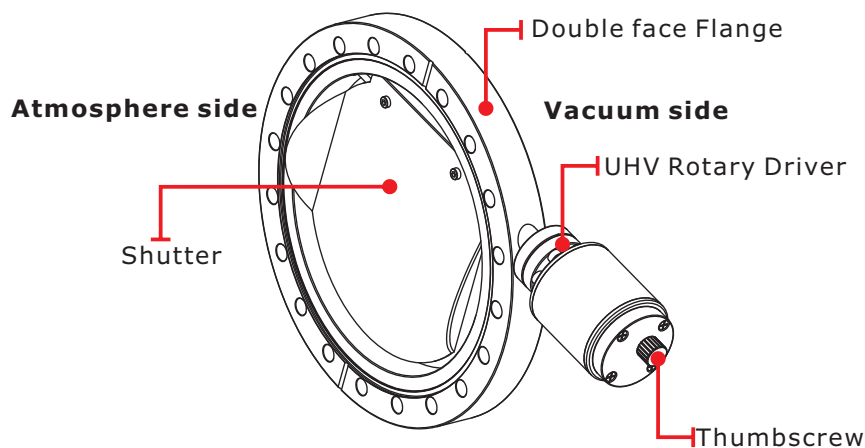


Product Application



Viewport shutter is mounted in between the chamber and viewport

Key Product Parts

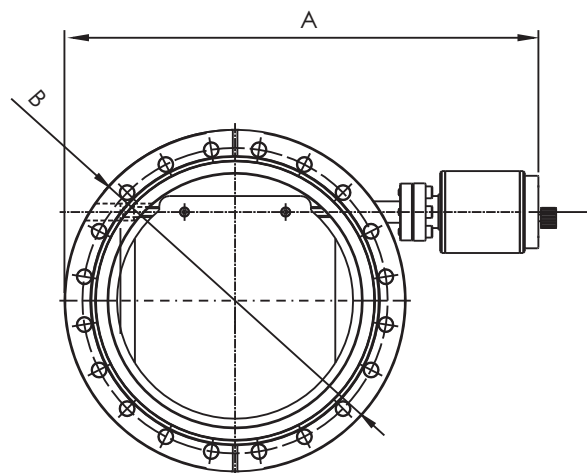


System Components

Technical Data for Quick Access Doors

Shutter	Stainless steel
Mounting seal	OFHC gasket (both sides)
Operate pressure range	760 Torr ~ 1×10^{-10} Torr 1,000 mbar ~ 1.33×10^{-10} mbar 100 kPa ~ 1.13×10^{-11} kPa
Leak rate	1×10^{-10} Torr l/s, He 1.33×10^{-10} mbar l/s, He 1.13×10^{-11} kPa l/s, He
Temperature range	0°C (32°F) ~ 200°C (392°F)
Bake temperature	250°C (482°F)
Body material	SS304L
Feedthrough	UHV Rotary Drive
Mounting position	Any

Product Order Information



System
Components

UHV Viewport Shutters, CF Flange, SS304L

Part Number	Flange Size	A	B
VPS-CF-275	CF2.75"	152	69
VPS-CF-450	CF4.5"	197	114
VPS-CF-600	CF6"	235	152
VPS-CF-800	CF8"	285	202
VPS-CF-1000	CF10"	323	253

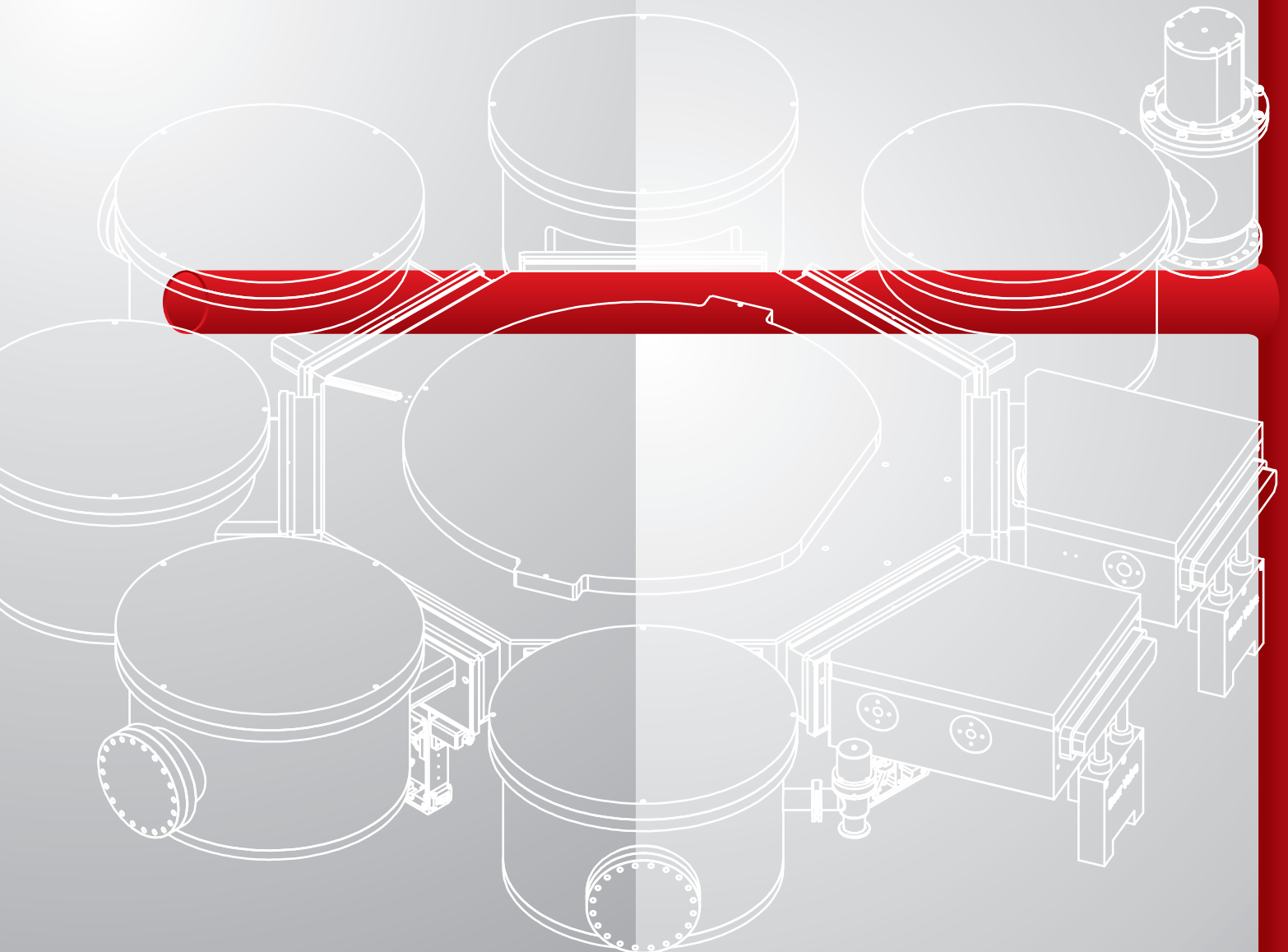


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