

ADVANTORR

K[®] GROUP

AdvanTorr[®]



VACUUM PRODUCTS

INTRODUCTION

AdvanTorr provides high quality vacuum products ranging from conflat flanges, fittings, valves and chambers plus 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 SUS304 material often used by other vendors. High quality 'forged' SUS316LN 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.



SECTION INDEX

Vacuum Valves

ARM lock Transfer Slit Valves 08~13

SMART & Ln- Axis Vacuum Gate Valves 14~21

Vacuum Poppet Valves 22~33

Vacuum Ball Valves 34~37

System Component

Vacuum Chambers 41~43

Vacuum Quick Access Doors 44~47

Vacuum Viewports 48~53

Viewports Shutter 54~56

Flanges & Fittings

CF Flanges & Fittings 57~76

KF Flanges & Fittings
DN Flanges & Fittings 77~100

ISO Flanges & Fittings 101~116

Adaptors 117~128

Weld Fittings 129~138

Bellows, Flexible Hoses & Traps 139~143

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Lock System

Position locked when the valve is open or closed.

SMART Vacuum Gate Valve

•Email: info@advantorr.com.tw

•Website: www.advantorr.com



Vacuum Valves

Transfer Door Valves

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

Vacuum Valves



Isolation valves

SMART Gate Valves										
Lock system	SMART Gate Valves							In-Axis		
Actuator orientation	Side of valve's body							On valve's bonnet		
Actuator type	Manual lever			Side-mounted Actuator				Top-mounted actuator		
Vacuum level	UHV grade	HV grade		UHV grade	HV grade		UHV grade	HV grade		
Flange types	CF Flanges	CF Flanges	ISO-F Flanges	CF Flanges	CF Flanges	ISO-F Flanges	CF Flanges	CF Flanges	ISO-F Flanges	

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

Isolation Ball Valves					
Actuator type	Manual lever		Pneumatic		
Valve body types	Casting	CNC machined		Casting	CNC machined
Flange types	KF Flanges	KF Flanges		KF Flanges	KF Flanges



Transfer Slit Valves

Product Introduction

Transfer Slit Valve (TSV) is connecting two sealed chambers as gate. The object transfer to another chamber.

Transfer Slit Valve is designed for single axis motion, no vibration and particle free.

Special design ARM LOCK motion, make sure the gate absolutely seal in closing position when the power and air are failure during the processing.

The valve designed for long endurance up to 1 million cycle.

Valve is simple design for easy maintenance, no extra gear, no need to relocation position of mechanism.

Vacuum
Valves

Product Features

ARM LOCK

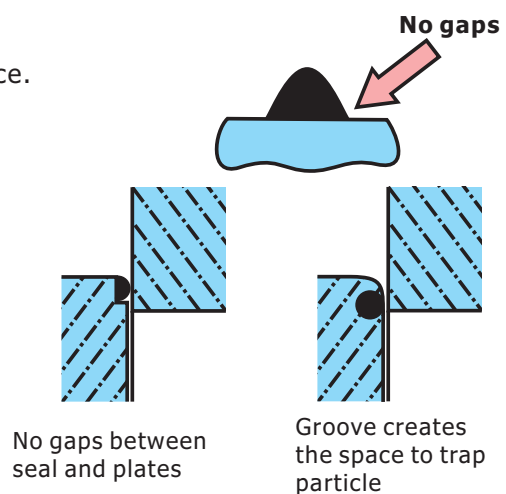
Auto-Relocation Mechanism

- Stay in closed position against larger pressure difference.
- Keep closed position losing the air power.

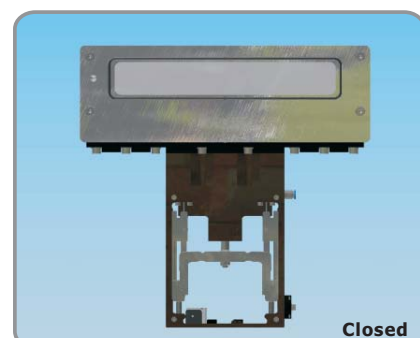
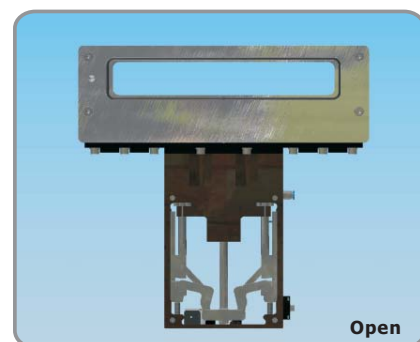
Feature

- Patented mechanism
- Low maintenance cost
- No gears, no need relocation
- More reliable
- Particle free seal

Vulcanised seal
Particle free sealing technology



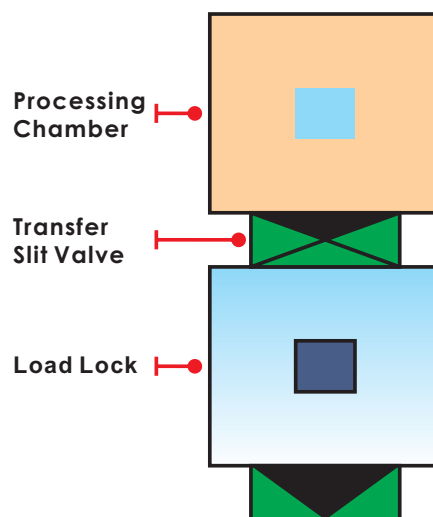
ARM Lock System



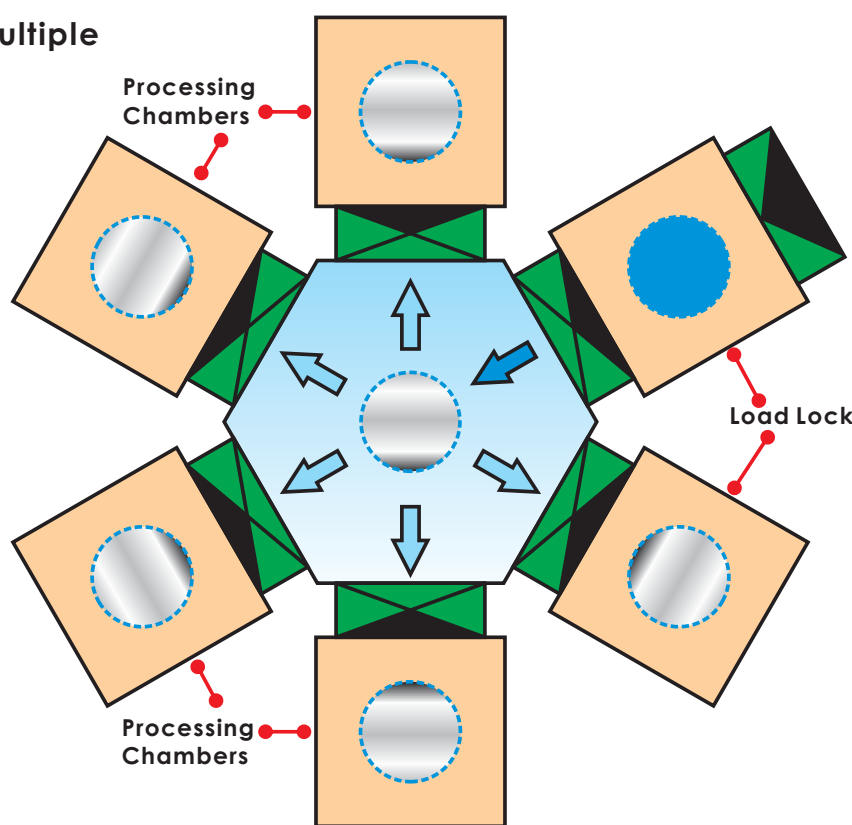
Product's Application

Layout for Inline process system
Object transfer from load lock to processing chamber.

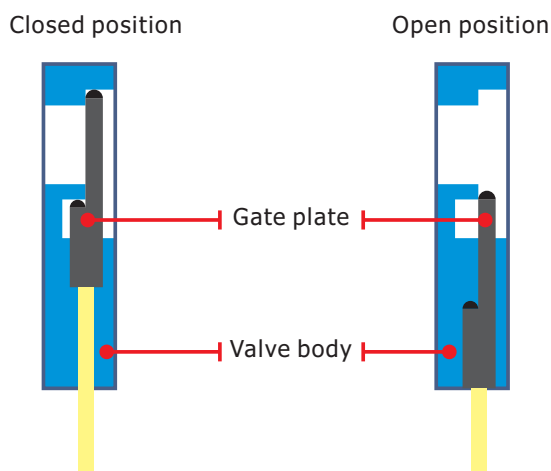
The Transfer Slit Valve is better performance than Circle Gate valve.
Transfer Slit Valve has no vibration for object transaction.



Transfer Slit Valve for multiple processing system.

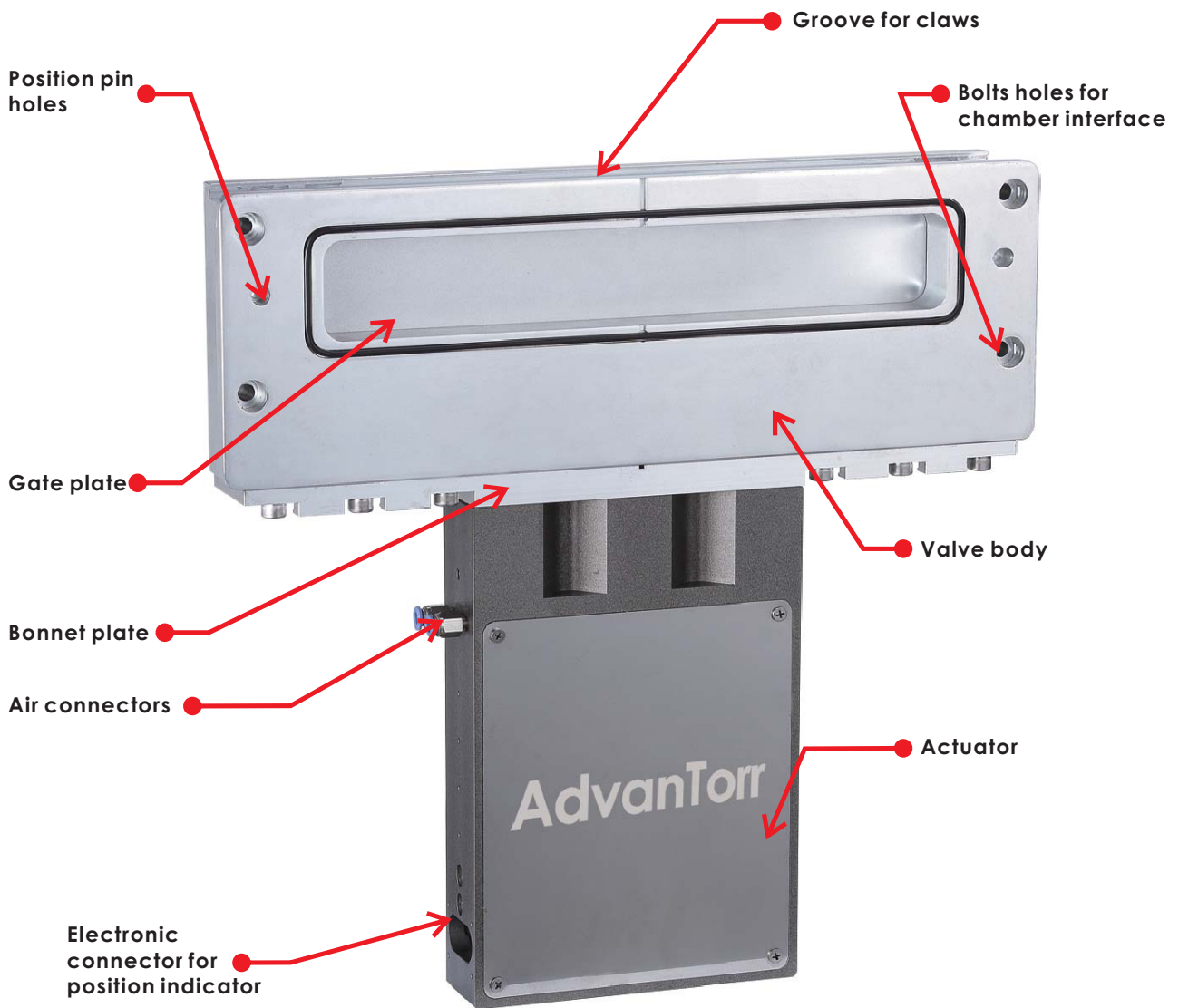


Valve's operation Concept



Key Valve Parts

Vacuum
Valves



Technical Data

Technical Data for Transfer Slit Valves

	High Vacuum	Ultra 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	FKM vulcanized ring	OFHC metal 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	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^{-9} Torr l/s, He 1.33×10^{-9} mbar l/s, He 1.13×10^{-10} kPa	1×10^{-10} Torr l/s, He 1.33×10^{-10} mbar l/s, He 1.13×10^{-11} kPa
Cycle life	>5,000,000 Cycles	
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	100°C (212°F) for FKM gate seal	200°C (392°F) for FKM gate seal
Valve body material	Optional for Aluminum, SUS304/L and SUS316/L	Optional for SUS304/L and 316/L
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 (Build in)	Build in micro switch with 9 pin connector
Cycles counter (included as standard)	Build in micro switch with visual 7 digital numbers
Solenoid (included as standard)	Optional for 24V DC, standard
Failure protection (Build in)	ARM lock system (valve closed position remain and locked)

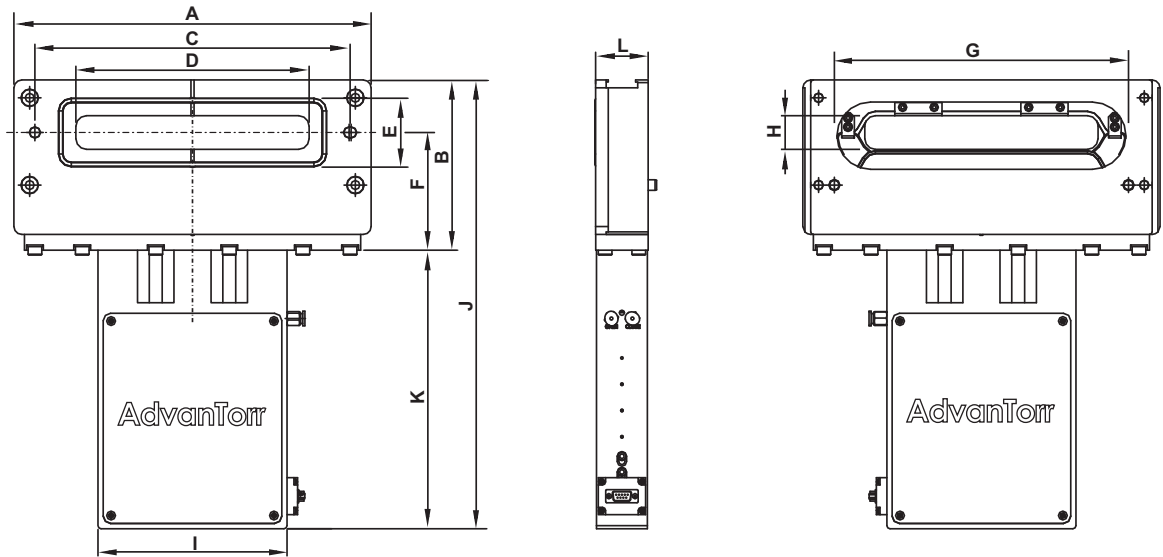
Valve's Performance data

	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)

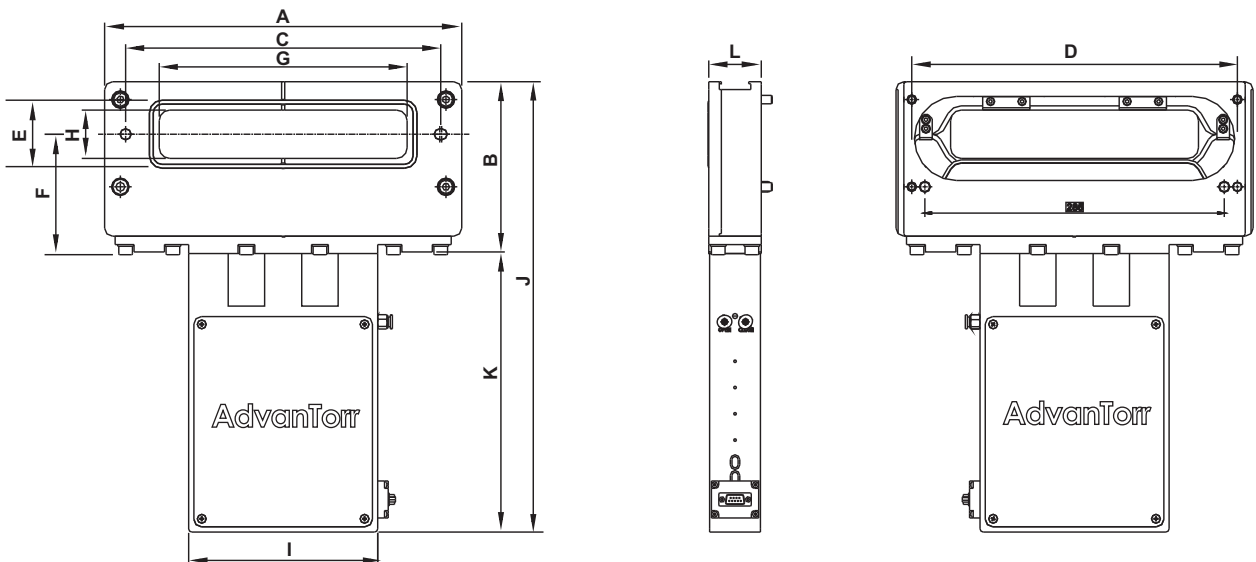
Product Order Information

Vacuum Valves

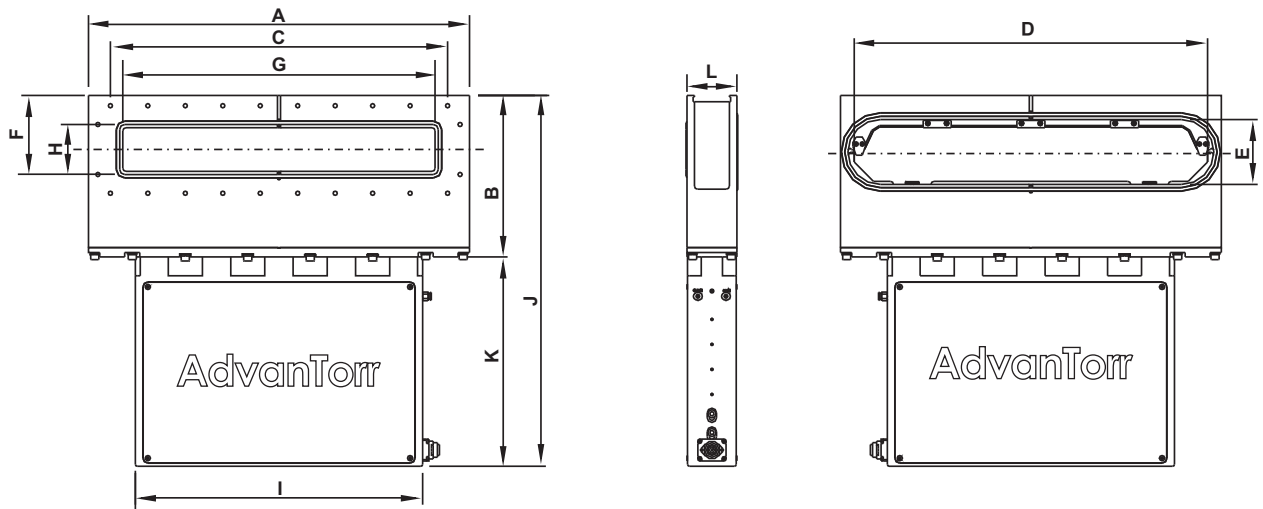
◆ **Figure 1**



◆ **Figure 2**



◆ **Figure 3**



◆ Transfer Slit Valves, Aluminum

Dimension in mm

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

Vacuum
Valves

◆ Transfer Slit Valves, SUS 304

Dimension in mm

Catalogue PN	Size	Figure	A	B	C	D	E	F	G	H	I	J	K	L
TSV-32x222-04	32 x 222	1	340	162	300	222	61	112	222	32	180	429	267	50
TSV-46x236-04	46 x 236	2	340	162	300	305	80	112	236	46	180	429	267	50
TSV-50x336-04	50 x 336	2	440	162	400	405	81	112	336	50	180	429	267	60
TSV-70x500-04	70 x 500	3	610	259	540	586	104	127	500	70	460	594	335	80

◆ Transfer Slit Valves, UHV, SUS 304

Dimension in mm

Catalogue PN	Size	Figure	A	B	C	D	E	F	G	H	I	J	K	L
TSV-UHV-32x222-04	32 x 222	1	340	162	300	222	61	112	222	32	180	429	267	50
TSV-UHV-46x236-04	46 x 236	2	340	162	300	305	80	112	236	46	180	429	267	50



SMART Vacuum Gate Valves

Product Introduction

Vacuum gate valves are used most in protection of high vacuum pumps. It can also be used as transfer application in-between tubular vacuum chambers.

New generation of gate valves- **S.M.A.R.T** is latest mechanism design for better Performance in vibration reduction.

Vacuum
Valves

S.M.A.R.T

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

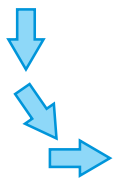
SMART Gate Valves generate lowest particle and vibration, it will reduce any risks For any vacuum system required clean or precious environment.

SMART series also provide the different version of actuator orientation, **In- Axis**. For different application in considering of small footprint, **SMART** is Small footprint design.

All valves' position are lock by **SMART** lock system.

Product Features

- S.M.A.R.T
- Soft shut Mechanism
- Lowest vibration than other gate valve's mechanism,
no spring, no expansion.



SMART mechanism
Seal plate moves with
no vibration



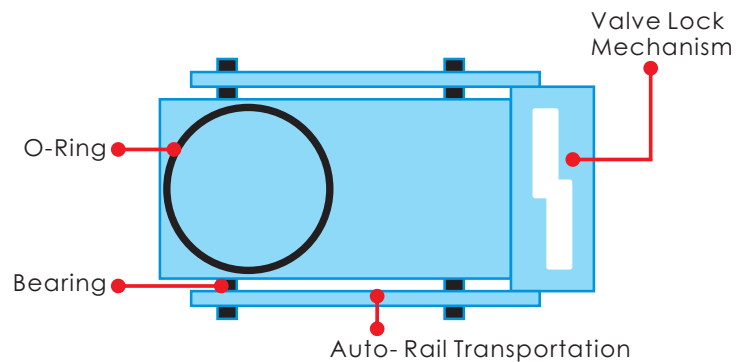
Normally seal plate closing by
Spring or other mechanism's
Expansion to close the gate.

- * **Lowest particle generation.**
- **Minimize the friction of seal plate.**

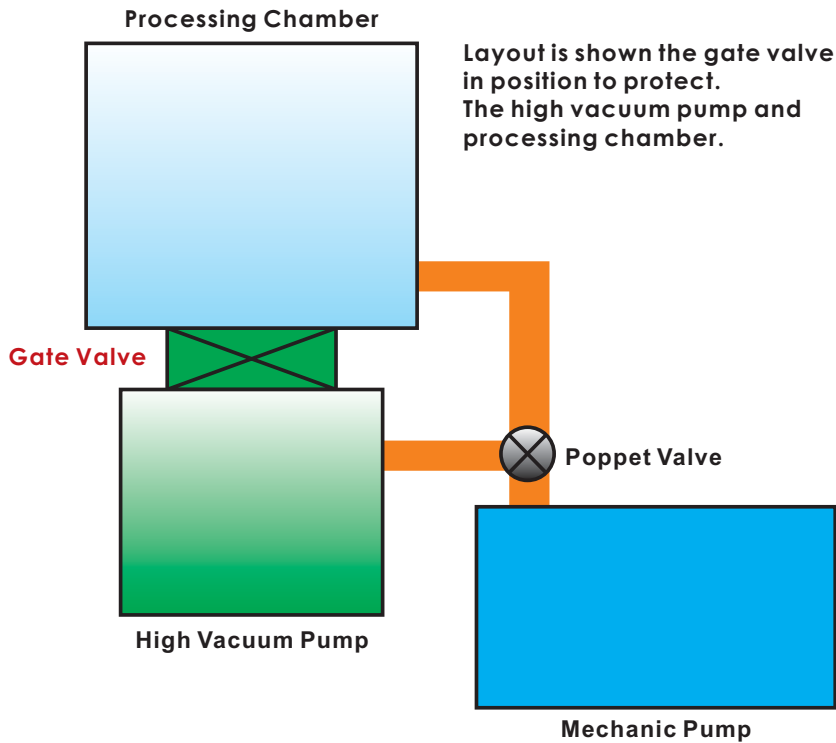
- * **Optional welded bellows feedthrough for better service life and cleanliness.**



- **SMART lock system**
Position locked when the valve in open or close.

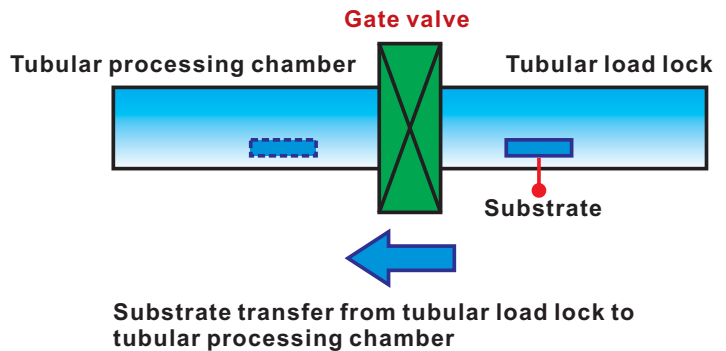


Product's Application



Vacuum Valves

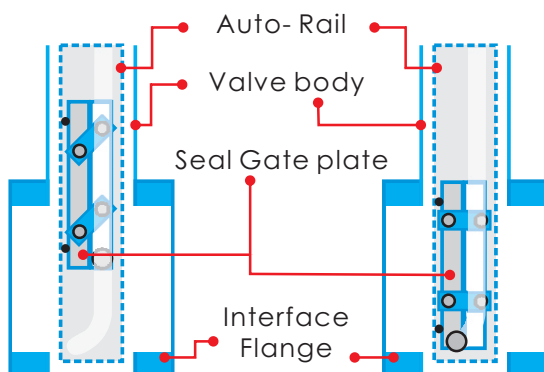
Layout for the gate valve in position between two tubular chambers



Valve's operation Concept

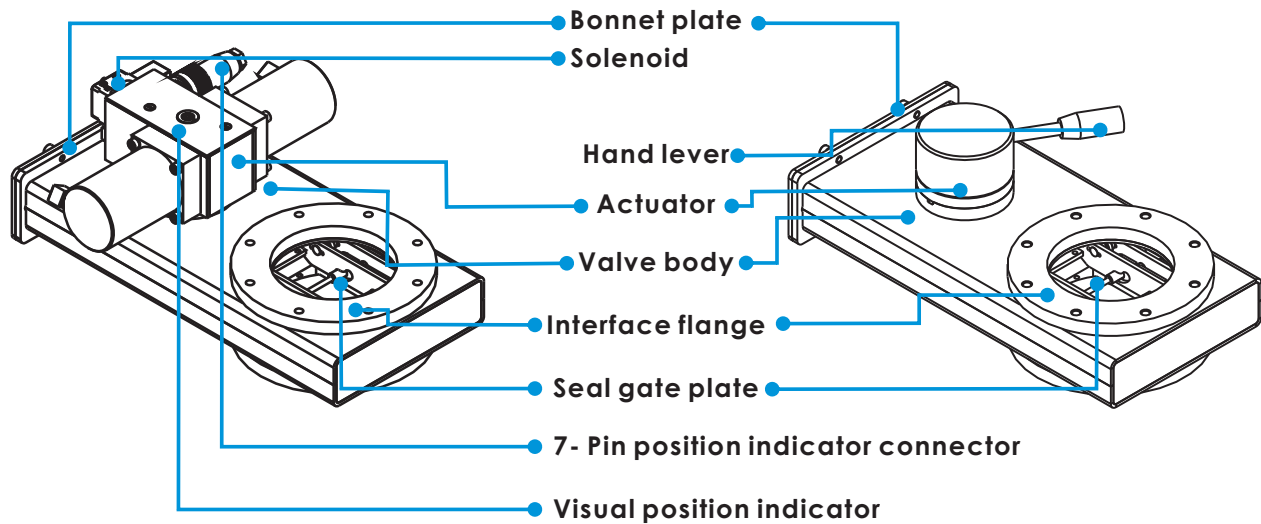
Open position

Closed position



Parts of valve- SMART Gate Valve

Vacuum Valves



Technical Data for SMART Gate Valve

	Ultra High Vacuum	High Vacuum
Feedthrough	Welded Bellows in AM350	Rorary type feedthrough
Gate seal	FKM o-ring (Optional for FFKM)	FKM o-ring (Optional for FFKM)
Bonnet seal	OFHC metal gasket	FKM vulcanize 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	1×10^{-9} Torr l/s, He 1.33×10^{-9} mbar l/s, He 1.13×10^{-10} kPa
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	200°C	
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	SUS304/L (Optional for SUS316/L)	
Mechanism material	SUS304/L	
Actuator material	SUS304/L, Aluminum	
Mounting position	Any	

Valve's operation data

Manual lever	180 degree angle
Pneumatic operating pressure	4 bar ~ 8 bar
Position indicator (Build in)	Build in visual and micro switch with 7 pin connector
Solenoid (optional)	Optional for 24V DC, standard
Failure protection (Build in)	Build in SMART lock system (valve position remain and locked)

Valve's Performance data

	CF6"/ISO-F100	CF8"/ISO-F160	CF10"/ISO-F200	CF12"/ISO-F250	CF14"/ISO-F320
Maximum differential pressure against gate	< 1,500 Torr < 2,100 mbar < 200kpa				
Maximum differential pressure at opening	< 225 Torr < 300 mbar < 30 kpa	< 187 Torr < 250 mbar < 25 kpa	< 150 Torr < 200 mbar < 20 kpa	< 112 Torr < 150 mbar < 15 kpa	< 75 Torr < 100 mbar < 10 kpa
Pneumatic valve open / close time	1.5(s)	2(s)	2.5(s)	3(s)	4(s)
Valve's Conductance (Molecular flow)	1,700(l/s)	5,100(l/s)	12,000(l/s)	22,000(l/s)	33,000(l/s)

Parts of valve- SMART Gate Valve “In- Axis”

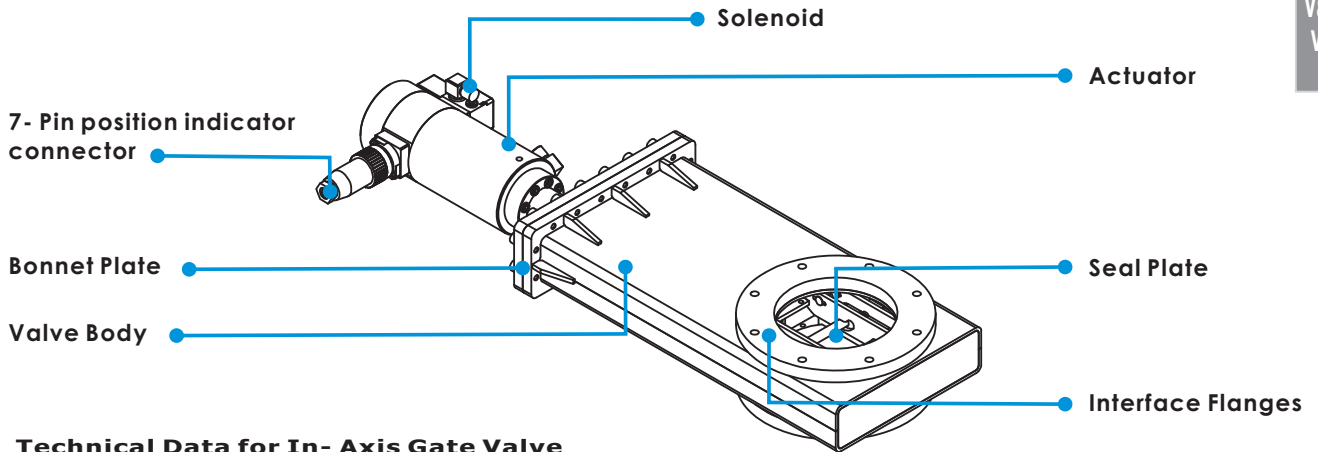
“In- Axis” is SMART gate valve's family with different actuator orientation.

In- Axis Gate valves are using the same S.M.A.R.T mechanism technology with only pneumatic version only.

Features

- * In- Axis gate valve with build in S.M.A.R.T. lock system.
- * Welded bellows feedthrough with better service life.
- * Low particle generation.
- * Soft shut gate, suitable for clean process.

Vacuum Valves



Technical Data for In- Axis Gate Valve

	Ultra High Vacuum	High Vacuum
Feedthrough	Welded Bellows in AM350	Rorary type feedthrough
Gate seal	FKM o-ring (Optional for FFKM)	FKM o-ring (Optional for FFKM)
Bonnet seal	OFHC metal gasket	FKM vulcanize 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	1×10^{-9} Torr l/s, He 1.33×10^{-9} mbar l/s, He 1.13×10^{-10} kPa
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	SUS304/L (Optional for SUS316/L)	
Mechanism material	SUS304/L	
Actuator material	SUS304/L, Aluminum	
Mounting position	Any	

Valve's operation data

Pneumatic operating pressure	4 bar~8 bar 400 kpa~800 kpa 58psi~116 psi
Position indicator (Build in)	Build in visual and micro switch with 7 pin connector
Solenoid (optional)	Optional for 24V DC, standard
Failure protection (Build in)	Build in SMART lock system (valve position remain and locked)

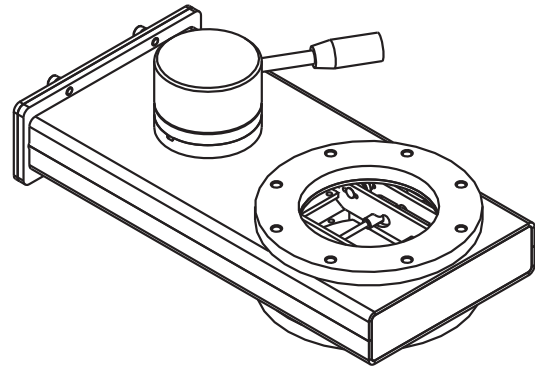
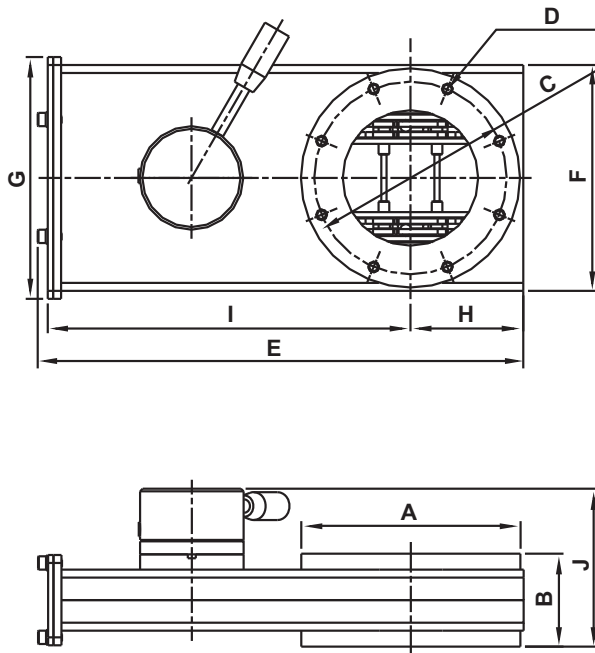
Valve's Performance data

	CF6"/ISO-F100	CF8"/ISO-F160	CF10"/ISO-F200	CF12"/ISO-F250	CF14"/ISO-F320
Maximum differential pressure against gate	<825 Torr <1,100 mbar < 109kpa				
Maximum differential pressure at opening	<225 Torr <300 mbar <30 kpa	<187 Torr <250 mbar <25 kpa	<150 Torr <200 mbar <20 kpa	<112 Torr <150 mbar <15 kpa	<75 Torr <100 mbar <10 kpa
Pneumatic valve open / close time	1.5(s)	2(s)	2.5(s)	3(s)	4(s)
Valve's Conductance (Molecular flow)	1,700(l/s)	5,100(l/s)	12,000(l/s)	22,000(l/s)	33,000(l/s)

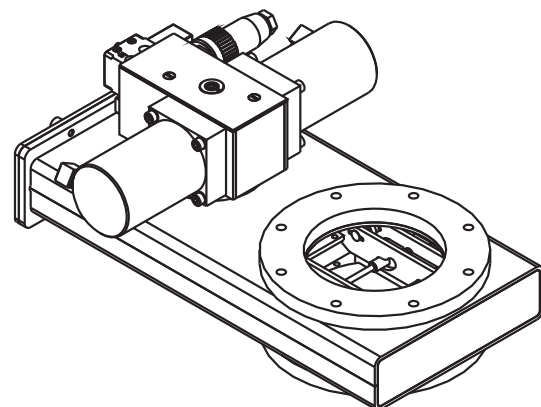
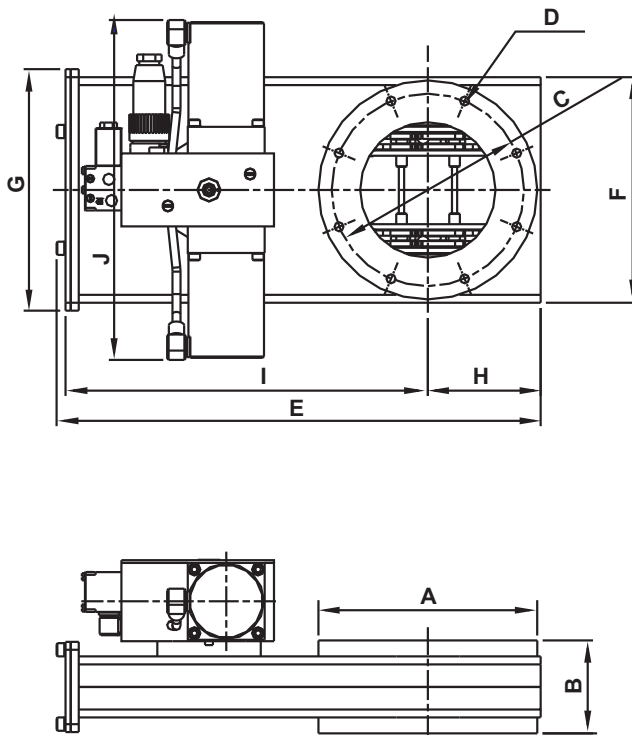
Product Order Information

◆ **Figure 1**

Vacuum Valves



◆ **Figure 2**



◆ Manual Lever SMART Gate Valves, UHV, CF Flange

Dimension in mm

Catalogue PN	Tube OD	Figure	A	B	C	D	E	F	G	H	I	J
SGVML-UHV-CF600	4"	1	152	84	130	M8	358	170	182	85	273	130
SGVML-UHV-CF800	6"	1	202	93	181	M8	495	234	250	117	378	150
SGVML-UHV-CF1000	8"	1	253	97	232	M8	683	316	334	158	525	180
SGVML-UHV-CF1200	10"	1	304	120	284	M8	781	368	390	184	597	200

◆ Pneumatic SMART Gate Valves, UHV, CF Flange

Dimension in mm

Catalogue PN	Tube OD	Figure	A	B	C	D	E	F	G	H	I	J
SGVP-UHV-CF600	4"	2	152	84	130	M8	358	170	182	85	273	140
SGVP-UHV-CF800	6"	2	202	93	181	M8	495	234	250	117	378	160
SGVP-UHV-CF1000	8"	2	253	97	232	M8	683	316	334	158	525	185
SGVP-UHV-CF1200	10"	2	304	120	284	M8	781	368	390	184	597	215

Vacuum Valves

◆ Manual Lever SMART Gate Valves, HV, CF Flange

Dimension in mm

Catalogue PN	Tube OD	Figure	A	B	C	D	E	F	G	H	I	J
SGVML-HV-CF600	4"	1	152	84	130	M8	358	170	182	85	273	119
SGVML-HV-CF800	6"	1	202	93	181	M8	495	234	250	117	378	138
SGVML-HV-CF1000	8"	1	253	97	232	M8	683	316	334	158	525	169
SGVML-HV-CF1200	10"	1	304	120	284	M8	781	368	390	184	597	186

◆ Pneumatic SMART Gate Valves, HV, CF Flange

Dimension in mm

Catalogue PN	Tube OD	Figure	A	B	C	D	E	F	G	H	I	J
SGVP-HV-CF600	4"	2	152	84	130	M8	358	170	182	85	273	131
SGVP-HV-CF800	6"	2	202	93	181	M8	495	234	250	117	378	151
SGVP-HV-CF1000	8"	2	253	97	232	M8	683	316	334	158	525	174
SGVP-HV-CF1200	10"	2	304	120	284	M8	781	368	390	184	597	202

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

Inch Thread Type

Dimension in mm

Catalogue PN	Tube OD	Figure	A	B	C	D	E	F	G	H	I	J
SGVML-HV-ISOF100T	4"	1	165	70	145	M8	358	170	182	85	273	119
SGVML-HV-ISOF160T	6"	1	225	80	200	M10	495	234	250	117	378	138
SGVML-HV-ISOF200T	8"	1	285	80	260	M10	683	316	334	158	525	169
SGVML-HV-ISOF250T	10"	1	335	100	310	M10	781	368	390	184	597	186

For Metric Thread, please add M to the end of part number.

Example: SGVML-HV-ISOF100T**M**

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

Inch Thread Type

Dimension in mm

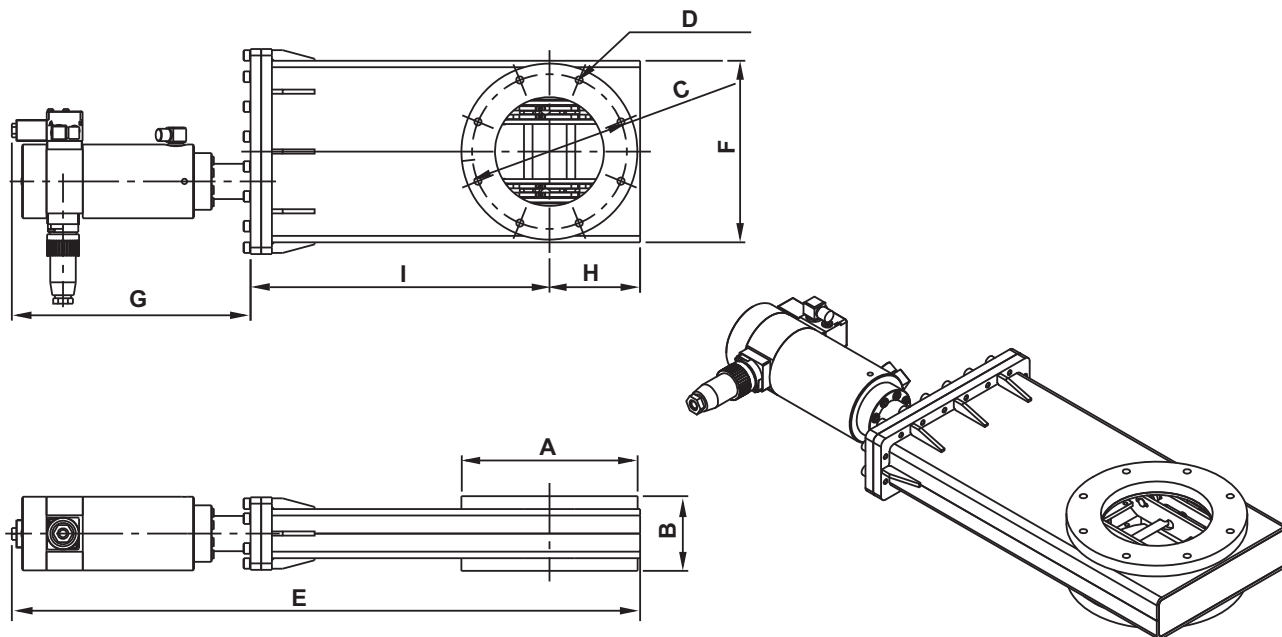
Catalogue PN	Tube OD	Figure	A	B	C	D	E	F	G	H	I	J
SGVP-HV-ISOF100T	4"	2	165	70	145	M8	358	170	182	85	273	131
SGVP-HV-ISOF160T	6"	2	225	80	200	M10	495	234	250	117	378	151
SGVP-HV-ISOF200T	8"	2	285	80	260	M10	683	316	334	158	525	174
SGVP-HV-ISOF250T	10"	2	335	100	310	M10	781	368	390	184	597	202
SGVP-HV-ISOF320T	12"	2	425	120	395	M12	960	450	478	225	735	224

For Metric Thread, please add M to the end of part number.

Example: SGVP-HV-ISOF100T**M**

Product Order Information

Vacuum Valves



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

Dimension in mm

Catalogue PN	Tube OD	A	B	C	D	E	F	G	H	I
AGP-UHV-CF600	4"	152	98	130	M8	589	170	224	85	287
AGP-UHV-CF800	6"	202	105	181	M8	746	234	251	117	387
AGP-UHV-CF1000	8"	253	114	232	M8	948	316	269	158	521
AGP-UHV-CF1200	10"	304	140	284	M8	1120	368	333	184	611

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

Dimension in mm

Catalogue PN	Tube OD	A	B	C	D	E	F	G	H	I
AGP-HV-CF600	4"	152	98	130	M8	589	170	224	85	287
AGP-HV-CF800	6"	202	105	181	M8	746	234	251	117	387
AGP-HV-CF1000	8"	253	114	232	M8	948	316	269	158	521
AGP-HV-CF1200	10"	304	140	284	M8	1120	368	333	184	611

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

Inch Thread Type

Dimension in mm

Catalogue PN	Tube OD	A	B	C	D	E	F	G	H	I
AGP-HV-ISOF100T	4"	152	70	145	M8	589	170	224	85	287
AGP-HV-ISOF160T	6"	202	80	200	M10	746	234	251	117	387
AGP-HV-ISOF200T	8"	253	80	260	M10	948	316	269	158	521
AGP-HV-ISOF250T	10"	304	100	310	M10	1120	368	333	184	611
AGP-HV-ISOF320T	12"	356	120	395	M12	1339	450	373	225	750

For Metric Thread, please add M to the end of part number.

Example: AGP-HV-ISOF100T**M**



A series of horizontal dashed lines for writing, consisting of 20 rows.

Vacuum Poppet Valves

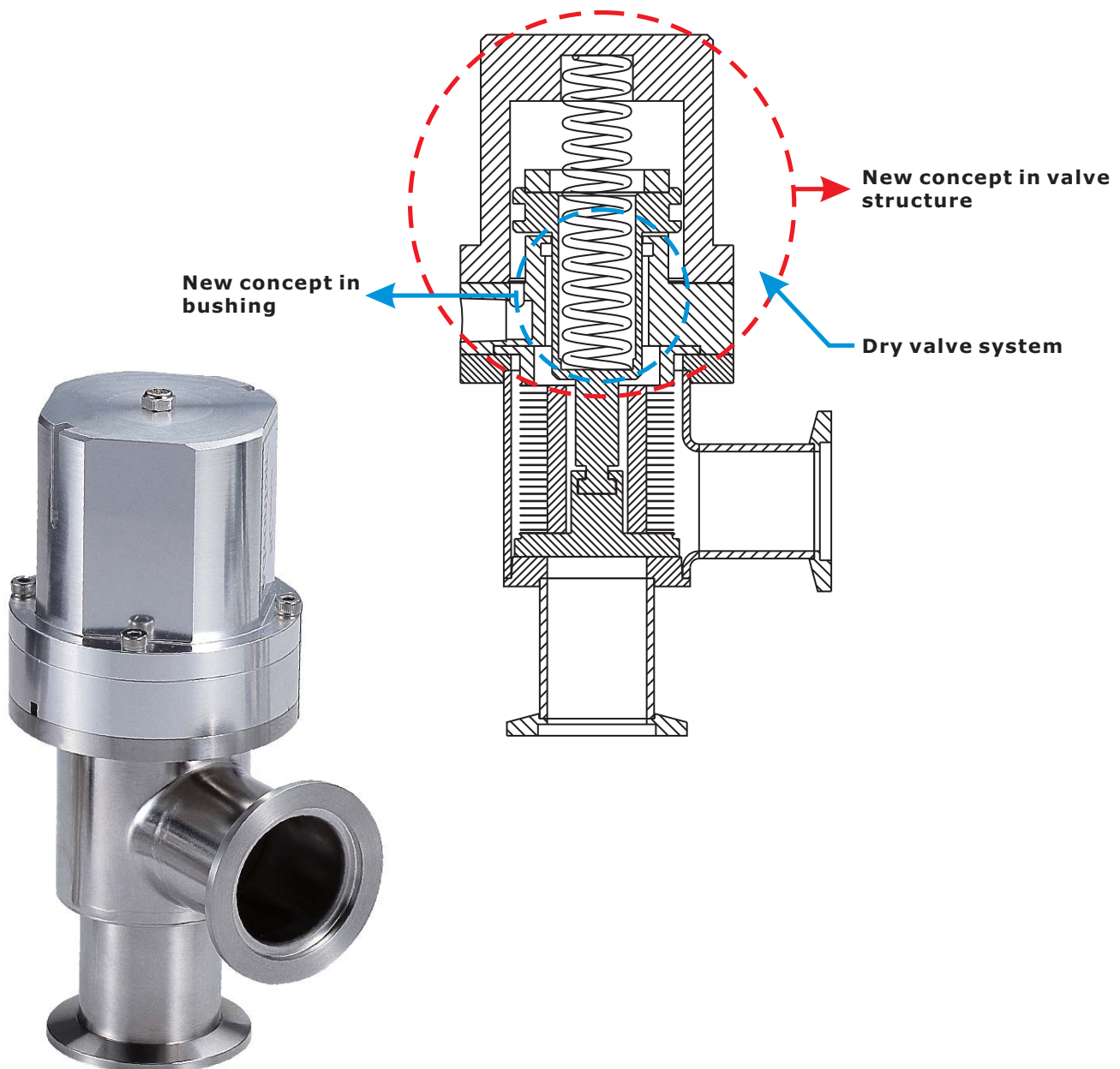
Product Introduction

Isolation Poppet Valves are usually installed in roughing or for line system. Most of application may connect to exhausting system, there is potential risk for contamination the chambers. Special design Dry valve brings the safety to protect chambers when pumping system in back streaming. The poppet valves use edge welded bellows, and provide highest conductance with small footprint design.

Vacuum
Valves

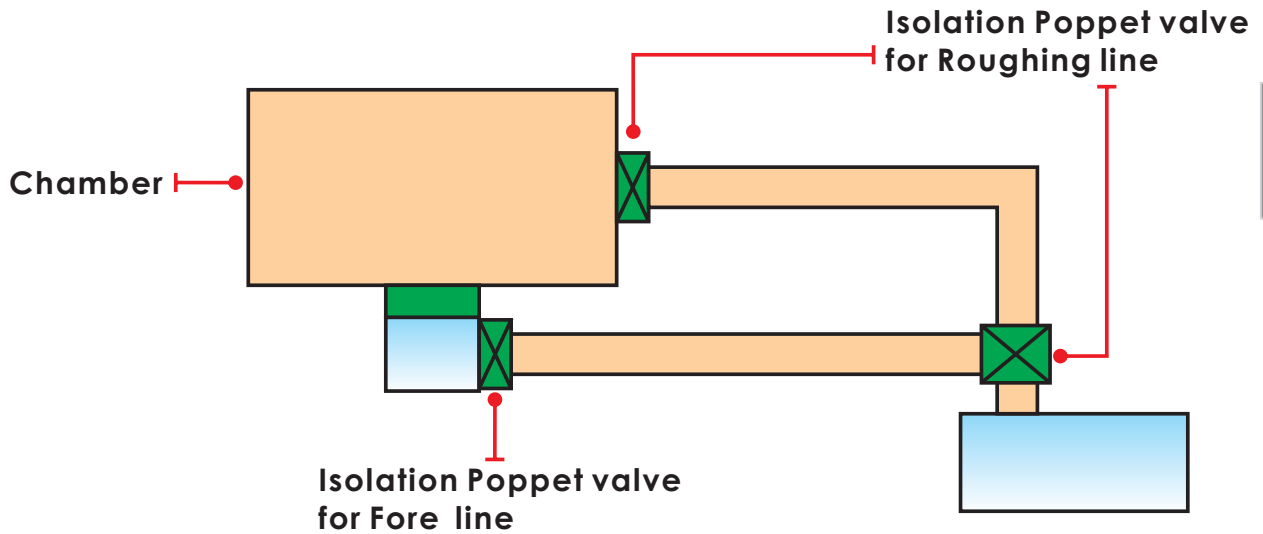
Product Features

- Spring return to closed, available from 3/4" orifice to 2".
- High Purity (Dry valve system), non-metal shaft bushing, less particle generation.
- Low profile design.
- Dry valve system, self lubricated mechanism, reducing particle generation.

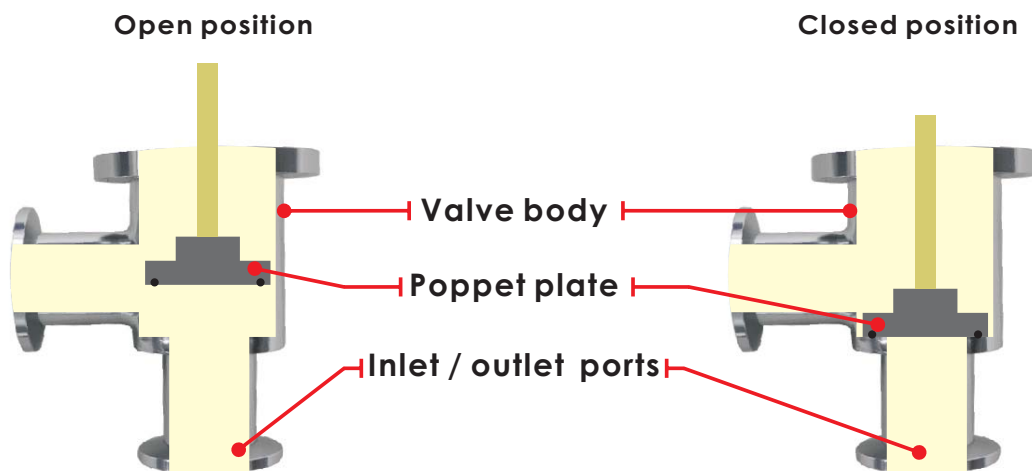


Product's Application

Poppet valves in the roughing & For line.

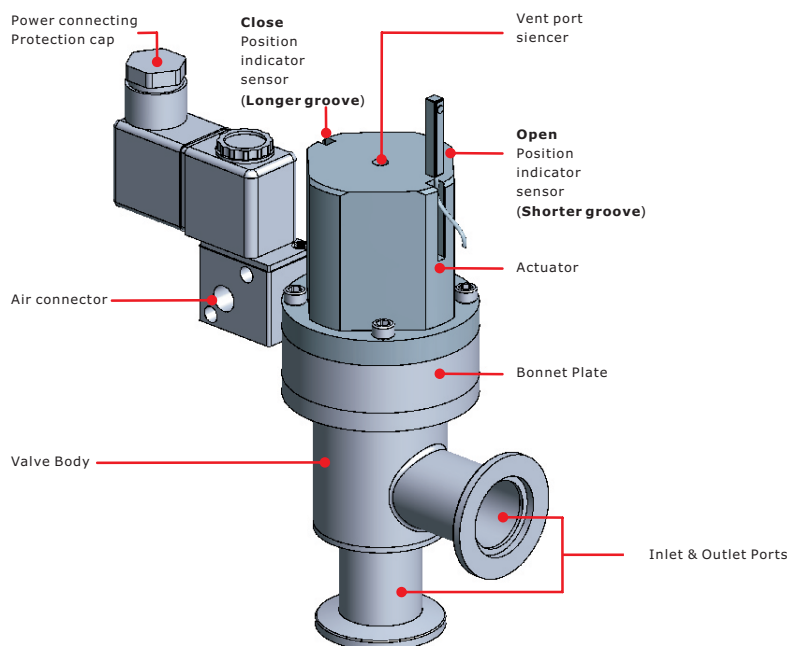


Valve's operation Concept



Part of Valve

Parts for Poppet Valves- Single acting



Vacuum Valves

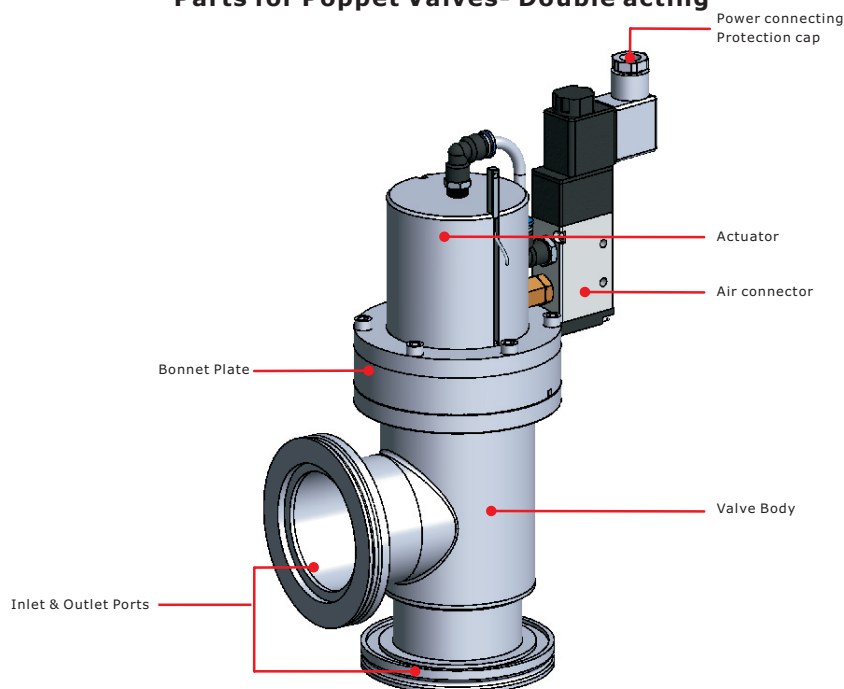
Technical Data for Poppet Angle / Inline valves

	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	1×10^{-9} Torr l/s, He 1.33×10^{-9} mbar l/s, He 1.13×10^{-10} kPa
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	SUS304/L (Optional for SUS316/L)	
Mechanism material	SUS304/L	
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 (Build in)	Build in Spring closed for KF16, KF25, KF40, KF50, CF1.33", CF2.75

Parts for Poppet Valves- Double acting



Vacuum Valves

Valve's Performance data

	KF16/CF1.33"	KF25	KF40/CF2.75"	KF50	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)

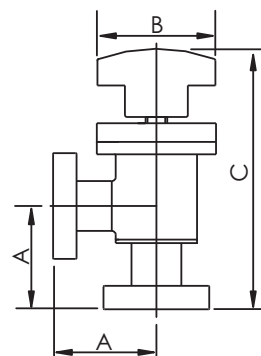
	ISO-K 80	ISO-K 100/CF6"	ISO-K 160/CF8"	ISO-K 200	ISO-K 250
Maximum differential pressure against gate	2,925 Torr 3,900 mbar 391 kpa	2,925 Torr 3,900 mbar 392 kpa	3,300 Torr 4,400 mbar 440 kpa	3,300 Torr 4,400 mbar 441 kpa	3,300 Torr 4,400 mbar 442 kpa
Maximum differential pressure at opening	1,500 Torr 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

Manual wheel Angle poppet valves, UHV, CF Flange

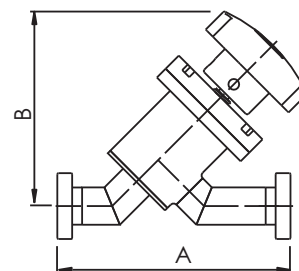
Catalogue PN	Tube OD	A	B	C
MAV-UHV-CF-133	3/4"	41	60	124
MAV-UHV-CF-133-1	3/4"	55	60	139
MAV-UHV-CF-275	1-1/2"	63	60	162
MAV-UHV-CF-275-1	1-1/2"	67	60	193



* Bonnet by OFC Gasket sealed

Manual wheel Inline poppet valves, UHV, CF Flange

Catalogue PN	Tube OD	A	B
MIV-UHV-CF-133	3/4"	119	100
MIV-UHV-CF-275	1-1/2"	133	123

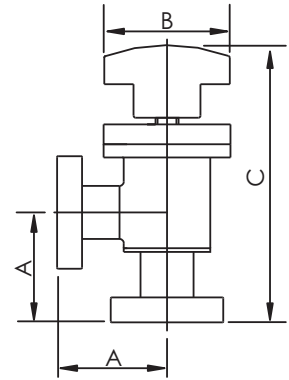


* Bonnet by OFC Gasket sealed



Manual wheel Angle poppet valves, HV, CF Flange

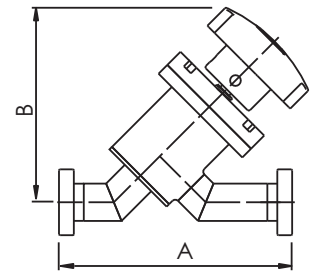
Catalogue PN	Tube OD	A	B	C
MAV-HV-CF-133	3/4"	41	60	124
MAV-HV-CF-133-1	3/4"	55	60	138
MAV-HV-CF-212	1"	50	60	131
MAV-HV-CF-212-1	1"	53	60	133
MAV-HV-CF-275	1-1/2"	63	60	162
MAV-HV-CF-275-1	1-1/2"	67	67	165
MAV-HV-CF-338	2"	72	60	193
MAV-HV-CF-338-1	2"	78	78	199



* Bonnet by FKM O-Ring sealed

Manual wheel Inline poppet valves, HV, CF Flange

Catalogue PN	Tube OD	A	B
MIV-HV-CF-133	3/4"	119	100
MIV-HV-CF-212	1"	107	97
MIV-HV-CF-275	1-1/2"	133	123
MIV-HV-CF-338	2"	182	152



*Bonnet by FKM O-Ring sealed

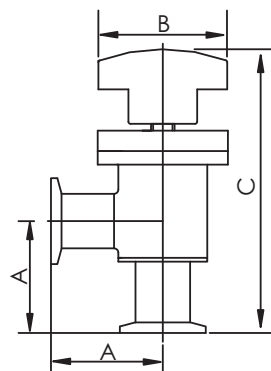


Product Order Information

Vacuum
Valves

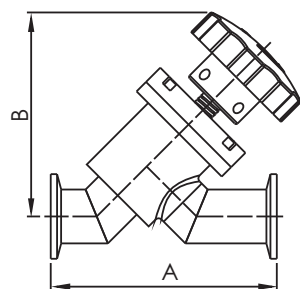
Manual wheel Angle poppet valves, HV, KF Flange

Catalogue PN	Tube OD	A	B	C
MAV-HV-KF-16	3/4"	40	60	123
MAV-HV-KF-16-1	3/4"	55	60	138
MAV-HV-KF-25	1"	50	60	130
MAV-HV-KF-25-1	1"	52	60	132
MAV-HV-KF-40	1-1/2"	65	60	164
MAV-HV-KF-50	2"	70	60	191
MAV-HV-KF-50-1	2"	76	60	198



Manual wheel Inline poppet valves, HV, KF Flange

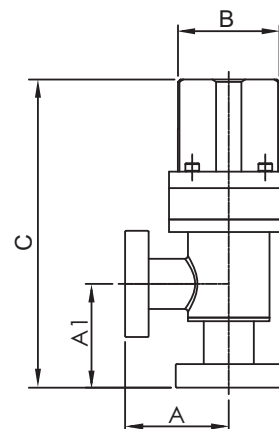
Catalogue PN	Tube OD	A	B
MIV-HV-KF-16	3/4"	102	100
MIV-HV-KF-25	1"	107	97
MIV-HV-KF-40	1-1/2"	130	123
MIV-HV-KF-50	2"	178	152



**Pneumatic Angle poppet valves, UHV, CF Flange
Single acting**

Catalogue PN	Tube OD	A	A1	B	C
PAV-UHV-CF-133	3/4"	41	41	52	147
PAV-UHV-CF-133-1	3/4"	55	55	52	162
PAV-UHV-CF-275	1-1/2"	63	63	65	174
PAV-UHV-CF-275-1	1-1/2"	67	67	65	178

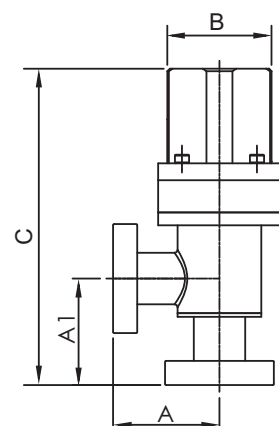
* Bonnet by OFC Gasket sealed



**Pneumatic Angle poppet valves, UHV, CF Flange
Double acting**

Catalogue PN	Tube OD	A	A1	B	C
PAV-UHV-CF-450	2-1/2"	91	91	70	251
PAV-UHV-CF-450-1	2-1/2"	86	86	70	246
PAV-UHV-CF-600	4"	113	113	89	342
PAV-UHV-CF-600-1	4"	118	118	89	348

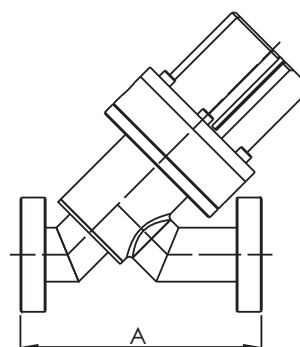
*Bonnet by OFC Gasket sealed



**Pneumatic Inline poppet valves, UHV, CF Flange
Single acting**

Catalogue PN	Tube OD	A
PIV-UHV-CF-133	3/4"	119
PIV-UHV-CF-275	1-1/2"	133

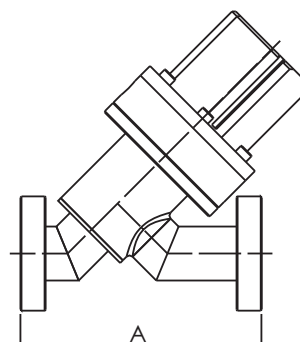
* Bonnet by OFC Gasket sealed



**Pneumatic Inline poppet valves, UHV, CF Flange
Double acting**

Catalogue PN	Tube OD	A
PIV-UHV-CF-450	2-1/2"	216
PIV-UHV-CF-600	4"	355

* Bonnet by OFC Gasket sealed

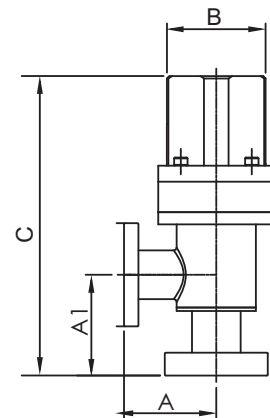


Product Order Information

Vacuum
Valves

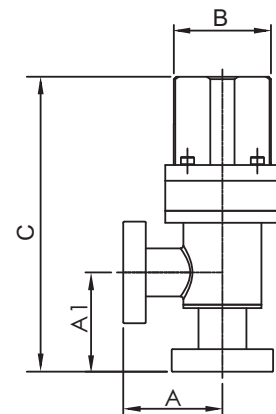
Pneumatic Angle poppet valves, HV, CF Flange Single acting

Catalogue PN	Tube OD	A	A1	B	C
PAV-HV-CF-133	3/4"	41	41	52	147
PAV-HV-CF-133-1	3/4"	55	55	52	162
PAV-HV-CF-212	1"	50	50	52	154
PAV-HV-CF-212-1	1"	53	53	52	156
PAV-HV-CF-275	1-1/2"	63	63	65	174
PAV-HV-CF-275-1	1-1/2"	67	67	65	178
PAV-HV-CF-338	2"	72	72	67	234
PAV-HV-CF-338-1	2"	78	78	67	240



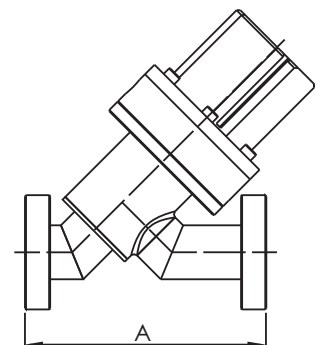
Pneumatic Angle poppet valves, HV, CF Flange Double acting

Catalogue PN	Tube OD	A	A1	B	C
PAV-HV-CF-450	2-1/2"	91	91	70	251
PAV-HV-CF-450-1	2-1/2"	86	86	70	246
PAV-HV-CF-600	4"	113	113	89	342
PAV-HV-CF-600-1	4"	118	118	89	348
PAV-HV-CF-800	6"	144	144	140	449
PAV-HV-CF-800-1	6"	165	165	140	469



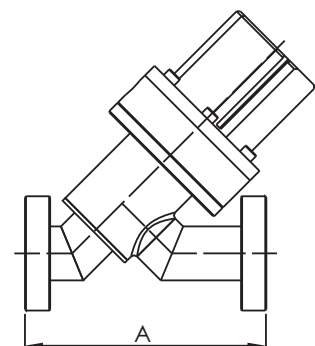
Pneumatic Inline poppet valves, HV, CF Flange Single acting

Catalogue PN	Tube OD	A
PIV-HV-CF-133	3/4"	119
PIV-HV-CF-212	1"	107
PIV-HV-CF-275	1-1/2"	133
PIV-HV-CF-338	2"	182



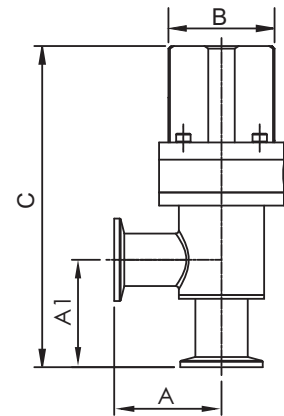
Pneumatic Inline poppet valves, HV, CF Flange Double acting

Catalogue PN	Tube OD	A
PIV-HV-CF-450	2-1/2"	216
PIV-HV-CF-600	4"	355
PIV-HV-CF-800	6"	394



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

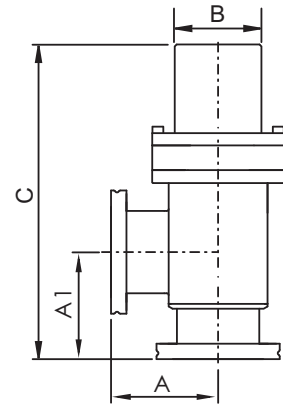
Catalogue PN	Tube OD	A	A1	B	C
PAV-HV-KF-16	3/4"	40	40	52	147
PAV-HV-KF-16-1	3/4"	55	55	52	161
PAV-HV-KF-25	1"	50	50	52	154
PAV-HV-KF-25-1	1"	52	52	52	156
PAV-HV-KF-40	1-1/2"	65	65	65	176
PAV-HV-KF-50	2"	70	70	67	232
PAV-HV-KF-50-1	2"	76	76	67	238



Vacuum Valves

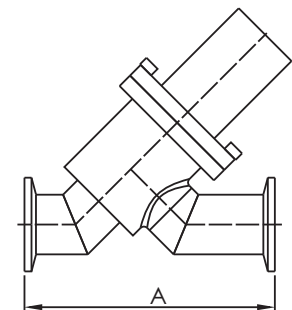
**Pneumatic Angle poppet valves, HV, ISO-K Flange
Double acting**

Catalogue PN	Tube OD	A	A1	B	C
PAV-HV-ISOK-63	2-1/2"	88	88	70	248
PAV-HV-ISOK-63-1	2-1/2"	83	83	70	243
PAV-HV-ISOK-80	3"	90	90	82	284
PAV-HV-ISOK-80-1	3"	89	89	82	283
PAV-HV-ISOK-100	4"	108	108	89	338
PAV-HV-ISOK-100-1	4"	114	114	89	344
PAV-HV-ISOK-160	6"	138	138	140	442
PAV-HV-ISOK-160-1	6"	159	159	140	463
PAV-HV-ISOK-200	8"	178	178	140	648
PAV-HV-ISOK-200-1	8"	210	210	140	659
PAV-HV-ISOK-250	10"	208	208	202	668
PAV-HV-ISOK-250-1	10"	260	260	202	720



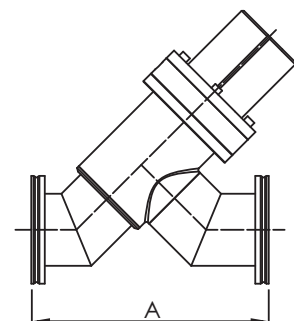
**Pneumatic Inline poppet valves, HV, KF Flange
Single acting**

Catalogue PN	Tube OD	A
PIV-HV-KF-16	3/4"	102
PIV-HV-KF-25	1"	107
PIV-HV-KF-40	1-1/2"	130
PIV-HV-KF-50	2"	178



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

Catalogue PN	Tube OD	A
PIV-HV-ISOK-63	2-1/2"	209
PIV-HV-ISOK-80	3"	268
PIV-HV-ISOK-100	4"	345
PIV-HV-ISOK-160	6"	381

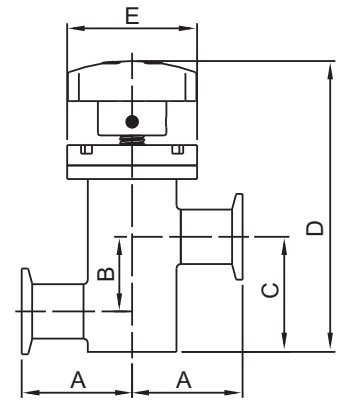


Product Order Information

Vacuum
Valves

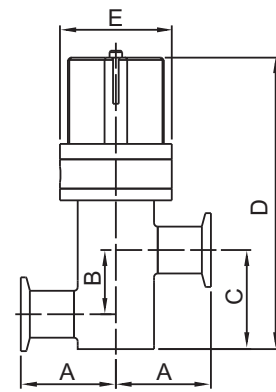
Manual Wheel Inline Poppet Valves, Z-Type, HV, KF Flange

Catalogue PN	Tube OD	A	B	C	D	E
MZV-HV-KF-16	3/4"	55	29	47	132	61
MZV-HV-KF-25	1"	52	35	54	134	61
MZV-HV-KF-40	1-1/2"	61	48	74	172	77



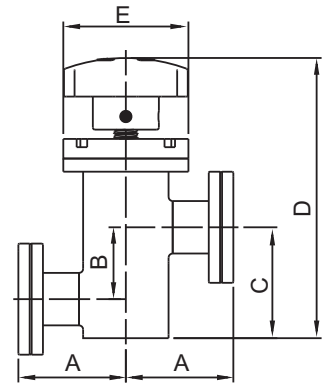
Pneumatic Inline Poppet Valves, Z-Type, HV, KF Flange Single Acting

Catalogue PN	Tube OD	A	B	C	D	E
PZV-HV-KF-16	3/4"	55	29	47	156	61
PZV-HV-KF-25	1"	52	35	54	158	61
PZV-HV-KF-40	1-1/2"	61	48	74	184	77



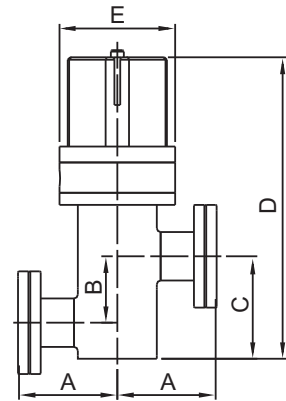
Manual Wheel Inline Poppet Valves, Z- Type, HV, CF Flange

Catalogue PN	Tube OD	A	B	C	D	E
MZV-HV-CF-133	3/4"	55	29	47	132	61
MZV-HV-CF-212	1"	52	35	54	134	61
MZV-HV-CF-275	1-1 /2"	62	48	74	172	77



Pneumatic Inline Poppet Valves, Z-Type, HV, CF Flange Single Acting

Catalogue PN	Tube OD	A	B	C	D	E
PZV-HV-CF-133	3/4"	55	29	47	156	61
PZV-HV-CF-212	1"	52	35	54	158	61
PZV-HV-CF-275	1-1 /2"	62	48	74	184	77



Vacuum Ball Valves

Product Introduction

Vacuum Ball Valves are used on a system's exhaust section.

Ball Valve is designed for taking harsh processing to against particles or even powder. The valve's main body uses solid metal of stainless steel to form one piece. The inlet piece and outlet piece are also made by forged metal. Valve can take into high chemical process or high temperature environment by using 316L or 316Ti materials.

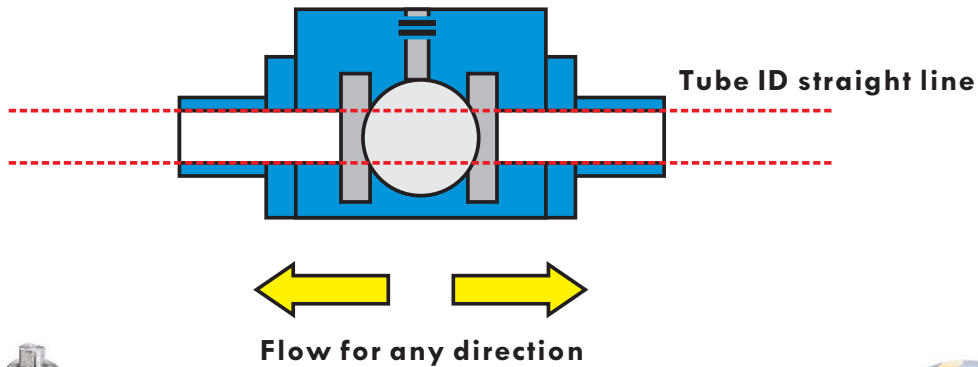
The valve is also designed for baking purpose. The packing of ball valve is optional for different materials in FKM, FFKM, Teflon.

Vacuum
Valves

Product Features

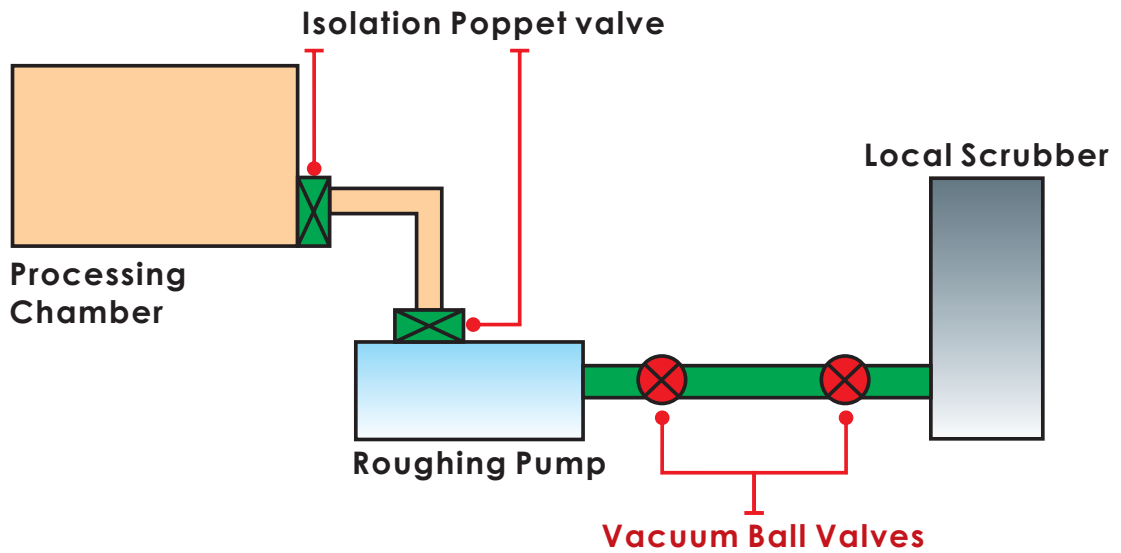
Special features for Vacuum Ball Valves

- Stand for particles, straight through design.
- Three Piece designed valve body, both in CNC and Casting.
- Optional for high chemical resistance.

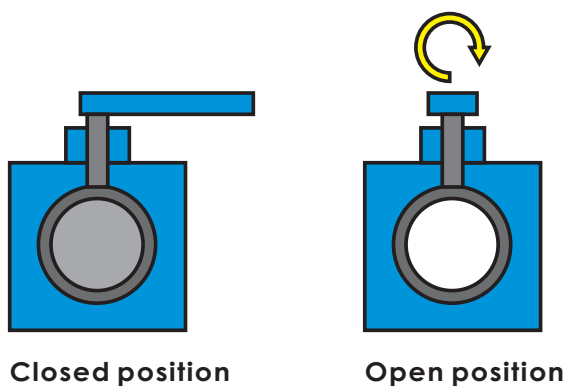


Product's Application

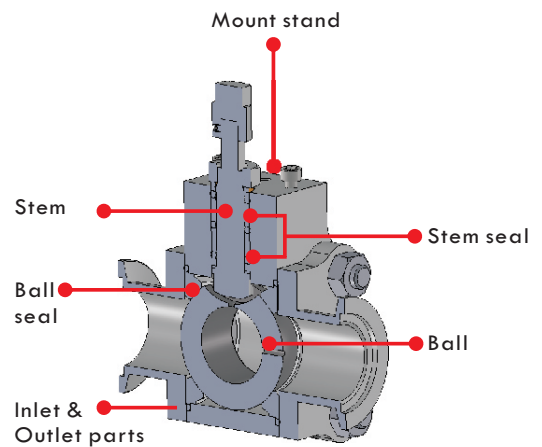
Layout for Processing System
Ball valves are placed Scrubber line



Valve's operation Concept



Parts of valve



Technical Data

Vacuum Valves

Technical Data for Vacuum Ball Valve

	Medium Vacuum	High Vacuum
Feedthrough	FKM o-ring	FKM o-ring
Gate seal	PTFE packing	PTFE packing
Bonnet seal	FKM	FKM
Operate pressure range	4,500 Torr~ 1x10 ⁻⁵ Torr 6,000 mbar~ 1.33x10 ⁻⁵ mbar 600 kpa~ 1.33x10 ⁻⁶ kpa	4,500 Torr~ 1x10 ⁻⁶ Torr 6,000 mbar~ 1.33x10 ⁻⁶ mbar 600 kpa~ 1.33x10 ⁻⁷ kpa
Leak rate	1x10 ⁻⁸ Torr l/s, He 1.33x10 ⁻⁸ mbar l/s, He 1.33x10 ⁻⁹ kpa	1x10 ⁻⁹ Torr l/s, He 1.33x10 ⁻⁹ mbar l/s, He 1.33x10 ⁻¹⁰ kpa
Cycle life	>30,000 Cycle	
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 SUS316/L	CNC machined SUS316/L
Mechanism material	SUS316/L	
Actuator material	Pneumatic version= Aluminum Manual version= SUS304/L Handle with plastic cover	
Mounting position	Any	

Valve operation data

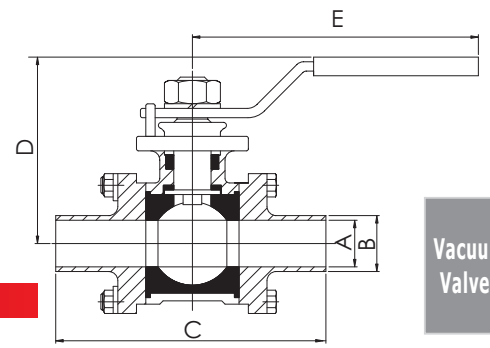
Pneumatic operating pressure	4 bar~8 bar 400 kPa~800 kPa 58 psi~116 psi
Position indicator (Build in for pneumatic version)	Build in visual
Solenoid (optional)	Optional for 24V DC, standard
Failure protection (Build in)	Build in handle hook with manual version (Open/ Close position locked)

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)

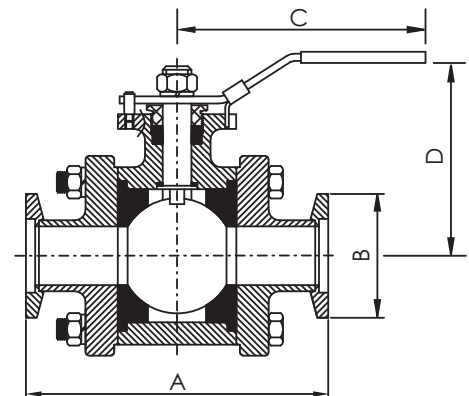
Manual Casting Ball Valves, SUS316/L, Tube Ends

Catalogue PN	Tube OD	A	B	C	D	E
MBV-CT-075	3/4"	16	19	101	58	132
MBV-CT-100	1"	22	25	114	62	132
MBV-CT-150	1-1/2"	35	38	141	98	175
MBV-CT-200	2"	48	51	156	104	175



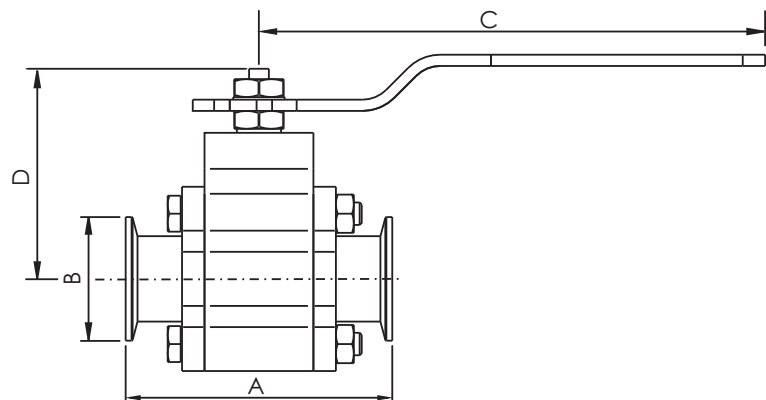
Manual Casting Ball Valves, SUS316/L, KF Flange

Catalogue PN	Tube OD	A	B	C	D
MBV-CT-KF16	3/4"	110	30	132	58
MBV-CT-KF25	1"	122	40	132	62
MBV-CT-KF40	1-1/2"	147	55	175	98
MBV-CT-KF50	2"	166	75	175	104



Manual CNC Ball Valves, SUS316/L

Catalogue PN	Tube OD	A	B	C	D
MBV-NC-KF16	3/4"	88	30	141	53
MBV-NC-KF25	1"	100	40	141	62
MBV-NC-KF40	1-1/2"	119	55	226	94
MBV-NC-KF50	2"	159	75	226	107

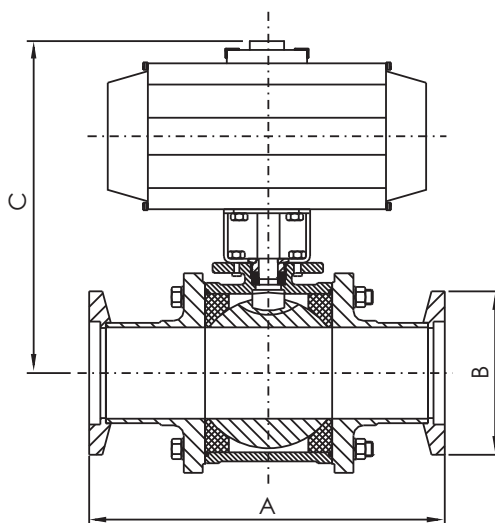


Pneumatic Casting Ball Valves, SUS316/L

Catalogue PN	Tube OD	A	B	C
PBV-CT-KF16	3/4"	110	30	165
PBV-CT-KF25	1"	122	40	170
PBV-CT-KF40	1-1 /2"	147	55	200
PBV-CT-KF50	2"	166	75	220

Pneumatic CNC Ball Valves, SUS316/L

Catalogue PN	Tube OD	A	B	C
PBV-NC-KF16	3/4"	88	30	160
PBV-NC-KF25	1"	100	40	165
PBV-NC-KF40	1-1 /2"	118	55	195
PBV-NC-KF50	2"	160	75	215





KL[®] GROUP

Advantorr[®]

**Vacuum
Quick
Access
Doors**

•Email: info@advantorr.com.tw

•Website: www.advantorr.com



System Component

Product Families List



System Component

Vacuum Chamber Families									
Geometry types	D Type		Box Type		Tall Cylinder Type				
Vacuum level	HV grade		HV grade		HV grade		UHV grade		
Materials	Stainless Steel 304/L	Stainless Steel 316/L	Stainless Steel 304/L	Stainless Steel 316/L	Stainless Steel 304/L	Stainless Steel 316/L	Stainless Steel 304/L	Stainless Steel 316/L	Stainless Steel 316/L

Vacuum Chamber Families									
Geometry types	Short Cylinder Type				Spherical Type		Bell Type		
Vacuum level	HV grade		UHV grade		UHV grade		UHV grade		
Materials	Stainless Steel 304/L	Stainless Steel 316/L	Stainless Steel 304/L	Stainless Steel 316/L	Stainless Steel 304/L	Stainless Steel 316/L	Stainless Steel 304/L	Stainless Steel 316/L	Stainless Steel 316/L



Vacuum Chamber Quick Access Door Families		
Door types	With viewport	Blank flange
Flange types	CF Flange	CF Flange



Vacuum Viewport Families						
Vacuum level	UHV grade			HV grade		
Viewport materials	Kodial	Fuse silicon	Sapphire	Kodial	Tempered Glass	
Viewport bonding types	Brazed	Brazed	Brazed	Brazed	FKM o-ring sealed	
Flange types	CF Flange	CF Flange	CF Flange	KF Flange	ISO-K Flange	ISO-K Flange

Vacuum Viewport Shutter Families		
Vacuum level	UHV grade	HV grade
Flange types	CF Flange	ISO-K Flange



Vacuum Chambers

King Lai utilizes state-of-the-art manufacturing and inspection equipments dedicated for our vacuum chamber department. We can fabricate chambers up to 6 meters x 2.5 meters x 1.8 meters. Moreover, we stock large inventory of raw material in SS 304, 316L and aluminum alloy which are commonly used for fabricating HV and UHV chambers. We provide custom designed chambers that are built to meet your unique shapes or requirements. With thorough communication with customers to understand customers' unique requirements, careful control during each production process, and explicit inspection, we aim to provide vacuum chambers that are over customers' expectations.

Please contact us for more information.

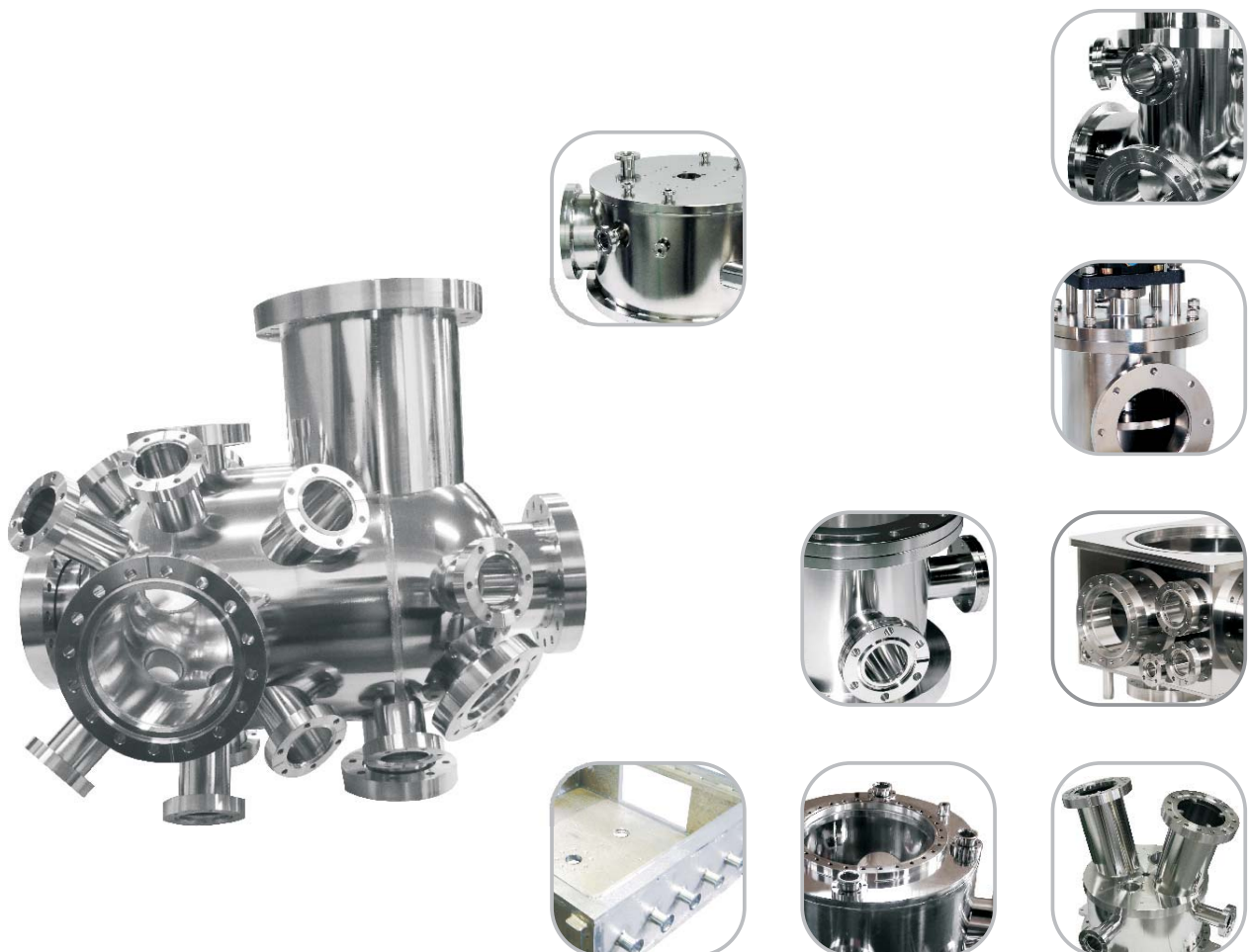
Inspection and Test Equipment

- 3D computerized measuring systems
- Helium leak detectors
- Alloy analyzer
- Borescope

Main Facility for Chamber

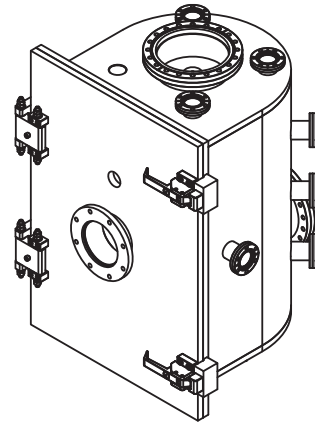
- Water-Jet Cutting Machine
- 5-Axis Machining Center
- Bridge Type Machining Center
- Welding Platform
- CATIA 3D / Solid Works 3D
- Electropolishing Equipment
- TIG Weld Machines
- Class 10,000 clean room
- Ultrasonic Clean Machine w/ DI water
- Degreasing Process Equipment

System Component



D Type Stainless steel Chambers

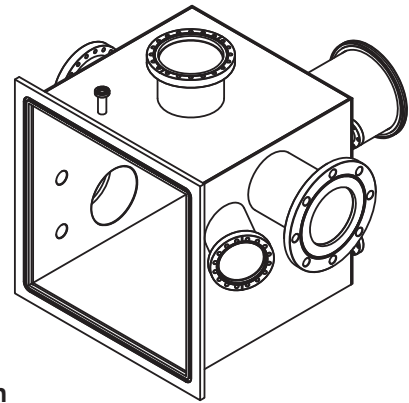
- Optional for SUS304 / SUS316L
- 100mm Viewport with o-ring sealed
- Customized ports configuration CF/KF/ISO
- Optional for water cooling
- Optional for inner shielding plates
- Customized designs are acceptable
- Body wall thickness 6mm/10mm, Plate wall thickness 20mm



Catalogue PN	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

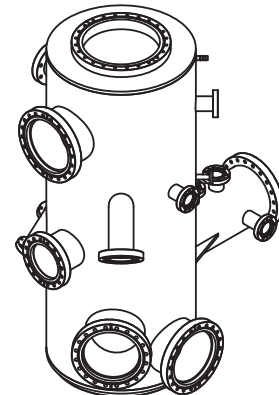
- Optional for SUS304 / SUS316L
- 100mm Viewport with o-ring sealed
- Customized ports configuration CF/KF/ISO
- Optional for water cooling
- Optional for inner shielding plates
- Customized designs are acceptable
- Body wall thickness 6mm/10mm, Plate wall thickness 20mm



Catalogue PN	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

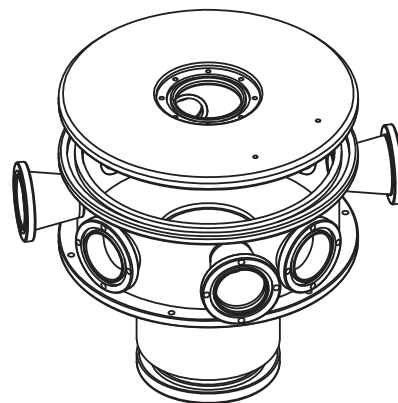
- Optional for SUS304 / SUS316L
- Customized ports configuration
- Optional for water cooling (Double Wall)
- Optional for LN2 Cold Trap
- Customized designs are acceptable
- Body wall thickness 6mm/10mm, top and bottom zero length flanges.



Catalogue PN	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

Short Cylinder Type Stainless steel Chambers

- Optional for SUS304 / SUS316L
- Customized ports configuration CF/KF/ISO
- Customized designs are acceptable (Up to 900mm OD, 500mm height)
- Body wall thickness 6mm / 10mm, top and bottom flanges are both gasket seal or o-ring seal.

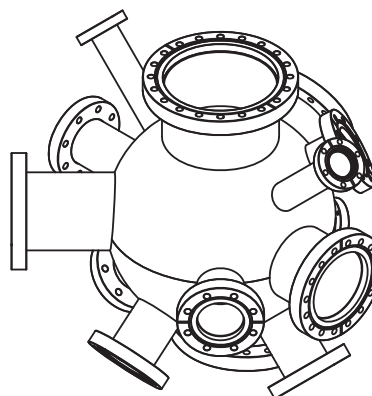


Catalogue PN	Size	Product Description
SCCH-254x100	OD10" x 100mm	Short Cylinder Type Stainless Steel Chamber 10"x100mm
SCCH-305x200	OD12" x 200mm	Short Cylinder Type Stainless Steel Chamber 12"x200mm
SCCH-356x200	OD14" x 200mm	Short Cylinder Type Stainless Steel Chamber 14"x200mm
SCCH-457x250	OD18" x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

System Component

Spheric Type Stainless steel Chambers

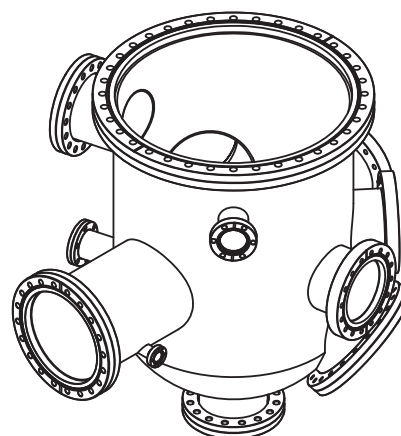
- Optional for SUS304 / SUS316L
- Customized port configuration
- Customized designs are acceptable
- Body wall thickness 6mm / 10mm



Catalogue PN	Size	Product Description
SCH-254	10" Spherisc	Spheric Type Stainless Steel Chamber 10"
SCH-300	12" Spherisc	Spheric Type Stainless Steel Chamber 12"
SCH-457	18" Spherisc	Spheric Type Stainless Steel Chamber 18"

Bell Type Stainless steel Chambers

- Optional for SUS304 / SUS316L
- Customized ports configuration
- Optional for water cooling (Double Wall)
- Optional for LN2 Cold Trap
- Customized designs are acceptable
- Body wall thickness 6mm / 10mm



Catalogue PN	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

Vacuum Quick Access Doors

Product Introduction

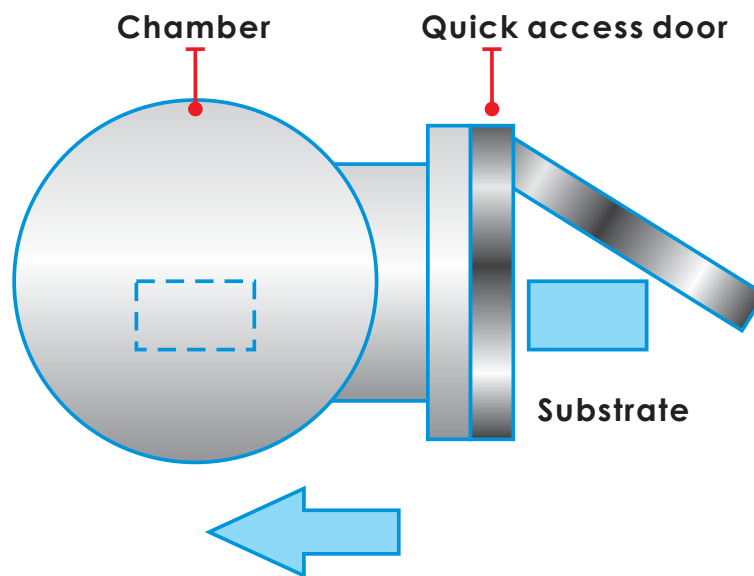
Vacuum Quick Access Doors are design for chamber with quick load and unload substrate .
There are two styles with blanker cover or view glass.
There is option for high grade SUS316/L, more purity materials with low out glassing rate.

System
Component

Product Features

- Easy to operate with strong door hinge.
- Optional materials, SUS304/L and SUS316/L .
- Any position installation.

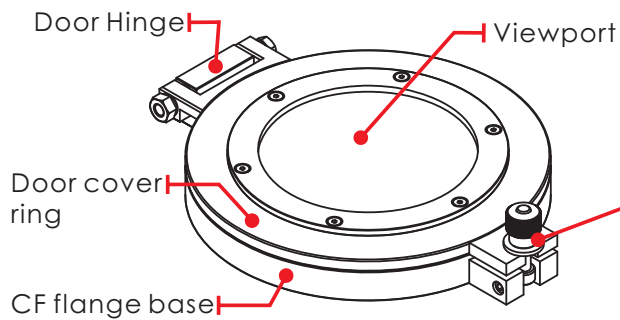
Product Application



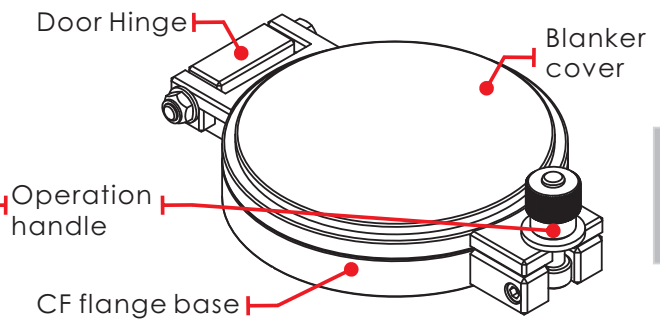
Substrate can transfer from atmosphere to vacuum chamber via quick access door

Parts of Quick Access Doors

Viewport type



Blanker type



System Component

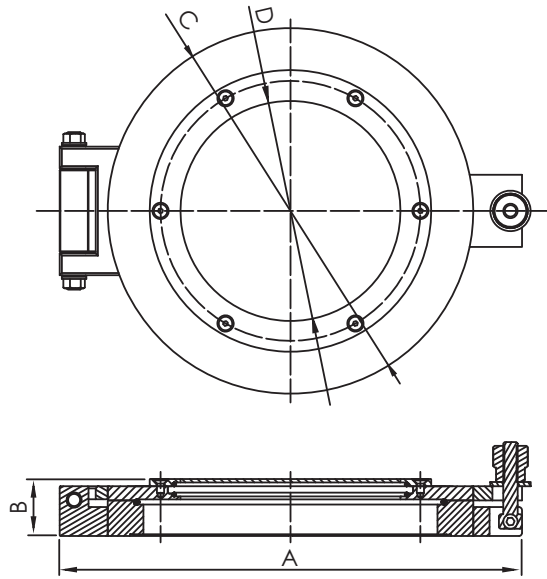
Technical Data for Quick Access Doors

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
Temperature Range	-20°C (-4°F) ~ 150°C (302°F)
Bake Temperature	100°C (212°F)
Body material	SUS304/L
Hinge material	Stainless steel and copper
Viewport material	Glass (only with viewport version)
Mounting position	90, 180, 270, 360 degree



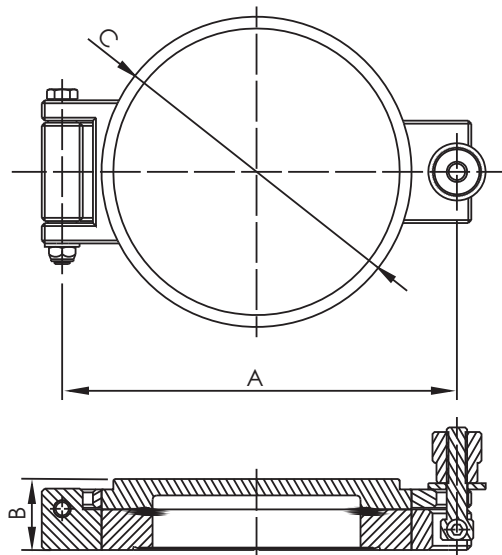
Product Order Information

System Component



Quick Access Door- Viewport Type

Catalogue PN	Size	A	B	C	D
QDV-CF-450	CF4.5"	177	32	114	64
QDV-CF-600	CF6"	215	35	152	102
QDV-CF-800	CF8"	276	37	202	152
QDV-CF-1000	CF10"	289	40	253	152



Quick Access Door- Blank Type

Catalogue PN	Size	A	B	C
QDB-CF-450	CF4.5"	177	32	114
QDB-CF-600	CF6"	215	35	152
QDB-CF-800	CF8"	276	37	202
QDB-CF-1000	CF10"	289	40	253



A series of horizontal dashed lines for writing, arranged in 15 rows across the page.

Vacuum Viewports

Product Introduction

Kinglai offer a range of viewport from HV to UHV.

The viewports are used for process observation in visible spectrum and optical guiding.

For HV viewport, an O-ring is used for sealing.

For UHV, vacuum welding is used for sealing.

In addition, most of the viewports are zero length viewport.

The glass surface do not protrude from the mounting flange.

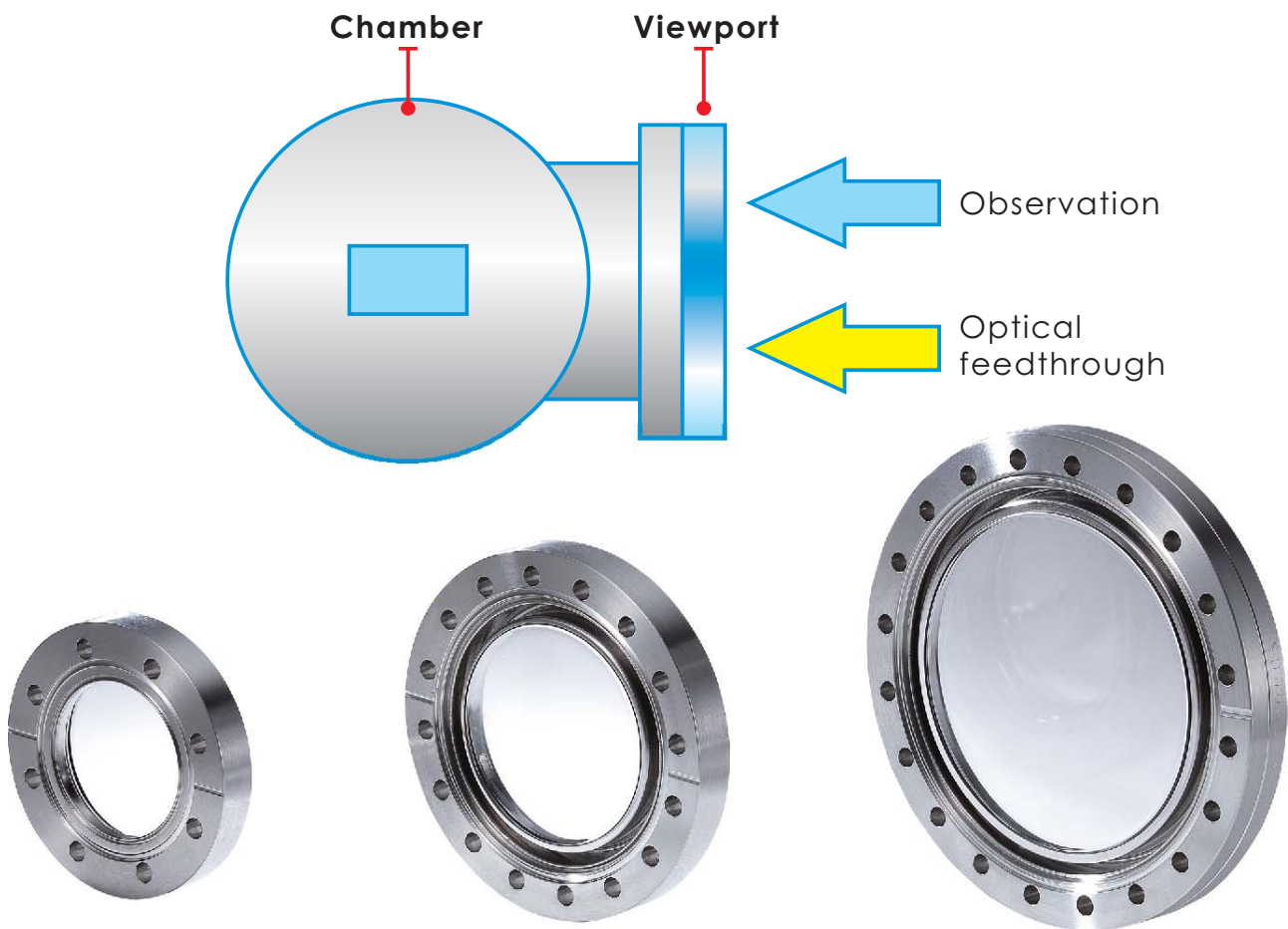
It gives a better protection from accidental damage, and it provides a good angle of view.

System
Component

Product Features

- UHV viewports are available for Kodial, fuse silica and sapphire .
- Braze joint design for high temperature operation.
- Customize design are available upon request.

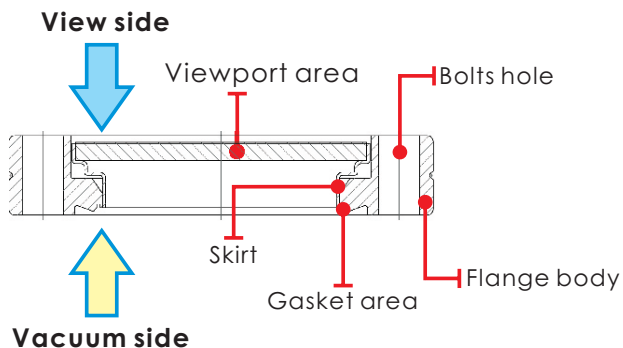
Product Application



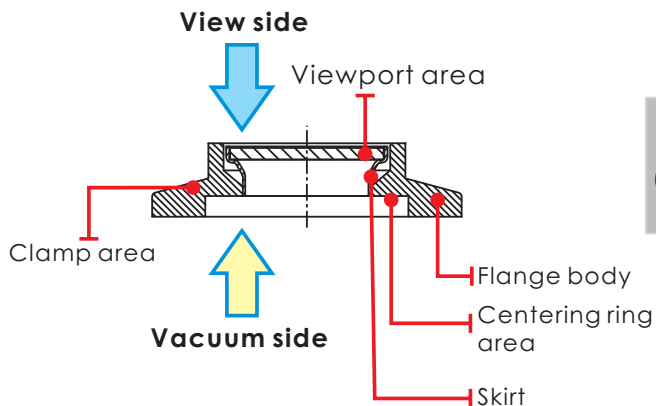
UHV View Ports

Parts of Viewports

UHV Viewport

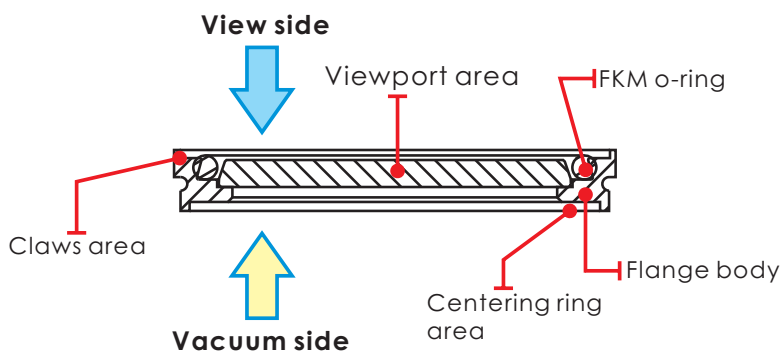


HV KF viewport

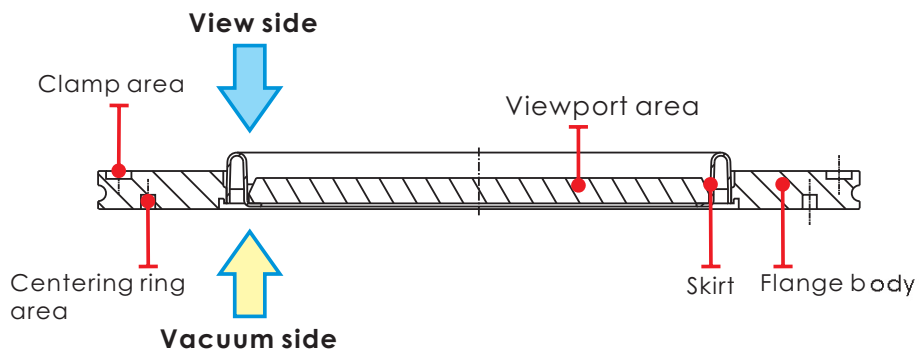


System Component

HV ISO-K Viewport Type I



HV ISO-K Viewport Type II



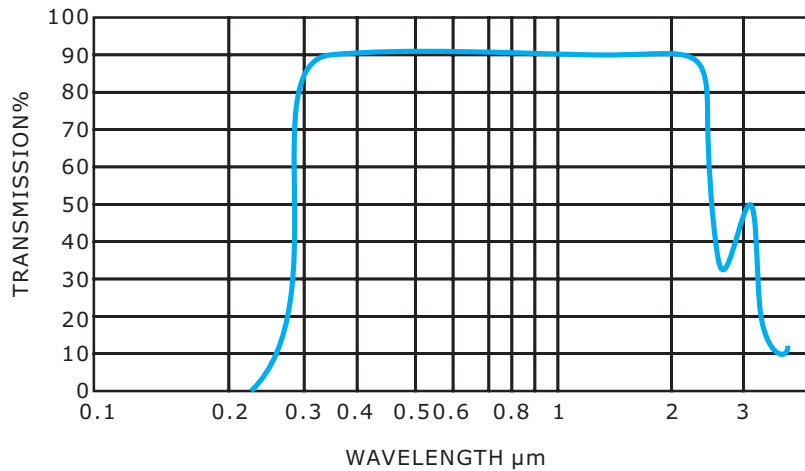
Technical Data

Technical Data for Viewport

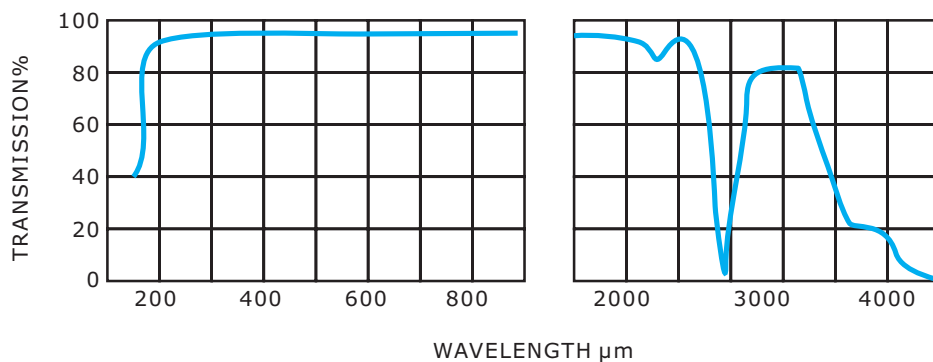
	UHV Kodial	UHV Fuse Silica
Viewport seal	Metal skirt	Metal skirt
Mounting seal	OFHC gasket	OFHC gasket
Operate pressure range	760 Torr $\sim 1 \times 10^{-10}$ Torr 1,000 mbar $\sim 1.33 \times 10^{-10}$ mbar 100 kPa $\sim 1.13 \times 10^{-11}$ kPa	760 Torr $\sim 1 \times 10^{-10}$ Torr 1,000 mbar $\sim 1.33 \times 10^{-10}$ mbar 100 kPa $\sim 1.13 \times 10^{-11}$ kPa
Leak rate	1×10^{-10} Torr l/s, He 1.33×10^{-10} mbar l/s, He 1.13×10^{-11} kPa	1×10^{-10} Torr l/s, He 1.33×10^{-10} mbar l/s, He 1.13×10^{-11} kPa
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 (37°F)	3°C (37°F)
Body material	SUS304/L	SUS304/L
Viewport material	Kodial	Fuse Silica
Mounting position	Any	Any

System Component

Transmission Curve Kodial

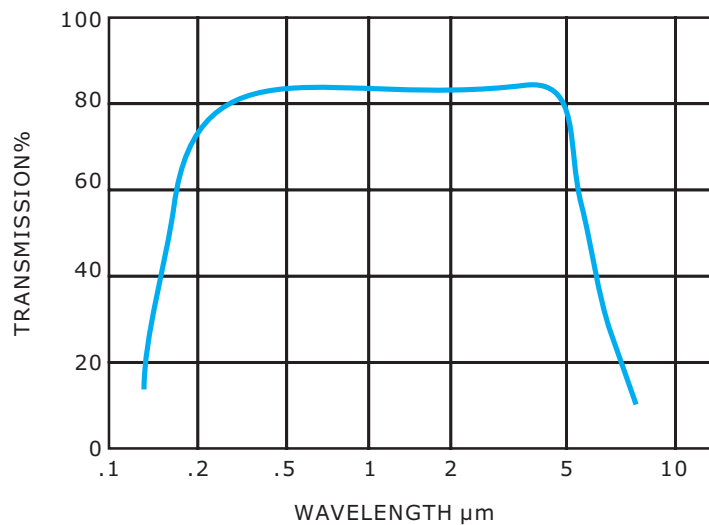


Transmission Curve Fuse Silica



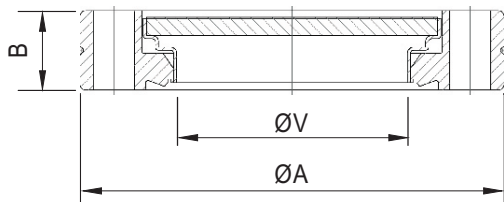
UHV Sapphire	HV Kodial
Metal skirt	Metal skirt
OFHC gasket	Cnetering ring
760 Torr ~ 1×10^{-10} Torr 1,000 mbar ~ 1.33×10^{-10} mbar 100 kPa ~ 1.13×10^{-11} kPa	760 Torr ~ 1×10^{-8} Torr 1,000 mbar ~ 1.33×10^{-8} mbar 100 kPa ~ 1.13×10^{-9} kPa
1×10^{-10} Torr l/s, He 1.33×10^{-10} mbar l/s, He 1.13×10^{-11} kPa	1×10^{-9} Torr l/s, He 1.33×10^{-9} mbar l/s, He 1.13×10^{-10} kPa
-20°C(-4°F)~200°C(392°F)	-20°C(-4°F)~200°C(392°F)
150°C (302°F)	150°C (302°F)
3°C (37°F)	3°C (37°F)
SUS304/L	SUS304/L
Sapphire	Kodial
Any	Any

Transmission Curve Sapphire



Product Order Information

◆ UHV Viewports



UHV Kodial Viewports, CF Flanges, SUS304/L

Catalogue PN	Size	A	B	V
VP-KD-CF-133	CF1.33"	34	8	16
VP-KD-CF-275	CF2.75"	69	13	38
VP-KD-CF-450	CF4.5"	114	17	64
VP-KD-CF-600	CF6"	152	20	89
VP-KD-CF-800	CF8"	202	22	137

UHV Kodial Viewports, CF Flanges, SUS316LN

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

UHV Fuse Silica Viewports, CF Flanges, SUS304/L

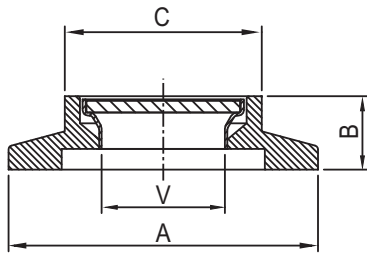
Catalogue PN	Size	A	B	V
VP-QZ-CF-133	CF1.33"	34	13	15
VP-QZ-CF-275	CF2.75"	69	13	32
VP-QZ-CF-450	CF4.5"	114	17	63
VP-QZ-CF-600	CF6"	152	20	89
VP-QZ-CF-800	CF8"	202	22	136

UHV Sapphire Viewports, CF Flanges, SUS304/L

Catalogue PN	Size	A	B	V
VP-SH-CF-133	CF1.33"	34	13	15
VP-SH-CF-275	CF2.75"	69	13	32
VP-SH-CF-450	CF4.5"	114	17	63
VP-SH-CF-600	CF6"	152	20	89
VP-SH-CF-800	CF8"	202	22	136

System
Component

◆ HV KF Viewports

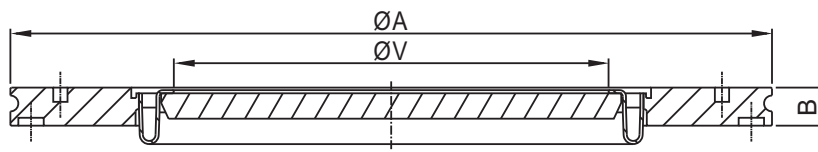


HV Kodial Viewports, KF Flanges, SUS304/L

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

System
Component

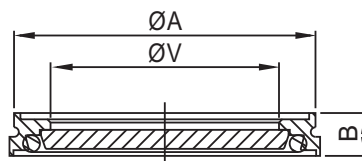
◆ Welding Sealed- HV ISO-K Viewports



ISO-K Welded Zero Length Viewports, SUS304/L

Catalogue PN	Size	A	B	V
VP-KD-ISOK-63	ISO-K 63	95	14	64
VP-KD-ISOK-100	ISO-K 100	130	16	89
VP-KD-ISOK-160	ISO-K 160	180	17	137
VP-KD-ISOK-200	ISO-K 200	240	18	137
VP-KD-ISOK-250	ISO-K 250	290	19	137

◆ O-ring Sealed- HV ISO-K Viewports



ISO-K O-ring Zero Length Viewports, SUS304/L

Catalogue PN	Size	A	B	V
VP-KD-ISOK-63-0	ISO-K 63	95	14	64
VP-KD-ISOK-100-0	ISO-K 100	130	16	89
VP-KD-ISOK-160-0	ISO-K 160	180	17	137

Vacuum Viewport Shutters

Product Introduction

Viewport Shutters are used for protecting viewports. For thin film processing or other processing, there may be emission from the chamber side. It can be cleaned by a beam blast on the shutter plate.

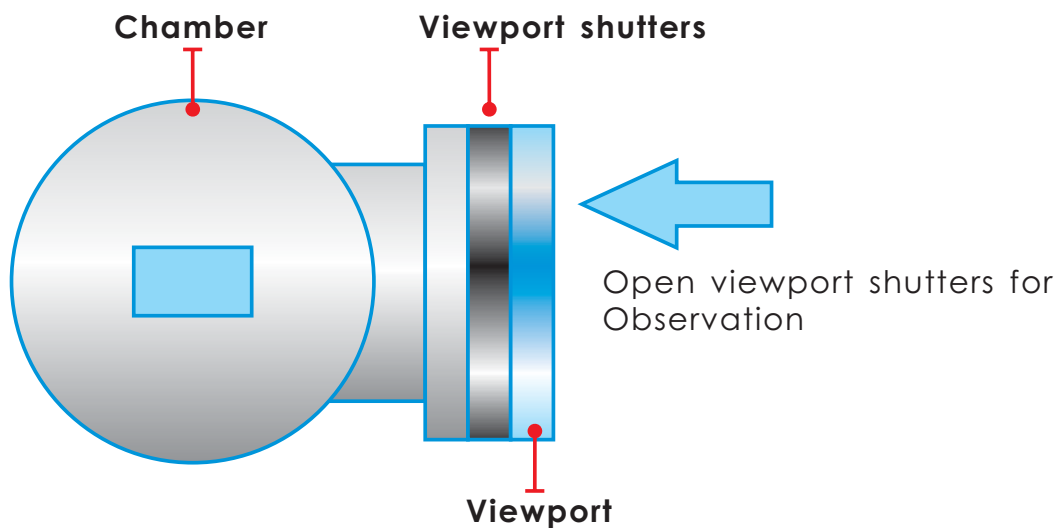
Product Features

- UHV grade rotary driver, with stop position on the driver.
- Wide range for observation area.
- Easy for installation.

System Component

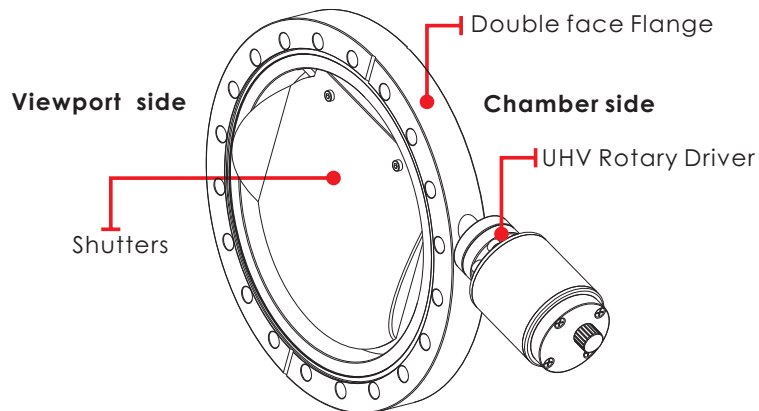


Product Application



Viewport shutters are installed in front of viewports

Parts of Viewport Shutters



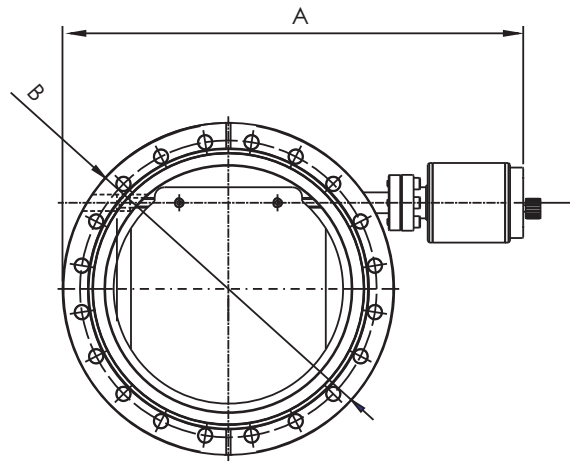
System
Component

Technical Data for Quick Access Doors

Shutter	Stainless steel
Mounting seal	OFHC gasket (Both side)
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
Temperature Range	0°C (32°F) ~ 200°C (392°F)
Bake Temperature	250°C (482°F)
Body material	SUS304/L
Feedthrough	UHV Rotary Driver
Mounting position	Any

Product Order Information

System
Component



UHV Viewport Shutters, CF Flange, SUS304/L

Catalogue PN	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



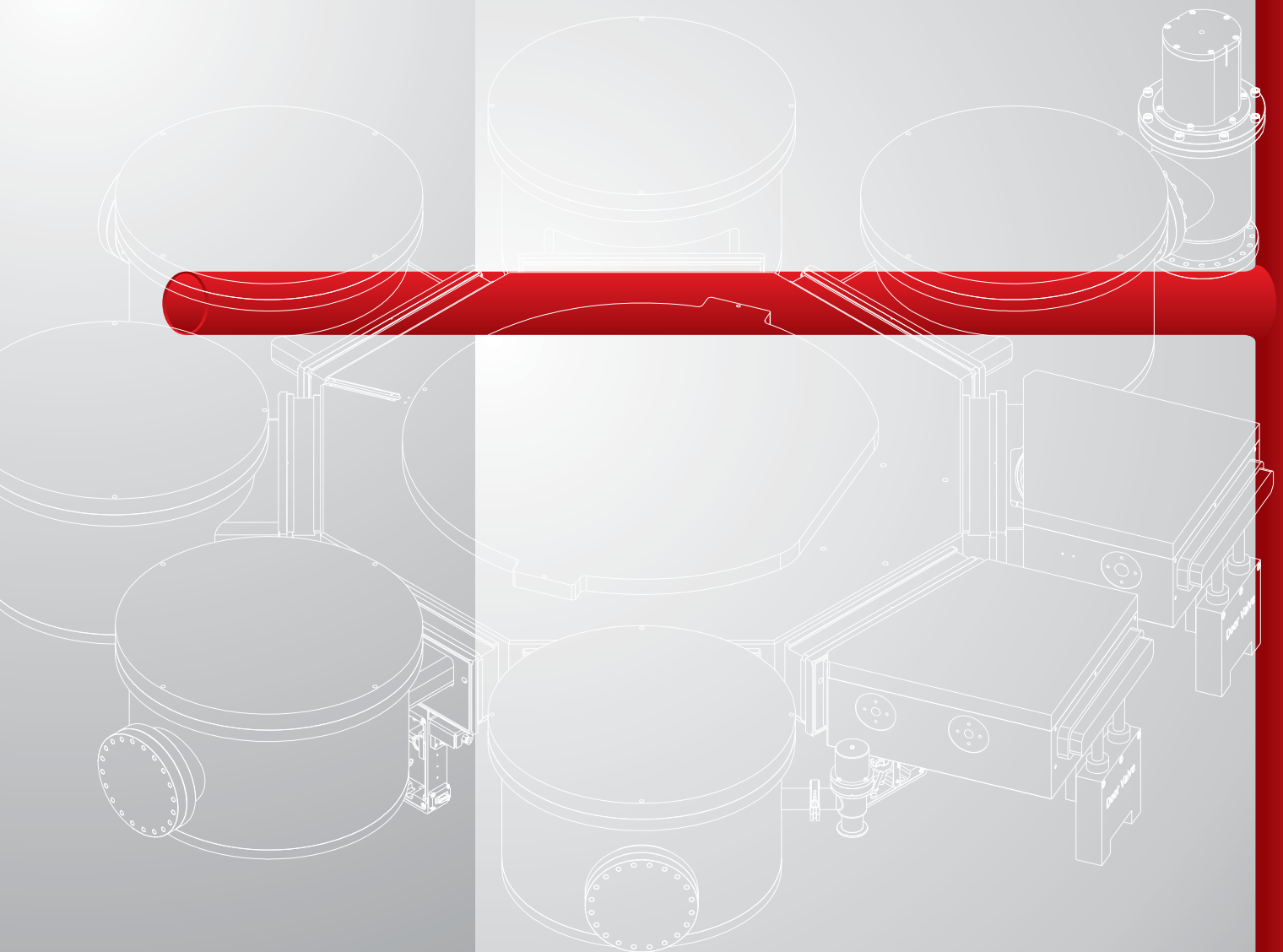


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