



Transfer Slit Valves

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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

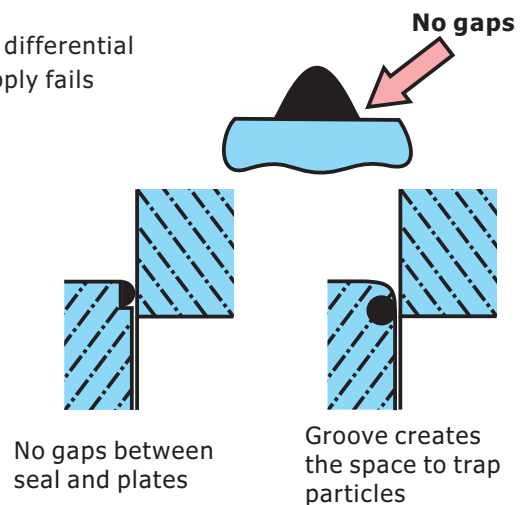
Mechanism

- 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

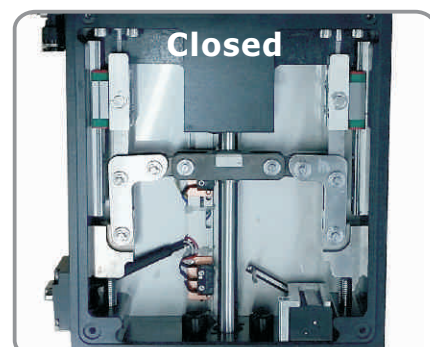
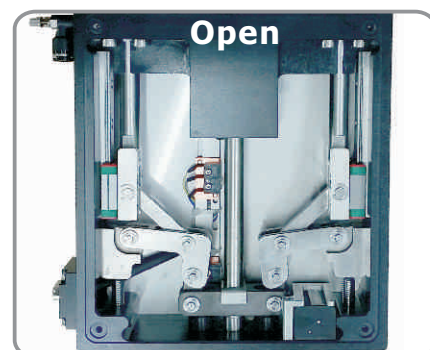
ARM Feature

- 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

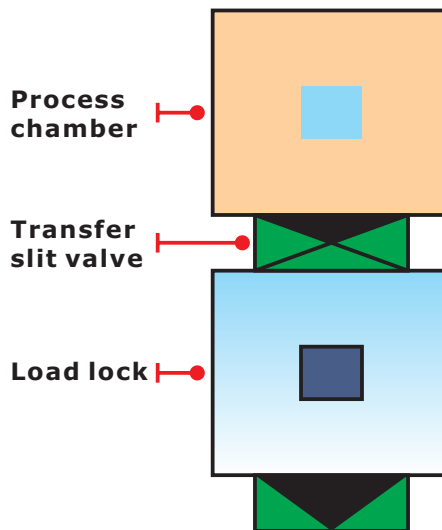


Product's Application

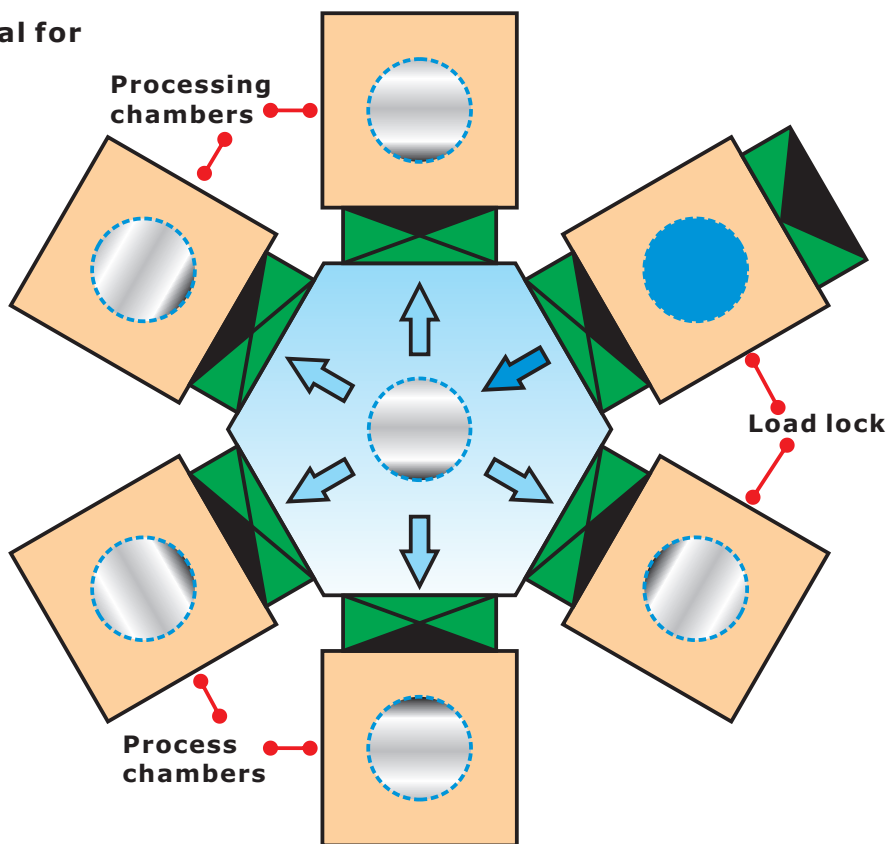
Layout for inline process system.

Object transfer: from load lock to process chamber.

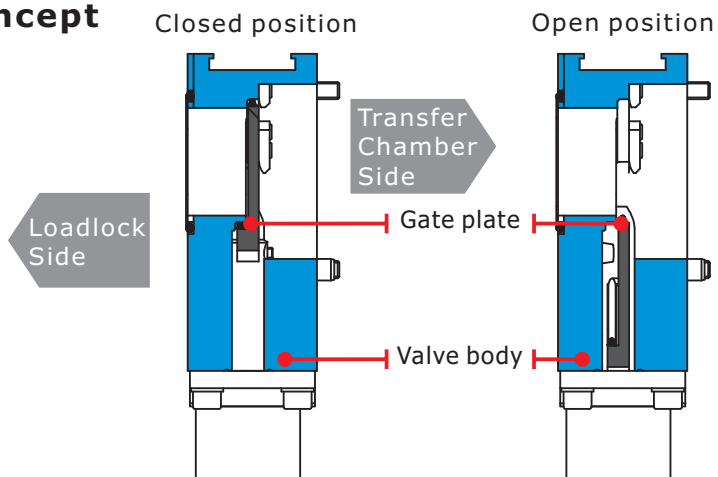
The Transfer Slit Valve offers superior performance over circular gate valves with smooth reliable operation and no vibration.



Transfer Slit Valve : Ideal for multiple process chamber systems.

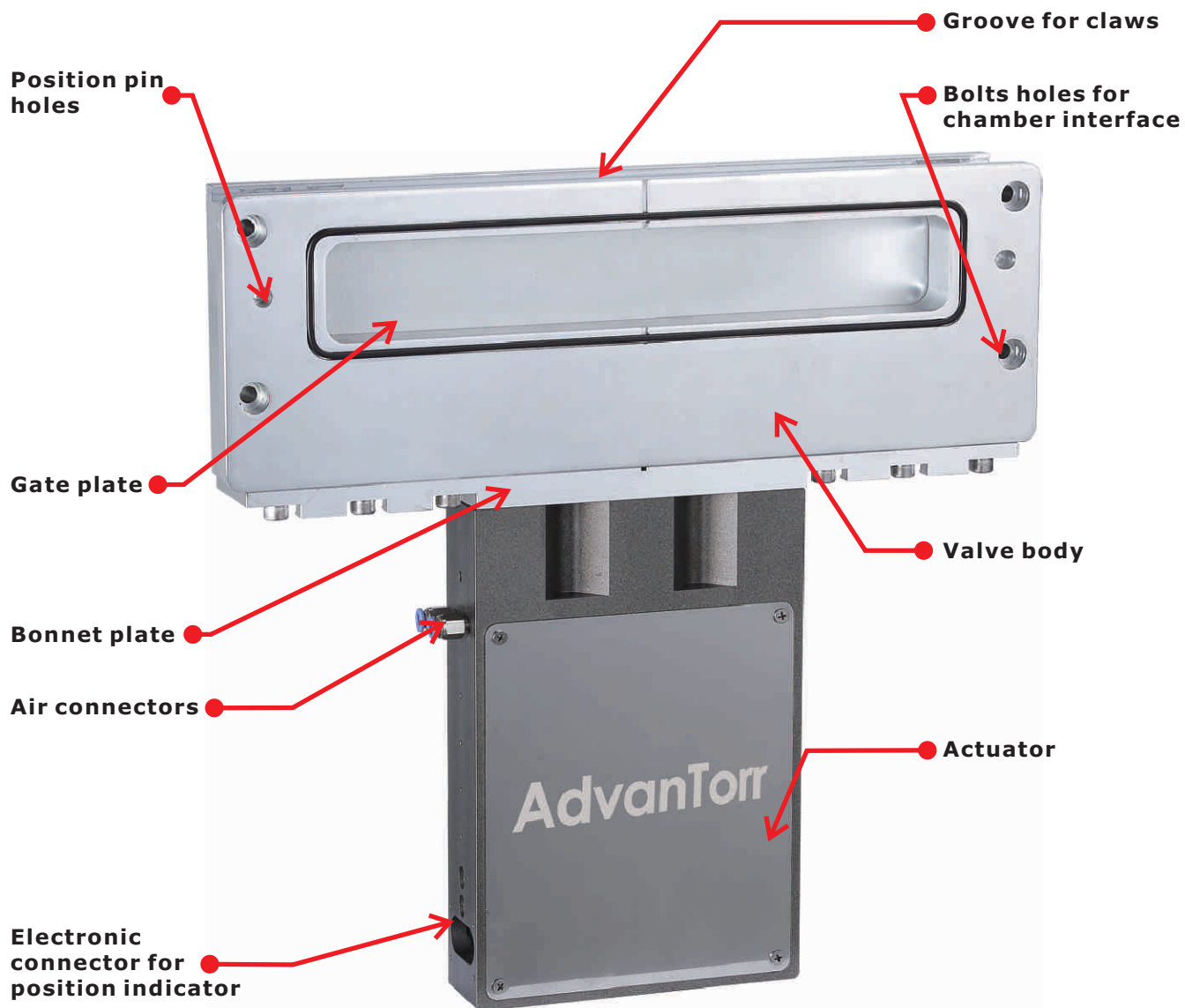


Valve's operation concept



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)

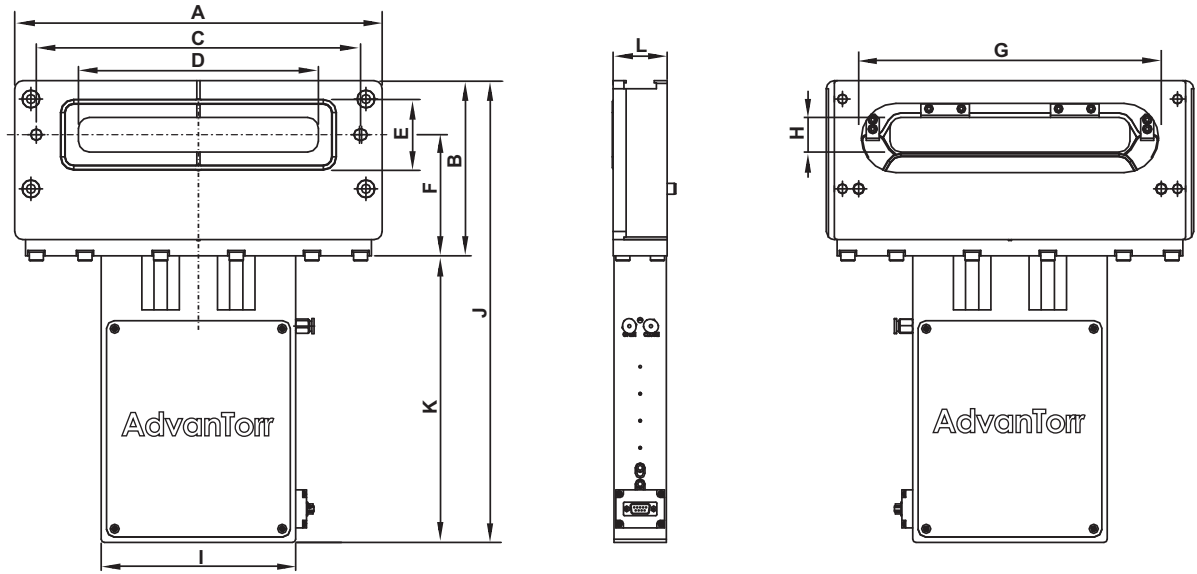
Valve's performance data

	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)

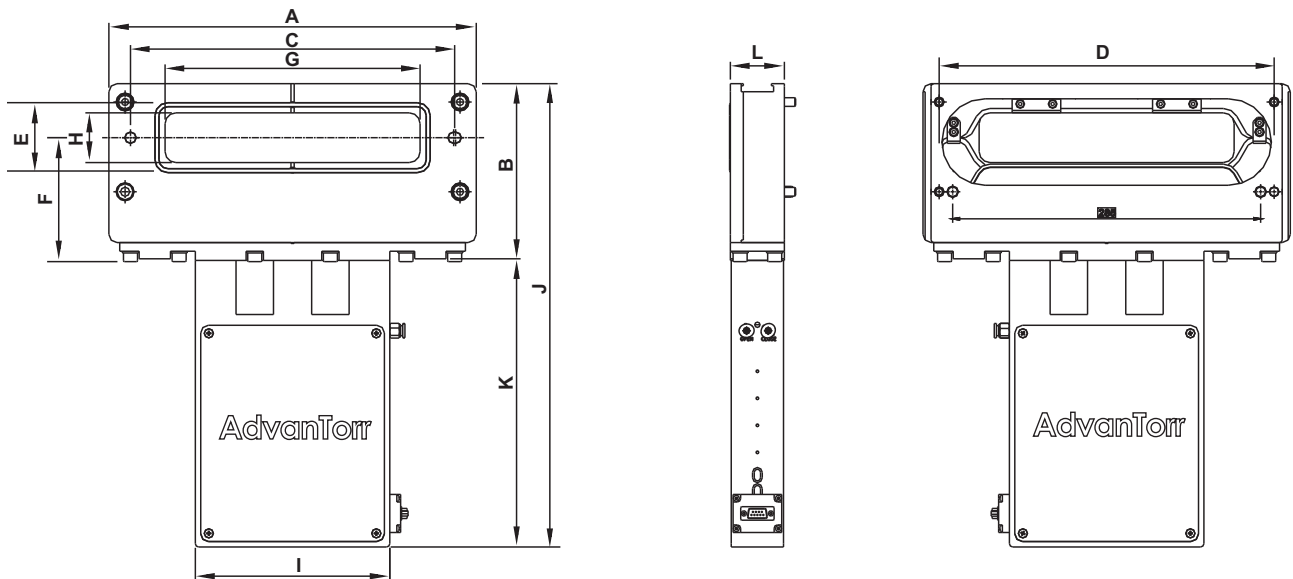
Product Order Information

Vacuum
Valves

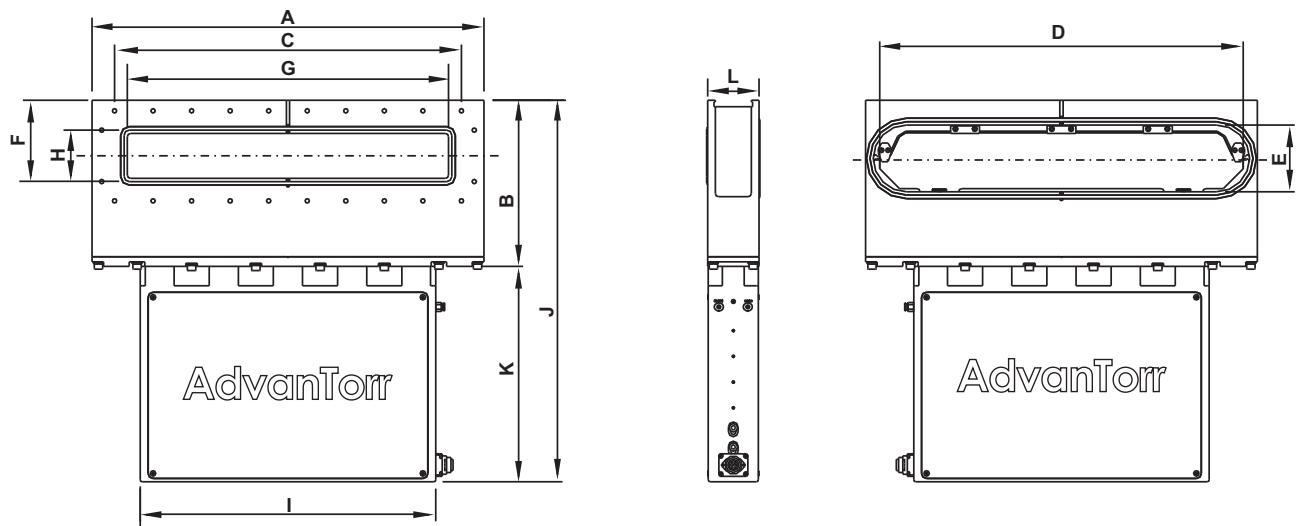
◆ Figure 1



◆ 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

