PRECESS VACUUM®
普瑞赛思 · Company

半导体应用真空阀门

Vacuum Valve for Semiconductor

Company Introduction

Founded in 2019 Years – Located Beijing city, the capital of China. Global footprint China, Singapore and Korea, PRECESS is a developer of high-performance vacuum valve, weld bellows and vacuum components. With the innovation and engineering excellence is the driving force of PRECESS' technology solutions and services. Customization on PRECESS product signifies our strong focus to provide customers solutions without compromise.

普瑞赛思® brand provides full portfolio of vacuum products in China.

Semiconductor BU – Control valve, transfer valve, ATM door, gate valve, pendulum valve, angle valve.

Solar & Display BU – Control valve, large transfer valve, ATM Door, pendulum valve, gate valve.

GVA and R&D BU – UHV gate valve and angle valve.

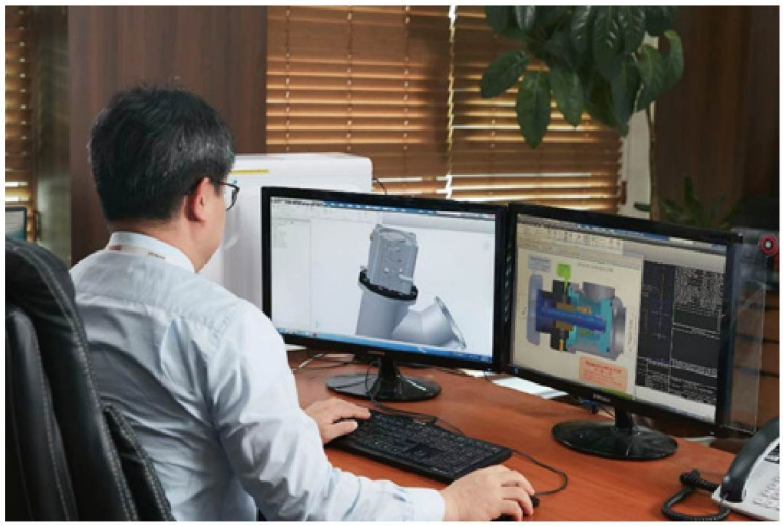
Our strength is the wide range of our product portfolio which comprises approximately 100 vales series with more than 1,500 customized and 1,000 standard products, high steady quality, short lead time, high experienced team. We have solutions for all vacuum levels from sub-atmospheric to extremely high vacuum (XHV).

Aim to be the world best, full portfolio of vacuum valve solution – Control valve, transfer valve, ATM door, gate valve, protection gate valve, pendulum valve, angle valve.

We focus on vacuum technology as our key competence. From the beginning, our approach was to work very closely with our customers. We have a deep knowledge of their industries, needs and expectations and develop new products accordingly. This is our passion for technology innovation.

Applications of our valve are semiconductor process, solar & display, industrial and R&D. Custom options include heating, water cooling, specialty coatings and seals.

After-sales service. Our service team is highly experienced and utilized well-established, proven process.



Product Portfolio – Valve Manufacturing

Manufacturing of vacuum valve

Manufacturing Environment

Form-die & Zig

We pride in our metal mold design, but also various types and sizes of metal molds. Among metal molds and ZIGs, welded metal bellows' shee t pressing metal molds require precise design, manufacture and manage ment.

We are able to predict quality decline by recording and managing the nu mber and time period of production according to the metal mold's serial number.

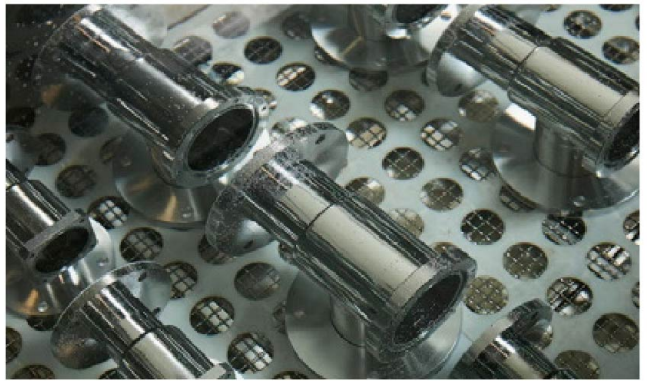
By taking proactive measures against these predictions, we are further a ble to preventquality problems. Because this is directly linked to the prod uct's quality, price and competitiveness, only our experts are delegated t he task of design and management.

Purity of Cleaning

Quality management regarding cleaning is treated equally with leakage as a critical quality point (CQP).

The aftertreatment processing of electrolytic polishing perfects, the purification of points not visible or touchable.

We have installed 2 systems (total 6 tanks) and D.I watering facilities as ultrasonic cleaners.



Purity of D.I. Water

We use hot D.I. water and ultrasonic cleaning system to block possibility of contamination-related defects.

Cleaning processing is applied to all the products we manufacture. For ultrasonic cleaning, products are separated by level of contamination into 6 different cleaning tanks.

We offer solution to various outgassing problems. Electrolytic polishing solution that has remained in gaps over time leaks or corrodes the interior, causing contamination and defects.

Type	Basis	Toc	UF	Absolute
0.22um	Standard	Standard	Standard	Standard
254/185nm UV Lamp	—	Standard	—	Standard
MW 5000 UF filter	—	—	Standard	Standard
Water Quality	—	—	—	—
Resistivity (at 25C)	18.2	18.2	18.2	18.2
TOC	5-10ppb	1-5ppb	5-10ppb	1-5ppb
Edotoxin(Progens)	—	—	—	—
Bacteria	<1cfu/mm	<1cfu/mm	<1cfu/mm	<1cfu/mm
Particles(0.2um)	<1/mm	<1/mm	<1/mm	<1/mm

Product Portfolio – Valve Manufacturing

Manufacturing of vacuum valve

Accuracy of Machining

Vacuum valve is our core product. We create, we machine process them with accuracy and precision as our principle. Our product parts meet the promised standard of excellence with our clients.

Management of Material

We have the quality of raw material, ratio of constituents and purity inspection. Especially, for the most important material of the welded bellows AM350, hastelloy-C, inconel and other special alloys, in case of durability and corrosion resistance, components ratios, purity we manufactured. It has a decisive influence on the quality of the finished product. We are responsible for quality control through periodic material. By doing this, to guarantee the quality of products, corrosion resistance, service life and reliability.

Accuracy of Welding

To minimize deformation from welding, we use optimal ZIG. Products requiring high precision are processed a secondary machining to correct for any deviation from the target measurement. In UHV and HV environment, we use the back bead welding process to manufacture vacuum pipes.

To prevent oxidation and minimize outgassing, we weld only after nitrogen charging.

Condition of Inside Welding

We check the interior welding status, which is the most important part of vacuum pipe quality control. We focus not only on the exterior condition of our products but also the interior, which directly affect product performance.

Back bead

Autogenous

Fillet

Brief

SEMICONDUCTOR

- Control Valve

  Control Butterfly Valve, Control Gate Valve

- ATM Door

- Transfer Valve

  L-Motion, I-Motion and T-Motion

- Gate Valve

  Vacuum Gate Valve, HV Gate Valve

  UHV Gate Valve, 3-Position Gate Valve

- Protection Gate Valve

- RPC Valve

- Pendulum Valve

Content

Content

Product Selection Guide

PS	BV-	N-	080F-	LR3S-	2FS-	TV	R001 /	0001

Model Quality	0001: 1st valve
	0002: 2nd valve
	0003: 3rd valve
Version	R001, R002....
Customer Code	Eg: TV—Tsinghua University
Quantity of Sensor Port	1: 1 sensor port
	2: 2 sensor ports
Sealing Material	FS: FFKM
Body Material	A: Aluminum
	H: Hard anodization
	S: SS304
	L: 316L
Communication Interface	R3: RS232 R4: RS485
	LO: Logic DN: DeviceNet
	PB : Profibus EN: Ethernet
	CC: CC-Link EC: EtherCAT
Power Option*	B: Basic S: with SPS
	P: with PFO D: with SPS and PFO
Flange Size	040: DN40 050: DN50
	063: DN63 080: DN80
	100: DN100 160: DN160
	200: DN200 250: DN250
Flange	K: ISO-KF
	F: ISO-F
	CF: CF-F
	CFU: CF-F UHV
Sealing Type	N: Non-sealing
	S: Sealing
Valve Type	BV: Butterfly
	PV: Pendulum
	GV: Gate
Company	PS: PRECESS

Product List

DN40

DN50

DN63

DN80

DN100

DN160

DN200

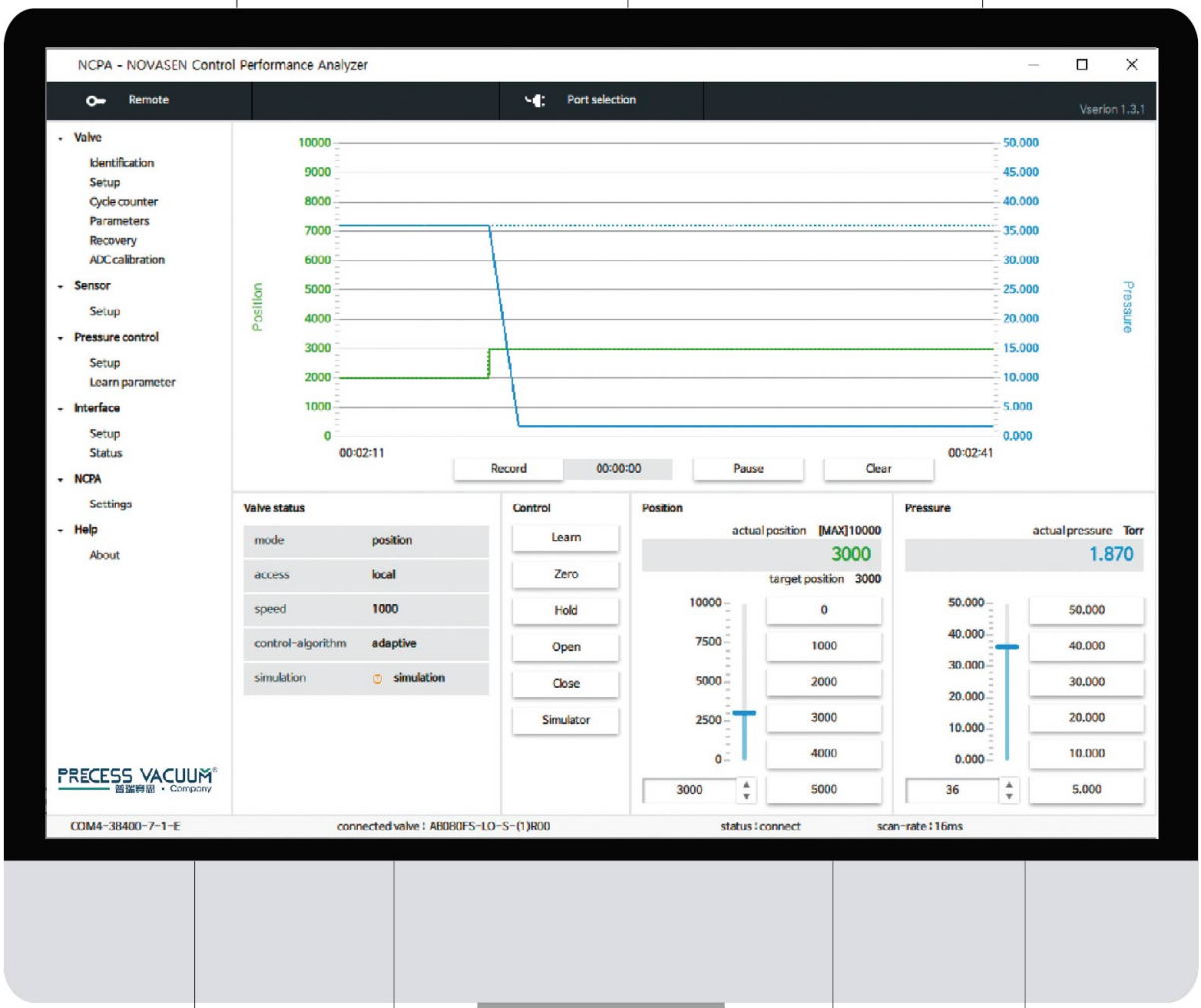
DN250

Setup&Management

Status Monitoring

Position and Pressure Control
Change Graph Watch and Save

Position and Pressure Control



Auto Learn Mode

Valve / Sensor Setup

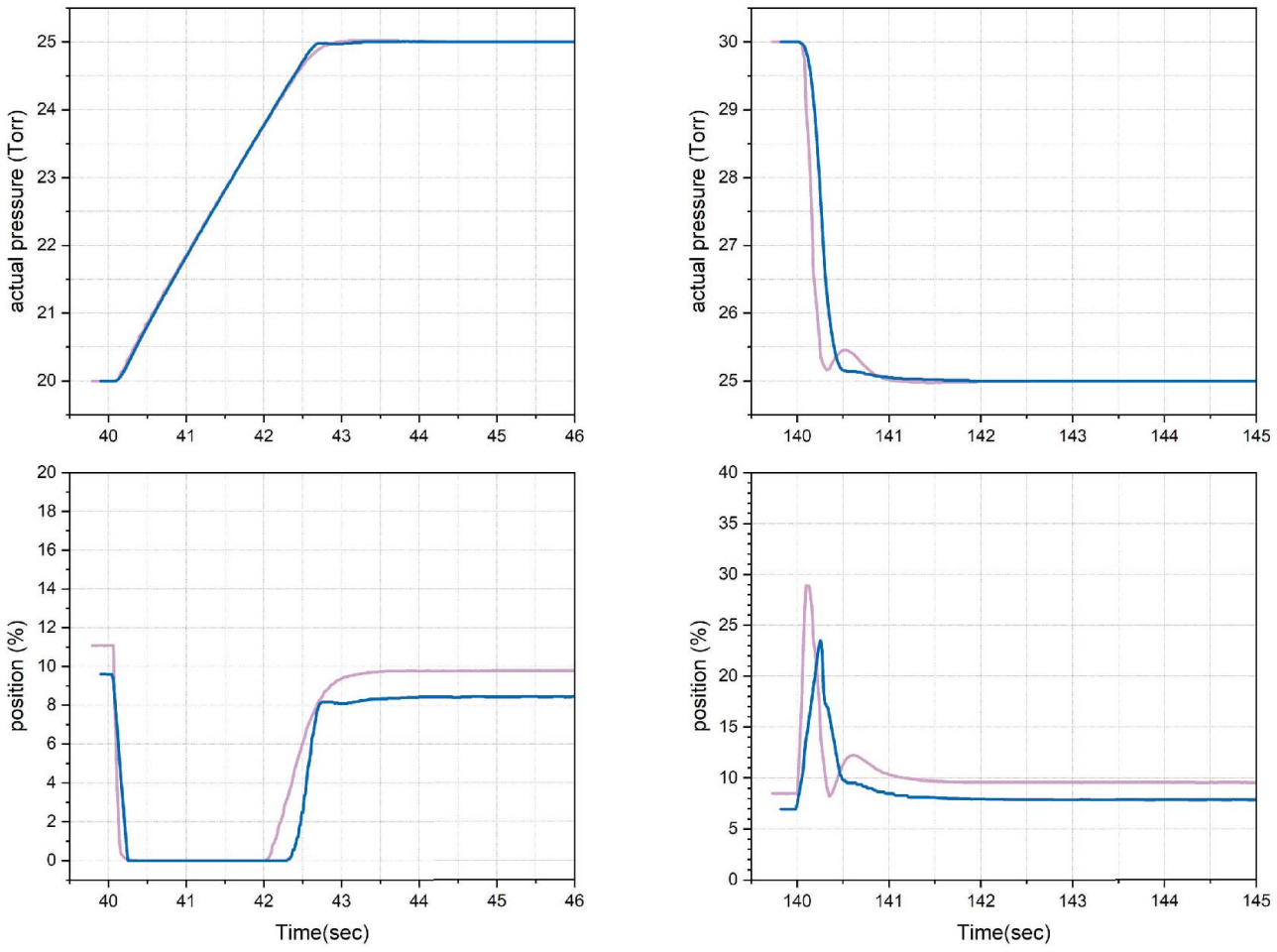
Learn Data Save / Load

Interface Setup

APC Butterfly Valve

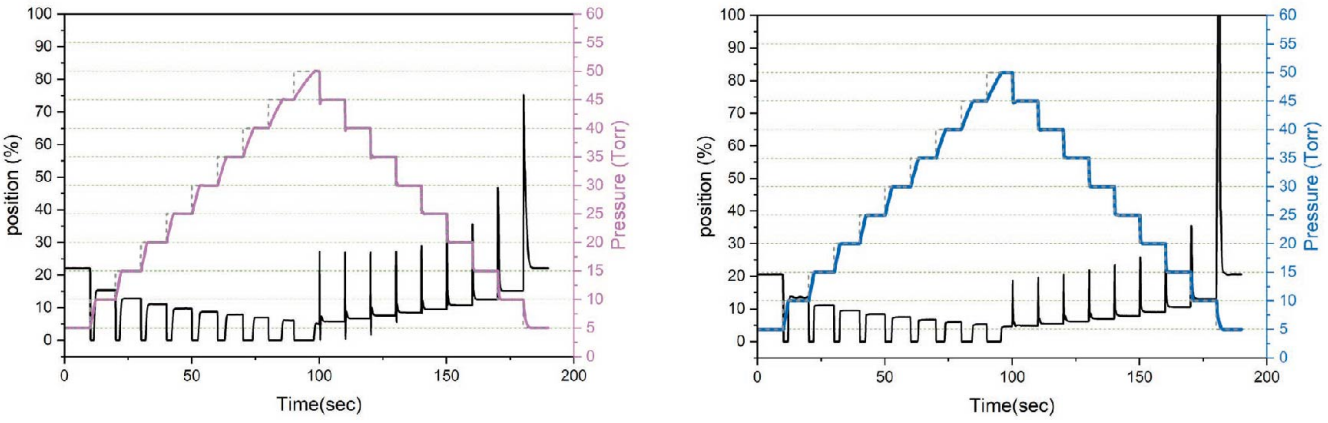
Control Performance

PRECESS
Competitor

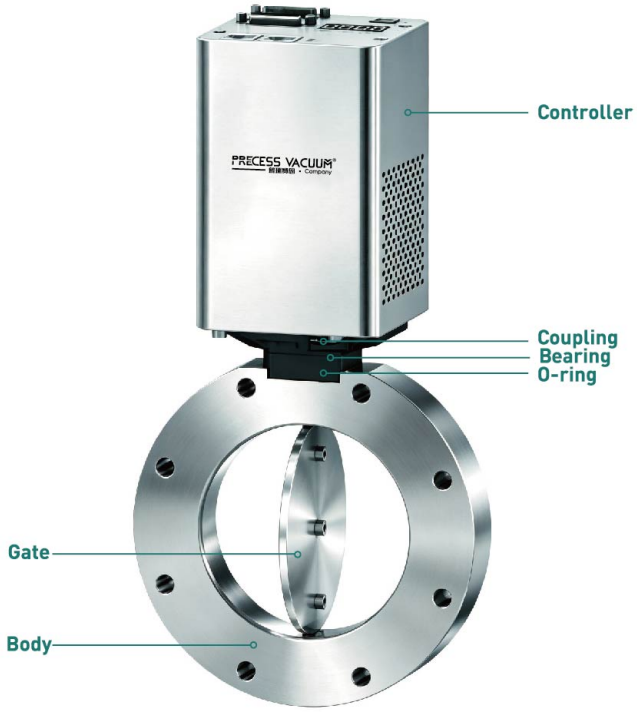


Pressure Up

Pressure Down



Control Response

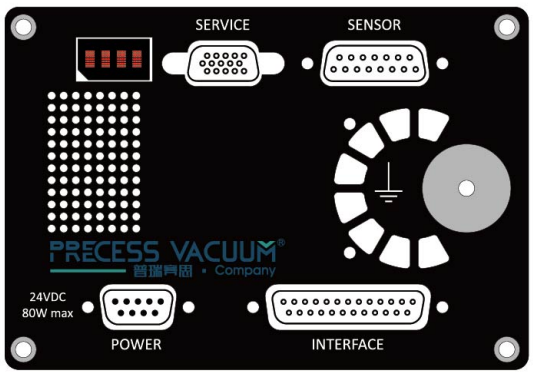


Product Specifications

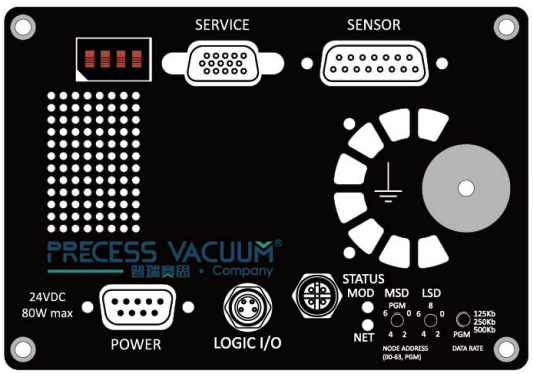
Pressure range at 20°C	1 × 10^{-8} mbar to 1.2 bar (abs)
Leak rate to outside at 20°C	<1 × 10^{-9} mbar l/s
Cycles until first service	2,000,000 (unheated and under clean conditions)
Admissible operating temperature	+10°C to +150°C
Mounting position	Any Control unit for ISO-KF version needs support when mounted on horizontal piping and control unit does not hang.
Wetted materials **- Body, plate** **- Shaft** **- Plate screws**	 Stainless steel 304 , aluminum 6061 Stainless steel 316L Stainless steel 304
- Shaft seal	Viton® (standard). Other materials available on request. Seal materials are declared on dimensional drawing of specific valve ordering number.
- Slide bearing for shaft	Iglidur® X

Power input [1]	+24 VDC (±10%) @ 0.5V pk-pk max.[connector: POWER]
Power Consumtion	80 W max. (operation of valve with max. load) without PF04)
Sensor power supply [2]	+24 VDC / 1500 mA max. [connector: POWER] ±15 VDC (±5%) / 667 mA max. [connector:SENSOR]
- Input **- Output**	
Sensor input	0-10 VDC / Ri > 100 kΩ [connector: SENSOR] 0.16 mV 1 ms
- Signal input **- ADC resolution** **- Sampling time**	
Digital inputs [3]	±24 VDC max.
Digital outputs [3]	70 VDC or 70 V peak max. 0.5 ADC or 0.5 A peak max. 10 W max.
- Input voltage **- Input current** **- Breaking capacity**	
Ambient temperature	0 °C to +50 °C max. (< 35 °C recommended)
Pressure control accuracy	5 mV or 0.1% of setpoint, whichever is greater
Position resolution / position control capability	20000
Actuating time **closing**	0.3 s typ.
opening	0.3 s typ.
Utilizable valve torque	2.5 Nm

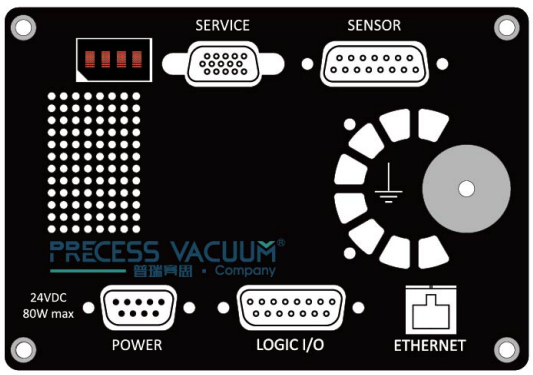
1) Internal overcurrent protection by a PTC device. 2) Refer to chapter «Sensor supply concepts» for details. 3) Refer to chapter «Schematics» for details.



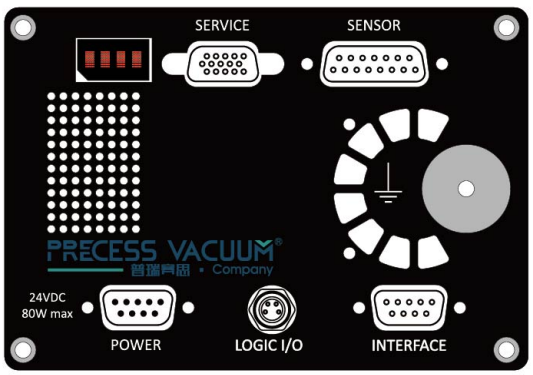
RS232, Logic, RS422, RS485



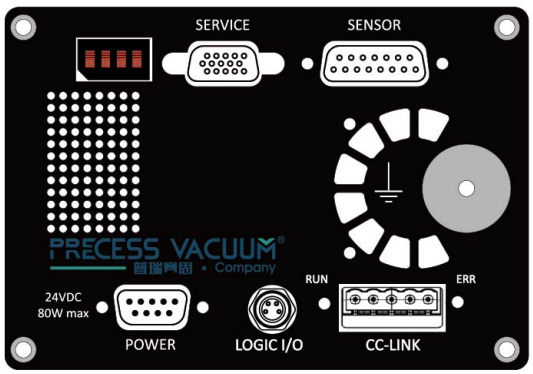
DeviceNet



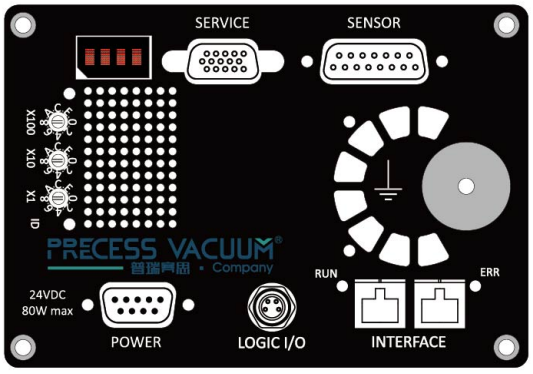
Ethernet



Profibus



CC-Link



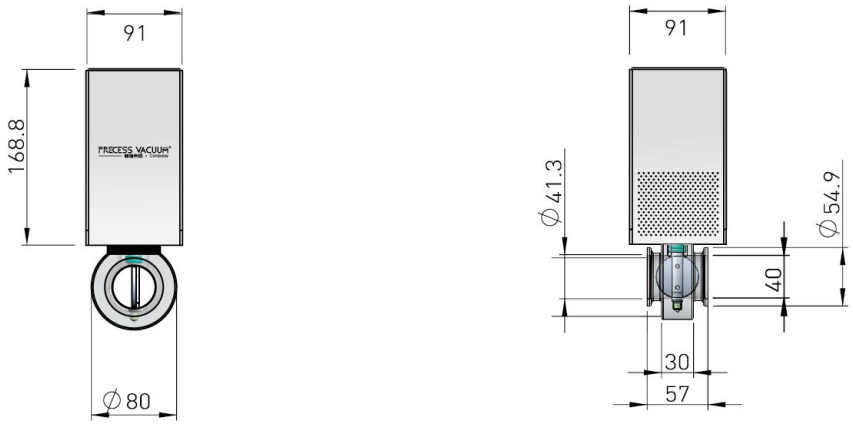
EtherCAT

ELECTRICAL CONNECTIONS

	CONNECTION	TYPE
POWER	Power input	DB-9 male
SENSOR	Sensor input Sensor power supply	DB-15 female
INTERFACE	RS232, Logic, RS422, RS485	DB-25 female
	DeviceNet	Micro-style male
	Ethernet	RJ-45
BUS Mudules	Profibus	DB-9 female
	CC-Link	5-pole terminal screw
	EtherCAT	RJ-45 x 2

Dimensional Drawing

DN40

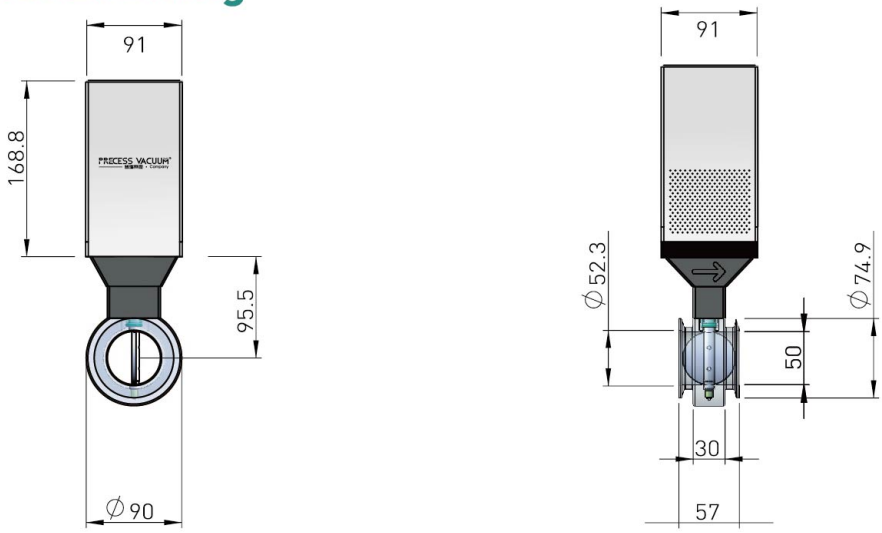


Product Specification

DN (nominal I.D.)		Conductance in open position (molecular flow)	Minimum controllable conductance (molecular flow)	Max. differential pressure	Typical closing / opening time	Weight(approx.)			
						Aluminum		Stainless steel	
mm	inch	ls-1	ls-1	mbar	s	kg	lbs	kg	lbs
40	1½	80	0.25	1,000	0.3	2.8	6.3	3.9	8.6

Dimensional Drawing

DN50

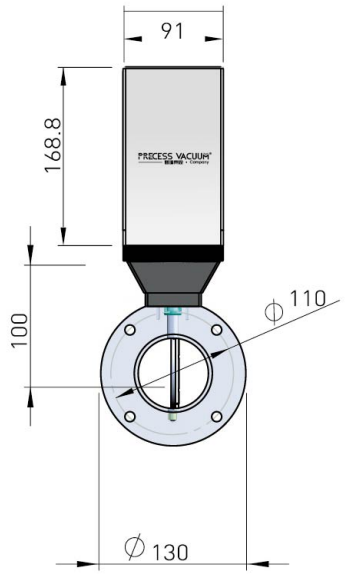


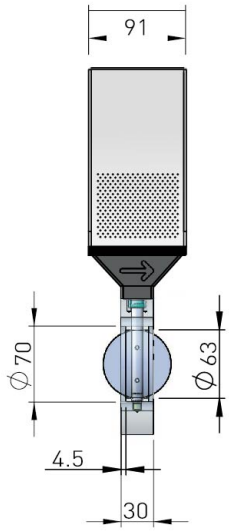
Product Specification

DN (nominal I.D.)		Conductance in open position (molecular flow)	Minimum controllable conductance (molecular flow)	Max. differential pressure	Typical closing / opening time	Weight(approx.)			
						Aluminum		Stainless steel	
mm	inch	ls-1	ls-1	mbar	s	kg	lbs	kg	lbs
50	2	150	0.3	1,000	0.3	2.9	6.4	4.1	9.0

Dimensional Drawing

DN63



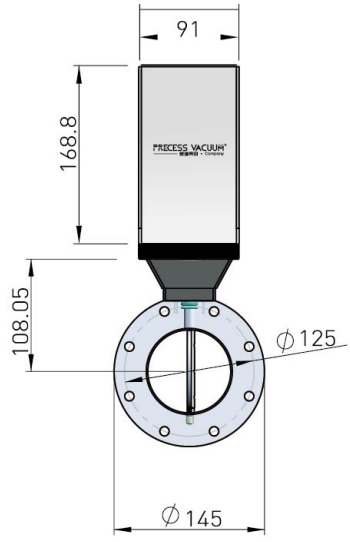


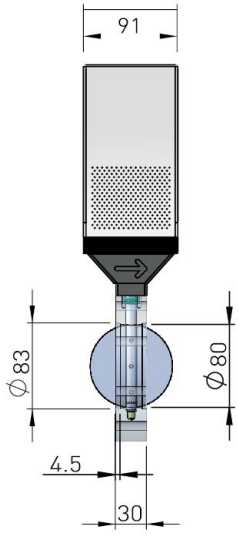
Product Specification

DN (nominal I.D.)		Conductance in open position (molecular flow)	Minimum controllable conductance (molecular flow)	Max. differential pressure	Typical closing / opening time	Weight(approx.)			
						Aluminum		Stainless steel	
mm	inch	ls-1	ls-1	mbar	s	kg	lbs	kg	lbs
63	2½	360	0.45	1,000	0.3	3.3	7.2	5.2	11.5

Dimensional Drawing

DN80



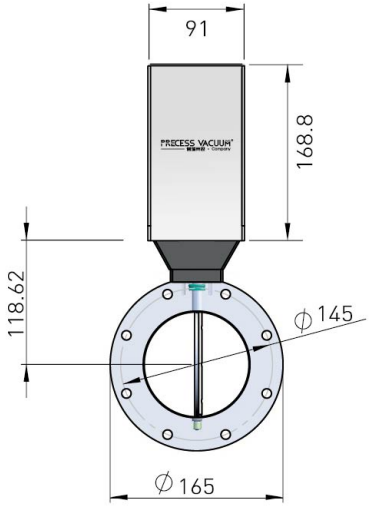


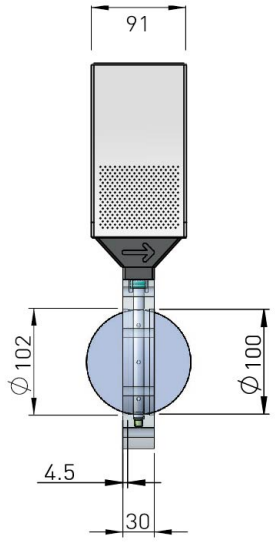
Product Specification

DN (nominal I.D.)		Conductance in open position (molecular flow)	Minimum controllable conductance (molecular flow)	Max. differential pressure	Typical closing / opening time	Weight(approx.)			
						Aluminum		Stainless steel	
mm	inch	ls-1	ls-1	mbar	s	kg	lbs	kg	lbs
80	3	850	0.65	1,000	0.3	3.4	7.5	5.5	12.1

Dimensional Drawing

DN100



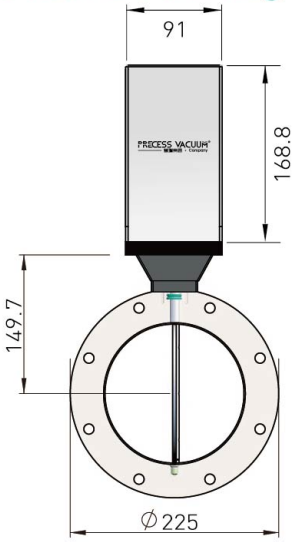


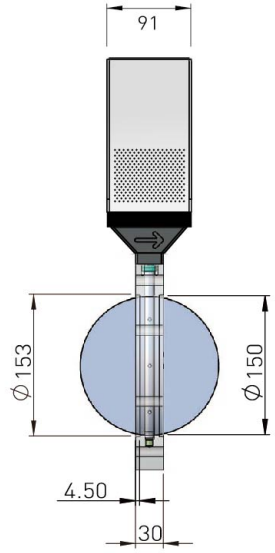
Product Specification

DN (nominal I.D.)		Conductance in open position (molecular flow)	Minimum controllable conductance (molecular flow)	Max. differential pressure	Typical closing / opening time	Weight(approx.)			
						Aluminum		Stainless steel	
mm	inch	ls-1	ls-1	mbar	s	kg	lbs	kg	lbs
100	4	1,400	0.85	800	0.3	3.6	7.9	6.1	13.4

Dimensional Drawing

DN160



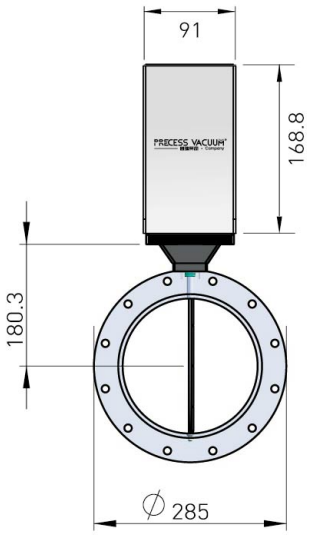


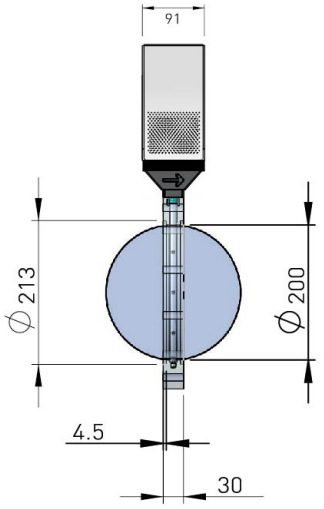
Product Specification

DN (nominal I.D.)		Conductance in open position (molecular flow)	Minimum controllable conductance (molecular flow)	Max. differential pressure	Typical closing / opening time	Weight(approx.)			
						Aluminum		Stainless steel	
mm	inch	ls-1	ls-1	mbar	s	kg	lbs	kg	lbs
160	6	3,800	1.7	300	0.3	4.3	9.5	8.3	18.3

Dimensional Drawing

DN200



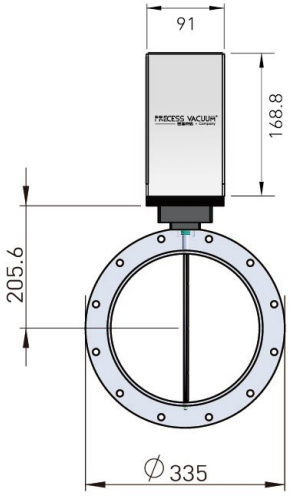


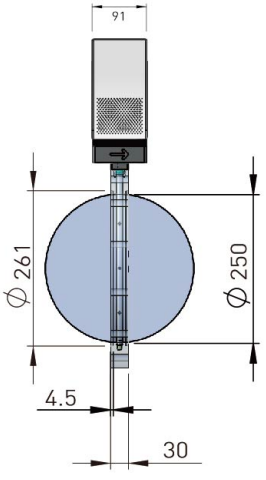
Product Specification

DN (nominal I.D.)		Conductance in open position (molecular flow)	Minimum controllable conductance (molecular flow)	Max. differential pressure	Typical closing / opening time	Weight(approx.)			
						Aluminum		Stainless steel	
mm	inch	ls-1	ls-1	mbar	s	kg	lbs	kg	lbs
200	8	7,800	2.8	150	0.3	5.2	11.5	10.9	24.0

Dimensional Drawing

DN250





Product Specification

DN (nominal I.D.)		Conductance in open position (molecular flow)	Minimum controllable conductance (molecular flow)	Max. differential pressure	Typical closing / opening time	Weight(approx.)			
						Aluminum		Stainless steel	
mm	inch	ls-1	ls-1	mbar	s	kg	lbs	kg	lbs
250	10	15,000	5.0	100	0.3	5.9	13.0	13.0	28.7

Control Gate Valve

HV / UHV CONTROL GATE VALVE, SERIES PSGV

Control and isolation valve for Semi, FPD and industry application.
Best fit for etching and sputtering processes.

APPLICATIONS

- Semiconductor, FPD, and general vacuum processing
- Etch and sputter deposition

MAIN FEATURES

- Excellent pressure control performance
- Service port available to connect with computer or service box
- DN63-250 with FKM O-ring gate seal
- Good bellows sealed valve
- Stainless steel material valve body for corrosion resistance
- Available in ISO-F, CF-F, ASA-LP, JIS flange

OPTIONS

- Controller located different position
- Various O-ring (Kalrez®,Chemraz®etc.)

Valve with integrated pressure controller and step motor

DN	Ordering Number	
mm	ISO-F metric flange	CF-F metric flange
63	PSGV-S-063F-SR3S-2	PSGV-S-063CFU-SR4S-2
80	PSGV-S-080F-SR3S-2	PSGV-S-080CFU-SR4S-2
100	PSGV-S-100F-SR3S-2	PSGV-S-100CFU-SR4S-2
160	PSGV-S-160F-SR3S-2	PSGV-S-160CFU-SR4S-2
200	PSGV-S-200F-SR3S-2	PSGV-S-200CFU-SR4S-2
250	PSGV-S-250F-SR3S-2	PSGV-S-250CFU-SR4S-2

Product Selection Guide

PS	GV-	S-	080F-	LR3S-	2FS-	TV	R001 /	0001		
									Model Quality	0001: 1st valve 0002: 2nd valve 0003: 3rd valve
									Version	R001, R002....
									Customer Code	Eg: TV—Tsinghua University
									Quantity of Sensor Port	1: 1 sensor port 2: 2 sensor ports
									Sealing Material	FS: FFKM
									Body Material	A: Aluminum H: Hard anodization S: SS304 L: 316L
									Communication Interface	R3: RS232 R4: RS485 LO: Logic DN: DeviceNet PB : Profibus EN: Ethernet CC: CC-Link EC: EtherCAT
									Power Option*	B: Basic S: with SPS P: with PFO D: with SPS and PFO
									Flange Size	040: DN40 050: DN50 063: DN63 080: DN80 100: DN100 160: DN160 200: DN200 250: DN250
									Flange	K: ISO-KF F: ISO-F CF: CF-F CFU: CF-F UHV
									Sealing Type	N: Non-sealing S: Sealing
									Valve Type	BV: Butterfly PV: Pendulum GV: Gate
									Company	PS: PRECESS

Actuator		Electric drive with integrated stepper motor controller
Leak rates	Valve body, seat	$< 1\times10^{-9}$mbar l/s
Pressure range	DN63-160 DN200-250	1×10^{-8}mbar to 1.6 bar 1×10^{-8}mbar to 1.2 bar
Differential pressure on the gate in opening direction	DN63-160 DN200-250	⩽ 1.6 bar ⩽ 1.2 bar
Differential pressure on the gate in closing direction		⩽ 1.2 bar
Differential pressure at the opening		⩽ 30 mbar
Life cycle until first service		> 200,000
Temperature	Valve body Valve gate Controller	⩽ 150 °C ⩽ 120 °C Max.50°C(⩽35°C recommended)
Material	Valve body Valve gate Bonnet Shaft Mechanism Bellows Bellows end piece	AISI 304 (1.4301) AISI 304 (1.4301) AISI 304 (1.4301) AISI 304 (1.4301) AISI 316L(1.4404,1.4435) AISI 316L(1.4404,1.4435) AISI 304 (1.4301)
Surface treatment	Valve body Valve gate Bonnet Shaft	Buffing Buffing Buffing Bare
Seal	Bonnet, gate	FKM (Viton®)
Feed through		Bellows
Mounting position		Any
Stepper Motor	Length Step angle Current Torque Radial inertia Weight	83mm 1.8^{0} 2.6A 220N.cm 500g.cm 1.15kgs
Controller	Max. output current Controllable angle Controller Inner loop Outer loop Pressure feedback input	7A(24V DC) 128step, 1.8^{0}/128 to 0.014^{0} PID Position controller Pressure controller 4-20mA current loop 0-5V input
Options	·FFKM sealing material is available ·Vulcanized sealing material ·Different valve body surface treatment	

Product Selection Guide

PSGV- | 063- | P | CFU | M | S- | 0011- | 4- | 1

Option	1: Check valve	2: Lock function
	3:Port inserted	
Air Fitting Size	0=No use	4=4pi
	6=6pi	1/4=1/4pi
Position Indicator	0=No position sensor	1=Magnetic reed switch
	2=Limit switch	
Solenoid Valve	0=No Solenoid Valve	1: 24V DC
	2: 110V AC	3: 220V AC
Gate O-ring	1=FKM	2=Karlez
	3=EPDM	4=FFKM
Bonnet O-ring	1=FKM	2=Karlez
	3=EPDM	4=FFKM
Material	S=SS304	A: Aluminum
	L=316L	
Thread	M=Metric	U=Unify
Flange	KF=ISO-KF	KQ=ISO-K
	ISO=ISO-F	CF=CF-F
	CFU=CF-F UHV	KFU=ISO-KF UHV
Actuator	P: Pneumatic	M: Manual
Size	040=DN40	200=DN200
	050=DN50	250=DN250
	063=DN63	320=DN320
	080=DN80	350=DN350
	100=DN100	400=DN400
	160=DN160	450=DN450
Company	PS: PRECESS	
Valve Type	PSGV(Gate valve)	PSAV(Aluminum)
	PS3P(3rd position)	PSPGV(Protection gate)
	PSAGV(All metal gate)	PSAAV(All metal angle)
	PSHI(Heater inserted)	PSHJ(Heating jacket)

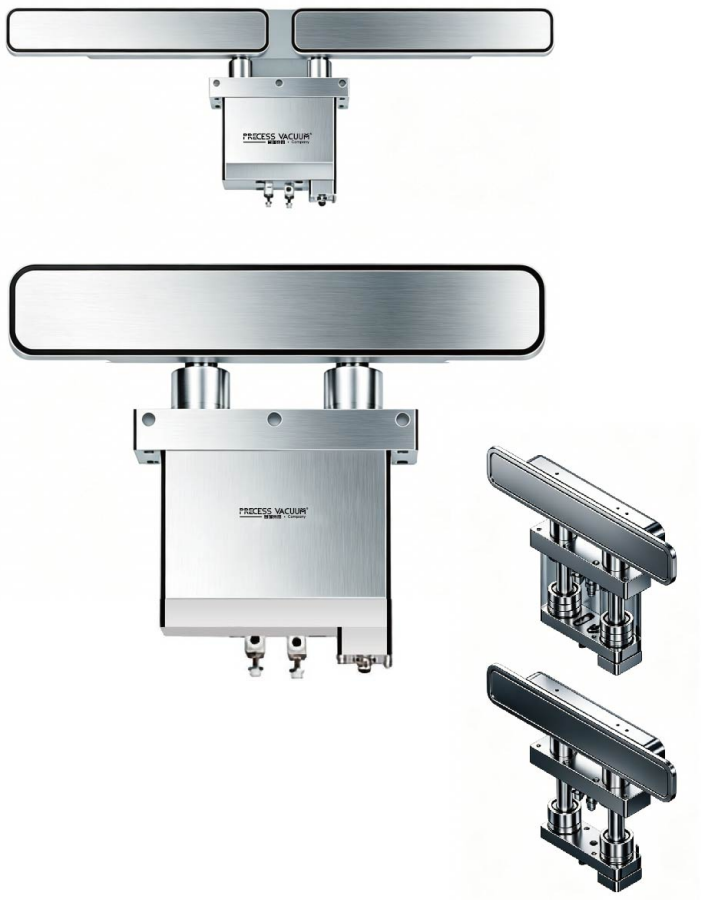
PSTV- | 32*222 | B | L- | 00AS | -4 | 0

Gate & Bonnet O-ring	0=FKM
	1=FFKM
Air Fitting Size	0=No use
	4=4pi
	6=6pi
	1/4=1/4pi
Position Indicator	0=No indicator
	1=Magnetic reed switch
Solenoid Valve	0=No Solenoid Valve
	1=24V DC
	2=110V AC
	3=220V AC
Body Material	A=Aluminum
	S=Stainless steel
	H=Hard anodized aluminum
Gate Blade Material	A=Aluminum
	S=Stainless steel
	H=Hard anodized aluminum
Motion	I=I motion
	L=L motion
	T=T motion
	F=Flap-motion
Open Type	A=Rear side=Seat side
	B=Rear side>Seat side
	C=Insert type C
	(seat mounted inside chamber without bonnet flange)
	L=Insert type L
	(seat mounted to chamber with bonnet flange)
	M=Insert type M
	(seat mounted to chamber wall, without bonnet flange)
	N=Insert type N
	(seat mounted through chamber wall,without bonnet flange)
Size	32*222
	46*236
	50*336
	56*496
Company	PS: PRECESS
Valve Type	PSTV(Transfer valve) / PSDV(Door valve)

ATM Door

TRANSFER DOOR VALVE, SERIES PSDV

For load lock and process chamber isolation on the atmospheric side of SEMI production system. Also suitable for PV inline system.



APPLICATIONS

- Semiconductor processing
- Plasma Etch, CVD, sputter deposition
- Manufacturing of solar panels
- LCD/flat panel process
- All other cluster and inline vacuum systems

MAIN FEATURES

- Semi standard application (Semi E21- 94, Semi E24-92, Semi- E21.1-1296)
- Dust seal on the vacuum side of the bonnet flange that virtually eliminates particulate from entering the bellows
- Mechanical lock at the close position
- Particle and vibration free
- Realization of exact L-motion
- Easy maintenance

OPTIONS

- Hard anodized surface treatment
- Custom opening size available
- Various O-ring (Kalrez®,Chemraz® etc.)

ATM Door with pneumatic actuator

with position indicator

double action

SEMI E21.1 - 1296

DN	Ordering Number	
mm	blank aluminum	hard anodized aluminum
32 x 222	PSDV-32*222UL-10AA-6-0	PSDV-32*222UL-10HH-6-1
46 x 236	PSDV-46*236UL-10AA-6-0	PSDV-46*236UL-10HH-6-1
50 x 336	PSDV-50*336UL-10AA-6-0	PSDV-50*336UL-10HH-6-1
56 x 496	PSDV-56*496UL-10AA-6-0	PSDV-56*496UL-10HH-6-1
75 x 420	PSDV-75*420UL-10AA-6-0	PSDV-75*420UL-10HH-6-1
50 x 740	PSDV-50*740UL-10AA-6-0	PSDV-50*740UL-10HH-6-1
Other size on request		

With solenoid valve is an option

Actuator		Pneumatic
Leak rates	Valve body, seat	$< 1\times10^{-9}$ mbar l/s
Pressure range		1×10^{-9} mbar to 1 bar
Differential pressure on the gate in opening direction		⩽ 0.1 bar
Differential pressure on the gate in closing direction		⩽ 1 bar
Differential pressure at the opening		⩽ 0.1 bar
Life cycle until first service	Mechanism	⩾ 3,000,000
	O-ring	⩾ 1,000,000
Temperature	Valve body	⩽ 120°C
	Valve gate	⩽ 120°C
	Actuator	⩽ 60°C
Material	Valve body	EN AW-6061 (3.3211)
	Valve gate	EN AW-6061 (3.3211)
	Bonnet	EN AW-6061 (3.3211)
	Shaft	AISI 304 (1.4301)
	Mechanism	EN AW-6061 (3.3211)
	Bellows	AISI 633 (AM350)
	Bellows end piece	AISI 316L (1.4435)
Surface treatment	Valve body	Bare
	Valve gate	White hard anodization
	Bonnet	White hard anodization
	Shaft	Cr plating, buffing
	Actuator	White hard anodization
Seal	Bonnet, gate	FKM (Viton®)
Feed through		O-ring shaft
Solenoid valve		24V DC or on request
Position indicator	Type	Micro switch
	Voltage	24V DC
	Current	5-40 mA
	Connector	D-Sub 9P male
Air pressure		5 - 6 bar
Mounting position		Actuator up or down
Air failure		NA
Compress air connection		Quick connector OD 4mm
Options	·Custom size is available ·Twin gate design ·Hard anodized aluminum surface ·FFKM sealing material is available ·Other solenoid valve voltage (standard 24V DC)	

Transfer Valve

TRANSFER VALVE L-MOTION, SERIES PSTV

For load lock and process chamber isolation in SEMI production system. Suitable for corrosive process such as Etch or CVD.

APPLICATIONS

- Semiconductor processing
- Plasma Etch, CVD, sputter deposition
- Manufacturing of solar panels
- LCD/flat panel process
- All other cluster vacuum systems

MAIN FEATURES

- Semi standard application (Semi E21- 94, Semi E24-92, Semi- E21.1-1296)
- Patented L-motion link and dual shifts without springs in the actuator enable faster, smoother actuation with significantly reduced vibration
- Single pneumatic actuator
- Mechanical lock at the close position
- Welded bellows actuator seal
- Bonnet flange bolts are designed with retainers to eliminate bolts from falling out upon disassembly

OPTIONS

- Custom opening size available
- Stainless steel solution
- Various O-ring (Kalrez®,Chemraz® etc.)

Valve A = B with pneumatic actuator

with position indicator
double action

DN	Ordering Number	
mm	blank aluminum	hard anodized aluminum
46 x 236	PSTV-46*236AL-10AA-6-0	PSTV-46*236AL-10HH-6-1
50 x 336	PSTV-50*336AL-10AA-6-0	PSTV-50*336AL-10HH-6-1
Other size on request		

With solenoid valve is an option

Valve A < B with pneumatic actuator

with position indicator
double action

DN	Ordering Number	
mm	blank aluminum	hard anodized aluminum
30 x 110	PSTV-30*110BL-10AA-6-0	PSTV-30*110BL-10HH-6-1
32 x 222	PSTV-32*222BL-10AA-6-0	PSTV-32*222BL-10HH-6-1
46 x 236	PSTV-46*236BL-10AA-6-0	PSTV-46*236BL-10HH-6-1
50 x 336	PSTV-50*336BL-10AA-6-0	PSTV-50*336BL-10HH-6-1
Other size on request		

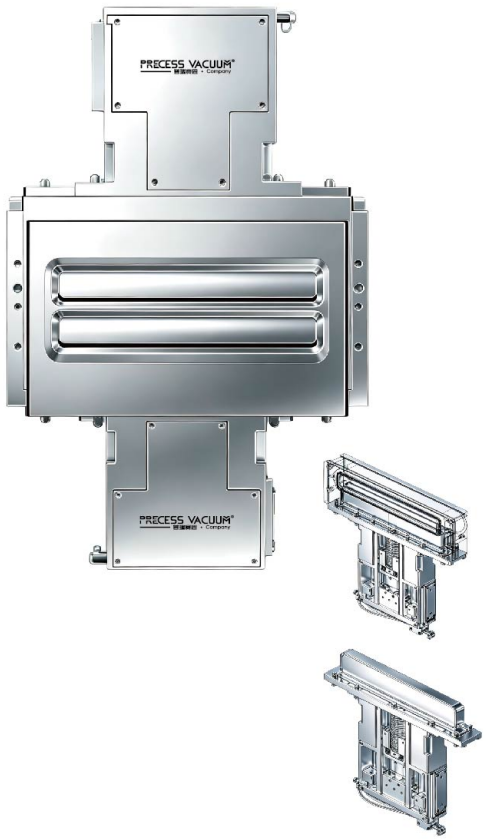
With solenoid valve is an option

Actuator		Pneumatic
Leak rates	Valve body, seat	$< 1\times10^{-9}$ mbar l/s
Pressure range		1×10^{-9} mbar to 1.2 bar
Differential pressure on the gate in opening direction		⩽ 1.2 bar
Differential pressure on the gate in closing direction		⩽ 1.2 bar
Differential pressure at the opening		⩽ 30 mbar
Life cycle until first service	Mechanism O-ring	⩾ 2,000,000
Temperature	Valve body Valve gate Actuator	⩽ 120°C ⩽ 120°C ⩽ 60°C
Material	Valve body Valve gate Bonnet Shaft Mechanism Bellows Bellows end piece	EN AW-6061 (3.3211) EN AW-6061 (3.3211) EN AW-6061 (3.3211) AISI 304 (1.4301) EN AW-6061 (3.3211) AISI 633 (AM350) AISI 316L (1.4435)
Surface treatment	Valve body Valve gate Bonnet Shaft Actuator	Bare Bare Bare Bare White hard anodization
Seal	Bonnet, gate	FKM (Viton®)
Feed through		Bellows
Solenoid valve		24V DC or on request
Position indicator	Type Voltage Current Connector	Micro switch 24V DC 0-80 mA D-Sub 9P male
Air pressure		4.5 - 6 bar
Mounting position		Actuator up or down
Air failure		Lock at close position
Compress air connection		Quick connector OD 6mm
Options	·Hard anodized aluminum surface ·Sealing surface or groove for O-ring seal ·Screw holes outside or inside of the sealing line ·FFKM sealing material is available ·Other solenoid valve voltage (standard 24V DC)	

Transfer Valve

NON-STANDARD DOUBLE OPENING L-MOTION, SERIES PSTV2

For load lock and process chamber isolation in SEMI production system.
Suitable for corrosive process such as Etch or CVD.



APPLICATIONS

- Semiconductor processing
- Plasma Etch, CVD, sputter deposition
- Manufacturing of solar panels
- LCD/flat panel process
- All other cluster vacuum systems

MAIN FEATURES

- Semi standard application (Semi E21- 94, Semi E24-92, Semi- E21.1-1296)
- Low vibration. Patented L-motion link and dual shifts without springs in the actuator enable faster, smoother actuation
- Mechanical lock at the close position
- Welded bellows actuator seal
- Bonnet flange bolts are designed with retainers to eliminate bolts from falling out upon disassembly

OPTIONS

- Hard anodized surface treatment
- Custom opening size available
- Various O-ring (Kalrez®,Chemraz® etc.)

Valve A = B with pneumatic actuator

with position indicator
double action

DN	Ordering Number	
mm	blank aluminum	hard anodized aluminum
46 x 236	PSTV2-46*236AL-10AA-6-0	PSTV2-46*236AL-10HH-6-1
50 x 336	PSTV2-50*336AL-10AA-6-0	PSTV2-50*336AL-10HH-6-1
Other size on request		

With solenoid valve is an option

Valve A < B with pneumatic actuator

with position indicator
double action

DN	Ordering Number	
mm	blank aluminum	hard anodized aluminum
46 x 236	PSTV2-46*236BL-10AA-6-0	PSTV2-46*236BL-10HH-6-1
50 x 336	PSTV2-50*336BL-10AA-6-0	PSTV2-50*336BL-10HH-6-1
Other size on request		

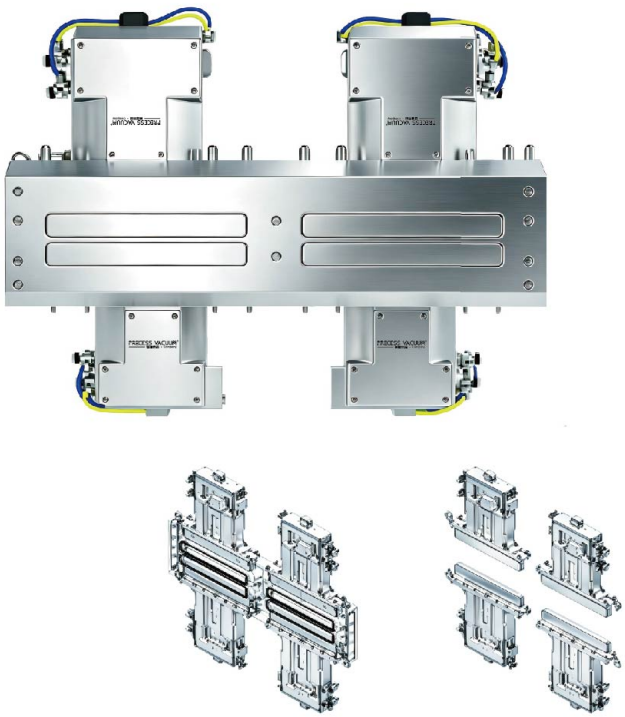
With solenoid valve is an option

Actuator		Pneumatic
Leak rates	Valve body, seat	$< 1\times10^{-9}$ mbar l/s
Pressure range		1×10^{-9} mbar to 1.2 bar
Differential pressure on the gate in opening direction		⩽ 1.2 bar
Differential pressure on the gate in closing direction		⩽ 1.2 bar
Differential pressure at the opening		⩽ 30 mbar
Life cycle until first service	Mechanism Bellows	⩾ 3,000,000
Temperature	Valve body Valve gate Actuator	⩽ 120°C ⩽ 120°C ⩽ 60°C
Material	Valve body Valve gate Bonnet Shaft Mechanism Bellows Bellows end piece	EN AW-6061 (3.3211) EN AW-6061 (3.3211) EN AW-6061 (3.3211) AISI 304 (1.4301) EN AW-6061 (3.3211) AISI 633 (AM350) AISI 316L (1.4435)
Surface treatment	Valve body Valve gate Bonnet Shaft Actuator	Bare Bare Bare Bare White hard anodization
Seal	Bonnet, gate	FKM (Viton®)
Feed through		Bellows
Solenoid valve		24V DC or on request
Position indicator	Type Voltage Current Connector	Magnetic reed switch 24V DC 5-100 mA D-Sub 9P male
Air pressure		4.5 - 6 bar
Mounting position		Actuator up or down
Air failure		Lock at close position
Compress air connection		Quick connector OD 6mm
Options	·Hard anodized aluminum surface ·Sealing surface or groove for O-ring seal ·Screw holes outside or inside of the sealing line ·FFKM sealing material is available ·Other solenoid valve voltage (standard 24V DC)	

Transfer Valve

NON-STANDARD FOUR OPENING L-MOTION, SERIES PSTV4

For load lock and process chamber isolation in SEMI production system.
Suitable for corrosive process such as Etch or CVD.



APPLICATIONS

- Semiconductor processing
- Plasma Etch, CVD, sputter deposition
- Manufacturing of solar panels
- LCD/flat panel process
- All other cluster vacuum systems

MAIN FEATURES

- Semi standard application (Semi E21- 94, Semi E24-92, Semi- E21.1-1296)
- Low vibration. Patented L-motion link and dual shifts without springs in the actuator enable faster, smoother actuation
- Mechanical lock at the close position
- Welded bellows actuator seal
- Bonnet flange bolts are designed with retainers to eliminate bolts from falling out upon disassembly

OPTIONS

- Hard anodized surface treatment
- Custom opening size available
- Various O-ring (Kalrez®,Chemraz® etc.)

Valve A = B with pneumatic actuator

with position indicator
double action

DN	Ordering Number	
mm	blank aluminum	hard anodized aluminum
46 x 236	PSTV4-46*236AL-10AA-6-0	PSTV4-46*236AL-10HH-6-1
50 x 336	PSTV4-50*336AL-10AA-6-0	PSTV4-50*336AL-10HH-6-1
Other size on request		

With solenoid valve is an option

Valve A < B with pneumatic actuator

with position indicator
double action

DN	Ordering Number	
mm	blank aluminum	hard anodized aluminum
46 x 236	PSTV4-46*236BL-10AA-6-0	PSTV4-46*236BL-10HH-6-1
50 x 336	PSTV4-50*336BL-10AA-6-0	PSTV4-50*336BL-10HH-6-1
Other size on request		

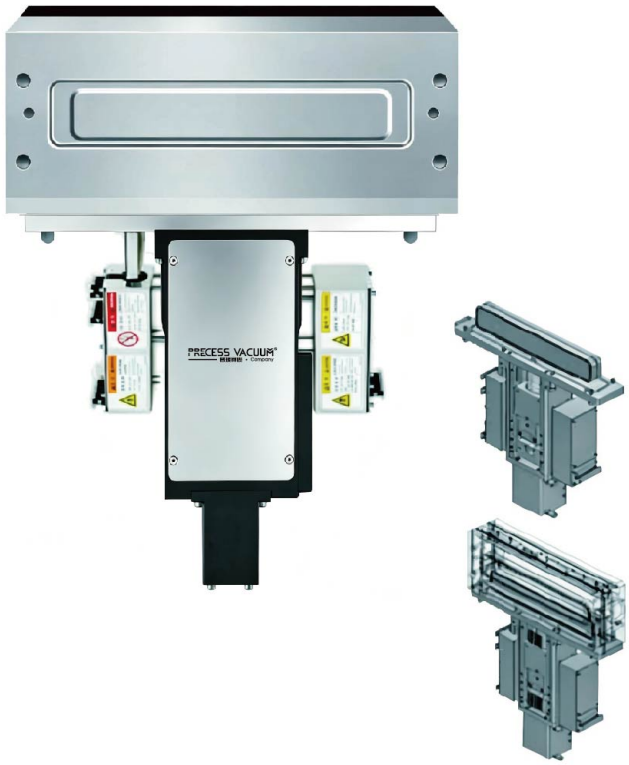
With solenoid valve is an option

Actuator		Pneumatic
Leak rates	Valve body, seat	$< 1\times10^{-9}$ mbar l/s
Pressure range		1×10^{-9} mbar to 1.2 bar
Differential pressure on the gate in opening direction		⩽ 1.2 bar
Differential pressure on the gate in closing direction		⩽ 1.2 bar
Differential pressure at the opening		⩽ 30 mbar
Life cycle until first service	Mechanism Bellows	⩾ 3,000,000
Temperature	Valve body Valve gate Actuator	⩽ 120°C ⩽ 120°C ⩽ 60°C
Material	Valve body Valve gate Bonnet Shaft Mechanism Bellows Bellows end piece	EN AW-6061 (3.3211) EN AW-6061 (3.3211) EN AW-6061 (3.3211) AISI 304 (1.4301) EN AW-6061 (3.3211) AISI 633 (AM350) AISI 316L (1.4435)
Surface treatment	Valve body Valve gate Bonnet Shaft Actuator	Bare Bare Bare Bare White hard anodization
Seal	Bonnet, gate	FKM (Viton®)
Feed through		Bellows
Solenoid valve		24V DC or on request
Position indicator	Type Voltage Current Connector	Micro switch 24V DC 5-100 mA D-Sub 9P male
Air pressure		4.5 - 6 bar
Mounting position		Actuator up or down
Air failure		Lock at close position
Compress air connection		Quick connector OD 6mm
Options	·Hard anodized aluminum surface ·Sealing surface or groove for O-ring seal ·Screw holes outside or inside of the sealing line ·FFKM sealing material is available ·Other solenoid valve voltage (standard 24V DC)	

Transfer Valve

ALL HEATING TRANSFER VALVE L-MOTION, SERIES PSTVH

For load lock and process chamber isolation in SEMI production system.
Suitable for corrosive process such as Etch or CVD.



APPLICATIONS

- Semiconductor processing
- Plasma Etch, CVD, sputter deposition
- Manufacturing of solar panels
- LCD/flat panel process
- All other cluster vacuum systems

MAIN FEATURES

- Semi standard application (Semi E21- 94, Semi E24-92, Semi- E21.1-1296)
- Low vibration. Patented L-motion link and dual shifts without springs in the actuator enable faster, smoother actuation
- Mechanical lock at the close position
- Welded bellows actuator seal
- Bonnet flange bolts are designed with retainers to eliminate bolts from falling out upon disassembly

OPTIONS

- Hard anodized surface treatment
- Custom opening size available
- Various O-ring (Kalrez®,Chemraz® etc.)

Valve A = B with pneumatic actuator

with position indicator
double action

DN	Ordering Number	
mm	blank aluminum	hard anodized aluminum
46 x 236	on request	on request
50 x 336	on request	on request
Other size on request		

With solenoid valve is an option

Valve A < B with pneumatic actuator

with position indicator
double action

DN	Ordering Number	
mm	blank aluminum	hard anodized aluminum
46 x 236	on request	on request
50 x 336	on request	on request
Other size on request		

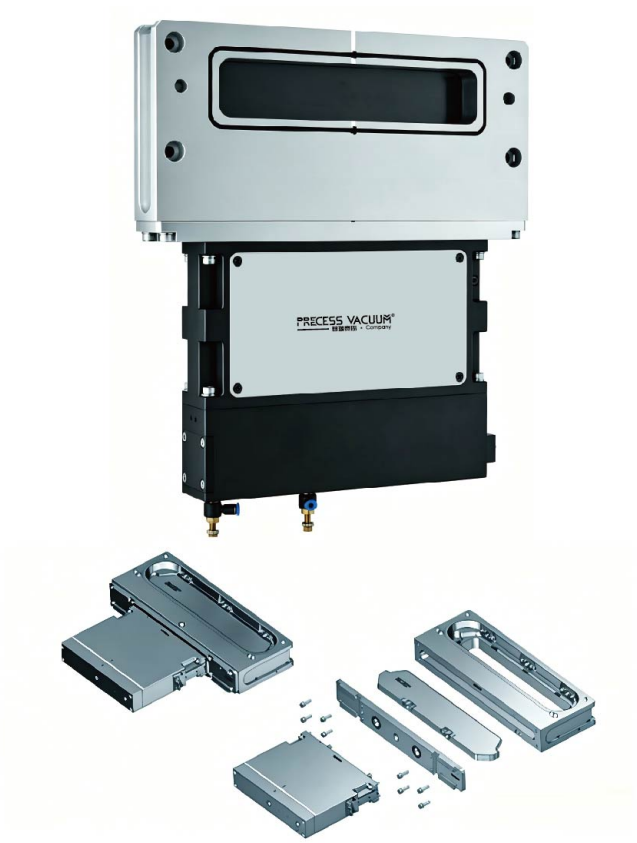
With solenoid valve is an option

Actuator		Pneumatic
Leak rates	Valve body, seat	$< 1\times10^{-9}$ mbar l/s
Pressure range		1×10^{-9} mbar to 1.2 bar
Differential pressure on the gate in opening direction		⩽ 1.2 bar
Differential pressure on the gate in closing direction		⩽ 1.2 bar
Differential pressure at the opening		⩽ 30 mbar
Life cycle until first service	Mechanism Bellows	⩾ 2,000,000
Temperature	Valve body Actuator	⩽ 180°C ⩽ 150°C
Material	Valve body Valve gate Bonnet Shaft Mechanism Bellows Bellows end piece	EN AW-6061 (3.3211) EN AW-6061 (3.3211) EN AW-6061 (3.3211) AISI 304 (1.4301) EN AW-6061 (3.3211) AISI 633 (AM350) AISI 316L (1.4435)
Surface treatment	Valve body Valve gate Bonnet Shaft Actuator	Bare Bare Bare Bare White hard anodization
Seal	Bonnet, gate	FFKM (FKM Zalak 5100)
Feed through		Bellows
Solenoid valve		24V DC or on request
Position indicator	Type Voltage Current Connector	Micro switch 24V DC 5-100 mA D-Sub 9P male
Air pressure		4.5 - 6 bar
Mounting position		Actuator up or down
Air failure		Lock at close position
Compress air connection		Quick connector OD 6mm
Options	·Hard anodized aluminum surface ·Sealing surface or groove for O-ring seal ·Screw holes outside or inside of the sealing line ·FFKM sealing material is available ·Other solenoid valve voltage (standard 24V DC)	

Transfer Valve

TRANSFER VALVE I-MOTION, SERIES PSTV

For load lock and process chamber isolation in SEMI production system.
Suitable for corrosive process such as Etch or CVD.



APPLICATIONS

- Semiconductor processing
- Pneumatically locked (option)
- Plasma Etch, CVD, sputter deposition
- Manufacturing of solar panels
- LCD/flat panel process

MAIN FEATURES

- Semi standard application (Semi E21- 94, Semi E24-92, Semi- E21.1-1296)
- Low vibration
- Long lifetime
- Pneumatically locked (option)
- Welded bellows actuator seal
- Bonnet flange bolts are designed with retainers to eliminate bolts from falling out upon disassembly

OPTIONS

- Hard anodized surface treatment
- Stainless steel solution
- Custom opening size available
- Various O-ring (Kalrez®,Chemraz® etc.)

Valve A = B with pneumatic actuator

with position indicator
double action

DN	Ordering Number	
mm	blank aluminum	hard anodized aluminum
46 x 236	PSTV-46*236AI-10AA-6-0	PSTV-46*236AI-10HH-6-1
50 x 336	PSTV-50*336AI-10AA-6-0	PSTV-50*336AI-10HH-6-1
Other size on request		

With solenoid valve is an option

Valve A < B with pneumatic actuator

with position indicator
double action

DN	Ordering Number	
mm	blank aluminum	hard anodized aluminum
46 x 236	PSTV-46*236BI-10AA-6-0	PSTV-46*236BI-10HH-6-1
50 x 336	PSTV-50*336BI-10AA-6-0	PSTV-50*336BI-10HH-6-1
Other size on request		

With solenoid valve is an option

Actuator		Pneumatic
Leak rates	Valve body, seat	$< 1\times10^{-9}$ mbar l/s
Pressure range		1×10^{-9} mbar to 1.2 bar
Differential pressure on the gate in opening direction		⩽ 1.2 bar
Differential pressure on the gate in closing direction		⩽ 1.2 bar
Differential pressure at the opening		⩽ 30 mbar
Life cycle until first service	Mechanism O-ring	⩾ 2,000,000
Temperature	Valve body Valve gate Actuator	⩽ 120°C ⩽ 120°C ⩽ 60°C
Material	Valve body Valve gate Bonnet Shaft Mechanism Bellows Bellows end piece	EN AW-6061 (3.3211) EN AW-6061 (3.3211) EN AW-6061 (3.3211) AISI 316L (1.4435) EN AW-6061 (3.3211) AISI 633 (AM350) AISI 316L (1.4435)
Surface treatment	Valve body Valve gate Bonnet Shaft Actuator	White hard anodization White hard anodization White hard anodization Bare White hard anodization
Seal	Bonnet, gate	FKM (Viton®)
Feed through		Bellows
Solenoid valve		24V DC or on request
Position indicator	Type Voltage Current Connector	Micro switch 24V DC 5-100 mA D-Sub 9P male
Air pressure		4.5 - 6 bar
Mounting position		Actuator up or down
Air failure		NA
Compress air connection		Quick connector OD 6mm
Options	·FFKM sealing material is available ·Hard anodized aluminum surface ·Sealing surface or groove for O-ring seal ·Metal body seal (stainless steel version) ·Screw holes outside or inside of the sealing lin	

Gate Valve

VACUUM GATE VALVE, SERIES PSAV

The standard valve for VACUUM isolation application in industry and research.

APPLICATIONS

- General vacuum, solar, semiconductor processing
- PVD, sputter deposition

MAIN FEATURES

- Low cost of ownership
- Good O-ring shaft sealed valve
- Shock free with minimum vibration
- Aluminum material valve body
- Mechanical lock in close position while air failure
- DN40-320 with FKM O-ring gate seal
- Pneumatic actuators double action
- Available in ISO-K, ISO-F metric flange options

OPTIONS

- Custom specified flange
- Custom opening size available
- Various O-ring (Kalrez®, Chemraz® etc.)

Valve with pneumatic actuator

with solenoid valve
with position indicator
double action

DN	Ordering Number	
mm	ISO-F metric flange	ISO-KF metric flange
40	on request	PSAV-040-PKF-1111-4
50	on request	PSAV-050-PKF-1111-4
63	PSAV-063-PISO-1111-4	on request
80	PSAV-080-PISO-1111-4	on request
100	PSAV-100-PISO-1111-4	on request
160	PSAV-160-PISO-1111-4	on request
200	PSAV-200-PISO-1111-4	on request
250	PSAV-250-PISO-1111-4	on request
320	PSAV-320-PISO-1111-4	on request

Specify control voltage

Valve with manual actuator

Push rod

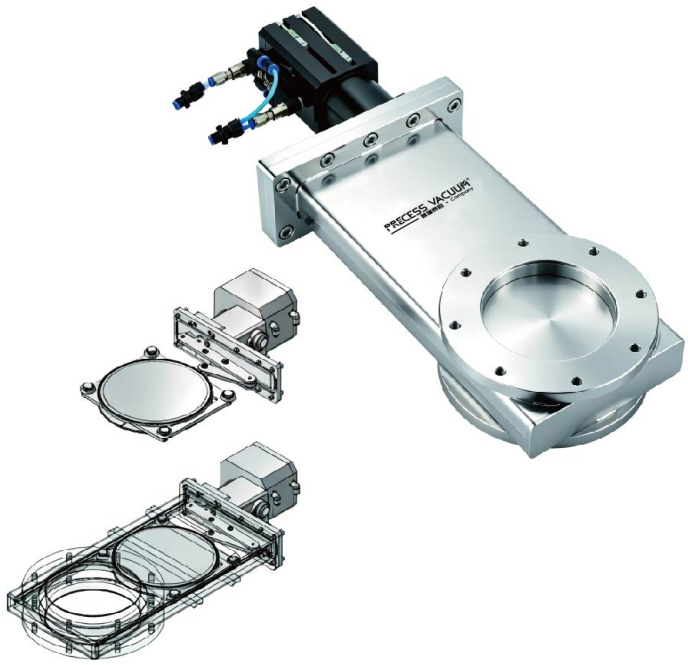
DN	Ordering Number	
mm	ISO-F metric flange	ISO-KF metric flange
40	on request	PSAV-040-MKF
50	on request	PSAV-050-MKF
63	PSAV-063-MISO	
80	PSAV-080-MISO	
100	PSAV-100-MISO	
160	PSAV-160-MISO	

Actuator		Pneumatic, Manual
Leak rates	Valve body, seat	$< 1\times10^{-9}$ mbar l /s
Pressure range	DN40 - 200	1×10^{-7} mbar to 1.6 bar
	DN250 - 320	1×10^{-7} mbar to 1.2 bar
Differential pressure on the gate in opening direction	DN40 - 200	⩽ 1.6 bar
	DN250 - 320	⩽ 1.2 bar
Differential pressure on the gate in closing direction	DN40 - 200	⩽ 1.6 bar
	DN250 - 320	⩽ 1.2 bar
Differential pressure at the opening		⩽ 30 mbar
Life cycle until first service	DN40 – 100	> 200,000
	DN160 – 320	> 100,000
Temperature	Valve body	⩽ 120°C
	Valve gate	⩽ 120°C
	Actuator	⩽ 60°C
	Valve body	⩽ 50°C
Material	Valve body	EN AW-6061 (3.3211)
	Valve gate	AISI 304 (1.4301)
	Bonnet	EN AW-6061 (3.3211)
	Shaft	AISI 304 (1.4301)
	Cylinder	EN AW-6061 (3.3211)
Surface treatment	Valve body	White hard anodization
	Valve gate	Vibration sanding
	Bonnet	White hard anodization
	Shaft	Bare
	Actuator	White hard anodization
Seal	Bonnet, gate	FKM (Viton®)
Feed through		O-ring shaft
Solenoid valve		24V DC or on request
Position indicator	Type	Micro switch
	Voltage	250V AC
	Current	5A Max.
	Connector	3P male (37103-3122-000FL)
Air pressure		4.5 - 6 bar
Mounting position		Any
Air failure		Lock at close position
Compress air connection		Quick connector OD 4mm
Options	·6mm air fitting is available (Standard 4mm) ·FFKM sealing material is available ·Other solenoid valve voltage (standard 24V DC) ·Insert type body with DIN centering	

Gate Valve

HV GATE VALVE, SERIES PSGV

General purpose for high vacuum isolation. Especially suit to pump isolation.



APPLICATIONS

- Semiconductor, solar, general vacuum processing
- PVD, CVD, sputter deposition

MAIN FEATURES

- Good bellows sealed valve
- Shock free with minimum vibration
- Stainless steel material valve body for corrosion resistance
- Mechanical lock in close position
- DN63-630 with FKM O-ring gate seal
- Pneumatic, manual and 3-Position actuators
- Available in ISO-F, CF-F, ASA-LP, JIS flange

OPTIONS

- Custom specified flange
- Custom opening size available
- Various O-ring (Kalrez®, Chemraz® etc.)

Valve with pneumatic actuator

without solenoid valve
with position indicator
double action

DN	Ordering Number	
mm	ISO-F metric flange	CF-F metric flange
63	PSGV-063-PISO-1011-4	PSGV-063-PCF-1011-4
80	PSGV-080-PISO-1011-4	PSGV-080-PCF-1011-4
100	PSGV-100-PISO-1011-4	PSGV-100-PCF-1011-4
160	PSGV-160-PISO-1011-4	PSGV-160-PCF-1011-4
200	PSGV-200-PISO-1011-4	PSGV-200-PCF-1011-4
250	PSGV-250-PISO-1011-4	PSGV-250-PCF-1011-4
320	PSGV-320-PISO-1011-6	PSGV-320-PCF-1011-6
400	PSGV-400-PISO-1011-6	on request
500	PSGV-500-PISO-1011-8	on request
630	PSGV-630-PISO-1011-8	on request

With solenoid valve is an option

Valve with manual actuator

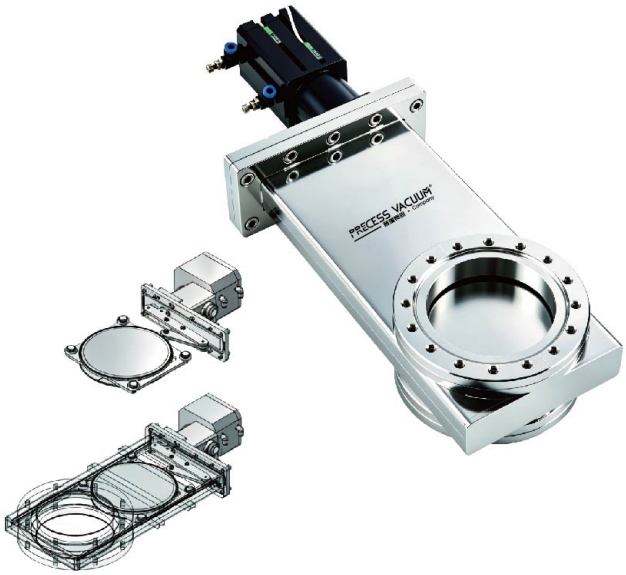
DN	Ordering Number	
M13	ISO-F metric flange	CF-F metric flange
63	PSGV-063-MISO	PSGV-063-MCF
80	PSGV-080-MISO	PSGV-080-MCF
100	PSGV-100-MISO	PSGV-100-MCF
160	PSGV-160-MISO	PSGV-160-MCF
200	PSGV-200-MISO	PSGV-200-MCF
250	PSGV-250-MISO	PSGV-250-MCF
320	PSGV-320-MISO	PSGV-320-MCF

Actuator		Pneumatic, Manual, 3-Position
Leak rates	Valve body, seat	$< 1\times10^{-9}$ mbar l/s
Pressure range	DN63-200	1×10^{-8} mbar to 1.6 bar
	DN250-320	1×10^{-8} mbar to 1.2 bar
Differential pressure on the gate in opening direction	DN63-200	⩽ 1.6 bar
	DN250-320	⩽ 1.2 bar
Differential pressure on the gate in closing direction		⩽ 1.2 bar
Differential pressure at the opening		⩽ 30 mbar
Life cycle until first service		> 200,000
Temperature	Valve body	⩽ 150°C
	Valve gate	⩽ 120°C
	Actuator	⩽ 60°C
	Solenoid valve	⩽ 50°C
	Position indicator	⩽ 50°C
Material	Valve body	AISI 304 (1.4301)
	Valve gate	AISI 304 (1.4301)
	Bonnet	AISI 304 (1.4301)
	Shaft	AISI 304 (1.4301)
	Mechanism	AISI 316L(1.4404,1.4435)
	Bellows	AISI 316L (1.4404,1.4435)
	Bellows end piece	AISI 304 (1.4301)
Surface treatment	Valve body	Bead blasting or buffing
	Valve gate	Vibration sanding
	Bonnet	Bead blasting or buffing
	Shaft	Bare
	Actuator	Hard anodization
Seal	Bonnet, gate	FKM (Viton®)
Feed through		Bellows
Solenoid valve		24V DC or on request
Position indicator	Type	Magnetic reed switch
	Voltage	24V DC
	Current	5-40 mA
Air pressure		4.5 - 6 bar
Mounting position		Any
Air failure		Lock at close position
Compress air connection		Quick connector OD 4mm
Options	·6mm air fitting is available (Standard 4mm) ·FFKM sealing material is available ·Vulcanized sealing material ·Other solenoid valve voltage (standard 24V DC) ·Different valve body surface treatment	

Gate Valve

UHV GATE VALVE, SERIES PSGV

General purpose for ultra high vacuum isolation applications in research and industry. Especially suit to pump isolation.



APPLICATIONS

- Research, Semiconductor, Solar, General Vacuum processing
- PVD, CVD, Sputter Deposition

MAIN FEATURES

- Good bellows sealed valve
- Shock free with minimum vibration
- Stainless steel material valve body for corrosion resistance
- Mechanical lock in close position
- DN63-320 with FKM O-ring gate seal
- Pneumatic and manual actuators
- Available in ISO-F, CF-F, ASA-LP, JIS flange

OPTIONS

- Custom specified flange
- Custom opening size available
- Various O-ring (Kalrez®, Chemraz® etc.)

Valve with pneumatic actuator

without solenoid valve
with position indicator
double action

DN	Ordering Number	
mm	ISO-F metric flange	CF-F metric flange
40	PSGV-040-PISOU-1011-4	PSGV-040-PCFU-1011-4
63	PSGV-063-PISOU-1011-4	PSGV-063-PCFU-1011-4
80	PSGV-080-PISOU-1011-4	PSGV-080-PCFU-1011-4
100	PSGV-100-PISOU-1011-4	PSGV-100-PCFU-1011-4
160	PSGV-160-PISOU-1011-4	PSGV-160-PCFU-1011-4
200	PSGV-200-PISOU-1011-4	PSGV-200-PCFU-1011-4
250	PSGV-250-PISOU-1011-4	PSGV-250-PCFU-1011-4
320	PSGV-320-PISOU-1011-6	PSGV-320-PCFU-1011-6

With solenoid valve is an option

Valve with manual actuator

crank hand

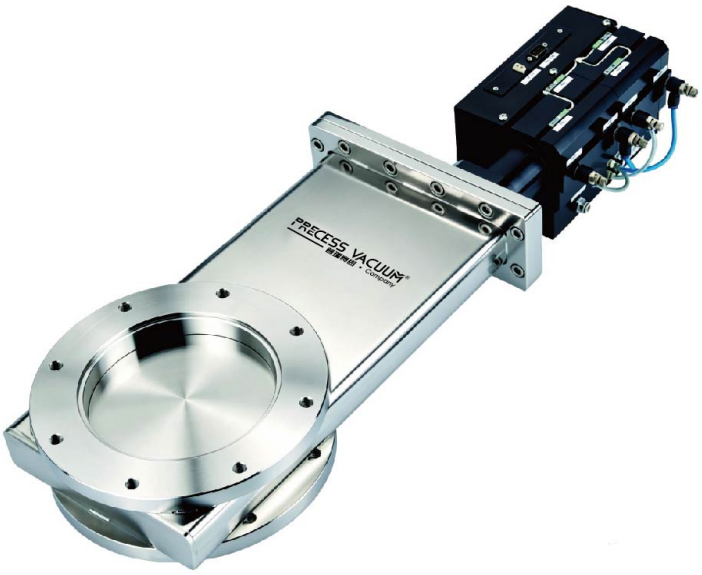
DN	Ordering Number	
mm	ISO-F metric flange	CF-F metric flange
40	PSGV-040-MISOU	PSGV-040-MCFU
63	PSGV-063-MISOU	PSGV-063-MCFU
80	PSGV-080-MISOU	PSGV-080-MCFU
100	PSGV-100-MISOU	PSGV-100-MCFU
160	PSGV-160-MISOU	PSGV-160-MCFU
200	PSGV-200-MISOU	PSGV-200-MCFU
250	PSGV-250-MISOU	PSGV-250-MCFU
320	PSGV-320-MISOU	PSGV-320-MCFU

Actuator		Pneumatic, Manual, 3-Position
Leak rates	Valve body	$< 5\times10^{-10}$ mbar l/s
	Valve seat	$< 1\times10^{-9}$ mbar l/s
Pressure range	DN63-200	1×10^{-10} mbar to 1.6 bar
	DN250-320	1×10^{-10} mbar to 1.2 bar
	DN250-320	1×10^{-8} mbar to 1.2 bar
Differential pressure on the gate in opening direction	DN63-200	⩽ 1.6 bar
	DN250-320	⩽ 1.2 bar
Differential pressure on the gate in closing direction		⩽ 1.2 bar
Differential pressure at the opening		⩽ 30 mbar
Life cycle until first service		> 50,000
Temperature	Valve body	⩽ 250°C
	Valve gate	⩽ 200°C
	Actuator	⩽ 200°C
	Solenoid valve	⩽ 50 °C
	Position indicator	⩽ 70°C
Heating and cooling rate		⩽ 50 °C h^{-1}
Material	Valve body	AISI 304 (1.4301)
	Valve gate	AISI 304 (1.4301)
	Bonnet	AISI 304 (1.4301)
	Shaft	AISI 304 (1.4301)
	Mechanism	AISI 316L(1.4404,1.4435)
	Bellows	AISI 316L(1.4404,1.4435)
	Bellows end piece	AISI 304 (1.4301)
Surface treatment	Valve body	Bead blasting or buffing
	Valve gate	Bare
	Bonnet	Bead blasting or buffing
	Shaft	Bare
	Actuator	Hard anodization
Seal	Bonnet, gate	FKM (Viton®)
Feed through		Bellows
Solenoid valve		24V DC or on request
Position indicator	Type	Magnetic reed switch
	Voltage	24V DC
	Current	2.5-40 mA
Air pressure		4.5 - 6 bar
Mounting position		Any
Air failure		Lock at close position
Compress air connection		Quick connector OD 4mm
Options	·6mm air fitting is available (Standard 4mm) ·FFKM sealing material is available ·Vulcanized sealing material ·Other solenoid valve voltage (standard 24V DC) ·Different valve body surface treatment	

3-Position Gate Valve

HV GATE VALVE / 3-POSITION, SERIES PS3P

General purpose for high vacuum isolation. Especially suit to pump isolation.



APPLICATIONS

- Semiconductor, Solar, General Vacuum processing
- PVD, CVD, sputter deposition

MAIN FEATURES

- Good bellows sealed valve
- Shock free with minimum vibration
- Stainless steel material valve body for corrosion resistance
- Mechanical lock in close position
- DN63-320 with FKM O-ring gate seal
- 3-Position pneumatic actuators
- Available in ISO-F, CF-F, ASA-LP, JIS flange

OPTIONS

- Custom specified flange
- Custom opening size available
- Various O-ring (Kalrez®, Chemraz® etc.)

Valve with pneumatic actuator

without solenoid valve
with position indicator
double action

DN	Ordering Number	
mm	ISO-F metric flange	CF-F metric flange
40	PS3P-040-PISO-1111-4	PS3P-040-PCF-1111-4
63	PS3P-630-PISO-1111-4	PS3P-063-PCF-1111-4
80	PS3P-080-PISO-1111-4	PS3P-080-PCF-1111-4
100	PS3P-100-PISO-1111-4	PS3P-100-PCF-1111-4
160	PS3P-160-PISO-1111-4	PS3P-160-PCF-1111-4
200	PS3P-200-PISO-1111-4	PS3P-200-PCF-1111-4
250	PS3P-250-PISO-1111-4	PS3P-250-PCF-1111-4
320	PS3P-320-PISO-1111-6	PS3P-320-PCF-1111-6

With solenoid valve is an option

Valve with manual actuator

DN	Ordering Number	
mm	ISO-F metric flange	CF-F metric flange
63	PS3P-063-MISO	PS3P-063-MCF
80	PS3P-080-MISO	PS3P-080-MCF
100	PS3P-100-MISO	PS3P-100-MCF
160	PS3P-160-MISO	PS3P-160-MCF

Actuator		3-Position
Leak rates	Valve body, seat	$< 1\times10^{-9}$ mbar l/s
Pressure range	DN63-200 DN250-320	1 x 10^{-8} mbar to 1.6 bar
Differential pressure on the gate in opening direction	DN63-200 DN250-320	⩽ 1.6 bar ⩽ 1.2 bar
Differential pressure on the gate in closing direction		⩽ 1.2 bar
Differential pressure at the opening		⩽ 30 mbar
Life cycle until first service		> 200,000
Temperature	Valve body Valve gate Actuator Solenoid valve Position indicator	⩽ 150°C ⩽ 120°C ⩽ 60°C ⩽ 50°C ⩽ 50°C
Material	Valve body Valve gate Bonnet Shaft Mechanism Bellows Bellows end piece	AISI 304 (1.4301) AISI 304 (1.4301) AISI 304 (1.4301) AISI 304 (1.4301) AISI 316L(1.4404,1.4435) AISI 316L(1.4404,1.4435) AISI 304 (1.4301)
Surface treatment	Valve body Valve gate Bonnet Shaft Actuator	Bead blasting or buffing Bare Bead blasting or buffing Bare Hard anodization
Seal	Bonnet, gate	FKM (Viton®)
Feed through		Bellows
Solenoid valve		24V DC or on request
Position indicator	Type Voltage Current	Magnetic reed switch 24V DC 5-40 mA
Solenoid valve		24V DC or on request
Air Pressure		4 - 7 bar
Mounting position		Any
Air failure		Lock at close position
Compress air connection		Quick connector OD 4mm
Options	·FFKM sealing material is available ·Vulcanized sealing material ·Different surface treatment ·Other solenoid valve voltage (standard 24V DC) ·6mm air fitting is available (Standard 4mm)	

3-Position Gate Valve

UHV GATE VALVE / 3-POSITION, SERIES PS3P

General purpose for ultra high vacuum isolation applications in research and industry. Especially suit to pump isolation.

APPLICATIONS

- Research, semiconductor, solar, general vacuum processing
- PVD, CVD, sputter deposition

MAIN FEATURES

- Good bellows sealed valve
- Shock free with minimum vibration
- Stainless steel material valve body for corrosion resistance
- Mechanical lock in close position
- DN63-320 with FKM O-ring gate seal
- Pneumatic, manual and 3-Position actuators
- Available in ISO-F, CF-F, ASA-LP, JIS flange

OPTIONS

- Custom specified flange
- Custom opening size available
- Various O-ring (Kalrez®, Chemraz® etc.)

Valve with pneumatic actuator

solenoid valve
with position indicator
double action

DN	Ordering Number	
mm	ISO-F metric flange	CF-F metric flange
40	PS3P-040-PISOU-1111-4	PS3P-040-PCFU-1111-4
63	PS3P-630-PISOU-1111-4	PS3P-063-PCFU-1111-4
80	PS3P-080-PISOU-1111-4	PS3P-080-PCFU-1111-4
100	PS3P-100-PISOU-1111-4	PS3P-100-PCFU-1111-4
160	PS3P-160-PISOU-1111-4	PS3P-160-PCFU-1111-4
200	PS3P-200-PISOU-1111-4	PS3P-200-PCFU-1111-4
250	PS3P-250-PISOU-1111-4	PS3P-250-PCFU-1111-4
320	PS3P-320-PISOU-1111-6	PS3P-320-PCFU-1111-6

With solenoid valve is an option

Valve with manual actuator

DN	Ordering Number	
mm	ISO-F metric flange	CF-F metric flange
63	PS3P-063-MISOU	PS3P-063-MCFU
80	PS3P-080-MISOU	PS3P-080-MCFU
100	PS3P-100-MISOU	PS3P-100-MCFU
160	PS3P-160-MISOU	PS3P-160-MCFU

Actuator		3-Position
Leak rates	Valve body	$< 5\times10^{-10}$ mbar l/s
	Valve seat	$< 1\times10^{-9}$ mbar l/s
Pressure range	DN63-200	1×10^{-10} mbar to 1.6 bar
	DN250-320	1×10^{-10} mbar to 1.2 bar
Differential pressure on the gate in opening direction	DN63-200	⩽ 1.6 bar
	DN250-320	⩽ 1.2 bar
Differential pressure on the gate in closing direction		⩽ 1.2 bar
Differential pressure at the opening		⩽ 30 mbar
Life cycle until first service		> 50,000
Temperature	Valve body	⩽ 250 °C
	Valve gate	⩽ 200 °C
	Actuator	⩽ 200 °C
	Solenoid valve	⩽ 50 °C
	Position indicator	⩽ 70 °C
Heating and cooling rate		⩽ 50 °C h^{-1}
Material	Valve body	AISI 304 (1.4301)
	Valve gate	AISI 304 (1.4301)
	Bonnet	AISI 304 (1.4301)
	Shaft	AISI 304 (1.4301)
	Mechanism	AISI 316L(1.4404,1.4435)
	Bellows	AISI 316L(1.4404,1.4435)
	Bellows end piece	AISI 304 (1.4301)
Surface treatment	Valve body	Bead blasting or buffing
	Valve gate	Bare
	Bonnet	Bead blasting or buffing
	Shaft	Bare
	Actuator	Hard anodization
Seal	Bonnet, gate	FKM (Viton®)
Feed through		Bellows
Solenoid valve		24V DC or on request
Position indicator	Type	Magnetic reed switch
	Voltage	24V DC
	Current	2.5-40 mA
Air Pressure		4.5 - 6 bar
Mounting position		Any
Air failure		Lock at close position
Compress air connection		Quick connector OD 4mm
Options	·6mm air fitting is available (Standard 4mm) ·FFKM sealing material is available ·Vulcanized sealing material ·Other solenoid valve voltage (standard 24V DC) ·Different valve body surface treatment	

Butterfly Valve

HV BUTTERFLY VALVE, SERIES PSBV

Compact isolation valve for high vacuum. Alternative to gate valve.

APPLICATIONS

- Semiconductor, Solar, Research, General Vacuum processing
- PVD, CVD, PECVD, sputter deposition

MAIN FEATURES

- Low particle butterfly valve
- Robust and compact pump isolation
- Shock free with minimum vibration
- Stainless steel material valve body for corrosion resistance
- DN63-250 with FKM O-ring gate seal
- Pneumatic and manual actuators

OPTIONS

- Custom specified flange
- Custom opening size available
- Various O-ring (Kalrez®, Chemraz® etc.)

Valve with pneumatic actuator

without solenoid valve
with position indicator
double action

DN	Ordering Number	
mm	ISO-F metric flange	CF-F metric flange
40	PSBV-040-PKF-1011-4	on request
50	PSBV-050-PKF-1011-4	on request
63	PSBV-063-PISO-1011-4	on request
80	PSBV-080-PISO-1011-4	on request
100	PSBV-100-PISO-1011-4	on request
160	PSBV-160-PISO-1011-4	on request
200	PSBV-200-PISO-1011-4	on request
250	PSBV-250-PISO-1011-4	on request

With solenoid valve is an option

Valve with manual actuator

DN	Ordering Number	
mm	ISO-F metric flange	CF-F metric flange
40	PSBV-040-MKF	on request
50	PSBV-050-MKF	on request
63	PSBV-063-MISO	on request
80	PSBV-080-MISO	on request
100	PSGV-100-MISO	on request
160	PSBV-160-MISO	on request

Actuator		Pneumatic, Manual
Leak rates	Valve body valve seat	$< 1\times10^{-9}$ mbar l/s $< 1\times10^{-9}$ mbar l/s
Pressure range		1×10^{-8} mbar to 1.2 bar
Differential pressure on the gate in opening direction		⩽ 1.2 bar
Differential pressure on the gate in closing direction		⩽ 1.2 bar
Differential pressure at the opening		⩽ 500 mbar
Life cycle until first service	Pneumatic Manual	> 1,000,000
Temperature	Valve body Actuator Solenoid valve Position indicator	⩽ 150°C ⩽ 60°C ⩽ 50°C ⩽ 70°C
Heating and cooling rate		⩽ 50 °C h^{-1}
Material	Valve body Valve gate Bonnet Shaft Mechanism Bellows	AISI 304 (1.4301) AISI 304 (1.4301) AISI 304 (1.4301) AISI 304 (1.4301) AISI 316L(1.4404,1.4435) AISI 316L(1.4404,1.4435)
Surface treatment	Valve body Valve gate Bonnet Shaft Actuator	Buffing Buffing Buffing Bare NA
Seal	Bonnet, gate	FKM (Viton®)
Feed through		Rotary feedthrough
Solenoid valve		24V DC or on request
Position indicator	Type Voltage Current	Magnetic reed switch 24V DC 2.5-40 mA
Air pressure		4.5 - 6 bar
Mounting position		Any
Air failure		NA
Compress air connection		Quick connector OD 4mm
Options	·6mm air fitting is available (Standard 4mm) ·FFKM sealing material is available ·Other solenoid valve voltage (standard 24V DC) ·Different valve body surface treatment	

PTG Valve

HV PROTECTION GATE VALVE, SERIES PSPGV

General purpose for high vacuum protection and isolation. Especially suit to protection and isolation between chamber and pump.

APPLICATIONS

- Semiconductor processing
- Vacuum pump or chamber isolation in demanding processes
- Etch, CVD (MO, PE, HDP, LP) implant, sputter deposition
- Nanotechnology process with high particulate levels
- Thin film photovoltaic panels

MAIN FEATURES

- Protects process environment from down-streaming powder in the event of dry pump failure
- Fast pneumatic open & close less than 0.3s
- Long cycle life under adverse process conditions
- Integrated or independent controller with LCD display
- Easy routine maintenance

OPTIONS

- Independent control of protection ring
- 1,2,3 or 4 channel control on request
- UPS on request
- Heat jacket

Valve with pneumatic actuator

with solenoid valve
with position indicator
double action

DN	Ordering Number	
mm	ISO-K metric flange	ISO-F metric flange
63	on request	on request
100	PSPGV-100-PKQ-1144-6	PSPGV-100-PISO-1144-6
160	PSPGV-160-PKQ-1144-6	PSPGV-160-PISO-1144-6
200	PSPGV-200-PKQ-1144-6	PSPGV-200-PISO-1144-6
250	PSPGV-250-PKQ-1144-6	PSPGV-250-PISO-1144-6
Other size on request		

Specify control voltage

Actuator		Pneumatic
Leak rates	Valve body, seat	< 1×10^{-9}mbar l /s
Pressure range		1×10^{-8}mbar to 1.2 bar
Differential pressure on the gate in opening direction		⩽ 1.2 bar
Differential pressure on the gate in closing direction		⩽ 1.2 bar
Differential pressure at the opening		⩽ 30 mbar
Life cycle until first service		> 200,000
Open / Close time (Switch to switch)	Open Close	< 0.3-0.6 sec (Setting 0.3 sec)
Temperature	Valve body Valve gate Actuator Solenoid valve	⩽ 200°C ⩽ 200°C ⩽ 80°C ⩽ 50°C
Material	Valve body Valve gate Bonnet Shaft Mechanism	AISI 304 (1.4301) AISI 304 (1.4301) AISI 304 (1.4301) AISI 304 (1.4301) AISI 316L(1.4404,1.4435)
Surface treatment	Valve body Valve gate Bonnet Actuator	Electro polishing Buffing Electro polishing White hard anodization
Seal	Bonnet, gate	FKM (Viton®)
Feed through		O-ring shaft
Solenoid valve		24V DC or on request
Position indicator	Type Voltage Current	Magnetic reed switch 24V DC 5-40 mA
Air pressure		4- 7 bar
Mounting position		Any
Air failure		NA
Compress air connection		Quick connector OD 6mm
Options	·FFKM sealing material is available ·Other solenoid valve voltage (standard 24V DC) ·Different valve body surface treatment	

RPC Angle Valve

REMOTE PLASMA CONTROL VALVE , SERIES PSLSP

For upstream cleaning air inflow chamber in SEMI production system. Suitable for Etch, CVD process.

APPLICATIONS

- Semiconductor processing
- All CVD process (including MO, PE, HDP, LP and AP)
- Manufacturing of solar process
- All other cluster and inline vacuum systems

MAIN FEATURES

- Semi standard application (Semi E21- 94, Semi E24-92, Semi- E21.1-1296)
- Particle free, provides extremely clean updream air inflow chamber
- 1 million service life cycles
- High vacuum angle valve
- Pneumatic actuator, double action
- Smart and modularization design, easy maintenance

OPTIONS

- White hard anodized surface treatment
- Custom opening size available
- Various O-ring (Kalrez®, Chemraz® etc.)

Valve with pneumatic actuator

with solenoid valve
with position indicator
double action

DN	Ordering Number	
mm	hard anodized angle aluminum	hard anodized inline aluminum
16	PSLSP-016-PKFMA-1044-4	PSYSP-016-PKFMA-1044-4
25	PSLSP-025-PKFMA-1044-4	PSYSP-025-PKFMA-1044-4
40	PSLSP-040-PKFMA-1044-4	PSYSP-040-PKFMA-1044-4
Other size on request		

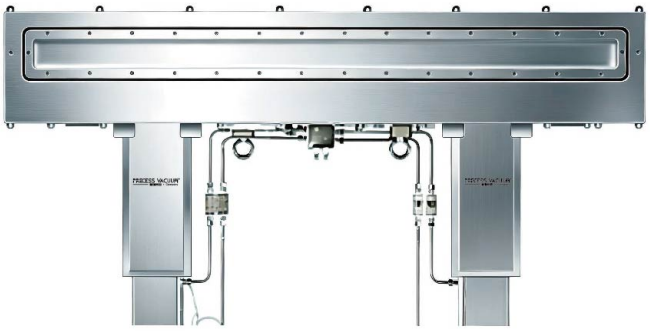
Specify control voltage

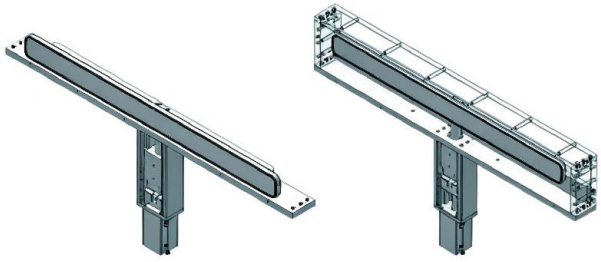
Actuator			Pneumatic
Leak rates		Stainless steel	< 1×10^{-9} mbar l/s
		Hard anodized aluminum	< 1×10^{-9} mbar l/s
Pressure range		Stainless steel	1×10^{-8} mbar to 2 bar
		Hard anodized aluminum	1×10^{-8} mbar to 1.2 bar
Differential pressure on the gate in opening direction			⩽ 1.2 bar
Differential pressure on the gate in closing direction			⩽ 1.2 bar
Differential pressure at the opening			⩽ 1 bar
Life cycle until first service		Stainless steel	> 300,000
		Hard anodized aluminum	> 100,000
Temperature	Stainless steel	Valve body	⩽ 150°C
		Valve gate	⩽ 150°C
		Actuator	⩽ 120°C
	Hard anodized aluminum	Valve body	⩽ 150°C
		Valve gate	⩽ 150°C
		Actuator	⩽ 120°C
Material	Stainless steel	Valve body	AISI 304 (1.4301)
		Valve gate	AISI 304 (1.4301)
		Bonnet	AISI 304 (1.4301)
	Hard anodized aluminum	Valve body	EN AW-6061 (3.3211)
		Valve gate	EN AW-6061 (3.3211)
		Bonnet	EN AW-6061 (3.3211)
Surface treatment	Stainless steel	Valve body	Electro polishing
		Valve gate	Bare
		Bonnet	Electro polishing
	Hard anodized aluminum	Valve body	White hard anodization
		Valve gate	White hard anodization
		Bonnet	White hard anodization
Seal		Stainless steel	FKM (Viton®)
		Hard anodized aluminum	FFKM (Kalrez®9500)
Feed through		Stainless steel	Bellows
		Hard anodized aluminum	O-ring shaft
Solenoid valve			24V DC or on request
Position indicator		Type	Magnetic reed switch
		Voltage	12V/24V DC or on request
		Current	5-50 mA
		Connector	AMP 4P male/D-Sub 9P male
Air pressure			3.0 - 6 bar
Mounting position			Any
Air failure			No
Compress air connection		Stainless steel	Quick connector OD 6mm / 4mm
		Hard anodized aluminum	

Large Transfer Valve

LARGE TRANSFER VALVE / DOOR L-MOTION, SERIES PSTVL

For inline process chamber isolation in solar, FPD production system.





APPLICATIONS

- Solar, FPD processing
- Plasma Etch, CVD, sputter deposition
- LCD/flat panel processing
- All other applications that require pressure controller vacuum systems

MAIN FEATURES

- Reduced vibration significantly by using patented L-motion link and dual shifts without springs in the actuator enable faster, smoother actuation
- Mechanical lock at the close position
- Welded bellows actuator seal
- Bonnet flange bolts are designed with retainers to eliminate bolts from falling out upon disassembly
- Pneumatic actuator double action

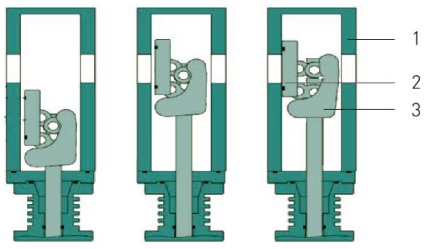
OPTIONS

- Hard anodized surface treatment
- Stainless steel solution
- Custom opening size available
- Various O-ring (Kalrez®,Chemraz® etc.)

MAIN FEATURES

Opening size	50x500mm, 100x1350mm, 110x1550mm, 250x3850mm
Actuator	Pneumatic drive, double action with position indicator
Body material	Aluminum
Feedthrough	Shaft feedthrough

FUNCTIONAL DEMONSTRATION



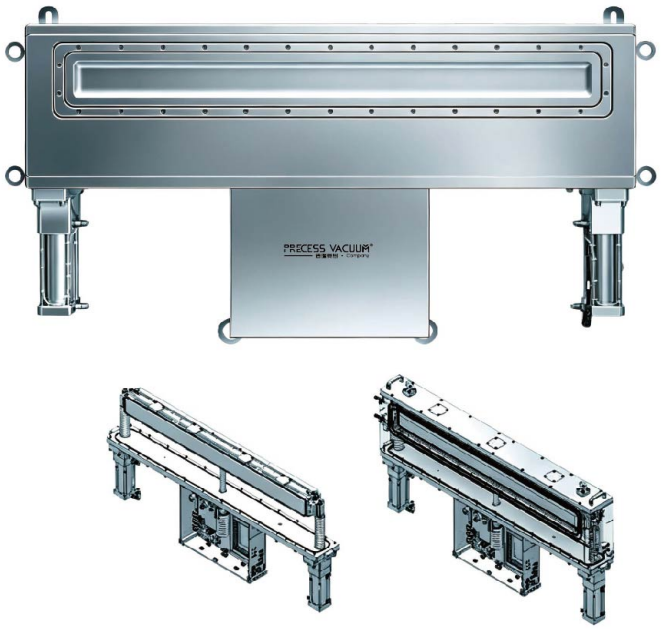
1. Valve body
2. Gate seal
3. Valve gate

Actuator		Pneumatic
Leak rates	Valve body, seat	$< 1\times10^{-7}$ mbar l/s
Pressure range		1×10^{-7} mbar to 1.2 bar
Differential pressure on the gate in opening direction		⩽ 50 mbar
Differential pressure on the gate in closing direction		⩽ 1.0 bar
Differential pressure at the opening		⩽ 5 mbar
Life cycle until first service	Mechanism O-ring	⩾ 1,000,000
Temperature	Valve body Valve gate Actuator	⩽ 120°C ⩽ 120°C ⩽ 60°C
Material	Valve body Valve gate Bonnet Shaft Mechanism Bellows Bellows end piece	EN AW-6061 (3.3211) EN AW-6061 (3.3211) EN AW-6061 (3.3211) AISI 304 (1.4301) AISI 316L(1.4404,1.4435) AISI 633 (AM350) AISI 316L (1.4435)
Surface treatment	Valve body Valve gate Bonnet Shaft Actuator	Bare Bare Bare Bare White hard anodization
Seal	Bonnet, gate	FKM (Viton®)
Feed through		Bellows
Solenoid valve		24V DC or on request
Position indicator	Type Voltage Current Connector	Micro switch 24V DC 5-100 mA D-Sub 9P male
Air pressure		4.5 - 6 bar
Mounting position		Actuator up or down
Air failure		Lock at close position
Compress air connection		Quick connector OD 10mm
Options	·Hard anodized aluminum surface ·Sealing surface or groove for O-ring seal ·Screw holes outside or inside of the sealing line ·FFKM sealing material is available ·Other solenoid valve voltage (standard 24V DC)	

Large Transfer Valve

LARGE TRANSFER VALVE / INSERT T-MOTION, SERIES PSTVT

For inline process chamber isolation in solar, FPD production system.



APPLICATIONS

- Solar, FPD processing
- Low shock at high operation speed
- Position 3 allows to keep one chamber under vacuum while maintenance work is carried out on the valve
- LCD/flat panel processing

MAIN FEATURES

- Reduced vibration significantly by using patented T-motion sealing technology
- Mechanical lock function is applied
- Welded bellows actuator seal
- Bonnet flange bolts are designed with retainers to eliminate bolts from falling out upon disassembly
- Pneumatic actuator double action

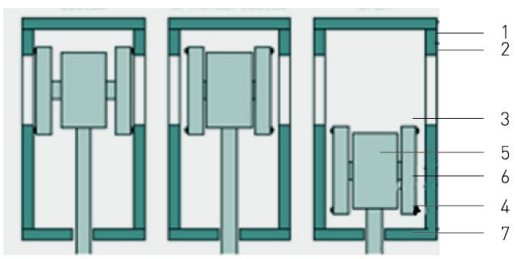
OPTIONS

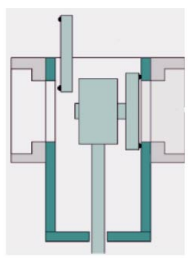
- Hard anodized surface treatment
- Stainless steel solution
- Custom opening size available
- Various O-ring (Kalrez®,Chemraz® etc.)

MAIN FEATURES

Opening size	50x500mm, 100x1350mm, 110x1550mm, 250x3850mm
Actuator	Pneumatic drive, double action with position indicator
Body material	Aluminum
Feedthrough	Shaft feedthrough

FUNCTIONAL DEMONSTRATION





Service position 3

One chamber is under VACUUM

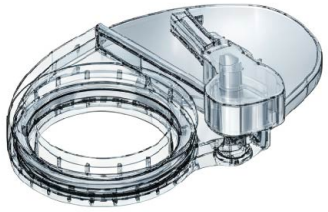
1. Top cover
2. Valve body
3. Gate
4. Gate seal
5. Horizontal actuator
6. Actuator flange
7. Vertical actuator shaft

Actuator		Pneumatic
Leak rates	Valve body, seat	$< 1\times10^{-7}$ mbar l/s
Pressure range		1×10^{-7} mbar to 1.2 bar
Differential pressure on the gate in opening direction		⩽ 5 mbar
Differential pressure on the gate in closing direction		⩽ 1 bar
Differential pressure at the opening		⩽ 5 mbar
Life cycle until first service	Mechanism O-ring	⩾ 1,000,000
Temperature	Valve body Valve gate Actuator	⩽ 120°C ⩽ 120°C ⩽ 60°C
Material	Valve body Valve gate Bonnet Shaft Mechanism Bellows Bellows end piece	EN AW-6082 (3.2315) EN AW-6082 (3.2315) EN AW-6082 (3.2315) AISI 316L (1.4435) AISI 316L (1.4435) AISI 633 (AM350) AISI 316L (1.4435)
Surface treatment	Valve body Valve gate Bonnet Shaft Actuator	Bare Bare Bare Bare White hard anodization
Seal	Bonnet, gate	FKM (Viton®)
Feed through		Shaft feedthrough
Solenoid valve		24V DC or on request
Position indicator	Type Voltage Current Connector	Micro switch 24V DC 5-100 mA D-Sub 9P male
Air pressure		4.5 - 6 bar
Mounting position		Actuator up or down
Air failure		Lock at close position
Compress air connection		Quick connector OD 10mm
Options	·Hard anodized aluminum surface ·Sealing surface or groove for O-ring seal ·Screw holes outside or inside of the sealing line ·FFKM sealing material is available ·Other solenoid valve voltage (standard 24V DC)	

Pendulum Valve

PENDULUM VALVE, SERIES PSPV

For applications requiring a compact design in large DN size.
Especially suit to large coating and FPD system.



APPLICATIONS

- FPD, general vacuum processing
- Demanding of corrosive processing

MAIN FEATURES

- Shock free with minimum vibration during operation
- DN500, DN550 with FKM O-ring gate seal
- Both cast and cutting aluminum material valve body
- Split body design for fast and easy maintenance
- Rotary feedthrough

OPTIONS

- Custom specified flange
- Custom opening size available
- Various O-ring (Kalrez®, Chemraz® etc.)

Valve with pneumatic actuator

without solenoid valve
with position indicator
double action

DN	Ordering Number	
mm	ISO-F metric flange	JIS
500	PSPV-500-PISO-1011-8	on request
550	PSPV-550-PISO-1011-8	on request

With solenoid valve is an option

Actuator		Pneumatic
Leak rates	Valve body, seat	$< 1\times10^{-9}$ mbar l/s
Pressure range		1×10^{-8} mbar to 1.2 bar
Differential pressure on the gate in opening direction		⩽ 1.2 bar
Differential pressure on the gate in closing direction		⩽ 1.2 bar
Differential pressure at the opening		⩽ 5 mbar
Life cycle until first service		> 50,000
Temperature	Valve body Valve gate Actuator Solenoid valve Position indicator	⩽ 120°C ⩽ 120°C ⩽ 60°C ⩽ 50°C ⩽ 60°C
Material	Valve body Valve gate Bonnet Shaft Mechanism	EN AW-5083 (3.3547) EN AW-5083 (3.3547) EN AW-5083 (3.3547) EN AW-5083 (3.3547) EN AW-5083 (3.3547)
Surface treatment	Valve body Valve gate Bonnet Shaft Actuator	Bare Vibration sanding Bare Bare White hard anodization
Seal	Bonnet, gate	FKM (Viton®)
Feed through		Rotary feedthrough
Solenoid valve		24V DC or on request
Position indicator	Type Voltage Current Connector	Micro switch 24V DC 5-40 mA D-Sub 9P male
Air pressure		4.5 - 6 bar
Mounting position		Any
Air failure		Lock at close position
Compress air connection		Quick connector OD 6mm
Options	·8mm air fitting is available (standard 6mm) ·FFKM sealing material is available ·Other solenoid valve voltage (standard 24V DC) ·Different valve body surface treatment	

Manual and precaution

① Safety

①-① Be sure to read this manual.

①-② The precautions shown here are intended to prevent harm and damage to you and others by using the product safely and correctly. These items are divided into three categories: [Danger], [Warning], and [Caution] to specify the size and extent of damage or damage. All of them are important for safety, so please observe the international standard [ISO / IEC] and other safety regulations. This chapter should be read and understood by those who use this product at all stages of use of this product. Failure to read this manual may result in property damage. Be sure to read the manual.

	Danger	**Serious danger** Indicates a potentially hazardous situation which, if not avoided, will result in death or serious injury.
	Warning	**Moderate risk** Indicates a hazardous situation which, if not avoided, could result in death or serious injury.
	Caution	**Low intensity hazard** Indicates that incorrect handling may result in minor or moderate injury.
	Notice	**Notice** Indicates if unavoidable, causing property loss

Warning

① The system designer will determine the suitability of our products.

Since this product has a variety of conditions used, the determination of suitability should be made by the system designer after technical analysis and, if necessary, testing. The performance and safety assurance of the system is the responsibility of the person who determines the suitability of the system.

② Please treat our products with a sufficient knowledge and experience.

- This product can not be guaranteed the safety when handling incorrectly.
- Those who have sufficient knowledge and experience in assembly and operation maintenance of machinery and equipment.

③ Please do not disassemble the machine-handling equipment or the machine until safety is confirmed.

- Inspection and maintenance of machinery and equipment should be carried out only after confirming measures to prevent falls or prevent runaway of driven objects.
- When disconnecting the product, check the above safety precautions and shut off the energy source and the power supply to the equipment.
- When restarting the machine, be sure to check the safety.

④ Do not use under the following conditions and environments. If unavoidable, please contact us after taking appropriate action to ensure safety.

- Used in conditions or circumstances other than those specified, outdoors or in areas where direct sunlight affects.
- Use is expected to have a significant impact on people or property, especially in applications where safety is required. property, especially in applications where safety is required.

② Personal Eligibility

Warnings for non-qualified personnel

- Improper handling may result in injury or property damage.
- Only persons with certain training qualifications may perform the tasks described in this manual.

③ Safety label indication

Label	Marking position on valve
	Protective film covering valve openings
	Valve body or actuation part

④ Common safety considerations

④-① Usage Precautions

④-①-① Common precautions

4-1-1-1 Valve body material is SUS304, bellows is SUS316L, seal material is FKM. For other materials, you can select optional items. Please check the materials used and use a gas-free gas.

4-1-1-2 The operating pressure, piping material, and fitting heat resistance temperature should be suitable for the operating temperature.

4-1-1-3 Keep the temperature of the auto switch at 60 ° C or less.

4-1-1-4 When using with heater attached, measures should be taken to prevent overheating.

4-1-1-5 When attaching a solenoid valve, keep the temperature of the solenoid valve at 50℃ or less.

④-①-② Precautions on valve selection

4-1-2-1 For large diameter valves, O-ring seal is recommended for improved durability for high vacuum valves used in the main exhaust line.

4-1-2-2 Consider the size, length and flow characteristics of the solenoid valves for operation when managing the responsiveness of the valves.

4-1-2-3 Observe the specified operating pressure.

4-1-2-4 The operating piston seal and bellows seal are in direct contact with the atmosphere. Please consult with us about the circumstances in which the particles are a problem because they may be introduced.

④-①-③ Installation notes

4-1-3-1 Please install this so that excessive vibration or impact is not applied. If the vibration continues, the durability may be reduced.

4-1-3-2 When attaching the heater, be careful not to damage the insulation of the leads and connections.

4-1-3-3 Be sure to secure the leadwire with sufficient curvature so that excessive force is not applied.

4-1-3-4 If the valve is heated, keep the body parts other than the bonnet.

4-1-3-5 When attaching the heater, do not touch the valve with bare hands during heater heating as the valve is hot. Causes burns.

4-1-3-6 If the environment is highly humid, keep the packaging until just before installation.

4-1-3-7 Do not install excessive force on the flange.

④-①-④ Installation Precautions

4-1-4-1 Please install after Flange Seal surface and O-ring should be cleaned with ethanol.

4-1-4-2 Please do not scratch the flange seal.

4-1-4-3 Exhaust direction : In some cases, the exhaust direction is free during operation, but the durability of exhaust flow is reduced. Install to vent to the bellows. This means that the bellows face towards the pump. Conversely, installation may cause sudden impact on the bellows, resulting in bellows damage and rapid degradation of life (except warranty).

④-①-⑤ Maintenance and inspection

4-1-5-1 When removing foreign matter inside, be careful not to damage each part.

4-1-5-2 Replace the bonnet unit when it is close to its service life.

4-1-5-3 If damage is expected even before the service life, please maintenance and inspection promptly.

4-1-5-4 Please use our standard parts for maintenance parts. Refer to the structural drawing, replacement parts, and maintenance parts list.

4-1-5-5 When attached valve, Install the O-ring so that it does not twist.

Warranty and Disclaimer

① The warranty period for our products is within one year from the commencement of use or within 1.5 years after delivery, whichever comes first.

② This product has an operation count, operating distance, and replacement parts so please contact us if needs.

③ In case of failure or damage due to the responsibility of our company during the warranty period, we will provide only replacement parts or necessary parts, and we will not bear any additional loss.

④ Other damages caused by the failure of our products are not covered by the warranty.

⑤ The warranty period of the vacuum pads can not be applied within one year from the use start date.

⑥ Since the vacuum pad is a consumable item, the warranty period is one year after delivery.
However, if it is caused by wear or rubber material deterioration caused by using a vacuum pad even during the warranty period, it will not be covered by the product warranty.

PRECESS VACUUM®
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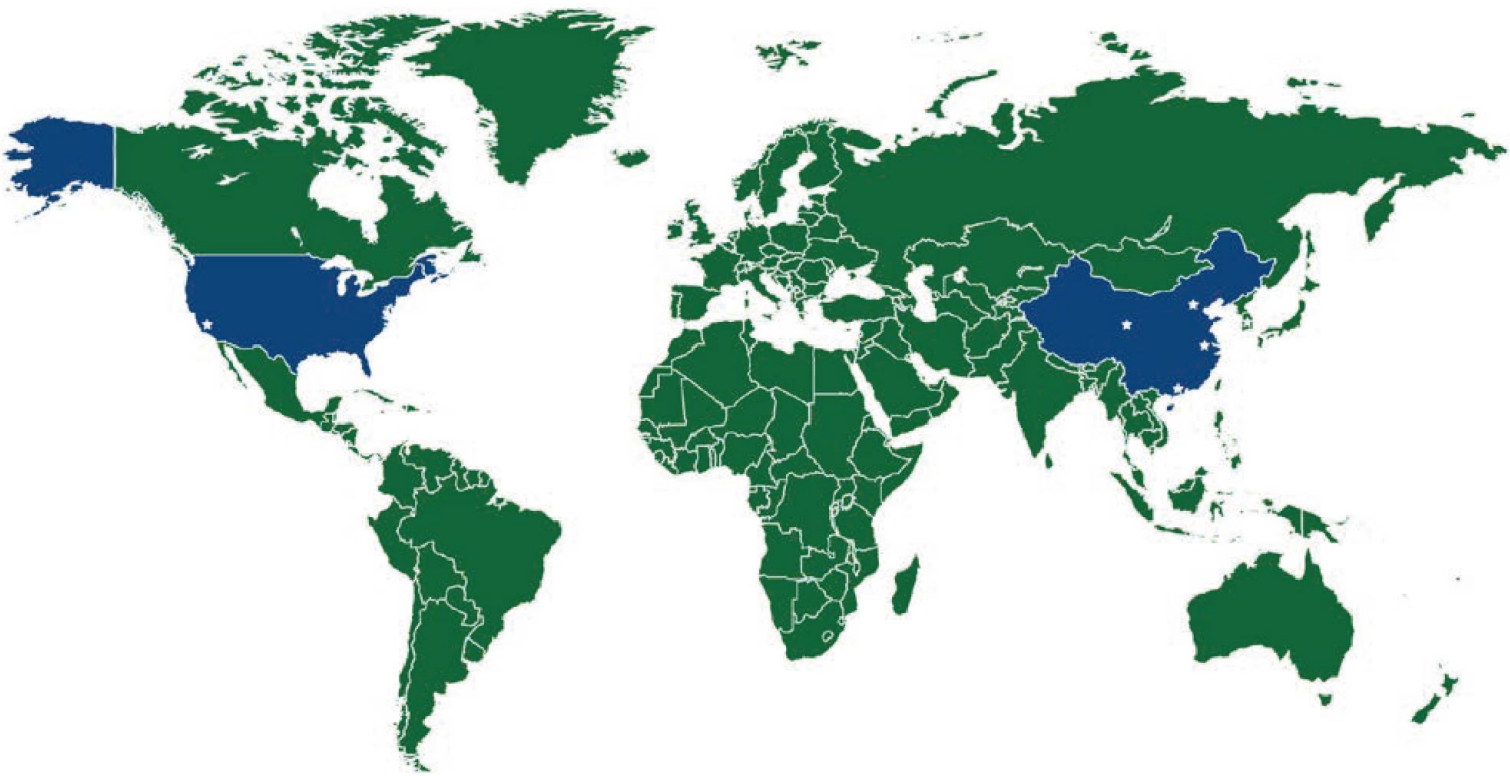

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