

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.

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.

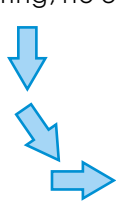
All valves' position are lock by **SMART** lock system.

Product Features

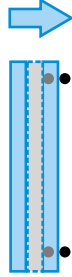
■ S.M.A.R.T

- Soft shut Mechanism

Lowest vibration than other gate valve's mechanism, no spring, no expansion.



SMART mechanism
Seal plate moves with
no vibration



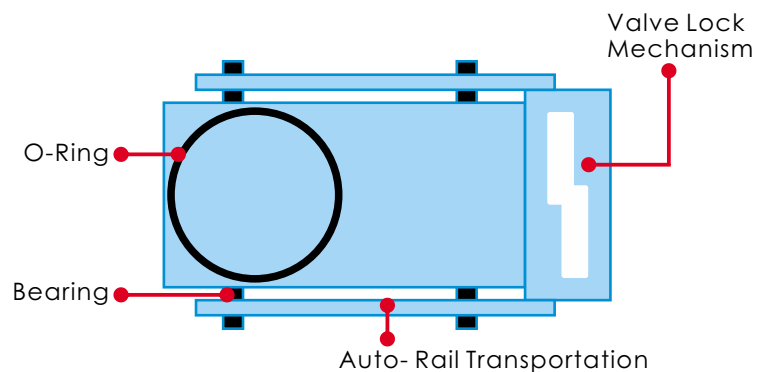
Normally seal plate closing by
Spring or other mechanism's
Expansion to close the gate.

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

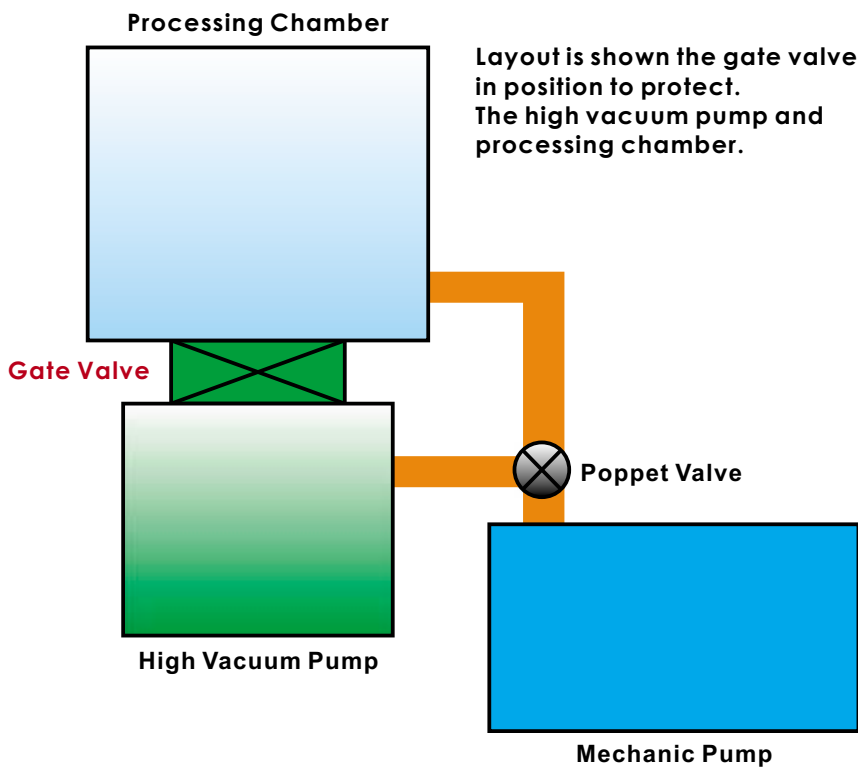
* **Optional welded bellows feedthrough for better service life and cleanliness.**

■ SMART lock system

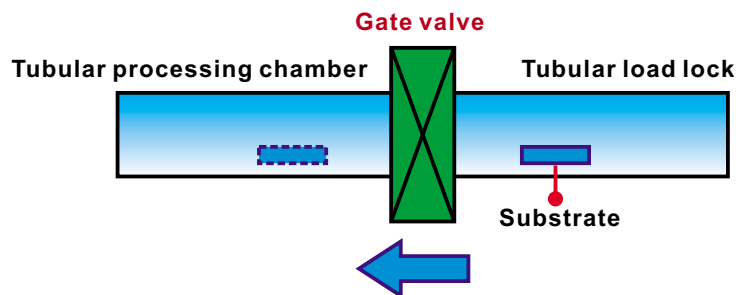
Position locked when the valve in open or close.



Product's Application



Layout for the gate valve in position between two tubular chambers

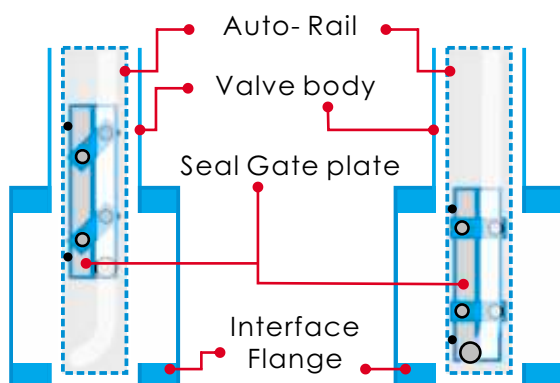


Substrate transfer from tubular load lock to tubular processing chamber

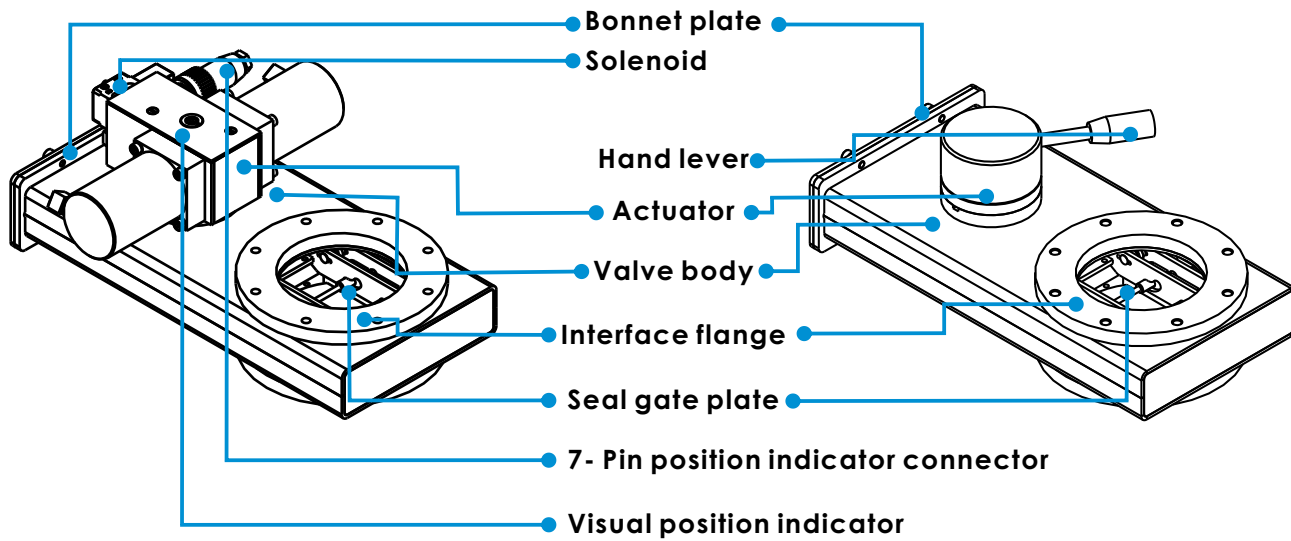
Valve's operation Concept

Open position

Closed position



Parts of valve- SMART Gate Valve



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^{-9} kPa	760 Torr ~ 1×10^{-8} Torr 1,000 mbar ~ 1.33×10^{-8} mbar 100 kPa ~ 1.13×10^{-7} kPa
Leak rate	1×10^{-10} Torr l/s, He 1.33×10^{-10} mbar l/s, He 1.13×10^{-9} kPa	1×10^{-9} Torr l/s, He 1.33×10^{-9} mbar l/s, He 1.13×10^{-8} kPa
Cycle life	>5,000,000 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	<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
Maximum differential pressure at opening	<825 Torr <1,100 mbar <109kpa				
Pneumatic valve open / close time	1.5(s)	2(s)	2.5(s)	3(s)	4(s)
Valve's Condantance (Molecular flow)	1,700(l/s)	5,100(l/s)	12,000(l/s)	22,000(l/s)	33,000(l/s)

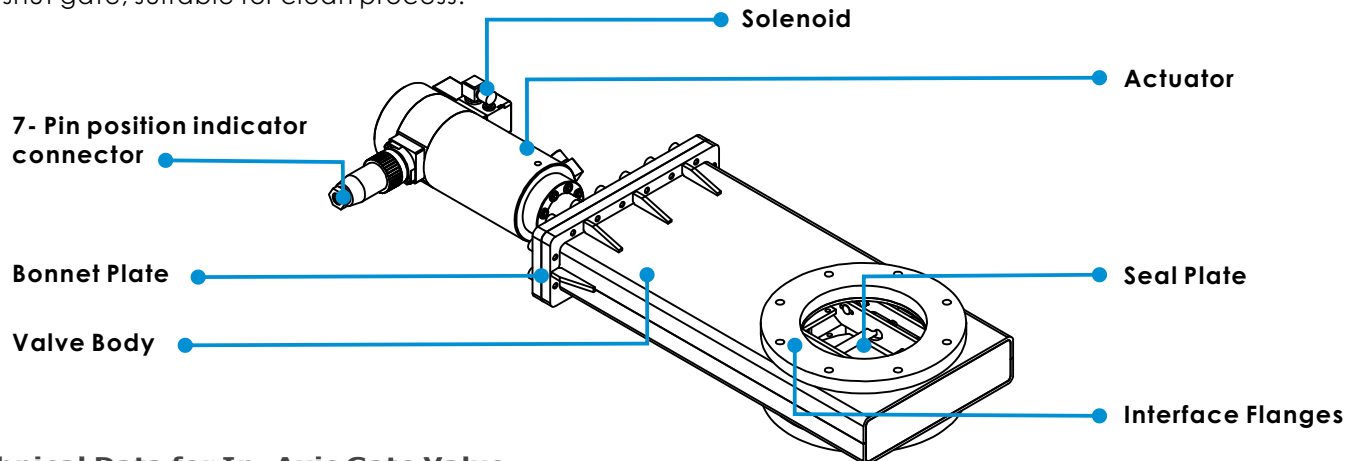
Parts of valve- SMART Gate Valve "In- Axis"

"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.



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^{-9} kPa	760 Torr ~ 1×10^{-8} Torr 1,000 mbar ~ 1.33×10^{-8} mbar 100 kPa ~ 1.13×10^{-7} kPa
Leak rate	1×10^{-10} Torr l/s, He 1.33×10^{-10} mbar l/s, He 1.13×10^{-9} kPa	1×10^{-9} Torr l/s, He 1.33×10^{-9} mbar l/s, He 1.13×10^{-8} 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

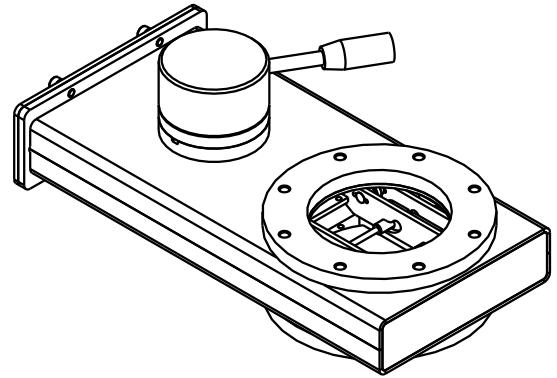
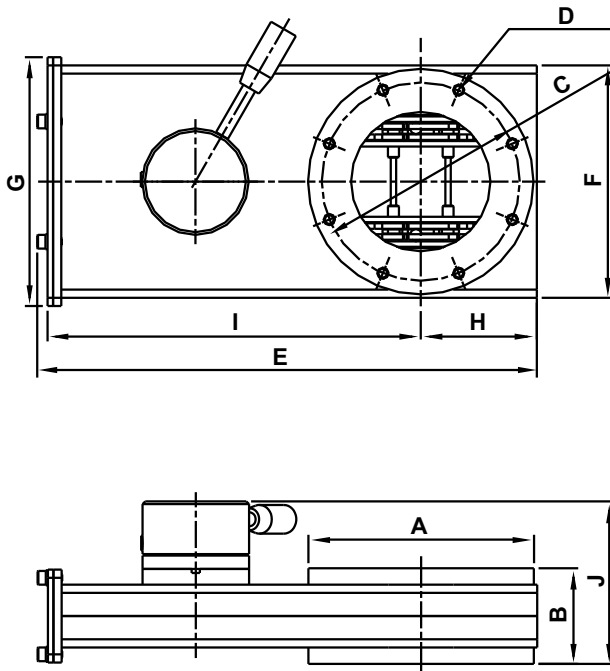
Pneumatic operating pressure	4 bar ~ 8 bar 400 kpa ~ 800 kpa 58psi ~ 116 psi
Position indicator (Build in)	Build in visual and micro switch with 7 pin connector
Solenoid (optional)	Optional for 24V DC, standard
Failure protection (Build in)	Build in SMART lock system (valve position remain and locked)

Valve's Performance data

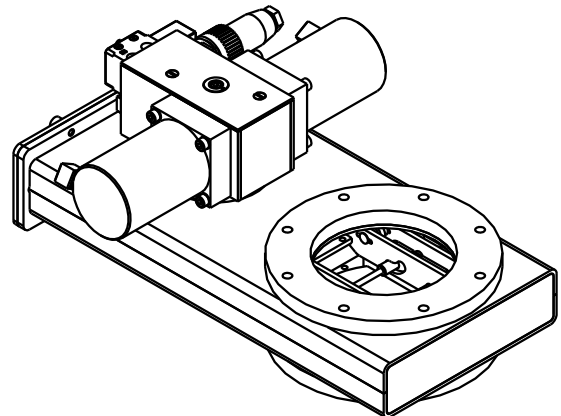
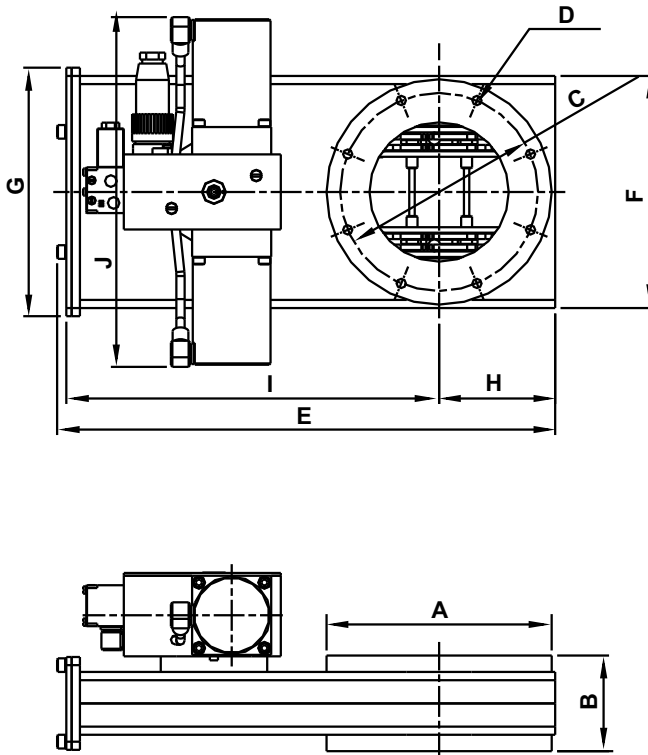
	CF6"/ISO-F100	CF8"/ISO-F160	CF10"/ISO-F200	CF12"/ISO-F250	CF14"/ISO-F320
Maximum differential pressure against gate	<225 Torr <300 mbar <30 kpa	<187 Torr <250 mbar <25 kpa	<150 Torr <200 mbar <20 kpa	<112 Torr <150 mbar <15 kpa	<75 Torr <100 mbar <10 kpa
Maximum differential pressure at opening	<825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



◆ **Figure 2**



◆ Manual Lever SMART Gate Valves, UHV, CF Flange

Dimension in mm

Catalog PN	Size	Figure	A	B	C	D	E	F	G	H	I	J
SGVML-UHV-CF600	CF6"	1	152	84	130	M8	358	170	182	85	273	130
SGVML-UHV-CF800	CF8"	1	202	93	181	M8	495	234	250	117	378	150
SGVML-UHV-CF1000	CF10"	1	253	97	232	M8	683	316	334	158	525	180
SGVML-UHV-CF1200	CF12"	1	304	120	284	M8	781	368	390	184	597	200
SGVML-UHV-CF1400	CF14"	1	336	137	325	M10	960	450	478	225	735	220

◆ Pneumatic SMART Gate Valves, UHV, CF Flange

Dimension in mm

Catalog PN	Size	Figure	A	B	C	D	E	F	G	H	I	J
SGVP-UHV-CF600	CF6"	2	152	84	130	M8	358	170	182	85	273	140
SGVP-UHV-CF800	CF8"	2	202	93	181	M8	495	234	250	117	378	160
SGVP-UHV-CF1000	CF10"	2	253	97	232	M8	683	316	334	158	525	185
SGVP-UHV-CF1200	CF12"	2	304	120	284	M8	781	368	390	184	597	215
SGVP-UHV-CF1400	CF14"	2	336	137	325	M10	960	450	478	225	735	235

◆ Manual Lever SMART Gate Valves, HV, CF Flange

Dimension in mm

Catalog PN	Size	Figure	A	B	C	D	E	F	G	H	I	J
SGVML-HV-CF600	CF6"	1	152	84	130	M8	358	170	182	85	273	119
SGVML-HV-CF800	CF8"	1	202	93	181	M8	495	234	250	117	378	138
SGVML-HV-CF1000	CF10"	1	253	97	232	M8	683	316	334	158	525	169
SGVML-HV-CF1200	CF12"	1	304	120	284	M8	781	368	390	184	597	186
SGVML-HV-CF1400	CF14"	1	336	137	325	M10	960	450	478	225	735	211

◆ Pneumatic SMART Gate Valves, HV, CF Flange

Dimension in mm

Catalog PN	Size	Figure	A	B	C	D	E	F	G	H	I	J
SGVP-HV-CF600	CF6"	2	152	84	130	M8	358	170	182	85	273	131
SGVP-HV-CF800	CF8"	2	202	93	181	M8	495	234	250	117	378	151
SGVP-HV-CF1000	CF10"	2	253	97	232	M8	683	316	334	158	525	174
SGVP-HV-CF1200	CF12"	2	304	120	284	M8	781	368	390	184	597	202
SGVP-HV-CF1400	CF14"	2	336	137	325	M10	960	450	478	225	735	224

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

Dimension in mm

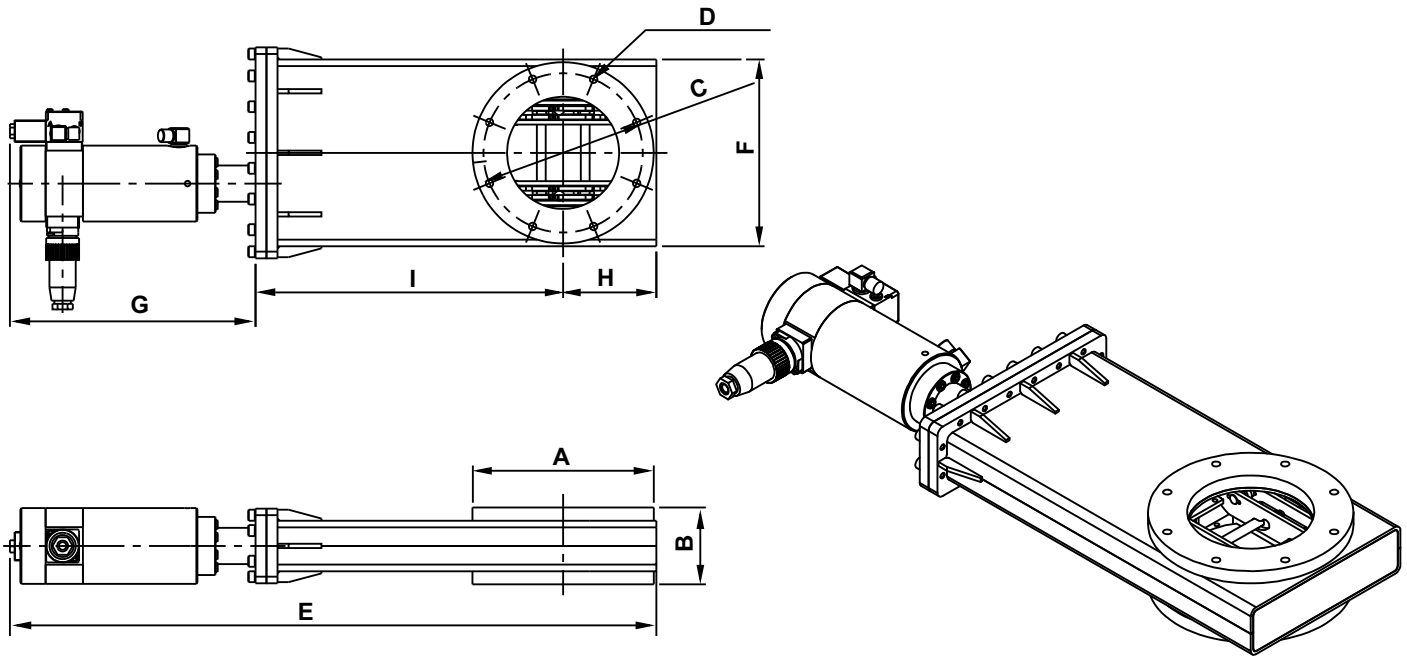
Catalog PN	Size	Figure	A	B	C	D	E	F	G	H	I	J
SGVML-HV-ISOF100	ISO-F 100	1	165	70	102	M8	358	170	182	85	273	119
SGVML-HV-ISOF160	ISO-F 160	1	225	80	153	M10	495	234	250	117	378	138
SGVML-HV-ISOF200	ISO-F 200	1	285	80	204	M10	683	316	334	158	525	169
SGVML-HV-ISOF250	ISO-F 250	1	335	100	255	M10	781	368	390	184	597	186
SGVML-HV-ISOF320	ISO-F 320	1	425	120	392	M12	960	450	478	225	735	211

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

Dimension in mm

Catalog PN	Size	Figure	A	B	C	D	E	F	G	H	I	J
SGVP-HV-ISOF100	ISO-F 100	2	165	70	102	M8	358	170	182	85	273	131
SGVP-HV-ISOF160	ISO-F 160	2	225	80	153	M10	495	234	250	117	378	151
SGVP-HV-ISOF200	ISO-F 200	2	285	80	204	M10	683	316	334	158	525	174
SGVP-HV-ISOF250	ISO-F 250	2	335	100	255	M10	781	368	390	184	597	202
SGVP-HV-ISOF320	ISO-F 320	2	425	120	392	M12	960	450	478	225	735	224

Product Order Information



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

Dimension in mm

Catalog PN	Size	A	B	C	D	E	F	G	H	I
AGP-UHV-CF600	CF6"	152	98	130	M8	589	170	224	85	287
AGP-UHV-CF800	CF8"	202	105	181	M8	746	234	251	117	387
AGP-UHV-CF1000	CF10"	253	114	232	M8	948	316	269	158	521
AGP-UHV-CF1200	CF12"	304	140	284	M8	1120	368	333	184	611
AGP-UHV-CF1400	CF14"	336	154	325	M10	1339	450	373	225	750

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

Dimension in mm

Catalog PN	Size	A	B	C	D	E	F	G	H	I
AGP-HV-CF600	CF6"	152	98	130	M8	589	170	224	85	287
AGP-HV-CF800	CF8"	202	105	181	M8	746	234	251	117	387
AGP-HV-CF1000	CF10"	253	114	232	M8	948	316	269	158	521
AGP-HV-CF1200	CF12"	304	140	284	M8	1120	368	333	184	611
AGP-HV-CF1400	CF14"	336	154	325	M10	1339	450	373	225	750

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

Dimension in mm

Catalog PN	Size	A	B	C	D	E	F	G	H	I
AGP-HV-ISOF100	ISO-F 100	152	70	102	M8	589	170	224	85	287
AGP-HV-ISOF160	ISO-F 160	202	80	153	M10	746	234	251	117	387
AGP-HV-ISOF200	ISO-F 200	253	80	204	M10	948	316	269	158	521
AGP-HV-ISOF250	ISO-F 250	304	100	255	M10	1120	368	333	184	611
AGP-HV-ISOF320	ISO-F 320	336	120	392	M12	1339	450	373	225	750