

IB

Bellows Valves

A higher Cv value IB series has is more advantageous than diaphragm valves in use where large flows are required, such as facility supply lines.

■ Features

- ① The proprietary seat shape serves to reduce particle generation from the disk and improves durability.
- ② Smaller dead space enables shorter purge time.
- ③ The IB series can be used not only in gas supply systems but also in exhaust systems. Unique specifications such as high temperature, high corrosion resistance, and variable flow rate can also be accommodated.

■ Specifications

Size			IB4 (1/4")	IB6 (3/8")·IB8 (1/2")
Cv			0.3	0.85
Wetted Area Volume			0.185in³ (3.03cm³)	0.359in³ (5.88cm³)
			CVC male, OPEN state	
Maximum Operating Pressure			142psig (0.98MPa(G))	
Fluid Temperature Range	Manual Valve		-10~100°C	
	Pneumatic Valve	PCTFE	-10~100°C	
		PFA	-10~150°C*	
		Flurine rubber	-10~180°C*	
Atomospheric Temperature			-10~60°C	
Actuation Pressure			58~101psig (0.4~0.7MPa(G))	
Leak Rates	Across the Seat He Leak Rates		≤ 1×10 ⁻⁹ sccs (≤ 1×10 ⁻¹⁰ Pa·m³/sec)	
	Inboard He Leak Rates		≤ 1×10 ⁻⁹ sccs (≤ 1×10 ⁻¹⁰ Pa·m³/sec)	
Cycle Life (N2 charged, own test)			Pneumatic valve 1 million cycles , manual valve 100,000 cycles	

*Bonnet Gasket Material is "M:SUS316S(PFA coating)" only

■ Product Grade

Grade		STD	EP
Material		SUS316L	
Surface Roughness	Only Body's Internal Roughness	$\leq R_z3.2\ \mu\text{m}$	$\leq R_z0.7\ \mu\text{m}$
		No bead cut in wetted area	
Cleaning		Degreasing + Precision cleaning	
Clean Room Environment		Class 10 (some products, Class 100)	
Packaging		Single bagged package	Double bagged package

■ Standard Materials

Body	SUS316L
Bellows	SUS316L
Bellows Flange	SUS316L
Bonnet	SUS304

■ Precautions

- ① Depending on the customer's usage conditions, the IB series may have a lower bellows life cycle due to accumulation of buildup material or corrosion.
- ② The valves are designed to be used under atmospheric pressure. Usage such as under vacuum vessels are not guaranteed.
- ③ For high temperature applications, please select appropriate material for air-fittings and tubes to assure proper performance.



Product Code Table

Model	Size	Operation	Valve shape	Connection	Bonnet Gasket material	Disk material	Grade + Body material
IB	4	C	S	V	C	C	EP-316L
IB-type bellows Seal valve	4: 1/4" 6: 3/8" 8: 1/2"	C: Normally closed O: Normally open	Straight	V: CVC male VF: CVC female S: Compression W: Butt weld	C: PCTFE M: SUS316L (PFA coating)	C: PCTFE F: Fluorine rubber A: PFA	STD-316L : Mechanical Polished + SUS316L EP-316L : Electro Polished + SUS316L

*In the automatic valves that have a maximum usage temperature of 180°C, the disk material is fluorine rubber and the bonnet gasket material is SUS316L (PFA coated).
The actuator dimension ϕA in that case will be $\phi 39$ for 1/4" to 1/2". We also offer a hot seal for a special-purpose heater.

Dimensions

Unit: inch (mm)

Model	Type	Connection	L	L ₁	H	H ₁	A	B	C	P	M	M ₁
	IB4□S-V□□	1/4" CVC Male	2.25 (57.1)	-	2.72 (69.0)	0.43 (11.0)	1.54 (39.0)	1.02 (26.0)	0.98 (25.0)	Rc1/8	1.00 (25.4)	2-M5 Depth 0.31 (8.0)
	IB8□S-V□□	1/2" CVC Male	2.56 (65.1)	-	3.27 (83.0)	0.63 (16.0)	1.89 (48.0)	1.02 (26.0)	0.98 (25.0)	Rc1/8	1.00 (25.4)	2-M5 Depth 0.31 (8.0)
	IB4□S-VF□□	1/4" CVC Female	2.78 (70.6)	-	2.72 (69.0)	0.43 (11.0)	1.54 (39.0)	1.02 (26.0)	0.98 (25.0)	Rc1/8	1.00 (25.4)	2-M5 Depth 0.31 (8.0)
	IB8□S-VF□□	1/2" CVC Female	3.27 (83.0)	-	3.27 (83.0)	0.63 (16.0)	1.89 (48.0)	1.02 (26.0)	0.98 (25.0)	Rc1/8	1.00 (25.4)	2-M5 Depth 0.31 (8.0)
	IB4□S-S□□	1/4" Compression Fittings	1.89 (48.0)	0.31 (7.9)	2.85 (72.3)	0.56 (14.3)	1.54 (39.0)	1.02 (26.0)	0.98 (25.0)	Rc1/8	1.00 (25.4)	2-M5 Depth 0.31 (8.0)
	IB6□S-S□□	3/8" Compression Fittings	2.52 (64.0)	0.37 (9.5)	3.14 (79.7)	0.50 (12.7)	1.89 (48.0)	1.02 (26.0)	0.98 (25.0)	Rc1/8	1.00 (25.4)	2-M5 Depth 0.31 (8.0)
	IB8□S-S□□	1/2" Compression Fittings	2.52 (64.0)	0.50 (12.7)	3.14 (79.7)	0.50 (12.7)	1.89 (48.0)	1.02 (26.0)	0.98 (25.0)	Rc1/8	1.00 (25.4)	2-M5 Depth 8
	IB4□S-W□□	1/4" Butt Weld	5.91 (150.0)	-	2.72 (69.0)	0.43 (11.0)	1.54 (39.0)	1.02 (26.0)	0.98 (25.0)	Rc1/8	1.00 (25.4)	2-M5 Depth 0.31 (8.0)
	IB6□S-W□□	3/8" Butt Weld	5.91 (150.0)	-	3.27 (83.0)	0.63 (16.0)	1.89 (48.0)	1.02 (26.0)	0.98 (25.0)	Rc1/8	1.00 (25.4)	2-M5 Depth 0.31 (8.0)
	IB8□S-W□□	1/2" Butt Weld	5.91 (150.0)	-	3.27 (83.0)	0.63 (16.0)	1.89 (48.0)	1.02 (26.0)	0.98 (25.0)	Rc1/8	1.00 (25.4)	2-M5 Depth 0.31 (8.0)

Ultra High Purity Valves

Ultra High Purity Fittings

Vacuum Components

PFA Valves

PFA Weld Fittings

Antistatic Unit