IVBH

Heated Vaccum Isolation Valve

The IVBH series vacuum valves have built-in spiral heaters that follow the movement of the bellows, and the valve and the bellows can be heated with the valve in either the open or closed state. These valves eliminate cold spots because heat is applied not only from an external heater but also from the inside of the bellows, which will reduce byproduct buildup. The internal and external heaters have individual channels and can heat independently to an arbitrary temperatures up to 180 °C. In addition, a magnetic proximity open/close switch, and thermostat are available as options.

■ Features

◎ Because of the internal heater, byproduct adhesion to the O-ring seal surface is reduced, and long-term seal performance can be maintained.
◎ Buildup on the bellows surface is reduced, so there will be less residue fallout when the bellows moves, resulting in minimal particle generation.
◎ Reduced buildup getting caught in the bellows surface, resulting in higher durability bellows.(1 million cycles, actual results)
◎ The connecting flanges are chosen from variety of industry standard fittings, including ISO/KF, JIS VF/VG, ConFlat flange, and ISO MF connections.
◎ Electrical wires for the heater, thermocouples, thermostat (optional), and proximity sensor (optional) may be furnished with user specified connectors.
◎ In addition, special specifications, such as unique brackets, non-standard face-to-face dimension, special flanges, special materials (body, bellows, seal materials), and air fittings can be accommodated.

■ Specifications

Maximum Heating Temperature		150ºC~180ºC * Please keep the temperature at the mounting part to be below 70°C, when using DA type with a proximity switch. * Please choose an actuator fitting and gasket material to match the heating temperature. * The maximum heating temperature will vary depending on the type of valve. For details, please ask to the sales representatives.
Temperature Control Method		Temperature controller with K-type thermocouple
Maximum Operating Pressure		$1.4x10^{-10}$~29 psia ($1x10^{-6}$ ~$2x10^{5}$ Pa (abs) [0.1MPa (G)])
Standard Materials		Body/SUS304
		Bellows/SUS316L
		Actuator/A6063 (magnet for magnetic proximity switch built-in)
		Seat/fluorine rubber *Other materials not listed may be available.
Bellows/internal Heater Durability		Actual results from more than 1,000,000 cycles (internal vacuum state) in an electrified state (the bellows durability performance drops when it is used on the pressurized side).
Actuation Pressure		58~101 psig (0.4~0.7MPa (G))
Allowable Leakage	Across the Seat He Leak Rates	≤ $1x10^{-9}$ sccs (≤ $1x10^{-10}$ Pa·m^3/sec)
	Inboard He Leak Rates	≤ $1x10^{-9}$ sccs (≤ $1x10^{-10}$ Pa·m^3/sec) Permiation through gasket is outside of spec.

	IVBH Series				
Size	25A	40A	50A	80A	100A
Orifice (inch(mm))	0.91 (23.0)	1.57 (40.0)	1.89 (48.0)	2.76 (70.0)	3.78 (96.0)
Valve Lift (inch(mm))	0.47 (12.0)	0.79 (20.0)	0.98 (25.0)	1.18 (30.0)	1.57 (40.0)
Conductance (ℓ /sec)	11.0	38.0	65.0	135.0	320.0
Heater Voltage (AC V)	100.0	100.0	100.0	100.0	100.0 / 200.0
Internal Heater Power (W)	80.0	106.0	106.0	120.0	172.0 / 212.0
External Heater Power (W)	80.0	120.0	120.0	250.0	354.0 / 300.0
Cylinder Volume (cc) (NC/NO)	13	56	70	136	295
Cylinder Volume (cc) (DA)	-	21	26	50	112
Heater Cord Length (ft(m))	16.4 (5)	16.4 (5)	16.4 (5)	9.8 (3)	9.8 (3)

■ Precautions

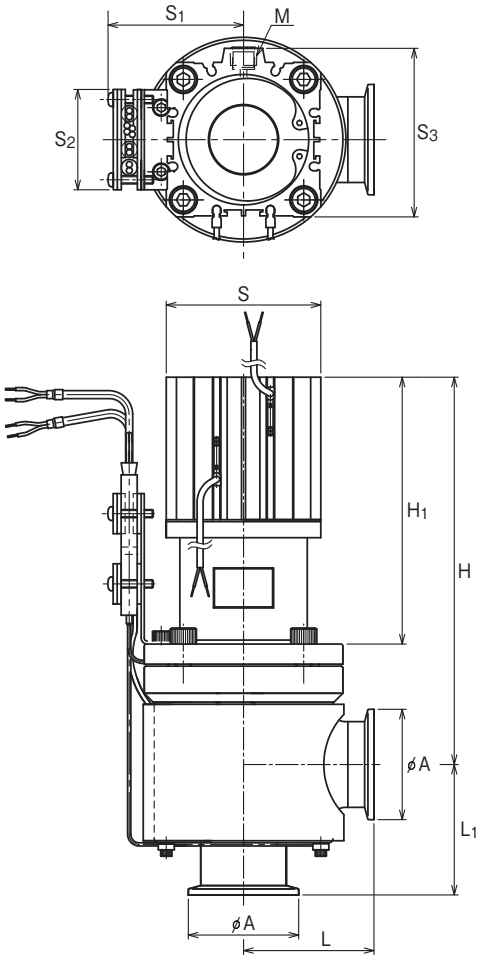
① The valves are designed to be used under atmospheric pressure. Usage such as under vacuum vessels are not guranteed.
② For high temperature applications, please select appropriate material for air-fittings and tubes to assure proper performance.

Product Code Table

Model	Size	Operation	Valve Shape		Connection (IN Side)	Connection (OUT Side)	Seat Material		Custom Specifications		Accessories		Accessories		RoHS	
IVBH	40	C	A	-	VF	G	F	-	Specific Code	-	SO	-	PE	-	(RS)	
Bellows Seal Hot Valve	25:25A 40:40A 50:50A 80S:80A 100S:100A	C: Normally Closed D: Double Acting O: Normally Open	A: Angle Type Y: Y-shape Straight Z: Z-shape Inline		NW: ISO KF Flange VF: JIS VF Flange VG: JIS VG Flange CF: ConFlat Flange MF: ISO MF Flange	Same Cases As IN Side Omitted F: JIS VF Flange G: JIS VG Flange	Fluorine Rubber		Standard Products are Omitted		Not Shown: No Switch SO: With Switch On the Open Position SC: With Switch On the Closed Position W: With Open and Colsed Position		Not Shown: With PD31L3 Switch PE: With PE33L3 Switch		Not Shown: Not RoHS Compliant (RS): RoHS Compliant Product	

* We handle materials and shapes other than those noted.
* A thermostat can be attached to an external heater to prevent eddy heating.
* Confirm the specifications for the heater, thermocouple and thermostat cable connectors with the sales representative.

IVBH Series (25A-100A) Pneumatic Type



Unit: inch (mm)

Type	Diameter of Opening	A	L	L_1	H	H_1	S	S_1	S_2	S_3	M
IVBH25CA-NWF	NW25	1.57 (40.0)	1.97 (50.0)	1.97 (50.0)	6.57 (167.0)	4.06 (103.0)	2.05 (52.0)	1.95 (49.5)	2.17 (55.0)	2.24 (57.0)	Rc 1/8
IVBH40CA-NWF	NW40	2.17 (55.0)	2.56 (65.0)	2.56 (65.0)	7.60 (193.0)	5.24 (133.0)	3.03 (77.0)	2.70 (68.5)	2.17 (55.0)	3.31 (84.0)	Rc 1/4
IVBH50CA-NWF	NW50	2.95 (75.0)	2.76 (70.0)	2.76 (70.0)	7.99 (203.0)	5.43 (138.0)	3.03 (77.0)	2.60 (66.0)	2.17 (55.0)	3.31 (84.0)	Rc 1/4
IVBH80SCA-NWF	NW80	4.49 (114.0)	3.86 (98.0)	3.86 (98.0)	9.51 (241.5)	6.44 (163.5)	3.86 (98.0)	3.19 (81.0)	2.17 (55.0)	4.09 (104.0)	Rc 3/8
IVBH100SCA-NWF	NW100	5.28 (134.0)	5.12 (130.0)	5.12 (130.0)	12.52 (318.0)	8.54 (217.0)	4.61 (117.0)	3.78 (96.0)	2.17 (55.0)	4.86 (123.5)	Rc 3/8
IVBH40DA-NWF	NW40	2.17 (55.0)	2.56 (65.0)	2.56 (65.0)	4.74 (120.5)	2.38 (60.5)	2.05 (52.0)	2.70 (68.5)	2.17 (55.0)	2.24 (57.0)	Rc 1/8
IVBH50DA-NWF	NW50	2.95 (75.0)	2.76 (70.0)	2.76 (70.0)	5.14 (130.5)	2.58 (65.5)	2.05 (52.0)	2.70 (68.5)	2.17 (55.0)	2.24 (57.0)	Rc 1/8
IVBH80SDA-NWF	NW80	4.49 (114.0)	3.86 (98.0)	3.86 (98.0)	5.89 (149.5)	2.81 (71.5)	2.52 (64.0)	3.21 (81.5)	2.17 (55.0)	2.80 (71.0)	Rc 1/4
IVBH100SDA-NWF	NW100	5.28 (134.0)	5.12 (130.0)	5.12 (130.0)	7.28 (185.0)	3.43 (87.0)	3.03 (77.0)	3.82 (97.0)	2.17 (55.0)	3.31 (84.0)	Rc 1/4