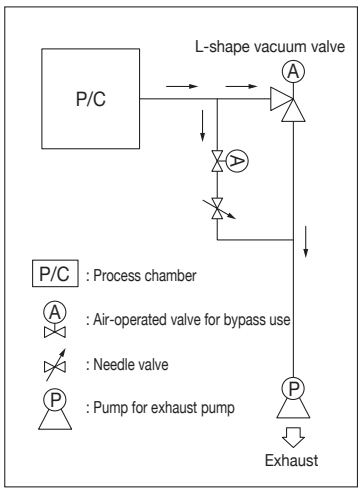
IVB/IVBL/IVBH

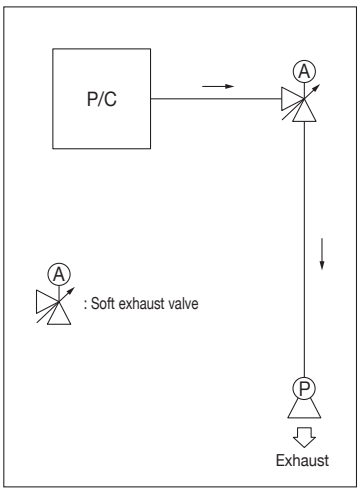
The IVB_X, VX series keep particles that are produced inside the chamber from rising. By controlling the integrated bypass valve before opening the main valve, it suppresses abrupt pressure fluctuation that occur when exhausting from air to vacuum, or when going back from vacuum to air. Fixed flow bypass valves and variable flow bypass valves are available. These bypass valves are compatible with all IVB, IVBL, and IVBH series valves except for the 15A size.

■ Features

◎ They help achieve reduced cost and space saving by integrating the conventional slow bypass line to the main valve.
◎ VX type bypass valve can change the conductance to reach optimal exhaust speed. Please refer to the table below for the adjustable range.
◎ By selecting high temperature resistant materials, these bypass valves can be used with IVBH series vacuum isolation valves in heated condition.
◎ Depending on the model of the vacuum isolation valve, multiple bypass valves can be attached. Please ask the sales representatives for details.



Conventional piping layout



Piping layout after use of soft exhaust valve

■ Specifications

The valve specifications are the same as those of the main valve on which the bypass valve is based.
* However, if you choose to use a PCTFE seat with the bypass valve, the across the seat He leak rates will be $1x10^{-9}$ Pa m^3/sec or less.

Bypass valve specifications

Type	Fixed Flow Type NC				Variable Flow Type NC			
	Fluorine rubber		PCTFE		Fluorine rubber		PCTFE	
Size	1/4"	1/2"	1/4"	1/2"	1/4"	1/2"	1/4"	1/2"
Cv	0.3	0.85	0.3	0.85	0.03~0.28	0.05~0.74	0.03~0.28	0.05~0.74
Valve Lift	0.039 (1.00)	0.059 (1.50)	0.039 (1.00)	0.059 (1.50)	0.039 (1.00)	0.059 (1.50)	0.039 (1.00)	0.059 (1.50)
Actuation Pressure	58~101 psig (0.4~0.7MPa (G))							

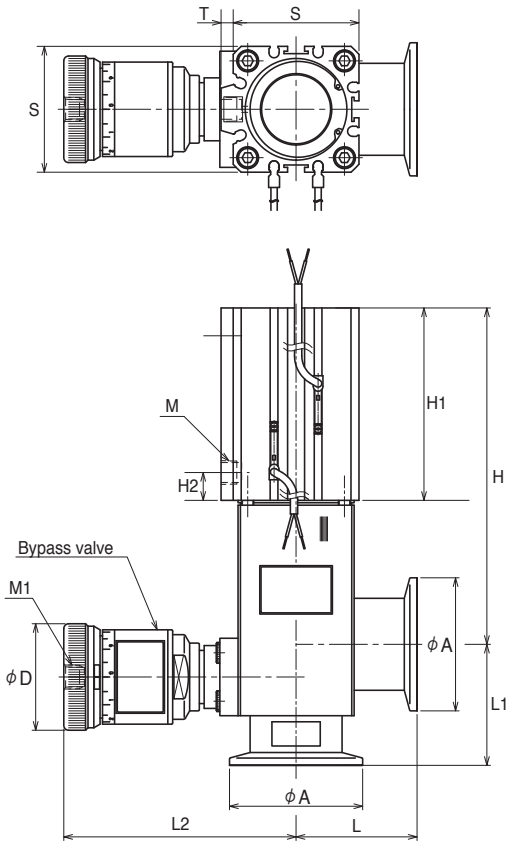
■ Precautions

① The variable flow bypass valves have a structure that adjusts the lift of the bellows' ON/OFF valve to control the flow; therefore the set amount of flow may vary according to your usage conditions.
② The valves are designed to be used under atmospheric pressure. Usage such as under vacuum vessels are not guranteed.
③ For high temperature applications, please select appropriate material for air-fittings and tubes to assure proper performance.

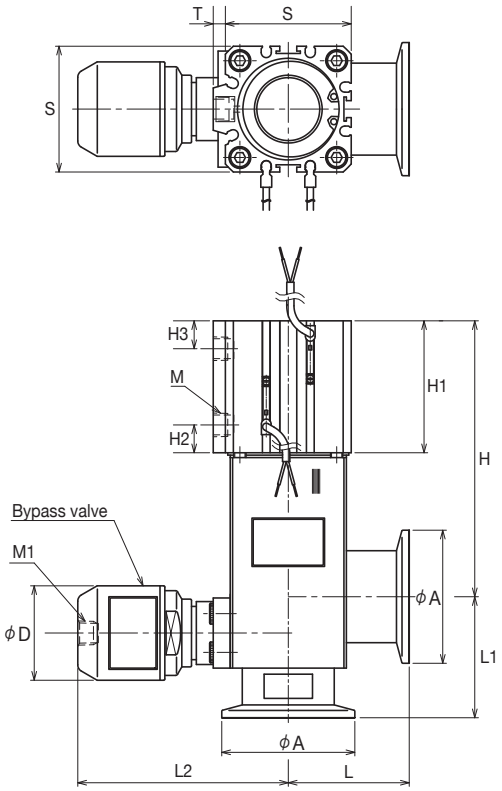
Product Code Table

Model	Size	Main Valve Operation	Bypass Valve Operation	Bypass Valve Seat	Bypass Valve Size	Valve Shape	-	Main Valve Connection (IN Side)	Main Valve Connection (OUT Side)	Main Valve Seat	-	Custom Specifications	-	Accessories	Accessories	-	RoHS
IVB	40	D	VX	F	8	A		VF	G	F		Specific Code		SO	PE		(RS)
IVB: Square Shaped Bellows Valve IVBL: Round Shaped Bellows Valve IVBH: Bellows Seal Hot Valve	25:25A 40:40A 50:50A 65S:65A 80S:80A 100S:100A	C: Normally Closed D: Double Acting O: Nomally Open	VX: Variable Flow X: Fixed Flow	Not Shown: PCTFE F: Fluorine Rubber	Not Shown: ¼" Size 8: ½" Size	A: Angle Type Y: Y-shape Straight		NW: ISO KF Flange VF: JIS VF Flange VG: VG: JIS VG Flange CF: ConFlat Flange MF: ISO MF Flange	Cases Same As IN Side Are 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 Closed Position *1	Not Shown: With PD31L3 Switch PE: With PE33L3 Switch		Not Shown: Not RoHS Compliant (RS): RoHS Compliant Product

IVB Soft Exhaust Valve (25A-50A) NC Type (Variable Flow Type)



IVB Soft Exhaust Valve (25A-50A) DA Type (Fixed Flow Type)



Dimensions

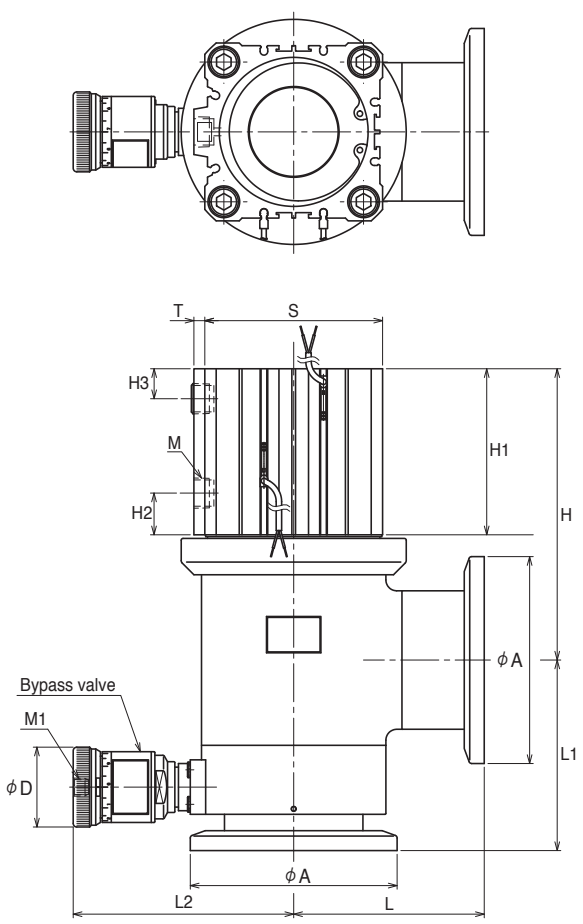
Unit: inch (mm)

Type	Diameter of Opening	A	L	L_1	H	H_1	H_2	H_3	M	S	T
IVB25 (V) X (F) (8) A-NWF	NW25	1.57 (40.0)	1.69 (43.0)	1.69 (43.0)	5.22 (132.5)	3.13 (79.5)	0.45 (11.5)	-	Rc 1/8	2.05 (52.0)	0.20 (5.0)
IVB40 (V) X (F) (8) A-NWF	NW40	2.17 (55.0)	1.97 (50.0)	1.97 (50.0)	5.47 (139.0)	3.13 (79.5)	0.45 (11.5)	-	Rc 1/8	2.05 (52.0)	0.20 (5.0)
IVB50 (V) X (F) (8) A-NWF	NW50	2.95 (75.0)	2.76 (70.0)	2.76 (70.0)	6.42 (163.0)	3.76 (95.5)	0.47 (12.0)	-	Rc 1/4	2.52 (64.0)	0.28 (7.0)
IVB25D (V) X (F) (8) A-NWF	NW25	1.57 (40.0)	1.69 (43.0)	1.69 (43.0)	4.25 (108.0)	2.15 (54.5)	0.45 (11.5)	0.45 (11.5)	Rc 1/8	2.05 (52.0)	0.20 (5.0)
IVB40D (V) X (F) (8) A-NWF	NW40	2.17 (55.0)	1.97 (50.0)	1.97 (50.0)	4.51 (114.5)	2.15 (54.5)	0.45 (11.5)	0.45 (11.5)	Rc 1/8	2.05 (52.0)	0.20 (5.0)
IVB50D (V) X (F) (8) A-NWF	NW50	2.95 (75.0)	2.76 (70.0)	2.76 (70.0)	5.04 (128.0)	2.38 (60.5)	0.47 (12.0)	0.47 (12.0)	Rc 1/4	2.52 (64.0)	0.28 (7.0)

Dimensions

Type		Fixed Flow X Series				Variable Flow VX Series			
Size		1/4"		1/2"		1/4"		1/2"	
Seat material		Fluorine Rubber	PCTFE	Fluorine Rubber	PCTFE	Fluorine Rubber	PCTFE	Fluorine Rubber	PCTFE
L_2	25A	3.17 (80.5)		-	-	3.52 (89.5)		3.78 (96.0)	-
	40A	3.17 (80.5)		3.43 (87.0)	3.50 (89.0)	3.52 (89.5)		3.78 (96.0)	3.82 (97.0)
	50A	3.37 (85.5)		3.62 (92.0)	3.70 (94.0)	3.72 (94.5)		3.98 (101.0)	4.02 (102.0)
D		1.54 (39.0)			1.89 (48.0)	1.73 (44.0)			2.13 (54.0)
M_1		Rc 1/8							

IVBL Vaccum Isolation Valves with Bypass (65A-100A) Pneumatic Type (Variable Flow Type)



Dimensions

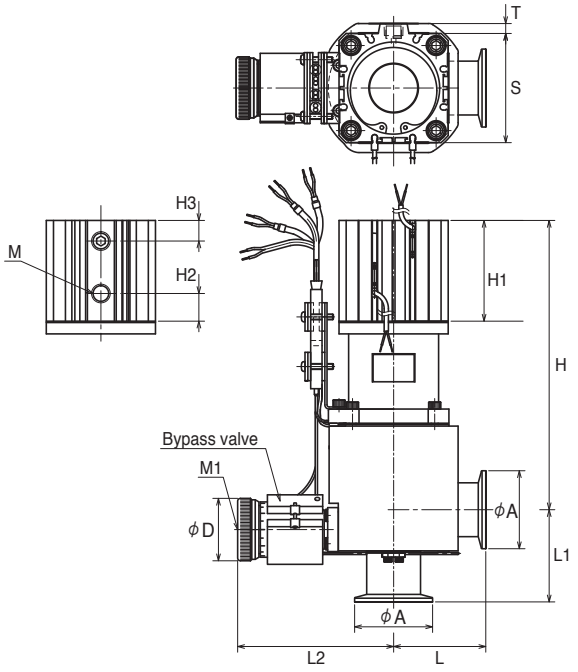
Unit: inch (mm)

Type	End Connection	A	L	L_1	H	H_1	H_2	H_3	M	S	T
IVBL65S (V) X (F) (8) A-NWF	NW63	3.43 (87.0)	3.86 (98.0)	3.86 (98.0)	5.98 (152.0)	3.60 (91.5)	0.91 (23.0)	-	Rc 3/8	3.86 (98.0)	0.24 (6.0)
IVBL80S (V) X (F) (8) A-NWF	NW80	4.49 (114.0)	3.86 (98.0)	3.86 (98.0)	6.57 (167.0)	3.60 (91.5)	0.91 (23.0)	-	Rc 3/8	3.86 (98.0)	0.24 (6.0)
IVBL100S (V) X (F) (8) A-NWF	NW100	5.28 (134.0)	5.12 (130.0)	5.12 (130.0)	8.74 (222.0)	4.25 (108.0)	0.98 (25.0)	-	Rc 3/8	4.61 (117.0)	0.26 (6.50)
IVBL65SD (V) X (F) (8) A-NWF	NW63	3.43 (87.0)	3.86 (98.0)	3.86 (98.0)	6.30 (160.0)	3.03 (77.0)	0.75 (19.0)	0.35 (9.0)	Rc 1/4	2.52 (64.0)	0.28 (7.0)
IVBL80SD (V) X (F) (8) A-NWF	NW80	4.49 (114.0)	3.86 (98.0)	3.86 (98.0)	6.93 (176.0)	3.03 (77.0)	0.75 (19.0)	0.35 (9.0)	Rc 1/4	2.68 (68.0)	0.28 (7.0)
IVBL100SD (V) X (F) (8) A-NWF	NW100	5.28 (134.0)	5.12 (130.0)	5.12 (130.0)	9.06 (230.0)	3.58 (91.0)	0.77 (19.5)	0.43 (11.0)	Rc 1/4	3.03 (77.0)	0.28 (7.0)

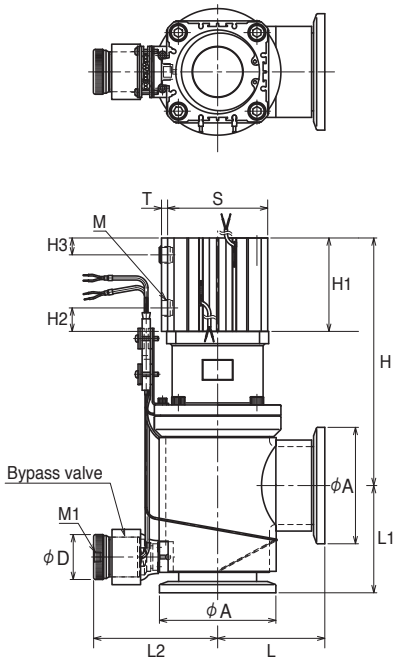
Dimensions

Type		Fixed Flow X Series				Variable Flow VX Series			
Size		1/4"		1/2"		1/4"		1/2"	
Seat Material		Fluorine Rubber	PCTFE	Fluorine Rubber	PCTFE	Fluorine Rubber	PCTFE	Fluorine Rubber	PCTFE
L_2	65A	3.96 (100.5)	-	4.43 (112.5)	4.51 (114.5)	-	-	4.78 (121.5)	4.84 (123.0)
	80A	-	-	4.43 (112.5)	4.51 (114.5)	-	-	4.78 (121.5)	4.84 (123.0)
	100A	-	-	5.12 (130.0)	-	5.16 (131.0)	-	5.47 (139.0)	-
D		1.54 (39.0)			1.89 (48.0)	1.73 (44.0)			2.13 (54.0)
M_1		Rc 1/8							

IVBH Vacuum Isolation Valves (40A and 50A) Pneumatic Type (Variable Flow Type)



IVBH Vacuum Isolation Valves (80A and 100A) Pneumatic Type (Variable Flow Type)



Dimensions

Unit: inch (mm)

Type	Connection	A	L	L_1	H	H_1	H_2	H_3	M	S	T
IVBH40 (V) XF (8) A-NWF	NW40	2.17 (55.0)	2.56 (65.0)	2.56 (65.0)	7.60 (193.0)	2.80 (71.0)	0.77 (19.5)	0.57 (14.5)	Rc 1/4	3.03 (77.0)	0.28 (7.0)
IVBH50 (V) XF (8) A-NWF	NW50	2.95 (75.0)	2.76 (70.0)	2.76 (70.0)	7.99 (203.0)	2.99 (76.0)	0.77 (19.5)	0.57 (14.5)	Rc 1/4	3.03 (77.0)	0.28 (7.0)
IVBH80S (V) XF (8) A-NWF	NW80	4.49 (114.0)	3.86 (98.0)	3.86 (98.0)	9.55 (242.5)	3.60 (91.5)	0.91 (23.0)	0.65 (16.5)	Rc 3/8	3.86 (98.0)	0.24 (6.0)
IVBH100S (V) XF (8) A-NWF	NW100	5.28 (134.0)	5.12 (130.0)	5.12 (130.0)	12.52 (318.0)	4.25 (108.0)	0.98 (25.0)	0.83 (21.0)	Rc 3/8	4.61 (117.0)	0.26 (6.5)
IVBH40D (V) XF (8) A-NWF	NW40	2.17 (55.0)	2.56 (65.0)	2.56 (65.0)	4.70 (119.5)	2.34 (59.5)	0.45 (11.5)	0.45 (11.5)	Rc 1/8	2.05 (52.0)	0.20 (5.0)
IVBH50D (V) XF (8) A-NWF	NW50	2.95 (75.0)	2.76 (70.0)	2.76 (70.0)	5.53 (140.5)	2.54 (64.5)	0.45 (11.5)	0.45 (11.5)	Rc 1/8	2.05 (52.0)	0.20 (5.0)
IVBH80SD (V) XF (8) A-NWF	NW80	4.49 (114.0)	3.86 (98.0)	3.86 (98.0)	5.89 (149.5)	2.78 (70.5)	0.47 (12.0)	0.47 (12.0)	Rc 1/4	2.52 (64.0)	0.16 (4.0)
IVBH100SD (V) XF (8) A-NWF	NW100	5.28 (134.0)	5.12 (130.0)	5.12 (130.0)	7.28 (185.0)	3.39 (86.0)	0.57 (14.5)	0.57 (14.5)	Rc 1/4	3.03 (77.0)	0.28 (7.0)

Dimensions

Unit: inch (mm)

Type		Fixed Flow X Series		Variable Flow VX Series	
Size		1/4"	1/2"	1/4"	1/2"
Seat Material		Fluorine rubber			
L_2	40A	-	4.02 (102.0)	4.11 (104.5)	4.37 (111.0)
	50A	3.76 (95.5)	4.02 (102.0)	4.11 (104.5)	4.37 (111.0)
	80A	4.25 (108.0)	4.43 (112.5)	4.41 (112.0)	4.78 (121.5)
	100A	-	-	-	5.53 (140.5)
D		1.54 (39.0)		1.73 (44.0)	
M_1		Rc 1/8			