Manual Valve for High Vacuum

MVB□17 Series

●Molded bellows used ●Aluminum body

RoHS

Model No. Notation Method

MVB 4 17 - 40K

- MVB: Model No.
- 4: ❶ Orifice Diameter
- 40K: ❷ Port Size

❶ Orifice Diameter

Code	Content
2	ø17
3	ø24
4	ø39
5	ø48

❷ Port Size

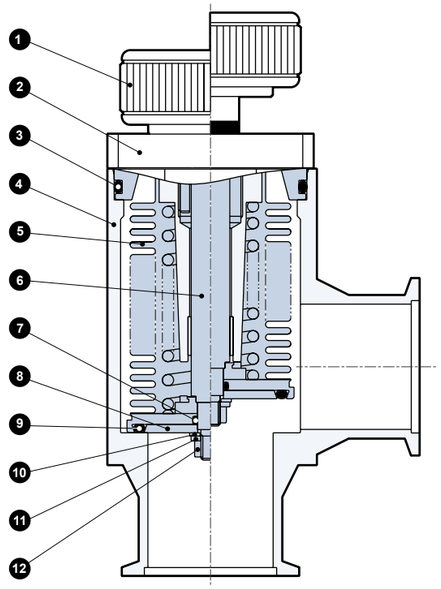
Code	Content	
16K	NW16	MVB217 only
25K	NW25	MVB317 only
40K	NW40	MVB417 only
50K	NW50	MVB517 only

Specifications

Item	MVB217	MVB317	MVB417	MVB517
Applicable Fluid	Vacuum and inert gas			
Working pressure Pa (abs)	1.3×10^{-6} to 1×10^{5}			
Max. Operating Pressure Differential	0.1			
Valve Seat Leakage Pa·m³/s (He)	1.3×10^{-10} or less			
Valve Seat Leakage Pa·m³/s (He)	1.3×10^{-11} or less			
Proof Pressure MPa	0.3			
Fluid temperature °C	5 to 60			
Ambient Temperature °C	0 to 60 (No freezing)			
Orifice Diameter mm	ø17	ø24	ø39	ø48
Conductance *1 L/s	5	13	43	74
Port Size	NW16	NW25	NW40	NW50
Operating torque *2 N·m	0.15 or more	0.25 or more	0.8 or more	1.5 or more
Number of handle rotations	5	7.5	12	15
Weight kg	0.4	0.6	1.4	2.3

*1: The conductance value is a theoretical calculated value in the molecular flow region and is not an actual measured value.
*2: As you turn the handle, the torque eases suddenly near the fully closed position; however, the internal seal uses an integrated spring, so there is no problem with the closing capacity.
*3: Grease for vacuum is applied to the O-rings of outer seal parts.

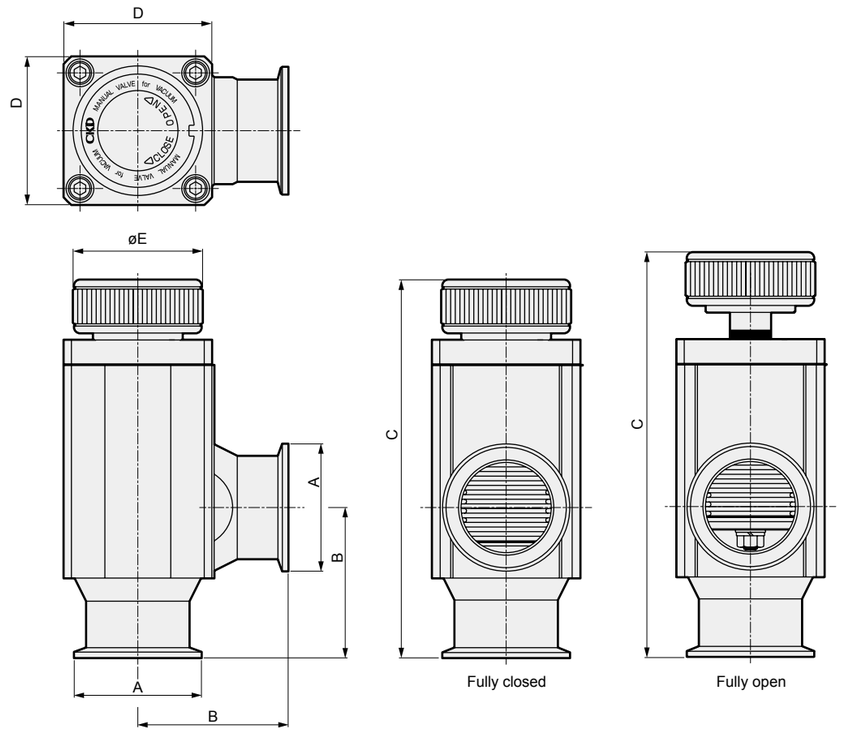
Internal Structure Diagram and Materials



Part No.	Part Name	Material
1	Handle	SUS303 (16K/25K) A5056 (40K/50K)
2	Adapter	A5056
3	O-ring	FKM Note)
4	Body	A6063
5	Bellows assembly	SUS316L
6	Rod	SUS316L
7	O-ring	FKM Note)
8	Valve Disc B	SUS316L
9	O-ring	FKM Note)
10	Flat Washer	SUS304
11	Spring Washer	SUS304
12	Hex Nut	SUS304

Note) For information on other available O-ring materials, please inquire.

External Dimension Drawings



Model No.	A	B	C		D	E
			Fully closed	Fully open		
MVB217	ø30 (NW16)	40	115	121	40	32
MVB317	ø40 (NW25)	50	127	134	45	38
MVB417	ø55 (NW40)	65	164	176	64	56
MVB517	ø75 (NW50)	70	178	193	77	69

To Use This Product Safely

Be sure to read this before use.
For General Precautions refer to Intro 9.

Individual Precautions: Manual valve for high vacuum MVB Series

Design / Selection

1. Confirmation of Specifications

Warning

- Incorrect equipment selection and handling can cause problems not only in this product, but also to your system. Please be sure to confirm the specifications of this product and its compatibility with your system before use.
- Check the compatibility between the gas contact part materials and working fluid before use.
- Use within the specified fluid temperature and pressure range.

2. Working fluids

Caution

- This product is designed for controlling vacuum or inert gas. If other fluids (active gas, liquids, solids, etc.) pass through, the product may fail to operate normally or may display decreased performance. Check the compatibility between the gas contact part materials and working fluid before use. If there is a risk of solidification of the working fluid, confirm that this poses no problems during use.
- Avoid using fluids that build up crystallization in the piping.

3. Selection

Caution

- The bellows interior is directly connected to the atmosphere. Do not block the connecting hole between the bellows interior and the atmosphere (1 hole on the top of the adaptor) in use.

4. Mounting

Caution

- Perform piping so no excessive force is applied to the flange. If heavy objects and mounted components vibrate, fix so that torque is not applied directly to the flange.

5. Securing Space

Caution

- Secure sufficient space for maintenance and inspection.

6. Piping

Caution

- When piping, do not apply tension, compression, bending or other forces to the valve body from the piping.
- Durability may decrease due to exhaust flow, so we recommend use of the bellows side as the exhaust side except for models with limited vacuum pump connection ports. In addition, since durability varies depending on the operating conditions, please confirm sufficiently.

7. During Use

Caution

- Do not use valves as a footing or place any heavy objects on top of the valves.

For cautions about mounting, installation, adjustment, use, and maintenance, refer to CKD components Product Site (https://www.ckd.co.jp/kiki/jp/) → "Model No." Instruction Manuals

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