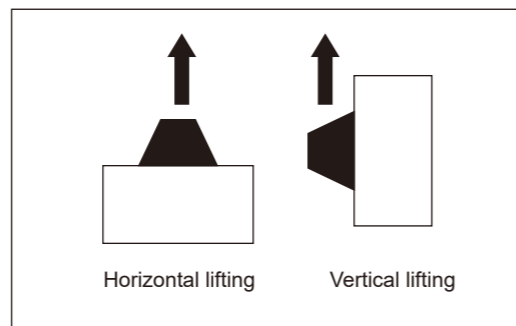


Technical Data

Formula for lifting capacity

$$W = \frac{P \times A}{-101.3} \times \frac{1}{0.102} \text{ However } \begin{cases} W = \text{Lifting capacity (N)} \\ P = \text{Vacuum pressure (kPa)} \\ A = \text{Pad area (cm}^2\text{)} \end{cases}$$

- The value obtained by this equation is a theoretical value. For actual design, please consider a safety factor of 4 times for horizontal lifting and 6 to 8 times or more for vertical lifting.
- When lifting and then moving, ensure an adequate safety factor by considering the weight due to acceleration.
- Diameter of the pad under suction increases by Approx. 10%.
- Pay attention to the position of center of gravity for the workpiece. If the workpiece tilts, the suction force will be significantly weakened.



Theoretical lifting force

- Circular pad (N)

Pad Diameter (ømm)	2	3.5	5	6	8	10
Suction Area (cm ²)	0.031	0.096	0.196	0.282	0.502	0.785
Vacuum pressure						
-93.3 KPa	0.284	0.873	1.765	2.550	4.511	7.061
-80.8 KPa	0.245	0.745	1.569	2.158	3.923	6.080
-66.7 KPa	0.206	0.618	1.275	1.863	3.236	5.099
-53.4 KPa	0.167	0.500	0.981	1.471	2.550	4.021
-40.0 KPa	0.118	0.373	0.785	1.079	1.961	3.040

The values in the table are calculated values.

Pad material and characteristics

Item	Hardness HS	Tensile Strength N/cm ²	Tear Strength N/cm ²	Elongation %	Heat Resistant Temperature °C	Oil Resistance	Sunlight Resistance	Ozone Resistance	Acid Resistance	Alkali Resistance	Abrasion Resistance	Electrical Insulation	Gas Permeability Resistance
Nitrile Rubber (NBR)	50° to 90°	686 to 1961	313 to 490	150 to 620	-26 to 120	○	x	x	△	○	○	x	○
Silicone Rubber (SI)	54° to 80°	441 to 784	117 to 411	100 to 300	-60 to 250	△	○	○	△	○	x	○	x
Urethane Rubber (U)	50° to 80°	686 to 4315	588 to 1961	310 to 750	-20 to 75	△	○	○	x	x	○	○	○
Fluororubber (FKM)	58° to 90°	931 to 1765	166 to 470	100 to 350	-10 to 230	○	○	○	○	△	○	○	○

This table shows the general characteristics of synthetic rubber that we can handle.
 ○: Good for use ○: Suitable for use △: Durable depending on conditions x: Unsuitable

- Refer to "Precision Components/Vacuum Components (catalog No.RJ-010AA)" for vacuum components selection.



Pneumatic Components

To Use This Product Safely

Be sure to read this before use. For general cylinder information, see Intro 41, and for cylinder switches, see P. 1512.

Individual Precautions: Compact vacuum suction cylinder MVC Series

Design / Selection

Warning

- In the case of a system incorporating a vacuum ejector, etc., if a suctioned workpiece (suctioned object) is thought to be dangerous in the event of it falling, provide a mechanical fall prevention measure for safety.

CAUTION

- Select a vacuum ejector, etc., that has an appropriate suction flow rate. Low suction flow rate will cause suction failure.
- When using the product with MVC cylinder buffer, the buffer stroke must be within 4 mm. Do not use beyond 4 mm.

During Use

CAUTION

- Perform piping with a sufficient effective cross-sectional area. For the vacuum piping side, select piping with a sufficient effective cross-sectional area that allows the maximum suction flow rate of the ejector to flow.

- When using MVC with reed switch, the cylinder cannot be mounted on a magnetic substance (iron plate, etc.). This will cause switch detection failure.

Special

Special

MVC

MVC

STK

STK

MCP

MCP

GLC

GLC

BBS

BBS

NHS

NHS

HR

HR

LN

LN

Cylinder Switch

Cylinder Switch

Ending

Ending

For precautions during mounting, installation, adjustment, use, and maintenance, refer to "During Use" in this catalog and the CKD Components Product website (<https://www.ckd.co.jp/kiki/en/>) -> "Model No." -> [Instruction Manual](#).