

Model Selection

Select the quantity of vacuum saving valves that can be used with one vacuum generator.

Selection Conditions

Workpiece: No leakage and several sizes
Required vacuum pressure: -50 kPa or more of vacuum pressure per vacuum pad
Part number of vacuum saving valve used: ZP2V-A8-05
(Connection thread size for pad side: M8, Fixed orifice size: ø0.5)

1 Check the flow-rate characteristics of the vacuum generator used.

From the flow-rate characteristics of the vacuum generator (Chart 1), calculate the suction flow rate (Q1) of the vacuum generator from the required vacuum pressure.

Vacuum pressure -50 kPa (①→②→③) =
 Suction flow rate (Q1) = 31 L/min (ANR).

2 Calculate the quantity (N) of vacuum saving valves.

Find the minimum operating flow rate (Q2) and the suction flow rate (Q1) of the vacuum generator from the specifications table (page 1236), and calculate the quantity (N) of vacuum saving valves that can be used with one vacuum generator.

Quantity of vacuum saving valves (N) = $\frac{\text{Suction flow rate of vacuum generator (Q1)}}{\text{Minimum operating flow rate (Q2)}}$

Example) Vacuum saving valve used: ZP2V-A8-05
 From Table 1, Q2 can be calculated as 5.0 L/min (ANR).

$$N = \frac{31 \text{ [L/min (ANR)]}}{5 \text{ [L/min (ANR)]}} = 6 \text{ (unit)}$$

Table 1. Relationship between Minimum Operating Flow Rate and Fixed Orifice Size

Connection thread size for pad side	M8
Fixed orifice size (mm)	0.5
Minimum operating flow rate (L/min (ANR)) Q2	5.0

The above selection example is based on a general method under the given selection conditions, and may not always be applicable. A final decision on operating conditions should be made based on test results performed at the responsibility of the customer.

Chart 1. Flow-Rate Characteristics of Vacuum Generator

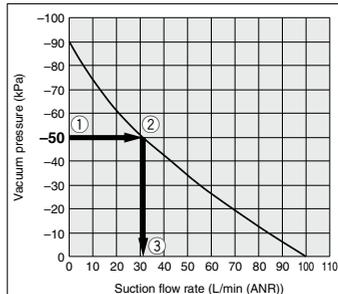
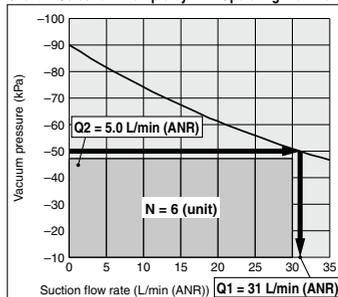


Chart 2. Selection Example by Min. Operating Flow Rate



⚠ Specific Product Precautions

Be sure to read before handling. Refer to front matter 35 for Safety Instructions and pages 899 to 901 for Vacuum Equipment Precautions.

- The product is not equipped with a vacuum holding function, and cannot be used for the purpose of holding vacuum.
- Determine the quantity of products to be used by selection, and keep the recommended pad diameter per product shown in Table 1. Also, check the operation with the customer's machine sufficiently beforehand.

Table 1. Recommended Pad Diameter per Product

Connection thread symbol for pad side	A5	B5	B6	A8	A01	B01	AG1	BG1	AN1	BN1
Thread size	M5	M6	M8	M8	R1/8	G1/8	G1/8	NPT1/8		
Recommended pad diameter (mm)	25 or less			32 to 50						

- Do not disassemble the product. Once the product is disassembled and reassembled, it will not be able to satisfy the original performance.
- When piping, do not get the vacuum generator side and vacuum generator side of the product the wrong way round. (Refer to Fig. 1.)

Enlarged view of name plate
 (Vacuum generator side)

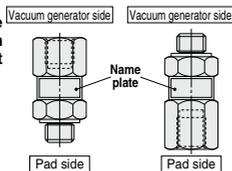
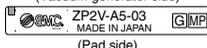


Fig. 1. Mounting direction

- For mounting and removing the product, strictly follow the instructions below. When mounting and removing the product, use the specified places shown in page 1239 to apply tools. Also, when mounting, tighten to the specified torque shown in page 1239. Excessive torque or applying a tool to places other than the specified place can cause damage or loss of original performance.
- The reduction of the vacuum pressure while the work piece is sucked and released depends on the flow-rate characteristics of the vacuum generator. Check the flow-rate characteristics of the vacuum generator before checking the operation with the customer's machine.
- When the built-in element of the product gets clogged, replace the whole product.
- When verifying the suction using such as a pressure sensor, check the operation with the customer's machine sufficiently beforehand.
- If there is leakage between the pad and a workpiece, for example if the workpiece is permeable, the quantity of products that can be used with one vacuum generator is reduced.

Take the leakage between the pad and workpiece into account and check the operation with the customer's machine sufficiently before using.

ZP3

ZP2

ZP2V

ZP

ZPT

ZPR

XT661