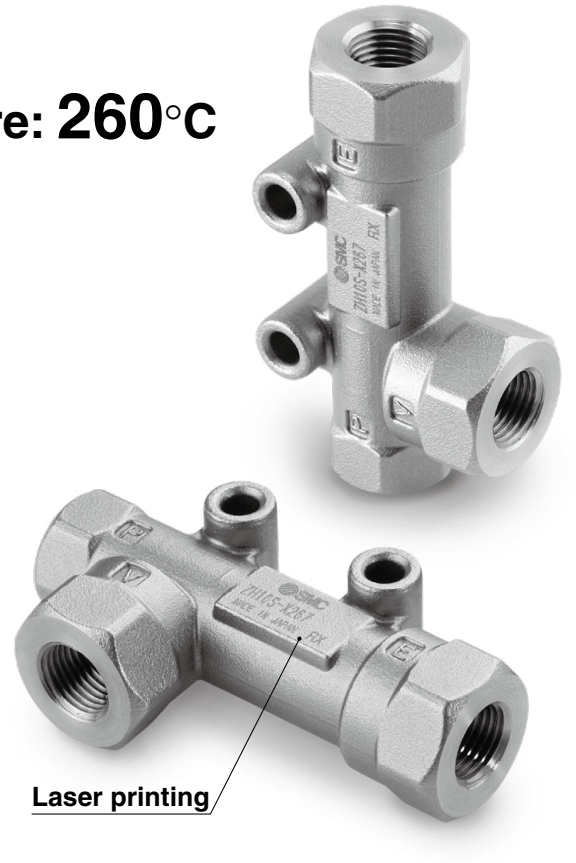
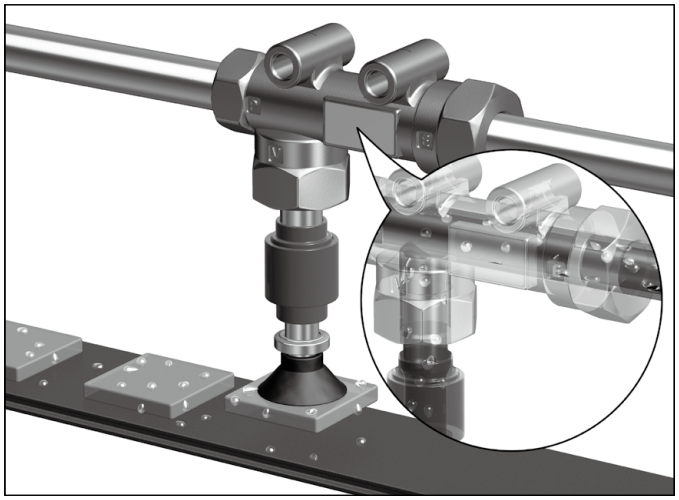
All Stainless Steel
Vacuum Ejector

RoHS

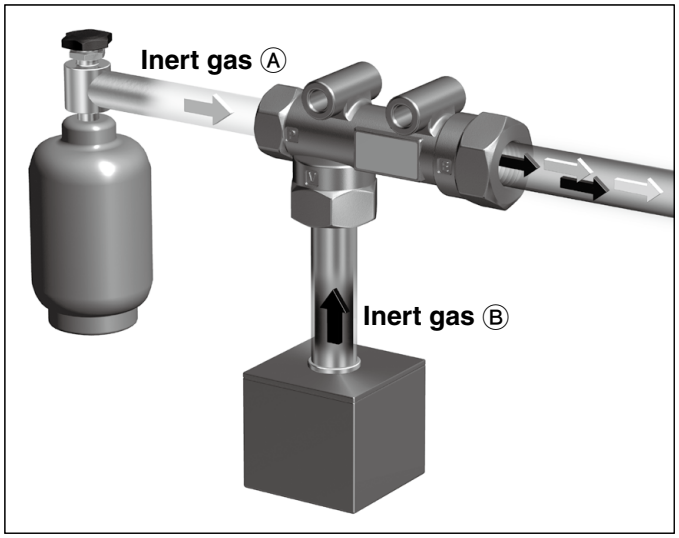
- All stainless steel (SCS13: Equivalent to stainless steel 304)
- Sealant not required
- Maximum operating temperature: 260°C
- Grease-free



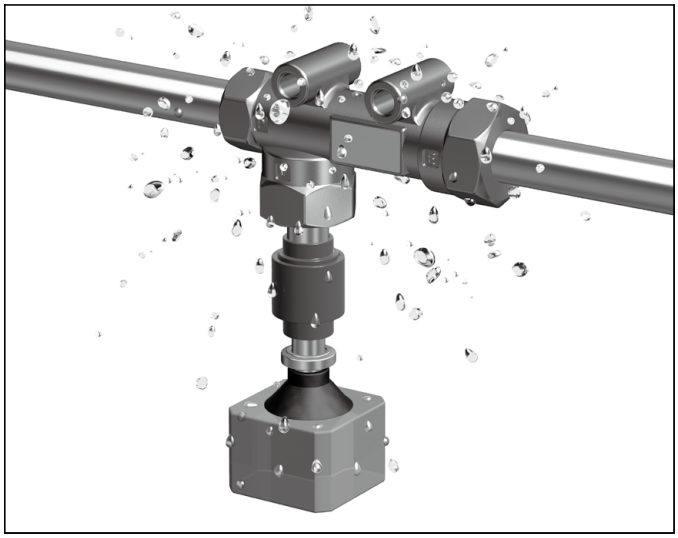
Adsorption of wet workpieces



Mixing 2 types of inert gas



An environment where it is exposed to water



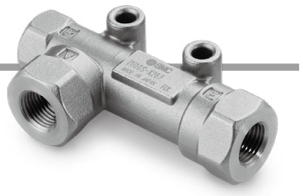
ZH□□-X267

SMC

All Stainless Steel Vacuum Ejector

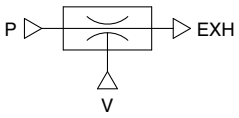
ZH□□-X267

RoHS



How to Order

Symbol



ZH 05 S – X267

Nozzle nominal size

05	ø0.5
07	ø0.7
10	ø1.0

Vacuum pressure

S	–88 kPa
L	–48 kPa

Specifications

Model	ZH05S-X267	ZH05L-X267	ZH07S-X267	ZH07L-X267	ZH10S-X267	ZH10L-X267
Nozzle nominal size [mm]	0.5		0.7		1.0	
Vacuum pressure [kPa] Note)	–88	–48	–88	–48	–88	–48
Suction flow rate [L/min (ANR)] Note)	5	8	12	20	24	34
Air consumption [L/min (ANR)] Note)	13		23		46	
Standard supply pressure [MPa]	0.45					
Body material	SCS13					
Nozzle material	Stainless steel 304					
Diffuser material	Stainless steel 304					
Maximum operating pressure [MPa]	0.6					
Ambient and fluid temperature [°C]	–5 to 260 (with no freezing or condensation)					
Fluid	Air, Inert gas					

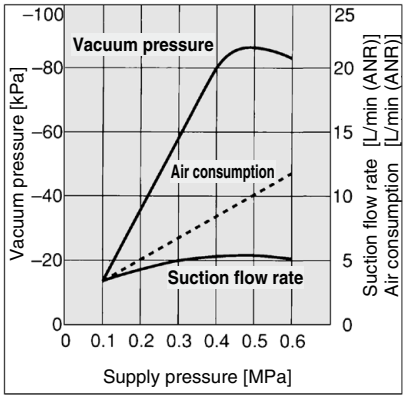
Note) Values are measured at ambient temperature of 20°C and the standard supply pressure based on SMC's measurement conditions. They may change depending on the operating ambient temperature, atmospheric pressure during use and measurement method.

Exhaust Characteristics/Flow-rate Characteristics (Representative value)

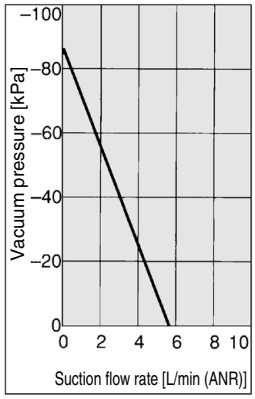
The flow-rate characteristics correspond to a supply pressure of 0.45 MPa.

ZH05S-X267

Exhaust characteristics

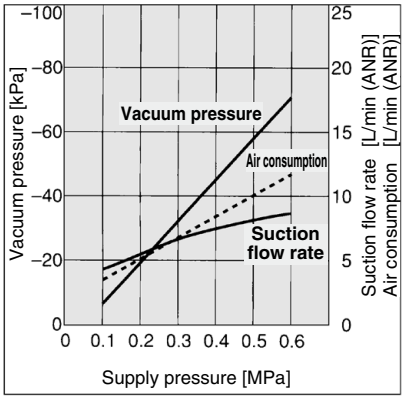


Flow-rate characteristics

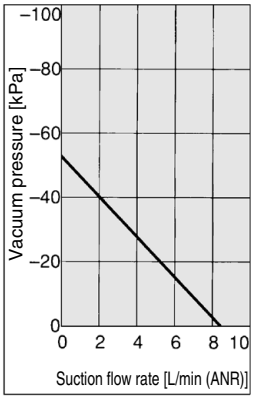


ZH05L-X267

Exhaust characteristics

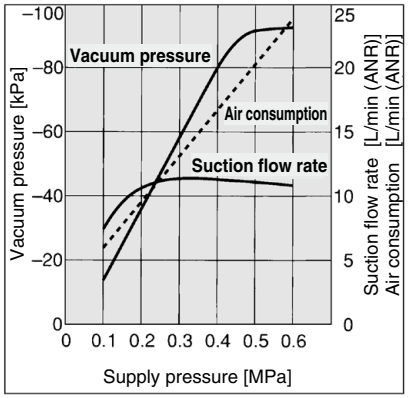


Flow-rate characteristics

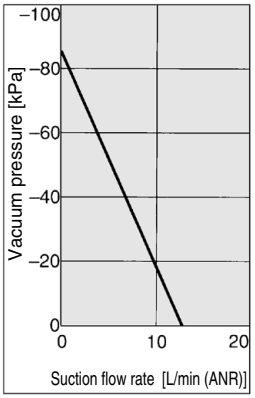


ZH07S-X267

Exhaust characteristics

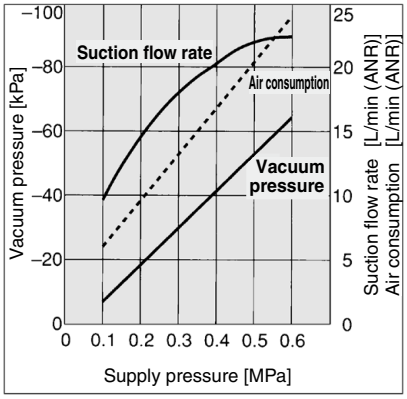


Flow-rate characteristics

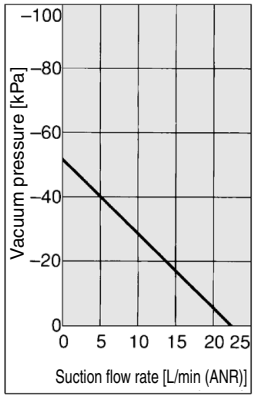


ZH07L-X267

Exhaust characteristics

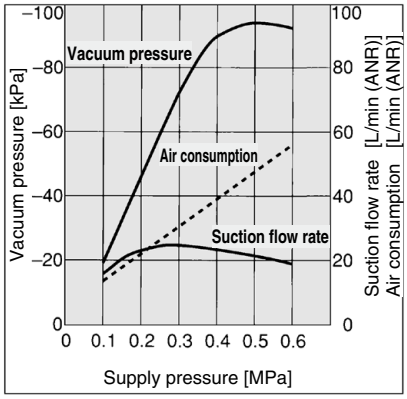


Flow-rate characteristics

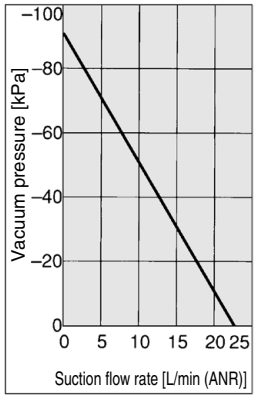


ZH10S-X267

Exhaust characteristics

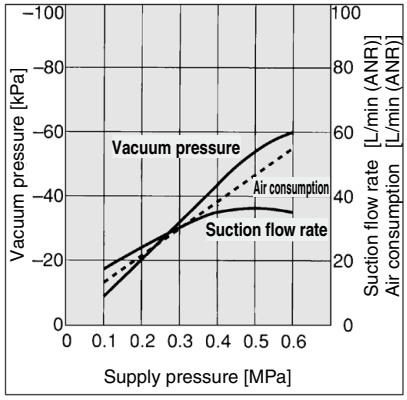


Flow-rate characteristics

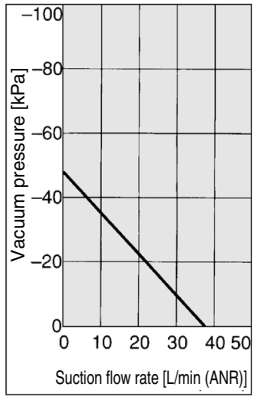


ZH10L-X267

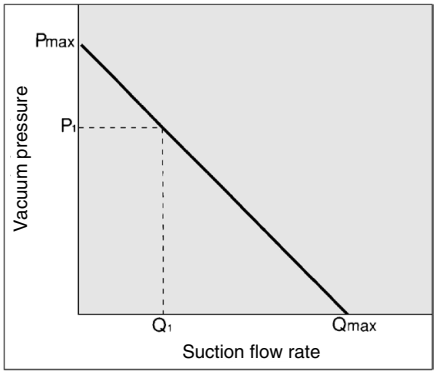
Exhaust characteristics



Flow-rate characteristics



How to Read Flow-rate Characteristics Graph



Flow-rate characteristics are expressed in ejector vacuum pressure and suction flow rate. If suction flow rate changes, a change in vacuum pressure will also be expressed. Normally this relationship is expressed in ejector standard use.

In graph, Pmax is maximum vacuum pressure and Qmax is maximum suction flow rate. The valves are specified according to catalog use.

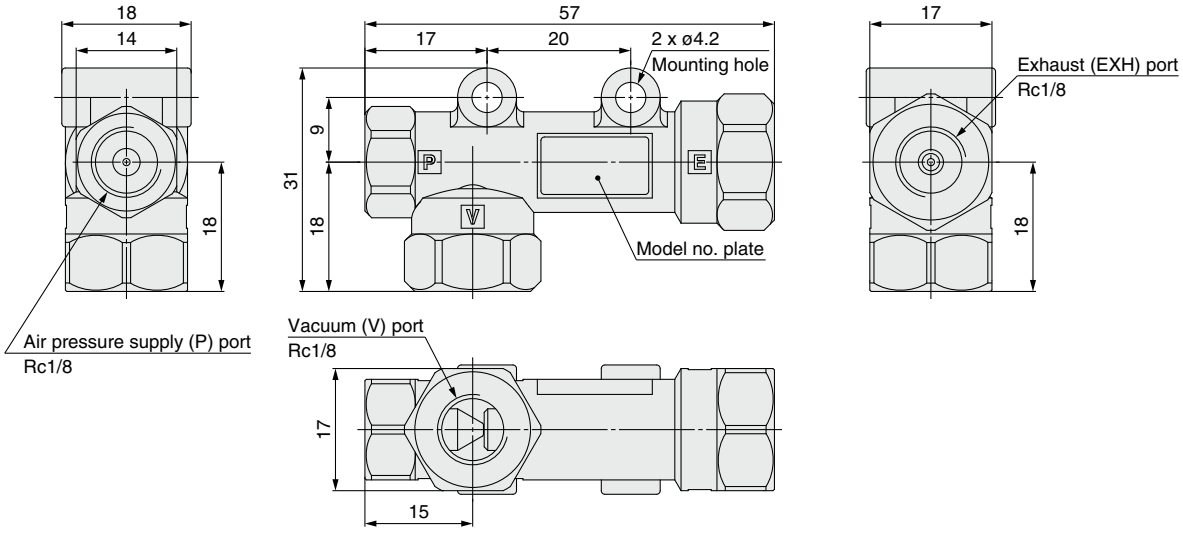
Changes in vacuum pressure are expressed in the order below.

1. When ejector suction port is covered and made airtight, suction flow rate becomes 0 and vacuum pressure is at maximum value (Pmax).
2. When suction port is opened gradually, air can flow (leak) through, suction flow rate increases, but vacuum pressure decreases. (condition P_1 and Q_1)
3. When suction port is opened further, suction flow rate moves to maximum value (Qmax), but vacuum pressure is near 0. (atmospheric pressure).

When vacuum port (vacuum piping) has no leakage, vacuum pressure becomes maximum, and vacuum pressure decreases as leakage increases. When leakage value is the same as maximum suction flow rate, vacuum pressure is near 0.

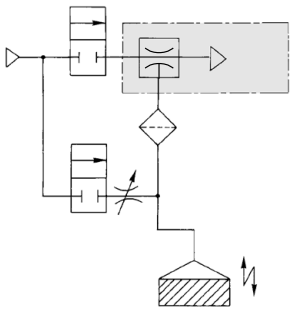
When permeable or leaky workpiece must be adsorbed, please note that vacuum pressure will not be high.

Dimensions

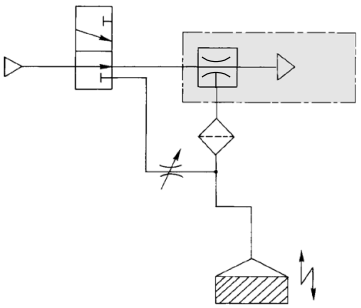


Example of Application Circuit

Example 1 **Full system**



Example 2 **3 port valve selection**



Diagrams Example 1 and Example 2 show the combination with peripherals.

⚠Caution

Handling of Application Circuits

1. Countermeasures for power outages
Select a supply valve for the ejector that is normally open or one that is equipped with a self-holding function.

2. Using a small-diameter picking nozzle
For picking electronic parts or small precision parts, if the picking nozzle is approximately ø1 mm in diameter, the vacuum remains high by being restricted by the nozzle. As a result, it will not be possible to verify it with the vacuum switch. In such a case, it is necessary to use an ejector that is suited to the nozzle and to select a vacuum switch with a favorable hysteresis and precision.

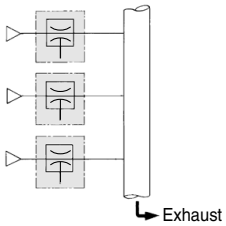
3. Considerable leakage from the suction surface
If a workpiece is made of porous material or if there is air leakage from the area between the pad and the workpiece, use a nozzle with a large diameter and a large suction flow rate.
If the amount of leakage is known based on the effective sectional area of the side with the leakage, the vacuum pressure can be estimated in accordance with the ejector's flow-rate characteristics.

4. Suction filter
To protect the ejectors and valves from dust, the use of a suction filter (Series ZFA, ZFB, ZFC) is recommended.

5. Use of a vacuum switch
It is recommended that verification be made with a vacuum switch as much as possible.

6. Vacuum release valve
To serve as a vacuum release valve, use a 2 port or 3 port valve that can be used under vacuum condition. For 3 port valves, the exhaust port should be plugged. In addition, add a needle valve that can regulate the flow rate of the vacuum releasing air. Use the atmospheric pressure or a positive pressure for the vacuum releasing pressure.

7. Common exhaust
For common exhaust as shown right, use an exhaust pipe big enough to prevent exhaust resistance.



⚠ Safety Instructions | Be sure to read "Handling Precautions for SMC Products" (M-E03-3) before using.