

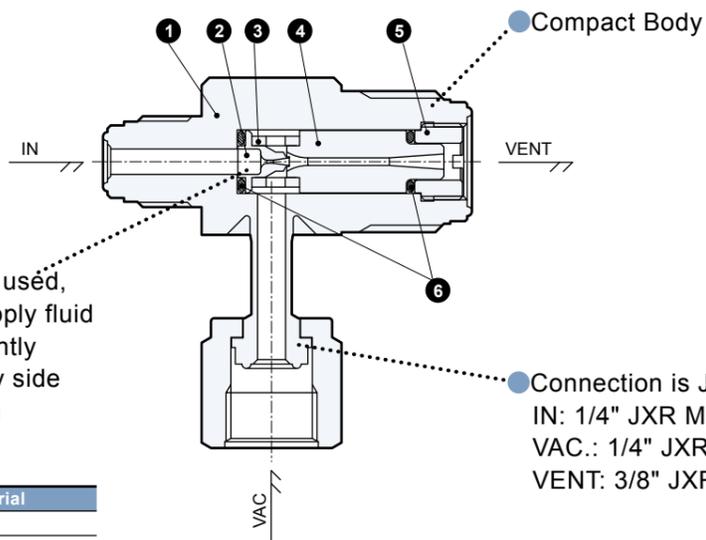


Vacuum Generator for Process Gas Exhaust

# VG Series



## Energy-saving type vacuum exhaust unit



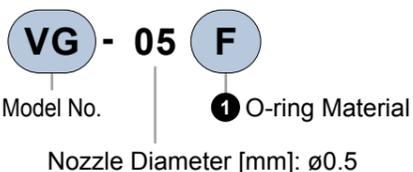
- High-efficiency nozzle used,
  1. Consumption of supply fluid is reduced significantly
  2. Resistant to primary side pressure fluctuation

● Connection is JXR fitting  
 IN: 1/4" JXR Male Fitting  
 VAC.: 1/4" JXR Female Fitting  
 VENT: 3/8" JXR Male Fitting

### Gas-wetted Materials

| Part No. | Part Name         | Material    |
|----------|-------------------|-------------|
| 1        | Body              | SUS316L     |
| 2        | Nozzle            | SUS316L     |
| 3        | Spacer            | SUS316L     |
| 4        | Diffuser          | SUS316L     |
| 5        | Diffuser Retainer | SUS316L     |
| 6        | O-ring            | FKM or FFKM |

### Model No. Notation Method



### 1 O-ring Material

| Code | Content |
|------|---------|
| F    | FKM     |
| P    | FFKM    |

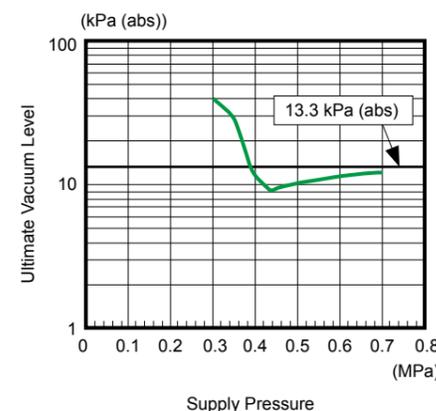
### Specifications

| Item  | VG   |
|---|--|
| Applicable Fluid                              | Inert gas / Process gas  |
| Fluid Temperature °C                          | 0 to 80  |
| Supply Fluid                                  | Nitrogen, Dry Air  |
| Supply fluid pressure MPa                     | 0.4 to 0.6 (During operation)  |
| Supply Fluid Consumption L/min (ANR)          | 16 or less *1  |
| Ultimate Vacuum Level kPa (abs)               | 13.3 or less   |
| Exhaust Flow Rate L/min (ANR)                 | 6 or more *1 *2  |
| External Leakage Pa·m <sup>3</sup> /sec. (He) | 2.8x10 <sup>-12</sup> or less  |
| Proof Pressure MPa                            | 3  |
| Ambient Temperature °C                        | 0 to 80  |
| Connection Method                             | IN: 1/4" JXR Male Fitting (connectable to VCR fitting)<br>VAC.: 1/4" JXR Female Fitting (connectable to VCR fitting)<br>VENT: 3/8" JXR Male Fitting (connectable to VCR fitting) |
| Weight kg                                     | 0.2  |

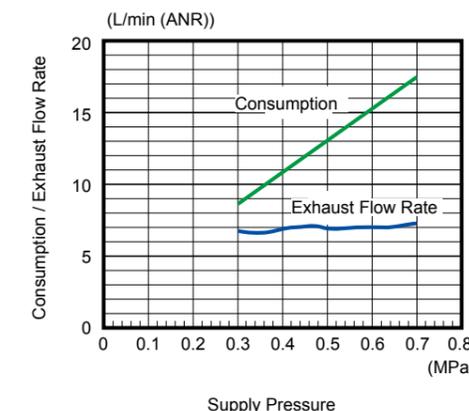
\*1: At 0.5 MPa pressure (during operation)  
 \*2: When the applicable fluid is air

### Characteristic Curves

#### ● Ultimate Vacuum



#### ● Supply Fluid Consumption / Exhaust Flow Rate

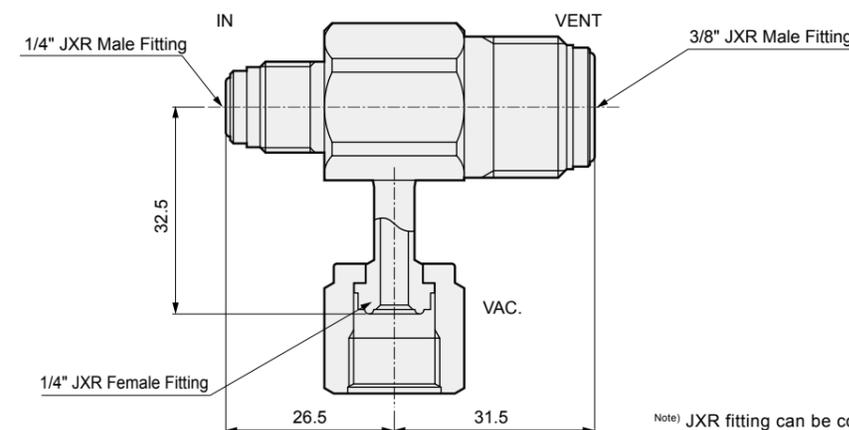


\*Based on our company's test data

Note) An unusual noise (popping sound) may occur at a supply pressure slightly below the peak ultimate vacuum of the above characteristics (around 0.4 MPa). When this noise occurs, the characteristics are unstable, and the noise level increases. This may also affect sensors and cause trouble. Please increase the supply pressure within the specified range for use.

### External Dimensions

#### ● VG-05□



Note) JXR fitting can be connected to VCR fitting.



# To Use This Product Safely

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

Individual Precautions: Vacuum Generator for Process Gas Exhaust, VG 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. Ambient Environment

#### Caution

- Do not use in atmospheres containing corrosive gases or in locations where substances that may affect the product such as chemicals, salt water, water or steam could make contact. Use within the specified ambient temperature range.

### 3. Mounting

#### Warning

- Incorrect mounting and piping will result in product trouble, may cause trouble in the user's system, and may result in death or serious injury. The user is responsible for making sure that the operator has read the instruction manual and fully comprehends the system. After mounting, perform a proper functional inspection to ensure it is installed correctly.

#### Caution

- This product is assembled in class 10 and class 100 cleanrooms after precision cleaning treatment. Open the clean pack inside the packaging in a clean environment immediately before mounting.

- Fittings** When mounting the product, touching the gas contact parts (body interior, seal surface) may result in adherence of foreign matter and contamination of high purity gas. Be careful not to touch the gas-wetted parts of this product during mounting.

### 4. Securing Space

#### Caution

- Secure sufficient space for installation, removal, piping and wiring work.
- Secure sufficient space for maintenance and inspection.

### 5. Piping

#### Warning

- Foreign materials or burrs in the piping and piping work could damage the valve seat or diaphragm seal, and lead to leaks. Before installing the valve, be sure to remove any debris or burrs and take measures such as installing a primary side filter.

#### Caution

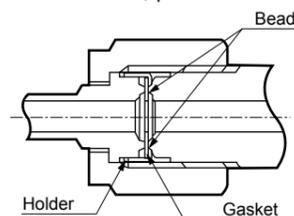
- Make sure not to use the wrong connecting port when connecting the pipes to the product.
- When piping, do not apply tension, compression, bending or other forces to the valve body from the piping.

- If the tube for piping is bent, it will cause malfunctions; pipe with suitable tube lengths.

- Make sure that there is no Fittings foreign materials, scratches or burrs on the seal section before tightening the tube with the following procedures.

#### ① Fitting Tightening Method

- JXR Fitting (when the gasket material is nickel/SUS316)  
Hand-tighten the nut until the gasket contacts the bead surface, then use a tool to tighten it an additional 1/8 turn. (For other materials, please consult with us)



- After tightening the fitting, be sure to perform a leak test to confirm there are no leaks.

### 6. Baking

#### Caution

- Baking temperature should be within the specified temperature range of the product. Perform baking with the valve in the fully open state.

### 7. Purging

#### Caution

- When removing valves using toxic, combustible or corrosive gases, purge with an inert gas such as nitrogen gas before removal.

### 8. During Use

#### Warning

- Use this product within the specifications range.
- Do not touch heater-equipped products with hands or body. Direct contact may cause burns.

#### Caution

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

### 9. Maintenance and Inspection

#### Warning

- Operate in accordance with the instruction manual.
- Always turn the power OFF and release any fluids or pressure before starting work.

- Fully replace the residual gas with inert gas, etc., before starting work so that it does not affect people or the surrounding components.

- After work, always carry out a leak test, and confirm that there are no leaks.

- Do not disassemble the valve. If the product is disassembled without authorization and then repaired or reused, it will no longer be covered by the product warranty.

#### Caution

- Store unused products in a location where they are not exposed to direct sunlight or high temperatures.

AGD  
OGD  
MGD  
LGD  
High Durability  
Other Gas Components  
Regulator  
IAGD  
AVB  
MVB  
IABV  
Vacu Press Control Sys

Ending