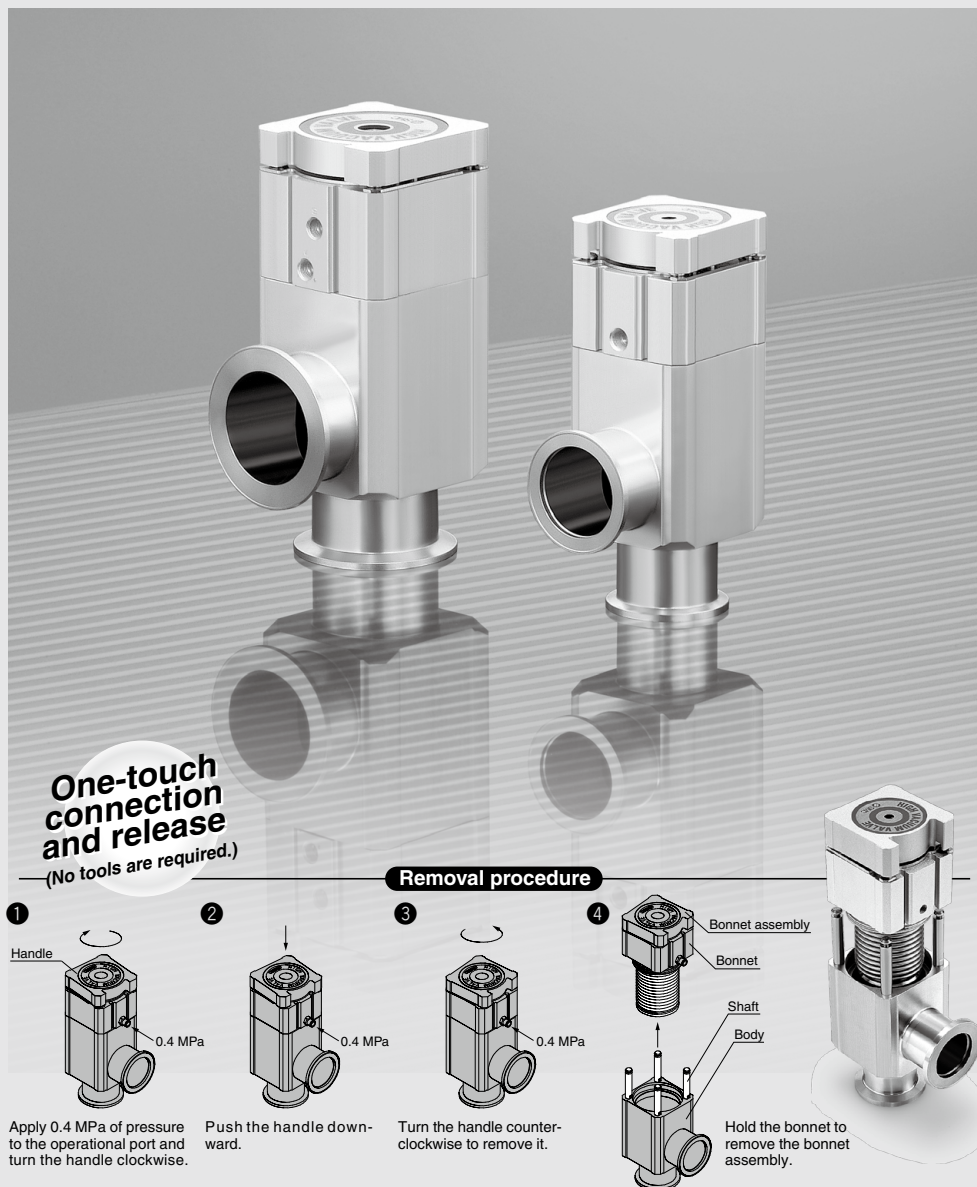


Aluminum One-touch Connection and Release High Vacuum Angle Valve

XLAQ/XLDQ Series



| |
|------|
| XLA |
| XL□ |
| XLAQ |
| XM□ |
| XY□ |
| D-□ |
| XSA |
| XVD |
| XGT |
| CVV |

Lightweight, Compact

Large conductance. Small body.

One-touch Connection and Release

(No tools are required.)



XLAQ Series Case

| Model | A* (mm) | B (mm) | Weight (kg) | Conductance* (L/s) |
|---------|------------|-----------|----------------|-----------------------|
| XLAQ-16 | 40 | 120 | 0.33 | 5 |
| XLAQ-25 | 50 | 133 | 0.6 | 14 |
| XLAQ-40 | 65 | 178 | 1.3 | 45 |
| XLAQ-50 | 70 | 190 | 2.0 | 80 |



*: Common to the XLAQ/XLDQ series

Variations

Bellows seal, Single acting/**XLAQ**

2-step control, Single acting/**XLDQ**

- Bellows type is particulate free and completely cleaned.
 - Pressure balancing mechanism.
- Initial stage exhaust valve and main exhaust valve are combined. (flow rate 2-step control valve)
 - Designed with a compact system and reduced piping.
 - Prevents particulate turbulence inside the chamber during exhaustion.
 - Prevents pumps from running while overloaded.

| Actuation | Applications | Shaft seal system | Model | Valve type | Operating pressure Pa | Flange size | | | | Options | | |
|--------------|---|-----------------------------|--|----------------------|--|-------------|----|----|----|---------|-----------|------------------------|
| | | | | | | 16 | 25 | 40 | 50 | Switch | Indicator | High temperature spec. |
| Air operated | Particle free | Bellows seal | XLAQ  | Single acting (N.C.) | Atmospheric pressure to 1 x 10 ⁻⁶ | ● | ● | ● | ● | ● | ● | ● |
| | Prevents turbulence of particulates. Prevents a pump from running overloaded. | Bellows seal O-ring seal | XLDQ  | | | — | — | ● | ● | ● | Standard | ● |

Aluminum One-touch Connection and Release High Vacuum Angle Valve Normally Closed/Bellows Seal **XLAQ Series**

How to Order

XLAQ - **16** **□** **□** - **M9N** **A** - **□**

① ② ③ ④ ⑤ ⑥

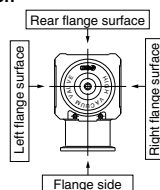


① Flange size

| Size |
|------|
| 16 |
| 25 |
| 40 |
| 50 |

② Indicator/Actuator port direction

| Symbol | Indicator | Actuator port direction |
|------------|-------------------|-------------------------|
| Nil | Without indicator | Flange side |
| A | With indicator | Flange side |
| F | | Left flange surface |
| G | | Rear flange surface |
| J | | Right flange surface |
| K | Without indicator | Left flange surface |
| L | | Rear flange surface |
| M | | Right flange surface |



③ Temperature specifications/Heater

| Symbol | Temperature | Heater | Applicable flange size | | | |
|------------|-------------|-------------------|------------------------|----|----|----|
| | | | 16 | 25 | 40 | 50 |
| Nil | 5 to 60°C | None | ● | ● | ● | ● |
| H0 | 5 to 150°C | None | ● | ● | ● | ● |
| H4 | | With 100°C heater | — | — | ● | ● |
| H5 | | With 120°C heater | — | ● | ● | ● |

Note) Size 16 is not applicable for H4, H5, Size 25 not for H4.

⑤ Number of auto switches/Mounting position

| Symbol | Quantity | Mounting position |
|------------|---------------------|-------------------|
| Nil | Without auto switch | |
| A | 2 pcs. | Valve open/closed |
| B | 1 pc. | Valve open |
| C | 1 pc. | Valve closed |

④ Auto switch type

| Symbol | Auto switch part no. | Remarks |
|---------------------|----------------------|---|
| Nil | | Without auto switch (Without built-in magnet) |
| M9N(M)(L)(Z) | D-M9N(M)(L)(Z) | Solid state auto switch |
| M9P(M)(L)(Z) | D-M9P(M)(L)(Z) | |
| M9B(M)(L)(Z) | D-M9B(M)(L)(Z) | |
| A90(L) | D-A90(L) | Reed auto switch (Not applicable to flange size 16) |
| A93(M)(L)(Z) | D-A93(M)(L)(Z) | |
| M9// | — | Without auto switch (With built-in magnet) |

Auto switches are not applicable for high-temperature specifications (Temperature specifications H0, H4, H5). Standard lead wire length is 0.5 m. Add "L" to the end of the part number when 3 m is desired, "M" when 1 m, and "Z" when 5 m.
Example) -M9N_L

⑥ Body surface treatment/Seal material and its changed part

• Body surface treatment

| Symbol | Surface treatment | |
|------------|-------------------------|--------------------------------|
| Nil | External: Hard anodized | Internal: Raw material |
| A | External: Hard anodized | Internal: Oxalic acid anodized |

• Seal material

| Symbol | Seal material | Compound no. |
|------------|-------------------|--------------|
| Nil | FKM | 1349-80* |
| N1 | EPDM | 2101-80* |
| P1 | Barrel Perfluoro® | 70W |
| Q1 | Kalrez® | 4079 |
| R1 | Chemraz® | SS592 |
| R2 | | SS630 |
| R3 | | SSE38 |
| S1 | VMQ | 1232-70* |
| T1 | FKM for Plasma | 3310-75* |
| U1 | ULTIC ARMOR® | UA4640 |

* Produced by Mitsubishi Cable Industries, Ltd.

• Part numbers indicating changed seal material and leakage

| Symbol | Changed part <small>Note 2)</small> | Leakage Pa·m ³ /s or less <small>Note 1)</small> | |
|------------|--|---|-------------------------------|
| | | Internal | External |
| Nil | None | 1.3 x 10 ⁻¹⁰ (FKM) | 1.3 x 10 ⁻¹⁰ (FKM) |
| A | ②, ③ | 1.3 x 10 ⁻⁸ | 1.3 x 10 ⁻⁸ |
| B | ② | 1.3 x 10 ⁻⁸ | 1.3 x 10 ⁻¹⁰ (FKM) |
| C | ③ | 1.3 x 10 ⁻¹⁰ (FKM) | 1.3 x 10 ⁻⁸ |

Note 1) Values at ambient temperatures, excluding gas permeation.

Note 2) Refer to parts number of "Construction" on the page 470 for changed part. Number indicates parts number of "Construction" accordingly.

To order something else "Nil" (standard), list the symbols starting with "X", followed by each symbol for "body surface treatment", "seal material" and then "changed parts" at last.

Example) XLAQ-25-M9NA-XAN1A

Barrel Perfluoro® is a registered trademark of Matsumura Oil Co., Ltd.
Kalrez® is a registered trademark of E. I. du Pont de Nemours and Company or its affiliates.
Chemraz® is a registered trademark of Greene, Tweed & Co.
ULTIC ARMOR® is a registered trademark of Nippon Valqua Industries, Ltd.

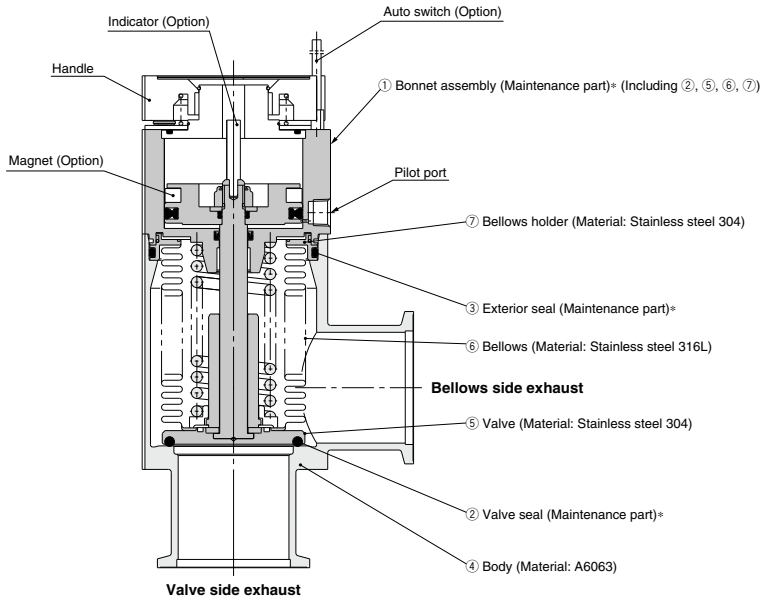


Specifications

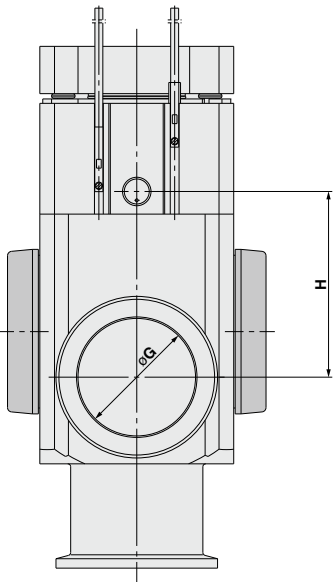
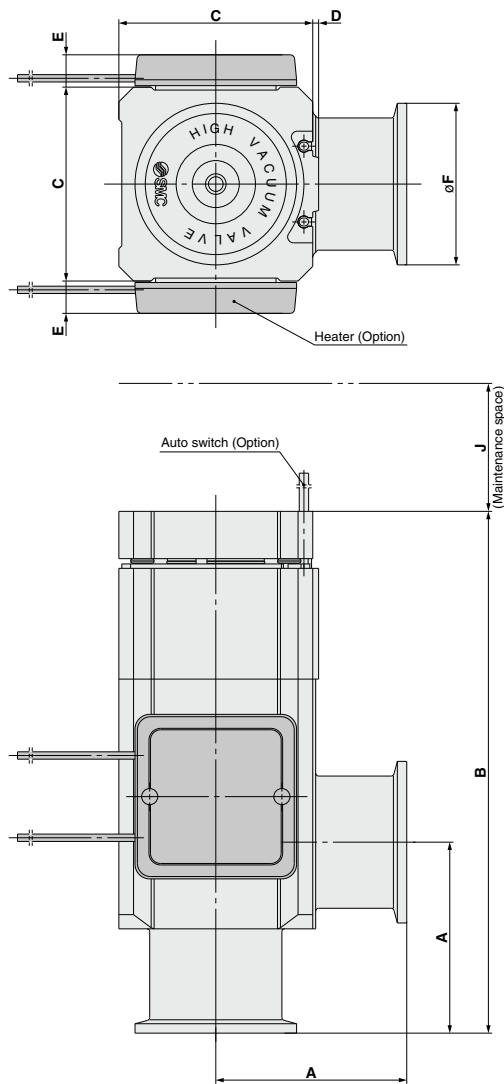
| Model | | XLAQ-16 | XLAQ-25 | XLAQ-40 | XLAQ-50 |
|--------------------------------------|----------|---|---------|---------|---------|
| Flange (valve) size | | 16 | 25 | 40 | 50 |
| Valve type | | Normally closed (Pressurize to open, Spring seal) | | | |
| Fluid | | Inert gas under vacuum | | | |
| Operating temperature (°C) | | 5 to 60 (High-temperature type: 5 to 150) | | | |
| Operating pressure (Pa) (abs) | | Atmospheric pressure to 1 x 10 ⁻⁶ | | | |
| Conductance (L/s) ^{Note 1)} | | 5 | 14 | 45 | 80 |
| Leakage (Pa·m³/s) | Internal | 1.3 x 10 ⁻¹⁰ at normal temperatures (in case of standard material, FKM), excluding gas permeation | | | |
| | External | | | | |
| Flange type | | KF (NW) | | | |
| Principal materials | | Body: Aluminum alloy, Bellows: Stainless steel 316L, Bellows holder: Stainless steel 304, FKM (Standard seal material) ^{Note 2)} | | | |
| Surface treatment | | External: Hard anodized Internal: Raw material | | | |
| Pilot pressure (MPa) (G) | | 0.4 to 0.7 | | | |
| Pilot port size | | M5 | | Rc 1/8 | |
| Weight (kg) | | 0.33 | 0.6 | 1.3 | 2.0 |

Note 1) Conductance is the value for the "molecular flow" of an elbow with the same dimensions.
Note 2) Vacuum grease (Fluorine-based, Y-VAC2) is applied to the external seal of the vacuum components.

Construction



Dimensions



- XLA
- XL□
- XL□Q**
- XM□
- XY□
- D-□
- XSA
- XVD
- XGT
- CYV

| (mm) | | | | | | | | | |
|---------|----|-----|----|---|----|----|----|----|-----|
| Model | A | B | C | D | E | F | G | H | J |
| XLAQ-16 | 40 | 120 | 38 | 1 | — | 30 | 17 | 40 | 87 |
| XLAQ-25 | 50 | 133 | 48 | 1 | 12 | 40 | 26 | 39 | 91 |
| XLAQ-40 | 65 | 178 | 66 | 2 | 11 | 55 | 41 | 63 | 129 |
| XLAQ-50 | 70 | 190 | 79 | 2 | 11 | 75 | 52 | 68 | 142 |

Note) The heater (Option) is not available with XLAQ-16.

Aluminum One-touch Connection and Release High Vacuum Angle Valve 2-step Control, Single Acting/Bellows Seal, O-ring Seal **XLDQ Series**

How to Order

XLDQ - **40** **□** **□** - **M9N** **A** - **□**

① ② ③ ④ ⑤ ⑥

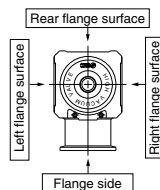


① Flange size

| Size |
|------|
| 40 |
| 50 |

② Actuator port direction

| Symbol | Actuator port direction |
|------------|-------------------------|
| Nil | Flange side |
| K | Left flange surface |
| L | Rear flange surface |
| M | Right flange surface |



③ Temperature specifications/Heater

| Symbol | Temperature | Heater |
|------------|-------------|-------------------|
| Nil | 5 to 60°C | None |
| H0 | 5 to 150°C | None |
| H4 | | With 100°C heater |
| H5 | | With 120°C heater |

⑤ Number of auto switches/Mounting position

| Symbol | Quantity | Mounting position |
|------------|---------------------|-------------------|
| Nil | Without auto switch | — |
| A | 2 pcs. | Valve open/closed |
| B | 1 pc. | Valve open |
| C | 1 pc. | Valve closed |

④ Auto switch type

| Symbol | Auto switch part no. | Remarks |
|---------------------|----------------------|---|
| Nil | — | Without auto switch (Without built-in magnet) |
| M9N(M)(L)(Z) | D-M9N(M)(L)(Z) | Solid state auto switch |
| M9P(M)(L)(Z) | D-M9P(M)(L)(Z) | |
| M9B(M)(L)(Z) | D-M9B(M)(L)(Z) | |
| A90(L) | D-A90(L) | Reed auto switch |
| A93(M)(L)(Z) | D-A93(M)(L)(Z) | |
| M9// | — | Without auto switch (With built-in magnet) |

Auto switches are not applicable for high-temperature specifications (Temperature specifications H0, H4, H5). Standard lead wire length is 0.5 m. Add "L" to the end of the part number when 3 m is desired, "M" when 1 m, and "Z" when 5 m.

Example) -M9NL

⑥ Body surface treatment/Seal material and its changed part

• Body surface treatment

| Symbol | Surface treatment | |
|------------|-------------------------|--------------------------------|
| Nil | External: Hard anodized | Internal: Raw material |
| A | External: Hard anodized | Internal: Oxalic acid anodized |

• Seal material

| Symbol | Seal material | Compound no. |
|------------|-------------------|--------------|
| Nil | FKM | 1349-80* |
| N1 | EPDM | 2101-80* |
| P1 | Barrel Perfluoro® | 70W |
| Q1 | Kalrez® | 4079 |
| R1 | Chemraz® | SS592 |
| R2 | | SS630 |
| R3 | | SSE38 |
| S1 | VMQ | 1232-70* |
| T1 | FKM for Plasma | 3310-75* |
| U1 | ULTIC ARMOR® | UA4640 |

The material for the sliding parts of the S valve is FKM.

* Produced by Mitsubishi Cable Industries, Ltd.

• Part numbers indicating changed seal material and leakage

| Symbol | Changed part ^{Note 2)} | Leakage Pa·m³/s or less ^{Note 1)} | |
|------------|---------------------------------|--|-------------------------------|
| | | Internal | External |
| Nil | None | 1.3 x 10 ⁻¹⁰ (FKM) | 1.3 x 10 ⁻¹⁰ (FKM) |
| A | ②, ③, ④, ⑤ | 1.3 x 10 ⁻⁸ | 1.3 x 10 ⁻⁸ |
| B | ②, ④, ⑤ | 1.3 x 10 ⁻⁸ | 1.3 x 10 ⁻¹⁰ (FKM) |
| C | ③ | 1.3 x 10 ⁻¹⁰ (FKM) | 1.3 x 10 ⁻⁸ |

Note 1) Values at ambient temperatures, excluding gas permeation.

Note 2) Refer to parts number of "Construction" on the page 473 for changed part. Number indicates parts number of "Construction" accordingly.

To order something else "Nil" (standard), list the symbols starting with "X", followed by each symbol for "body surface treatment", "seal material" and then "changed parts" at last.

Example) XLDQ-40K-M9NA-XAN1A

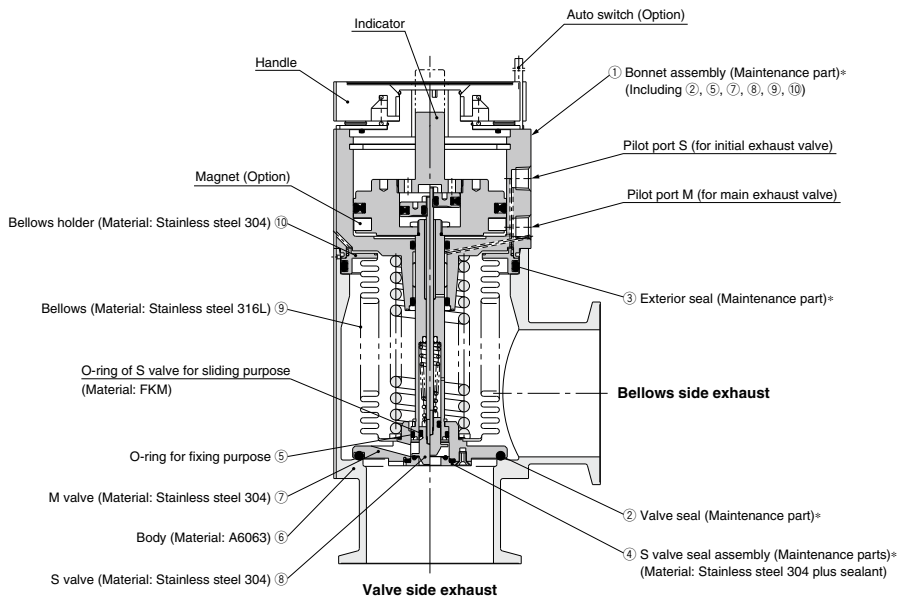
Specifications

| Model | | XLDQ-40 | XLDQ-50 |
|---|-----------------------|---|---------|
| Flange (valve) size | | 40 | 50 |
| Valve type | | Normally closed (Pressurize to open, Spring seal) [both main & initial exhaust valves] | |
| Fluid | | Inert gas under vacuum | |
| Operating temperature (°C) | | 5 to 60 (High-temperature type: 5 to 150) | |
| Operating pressure (Pa) (abs) | | Atmospheric pressure to 1 x 10 ⁻⁶ | |
| Conductance ^{Note 1)} (L/s) | Main exhaust valve | 45 | 80 |
| | Initial exhaust valve | 8 | 11 |
| Leakage (Pa·m³/s) | Internal | 1.3 x 10 ⁻¹⁰ at ordinary temperature (in case of standard material, FKM), excluding gas permeation | |
| | External | | |
| Flange type | | KF (NW) | |
| Principal materials | | Body: Aluminum alloy, Bellows: Stainless steel 316L, Bellows holder: Stainless steel 304, FKM (Standard seal material) ^{Note 2)} | |
| Pilot pressure (MPa) (G) | | 0.4 to 0.7 [both main & initial exhaust valves] | |
| Pilot port size | | Rc 1/8 | |
| Weight (kg) | | 1.5 | 2.2 |

Note 1) The main exhaust valve conductance is the valve for the "molecular flow" of an elbow with the same dimensions. The initial exhaust valve conductance is the value for the "viscous flow". Flow adjustment is not available for the initial exhaust valve.

Note 2) Vacuum grease (Fluorine-based, Y-VAC2) is applied to the external seal of the vacuum components.

Construction



* Refer to page 478 for the maintenance parts.

XLA

XL ☐

XL ☐ **Q**

XM ☐

XY ☐

D ☐

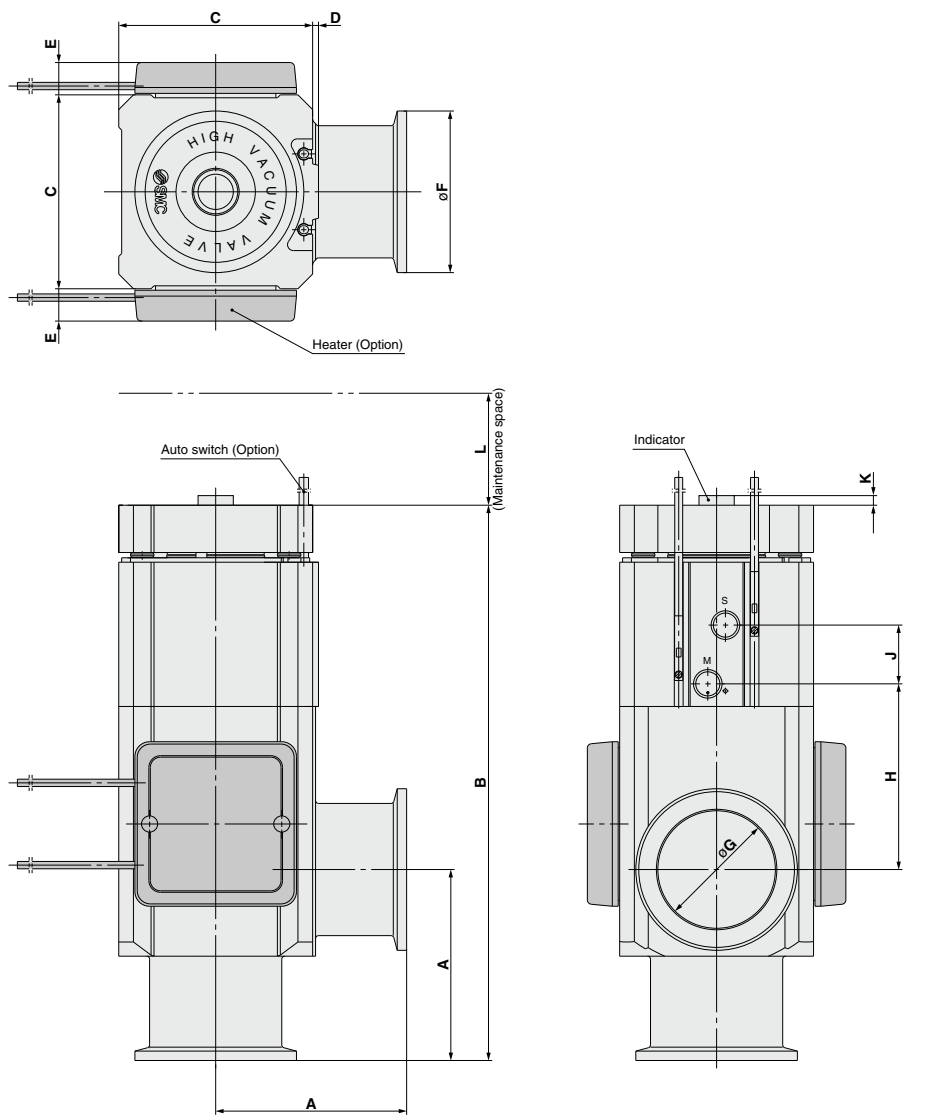
XSA

XVD

XGT

CVV

Dimensions



| | (mm) | | | | | | | | | | |
|----------------|------|-----|----|---|----|----|----|----|----|--------|-----|
| Model | A | B | C | D | E | F | G | H | J | K | L |
| XLDQ-40 | 65 | 189 | 66 | 2 | 11 | 55 | 41 | 63 | 20 | Max. 5 | 143 |
| XLDQ-50 | 70 | 198 | 79 | 2 | 11 | 75 | 52 | 68 | 20 | Max. 5 | 153 |

XLAQ/XLDQ Series

Glossary of Terms

1 Seal Materials

Please note that the following are general features and subject to change depending on a processing condition. For details, please contact sealing component manufacturers.

FKM (Fluororubber)

With low outgassing, low permanent-setting and low gas permeation rates, this is the most popular seal material for high vacuums. Standard material used by SMC's high vacuum angle valve is Mitsubishi Cable Industries, Ltd. (Compound No. 1349-80). It is advisable to choose a model depending on its application, because an improved material compound (3310-75) which reduces the weight reduction ratio with O₂ plasma is also available.

Kalrez® * Kalrez® is a registered trademark of E. I. du Pont de Nemours and Company or its affiliates. This material, perfluoroelastomer (FFKM), has excellent heat and chemical resistance, but its permanent-setting is large, and special caution is required. Variations are available with improved plasma (O₂, CF₄) and particulate resistance; therefore it is advisable to select types based upon the application. Compound No. 4079: Standard Kalrez®, excellent in gas and heat resistance.

Chemraz® * Chemraz® is a registered trademark of Greene, Tweed & Co. This material, perfluoroelastomer (FFKM), has excellent chemical and plasma resistance and has slightly higher heat resistance than FKM. Several variations of Chemraz® are available and it is advisable to choose based upon the particular plasma being used and other conditions, etc.

Compound No. SS592: Excellent physical properties and especially effective for moving parts.

Compound No. SS630: Applicable to both fixed and moving parts and compatible with a wide variety of applications.

Compound No. SSE38: The cleanest material among Chemraz®, developed for high-density plasma instruments and its permanent-setting is relatively low.

Barrel Perfluoro® * Barrel Perfluoro® is a registered trademark of Matsumura Oil Co., Ltd. Compound No. 70W: Perfluoroelastomer (FFKM) which does not contain a metal filler. Resistant against NF₃, NH₃. Low particle generation under dry process conditions.

ULTIC ARMOR® * ULTIC ARMOR® is a registered trademark of Nippon Valqua Industries, Ltd. Fluoro-based rubber which does not contain a metal filler. Seal material which is plasma-resistant and has low gas emittance and heat resistance.

Silicone (Silicone rubber, VMQ)

This material is relatively inexpensive, has good plasma resistance, but its gas permeation rate is high.

Optional seal material used by SMC's high vacuum angle valve is Mitsubishi Cable Industries, Ltd. (Compound No. 1232-70, White) It has a low weight-reduction ratio and low particle generation within O₂ plasma and NH₃ gas environments.

EPDM (Ethylenepropylene rubber)

Relatively lower priced and excellent in weatherability, chemical and heat resistance, but with no resistance at all to general mineral oil. Optional seal material used by SMC's high vacuum angle valve is Mitsubishi Cable Industries, Ltd. (Compound No. 2101-80) Resistant to NH₃ gas, etc.

2 Shaft Sealing Method

Bellows

Bellows offer cleaner sealing with reduced particle generation and less outgassing. The two major bellows types are: Formed-bellows and Welded-bellows. Formed-bellows produce less dusts and offer higher dust resistance. Welded-bellows allow longer strokes, but generate more dust particles and offer less dust resistance. Please note, the endurance depends on length and speed of the strokes.

3 Response Time/Operation Time

Valve opening

The time from the application of voltage to the actuation solenoid valve until 90% of the valve stroke has been completed is the valve opening response time. Valve opening operation time indicates the time from the start of the stroke until 90% of movement has been completed. Both of these become faster as the operating pressure is increased.

Valve closing

The time from the cut off of power to the actuation solenoid valve until 90% of the valve return stroke has been completed is the valve closing response time. Valve closing operation time indicates the time from valve opening until 90% of return movement has been completed. Both of these become slower as the operating pressure is increased.

XLA

XL□

XLAQ

XL□Q

XM□

XY□

D-□

XSA

XVD

XGT

CVV



XLAQ/XLDQ Series

Specific Product Precautions 1

Be sure to read this before handling the products.

Caution on Design

⚠ Warning

• All models

1. The body material is A6063, the bellows are stainless steel 316L, and other metal seal material is stainless steel 304. Standard seal material in the vacuum section is FKM that can be changed to the other materials (please refer to "How to Order"). Use fluids which are compatible with materials after confirming.
2. Select materials for the actuation pressure piping, and heat resistance for fittings that are suitable for the applicable operating temperatures.

• Model with auto switch

1. The switch section should be kept at a temperature no greater than 60°C.

• Model with heater

1. When using a model with a heater (thermistor), a device should be installed to prevent overheating.

Selection

⚠ Caution

• All models

1. When controlling valve responsiveness, take note of the size and length of piping, as well as the flow rate characteristics of the actuating solenoid valve.
2. Actuating pressure should be kept within the specified range. 0.4 to 0.5 MPa is recommended.
3. Use within the limits of the operating pressure range.
4. The piston chamber and bellows chamber are directly connected to the atmosphere. Use in an environment where particulate discharge will not present a problem.

• High temperature type

1. In the case of gases which cause a large amount of deposits, heat the valve body to prevent deposits in the valve.

Mounting

⚠ Caution

• All models

1. In high humidity environments, keep valves packaged until the time of installation.
2. In case with switches, secure the lead wires so that they have sufficient slack, without any unreasonable force applied to them.
3. Perform piping so that excessive force is not applied to the flange sections. In case there is vibration of heavy objects or attachments, etc., secure them so that torque is not applied directly to the flanges.
4. Vibration resistance allows for normal operation up to 30 m/s² (45 to 250 Hz), but continuous vibration may cause a decline in durability. Arrange piping to avoid excessive vibrations or shocks.

Mounting

⚠ Caution

• High-temperature type (Temperature specifications/H0, H2, H3)

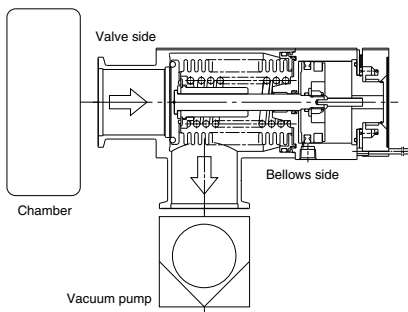
1. In models with heater (thermistor), take care not to damage the insulation components of the lead wires and connector section.
2. The setting temperature for models with heater should be established without a draft or heat insulation. It will change depending on conditions such as heat retaining measures and the heating of other piping. Fine adjustment is not possible.
3. When installing heater accessories or mounting a heater, check insulation resistance at the actual operating temperature. A short circuit breaker or fuse should be installed.
4. When a valve is to be heated, only the body section should be heated, excluding the bonnet (handle) section.
5. When a heater is in operation, the entire valve becomes hot. Be careful not to touch it with bare hands, as burns will result.

Piping

⚠ Caution

1. Before mounting, clean the surface of the flange seal and the O-ring with ethanol, etc.
2. There is an indentation of 0.1 to 0.2 mm in order to protect the flange seal surface, and it should be handled so that the seal surface is not damaged in any way.
3. Exhaust direction
During operation, the direction of the exhaust may be determined freely, but in cases where a flow is generated by the exhaust, a decline in durability may result.
The exhaust direction shown in the figure below (bellows side exhaust) is recommended.
Please take all available precautions, as the life of the equipment is affected by conditions of usage.

Recommended exhaust direction [Vacuum pump connected on bellows side]





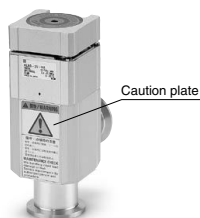
XLAQ/XLDQ Series **Specific Product Precautions 2**

Be sure to read this before handling the products.

Maintenance

⚠ Caution

1. Observe the caution plate during maintenance.
2. When removing deposits from a valve, take care not to damage any of its parts.
3. SMC specified parts should be used for service. Refer to "Construction" or "Maintenance Parts."
4. When removing valve or exterior seals, take care not to damage the sealing surfaces. When installing the valve seal, be sure that the O-ring is not twisted.
5. Refer to the operation manual for replacement instructions.



XLA

XL□

XLDQ

XM□

XY□

D-□

XSA

XVD

XGT

CYV



XLAQ/XLDQ Series

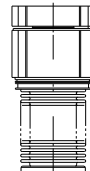
Specific Product Precautions 3

Be sure to read this before handling the products.

Maintenance Parts

⚠ Caution

1. Replace the bonnet assembly when changing the seal material.
It may not be applicable when a seal material different from the current one has been chosen.



Bonnet assembly

Bonnet Assembly: Component Part No.: ①

| Model | Temperature specifications | Indicator | Flange (Valve) size | | | |
|-------|----------------------------|-------------|---------------------|---------------|---------------|---------------|
| | | | 16 | 25 | 40 | 50 |
| XLAQ | General use | — | XLAQ16-30-1 | XLAQ25-30-1 | XLAQ40-30-1 | XLAQ50-30-1 |
| | | ○ | XLAQ16A-30-1 | XLAQ25A-30-1 | XLAQ40A-30-1 | XLAQ50A-30-1 |
| | High temperature | — | XLAQ16-30-1H | XLAQ25-30-1H | XLAQ40-30-1H | XLAQ50-30-1H |
| | | ○ | XLAQ16A-30-1H | XLAQ25A-30-1H | XLAQ40A-30-1H | XLAQ50A-30-1H |
| XLDQ | General use | ○: Standard | — | — | XLDQ40-30-1 | XLDQ50-30-1 |
| | High temperature | — | — | — | XLDQ40-30-1H | XLDQ50-30-1H |

- Note 1) Add a suffix for the seal material (below Table 1) to the end of the part number when valve seal materials other than the standard (FKM: Compound No. 1349-80: Mitsubishi Cable Industries, Ltd.) are desired.
- Note 2) An auto switch magnet is not attached. In cases where an auto switch magnet is attached, please add "-M9/" at the end of the part number. (Not available for high temperature models)
- Note 3) Auto switch and solenoid valve are not attached. When a set including auto switch and solenoid valve is required, please add the symbols after the auto switch in "How to Order" at the end of the part number.

External Seal/Valve Seal/S Valve Seal Assembly

| Model | Description construction no. | Material | Flange (Valve) size | | | |
|--------------|------------------------------|----------|---------------------|------------|---------------|---------------|
| | | | 16 | 25 | 40 | 50 |
| XLAQ XLDQ | External seal ③ | Standard | AS568-122V | AS568-129V | AS568-140V | AS568-231V |
| | | Special | AS568-122□ | AS568-129□ | AS568-140□ | AS568-231□ |
| | Valve seal ② | Standard | B2401-V15V | B2401-V24V | B2401-P42V | AS568-227V |
| | | Special | B2401-V15□ | B2401-V24□ | B2401-P42□ | AS568-227□ |
| XLDQ | S valve seal assembly ④ | Standard | — | — | XLD40-2-9-1A | XLD50-2-9-1A |
| | | Special | — | — | XLD40-2-9-1A□ | XLD50-2-9-1A□ |

- Note 1) Add a suffix for the seal material (below Table 1) to the end of the part number (blank box) when valve seal materials other than the standard (FKM: Compound No. 1349-80: Mitsubishi Cable Industries, Ltd.) are desired.
- Note 2) Refer to "Construction" of each series for the construction numbers.

Table 1

Optional Seal Material

| Symbol | -XN1 | -XP1 | -XQ1 | -XR1 | -XR2 | -XR3 | -XS1 | -XT1 | -XU1 |
|---------------|----------|-------------------|---------|----------|-------|-------|----------|----------------|--------------|
| Seal material | EPDM | Barrel Perfluoro® | Kalrez® | Chemraz® | | | VMQ | FKM for Plasma | ULTIC ARMOR® |
| Compound no. | 2101-80* | 70W | 4079 | SS592 | SS630 | SSE38 | 1232-70* | 3310-75* | UA4640 |

Note) It may not be applicable when a seal material different from the current one has been chosen.

* Produced by Mitsubishi Cable Industries, Ltd.