

# Filter for Cleaning Fluid/Quick Change Filter

## ***FQ1 Series***

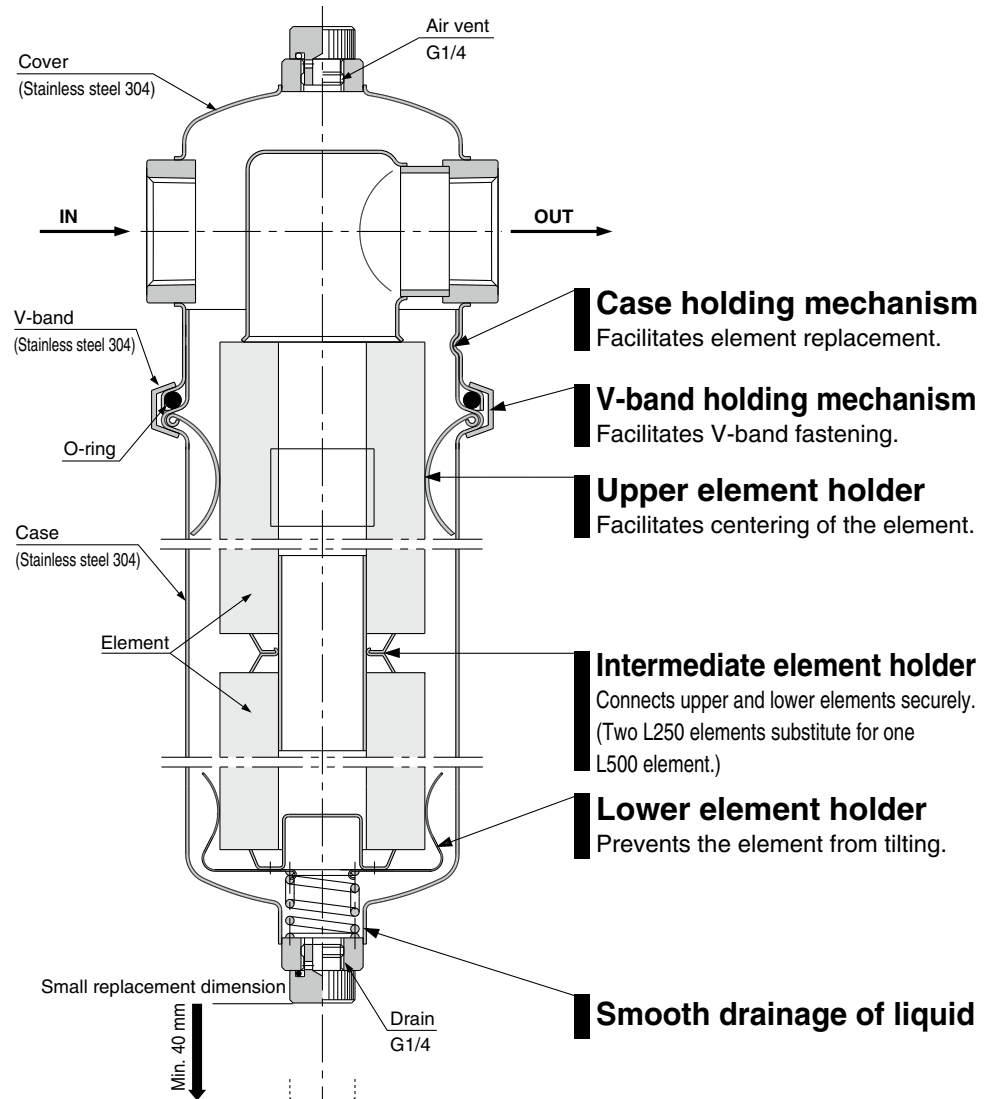
**No tools required,  
ensuring easy  
element replacement.**



# Easy element replacement

Element can be replaced without using any tool.

- Replacing the element
- Air release
- Drainage of liquid



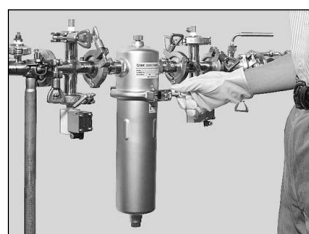
# Quick Change Filter

## FQ1 Series

### *No tools required, easy element replacement*

#### Removing the element

- 1 Stop liquid flowing into the filter. (If there are valves before and after the filter, close these valves.)
- 2 Release pressure inside the filter completely by loosening the air vent plug.
- 3 Discharge fluid inside the filter by removing the drain plug.
- 4 Remove the stopper from the retainer by loosening the wing bolt on the V-band.



- 5 To extract the element from the case, rotate the case counterclockwise about 20 degrees until it stops, then lower it by about 40 mm and remove it from the cover.

**Note)** When using two L250 elements, do not discard the intermediate holder since it is used.



- 6 Clean the inside of the case, gaskets, seals, holders, plugs, etc., with a pure fluid or solvent.

#### Installing the element

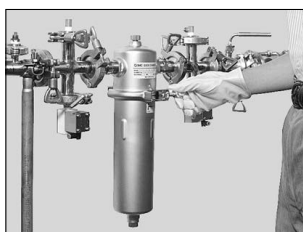
- 1 Make sure that O-rings are not damaged or deformed. If needed, replace with new ones.
- 2 Check that the lower holder inside the case is not inclined, and then insert the element.

[When using two L250 elements]

Insert the intermediate holder into the lower part of the second element (upper level), and then place one side of the intermediate holder into the case by inserting it into the upper part of the first element (lower level).



- 3 Align the indentations of the case with the projections of the cover, lift the case upward by about 10 mm and rotate it clockwise about 20 degrees.
- 4 Mount it in such a way that the entire flanged perimeter of the cover and case are held by the retainer of the V-band.



- 5 Set the stopper on the retainer while holding down the V-band outside perimeter, and then tighten the wing bolt to the prescribed position.
- 6 Tighten the drain plug.
- 7 When air release is completed, tighten the air vent plug.

#### Filter Housings

##### FQ1010

Element size  
L125 (125 mm)



##### FQ1011

Element size  
L250 (250 mm)



##### FQ1012

Element size  
L500 (500 mm)  
(L250 x 2 pcs.)

#### Filter Elements

##### (Standard elements)

##### Fiber element

- Nominal filtration accuracy: 0.5 to 100  $\mu\text{m}$
- Ideal for a relatively high level of impurities
- Ideal for use as a pre-filter
- Material: P.P. (EHM)  
Cotton (EH)



##### Micromesh element

- Nominal filtration accuracy: 5 to 105  $\mu\text{m}$
- High filtration accuracy with stainless steel micromesh
- Pleated type provides three times more filtration area than a cylinder.
- Element cleaning and regeneration are possible.
- Material: Stainless steel 304 (EM100, EM200)  
Stainless steel 316 (EM500, EM600)



##### (Made to order elements)

##### HEPO II element

- Absolute filtration accuracy: 2 to 13  $\mu\text{m}$  (Filtration efficiency 99%)
- Non-woven fabric element with high filtration accuracy of more than 99% removal and without fiber outflow and release of chemical components
- Material: P.P. (EJ102S ... x 0)



##### PP depth element

- Nominal filtration accuracy: 1 to 75  $\mu\text{m}$
- Material: P.P.  
EJ202S ... x 11 (L125)  
EJ302S ... x 11 (L250)  
EJ402S ... x 11 (L500)



##### Membrane element

- Absolute filtration accuracy: 0.2, 0.4  $\mu\text{m}$  (Filtration efficiency 99%)
- Material: P.P. (ED102S ... x 0)  
CA (ED111S ... x 0)



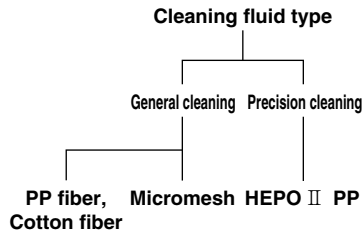
Note) P.P. : Polypropylene

# FQ1 Series Model Selection

## Selecting the Element and Housing

### 1 Selecting the element

According to the type and the cleaning level of a cleaning fluid, select corresponding element and seal types by referring to the "Standard Element Fluid Compatibility" table on the right.



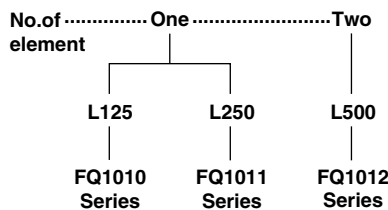
- Specifications: Select desired temperature conditions and filtration accuracy from the "Standard Element Selection Guide" on the right.

### 2 Calculating the number of elements

- Verify the recommended flow rate of the selected element with the "Standard Element Selection Guide".
- Find a value for the formula, Necessary flow rate ÷ Recommended flow rate, rounding up to the nearest whole number. The value obtained is the number of necessary elements (equivalent to L250).

### 3 Selecting the housing

Select a housing type to hold the elements selected in **2**.



- \* Consult SMC if the number of elements calculated in **2** exceeds two.
- Make sure whether the operating temperature range, pressure and cleaning fluid type meet the specifications.

### 4 Determining the filter model

Determine the filter model from the element type and the number of elements selected in **1** and **2**, and the housing type selected in **3**, referring to "How to Order".

## Standard Element Fluid Compatibility

| <div>Cleaning level and Element</div> <div>Cleaning fluid type</div> |                         | Cleaning level   | General cleaning                            |               |                     |                     | Precision cleaning                                                    | Applicable seal material and cleaning fluid |               |
|----------------------------------------------------------------------|-------------------------|------------------|---------------------------------------------|---------------|---------------------|---------------------|-----------------------------------------------------------------------|---------------------------------------------|---------------|
|                                                                      |                         |                  | Nominal filtration accuracy 105 μm ↔ 0.5 μm |               |                     |                     | Absolute filtration accuracy 13 μm ↔ 2 μm (Filtration efficiency 99%) |                                             |               |
|                                                                      |                         | Name             | Fiber element                               | Fiber element | Micromesh element   | Micromesh element   | HEPO II ** element                                                    | Nitrile rubber                              | Fluoro rubber |
|                                                                      |                         | Material         | P.P.                                        | Cotton        | Stainless steel 304 | Stainless steel 316 | P.P.                                                                  | NBR                                         | FKM           |
|                                                                      |                         | Element part no. | EHM                                         | EH            | EM                  | EM                  | EJ                                                                    |                                             |               |
| Element symbol                                                       | T                       | H                | M                                           | L             | R                   |                     |                                                                       |                                             |               |
| Water                                                                | Industrial water        | Optimal          | Suitable                                    | Optimal       | Suitable            | Unsuitable          | Optimal                                                               | Suitable                                    |               |
| Alkali                                                               | Ammonia                 | Optimal          | Unsuitable                                  | Optimal       | Suitable            | Optimal             | Optimal                                                               | Unsuitable                                  |               |
|                                                                      | Sodium hydroxide        | Optimal          | △ <sup>(Note)</sup>                         | Optimal       | Suitable            | Optimal             | Optimal                                                               | Unsuitable                                  |               |
| Chlorine, Fluorine                                                   | Trichloroethylene       | Unsuitable       | Optimal                                     | Unsuitable    | Optimal             | Unsuitable          | Unsuitable                                                            | Optimal                                     |               |
|                                                                      | Methylene chloride      | Unsuitable       | Optimal                                     | Unsuitable    | Optimal             | Unsuitable          | Unsuitable                                                            | Optimal                                     |               |
| Alcohol                                                              | Isopropyl alcohol (IPA) | Optimal          | Suitable                                    | Optimal       | Suitable            | Optimal             | Suitable                                                              | Optimal                                     |               |

\* For detailed element specifications, refer to the applicable element symbol in the "Standard Element Selection Guide" below. Furthermore, consult SMC for other fluids.

\*\* Made to order

Note) △ : Can be used at low temperatures and low concentration.

## Made to Order

### ■ P.P. depth element EJ

- General cleaning
- Nominal filtration accuracy: 1 to 75 µm
- Water, alkali, or alcohol bases

### ■ Membrane element ED

- Precision cleaning
- Absolute filtration accuracy: 0.2, 0.4 µm (Filtration efficiency 99%)
- Water, alkali, or alcohol bases

## Standard Element Selection Guide

| Cleaning level     | Name              | Element symbol | Material            | Element part no. | Temperature range (°C) | Filtration accuracy (µm) | Recommended flow rate (L/min)<br>Pressure loss: 0.01 to 0.02 MPa<br>Fluid: Water equiv. | Differential pressure resistance (MPa) |
|--------------------|-------------------|----------------|---------------------|------------------|------------------------|--------------------------|-----------------------------------------------------------------------------------------|----------------------------------------|
| General cleaning   | Fiber element     | T              | P.P.                | EHM              | 0 to 50                | 0.5 (Nominal)            | 5                                                                                       | 0.2                                    |
|                    |                   |                |                     |                  |                        | 1 (Nominal)              | 15                                                                                      |                                        |
|                    |                   |                |                     |                  |                        | 5 (Nominal)              |                                                                                         |                                        |
|                    |                   |                |                     |                  |                        | 10 (Nominal)             | 25                                                                                      |                                        |
|                    | Micromesh element | H              | Cotton              | EH               | 0 to 100               | 20 (Nominal)             |                                                                                         | 0.7                                    |
|                    |                   |                |                     |                  |                        | 50 (Nominal)             | 30                                                                                      |                                        |
|                    |                   |                |                     |                  |                        | 75 (Nominal)             |                                                                                         |                                        |
|                    |                   |                |                     |                  |                        | 100 (Nominal)            |                                                                                         |                                        |
|                    |                   | M              | Stainless steel 304 | EM1, 2           | 0 to 100               | 5 (Nominal)              | 25                                                                                      |                                        |
|                    |                   |                |                     |                  |                        | 10 (Nominal)             |                                                                                         |                                        |
|                    |                   |                |                     |                  |                        | 20 (Nominal)             |                                                                                         |                                        |
|                    |                   | L              | Stainless steel 316 | EM5, 6           | 0 to 250               | 40 (Nominal)             | 30                                                                                      |                                        |
|                    |                   |                |                     |                  |                        | 74 (Nominal)             |                                                                                         |                                        |
|                    |                   |                |                     |                  |                        | 105 (Nominal)            |                                                                                         |                                        |
| Precision cleaning | HEPO II * element | R              | P.P.                | EJ               | 0 to 80                | 2 (Absolute)             | 30                                                                                      | 0.5                                    |
|                    |                   |                |                     |                  |                        | 4 (Absolute)             |                                                                                         |                                        |
|                    |                   |                |                     |                  |                        | 6 (Absolute)             |                                                                                         |                                        |
|                    |                   |                |                     |                  |                        | 13 (Absolute)            |                                                                                         |                                        |

\* Made to order

# Quick Change Filter FQ1 Series

RoHS

## How to Order

**FQ1 0 1 0 N - 04 - M005N - B**

• **Model symbol**  
(In-line filters)

• **Housing material**

| Symbol | Cover               | Case                |
|--------|---------------------|---------------------|
| 0      | Stainless steel 304 | Stainless steel 304 |

• **Element sealing method**

|   |                                 |
|---|---------------------------------|
| 1 | Flat gasket (Double, Open, End) |
|---|---------------------------------|

• **Element size**

| Symbol | Element size         |
|--------|----------------------|
| 0      | L125                 |
| 1      | L250                 |
| 2      | L500 (L250 x 2 pcs.) |

• **Housing O-ring material**

| Symbol | Material |
|--------|----------|
| N      | NBR      |
| V      | FKM      |

• **Port size**

| Symbol | Port size | Applicable model |        |        |
|--------|-----------|------------------|--------|--------|
|        |           | FQ1010           | FQ1011 | FQ1012 |
| 04     | Rc 1/2    | ●                | ●      |        |
| 06     | Rc 3/4    | ●                | ●      | ●      |
| 10     | Rc 1      |                  | ●      | ●      |

• **Element type**  
Select from tables below.

• **Made to order specifications**

| Nil | Note                    |
|-----|-------------------------|
| X19 | Without V-band Support  |
| X61 | Cover with Bracket Seat |
| X68 | Chemical Resistant Type |

\* Refer to page 86 for the details of Made to Order specifications.

• **Options**

|     |         |
|-----|---------|
| Nil | N/A     |
| -B  | Bracket |



FQ1010 □ FQ1011 □ FQ1012 □

## Element and Seal Part Numbers

### 1. Fiber element (P.P.)

| Dimensions | Element symbol | Nominal filtration accuracy (μm) | Part number |
|------------|----------------|----------------------------------|-------------|
| ø65 x L250 | TX50           | 0.5                              | EHM10A      |
|            | T001           | 1                                | EHM39R10AY  |
|            | T005           | 5                                | EHM23R10AY  |
|            | T010           | 10                               | EHM19R10AY  |
|            | T020           | 20                               | EHM15R10A   |
|            | T050           | 50                               | EHM11R10A   |
|            | T075           | 75                               | EHM10R10A   |
|            | T100           | 100                              | EHM8R10A    |

### 2. Fiber element (Cotton)

| Dimensions | Element symbol | Nominal filtration accuracy (μm) | Part number |
|------------|----------------|----------------------------------|-------------|
| ø65 x L250 | HX50           | 0.5                              | EH10G       |
|            | H001           | 1                                | EH39R10GV   |
|            | H005           | 5                                | EH23R10GV   |
|            | H010           | 10                               | EH19R10GV   |
|            | H020           | 20                               | EH15R10G    |
|            | H050           | 50                               | EH11R10G    |
|            | H075           | 75                               | EH10R10G    |
|            | H100           | 100                              | EH8R10G     |

### 3. Micromesh element (Stainless steel 304) Bonding material: Epoxy resin

| Dimensions | Element symbol | Nominal filtration accuracy (μm) | Part number  |
|------------|----------------|----------------------------------|--------------|
| ø65 x L250 | M005□          | 5                                | EM100-005□   |
|            | M010□          | 10                               | EM100-010□   |
|            | M020□          | 20                               | EM100-020□   |
|            | M040□          | 40                               | EM100-040□   |
|            | M074□          | 74                               | EM100-074□   |
|            | M105□          | 105                              | EM100-105□   |
|            | M105□          | 105                              | EM100-105□   |
| ø65 x L125 | M005□          | 5                                | EM200-005□X4 |
|            | M010□          | 10                               | EM200-010□X4 |
|            | M020□          | 20                               | EM200-020□X4 |
|            | M040□          | 40                               | EM200-040□X4 |
|            | M074□          | 74                               | EM200-074□X4 |
|            | M105□          | 105                              | EM200-105□X4 |
|            | M105□          | 105                              | EM200-105□X4 |

Note) Specify seal material in place of "□" (N for NBR or V for FKM).

### 4. Micromesh element (Stainless steel 316)

| Dimensions | Element symbol | Nominal filtration accuracy (μm) | Part number  |
|------------|----------------|----------------------------------|--------------|
| ø65 x L250 | L005□          | 5                                | EM500-005□   |
|            | L010□          | 10                               | EM500-010□   |
|            | L020□          | 20                               | EM500-020□   |
|            | L040□          | 40                               | EM500-040□   |
|            | L074□          | 74                               | EM500-074□   |
|            | L105□          | 105                              | EM500-105□   |
|            | L105□          | 105                              | EM500-105□   |
| ø65 x L125 | L005□          | 5                                | EM600-005□X4 |
|            | L010□          | 10                               | EM600-010□X4 |
|            | L020□          | 20                               | EM600-020□X4 |
|            | L040□          | 40                               | EM600-040□X4 |
|            | L074□          | 74                               | EM600-074□X4 |
|            | L105□          | 105                              | EM600-105□X4 |
|            | L105□          | 105                              | EM600-105□X4 |

Note) Specify seal material in place of "□" (N for NBR or V for FKM).



### Made to order specifications

Elements other than 1 to 4 listed above are also available.  
Refer to "Made to Order" elements on pages 87 and 88 for details.

# FQ1 Series



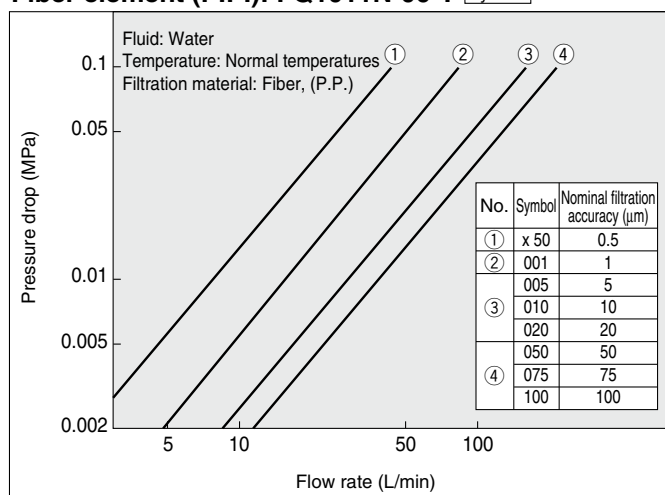
## Specifications

| Model                                              |         | FQ1010                                                                             | FQ1011      | FQ1012       |
|----------------------------------------------------|---------|------------------------------------------------------------------------------------|-------------|--------------|
| No. of built-in elements (L: Element length in mm) |         | 1 (L125)                                                                           | 1 (L250)    | 2 (L250 x 2) |
| Operating pressure                                 |         | Maximum 1 MPa                                                                      |             |              |
| Operating temperature                              |         | Maximum 80°C (Not exceeding boiling point)                                         |             |              |
| Applicable fluids                                  |         | Industrial water, weak alkali cleaning fluids etc.,<br>* Cannot be used for gases. |             |              |
| Port size (Rc)                                     |         | 1/2, 3/4                                                                           | 1/2, 3/4, 1 | 3/4, 1       |
| Material                                           | Housing | Stainless steel 304                                                                |             |              |
|                                                    | Seal    | NBR or FKM                                                                         |             |              |
| Weight (kg)                                        |         | Approx. 1.5                                                                        | Approx. 1.9 | Approx. 2.7  |
| Internal capacity (L)                              |         | Approx. 1                                                                          | Approx. 1.7 | Approx. 3.1  |

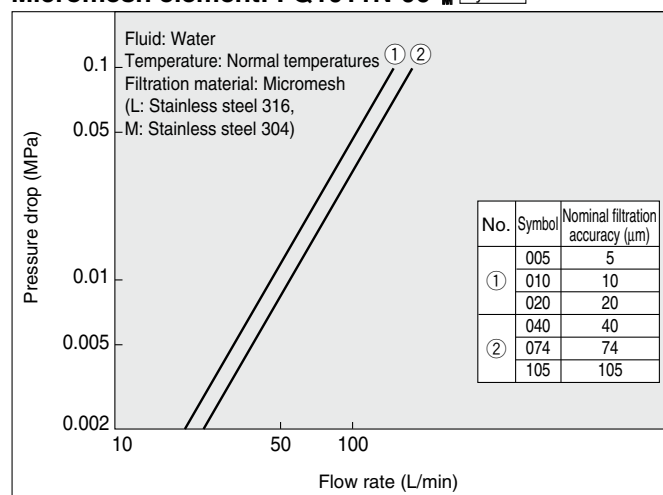
Note) For FQ1010, only micromesh elements and PP depth elements are used.  
For details, refer to the pages on element series.

## Flow Rate Characteristics

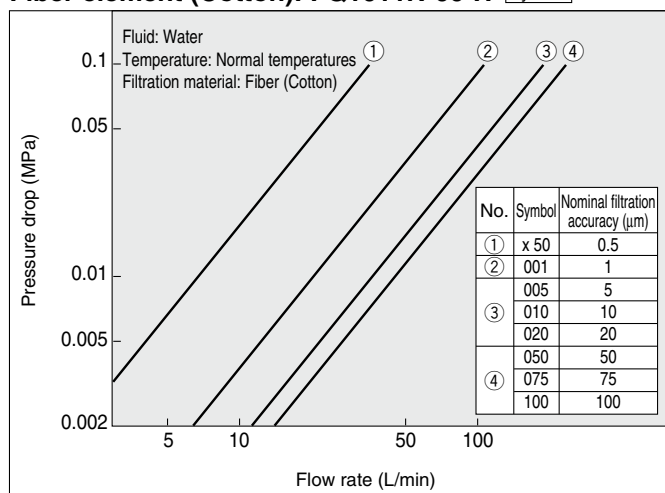
Fiber element (P.P.): FQ1011N-06-T [Symbol]



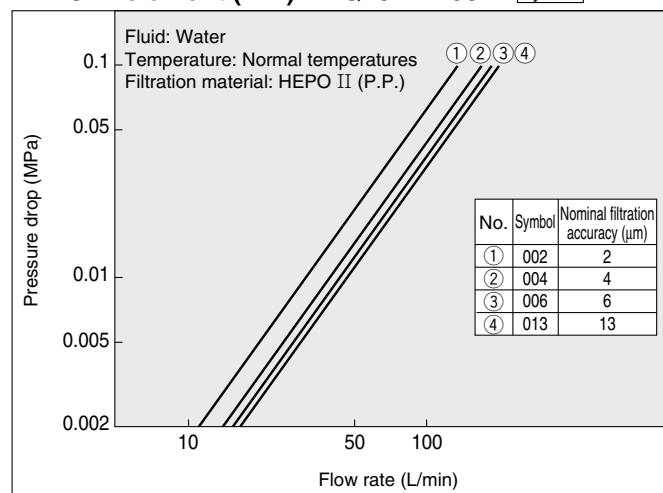
Micromesh element: FQ1011N-06-M [Symbol]



Fiber element (Cotton): FQ1011N-06-H [Symbol]



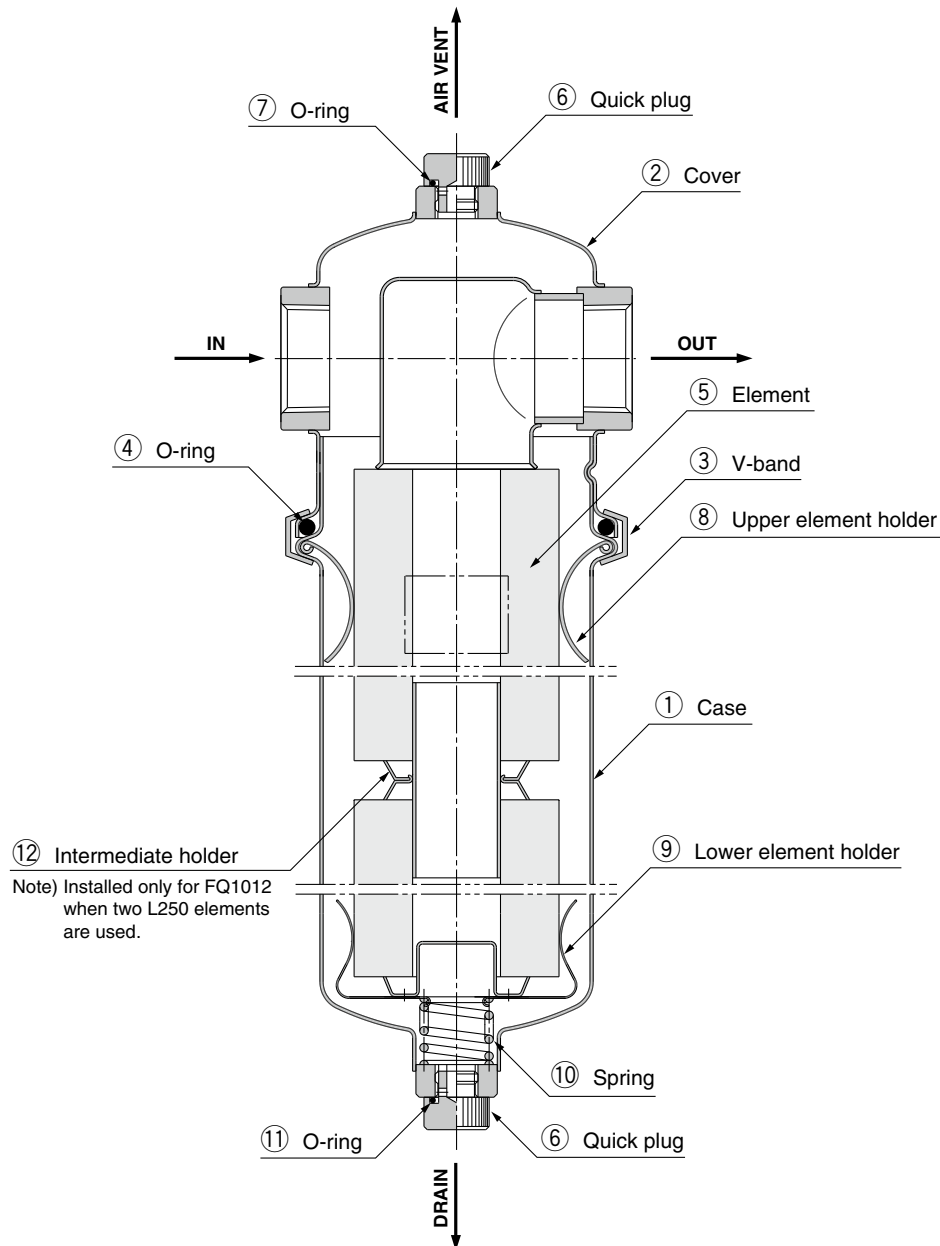
HEPO II element (P.P.): FQ1011N-06-R [Symbol]



Note) The recommended flow rate is the rate for an initial pressure drop of 0.01 to 0.02 MPa.

\* Made to order

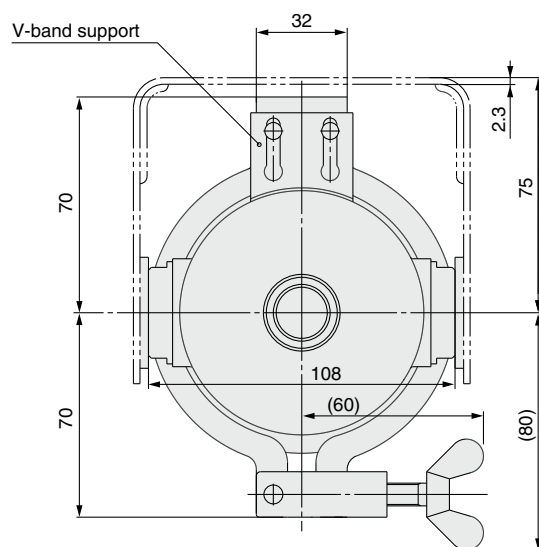
## Construction



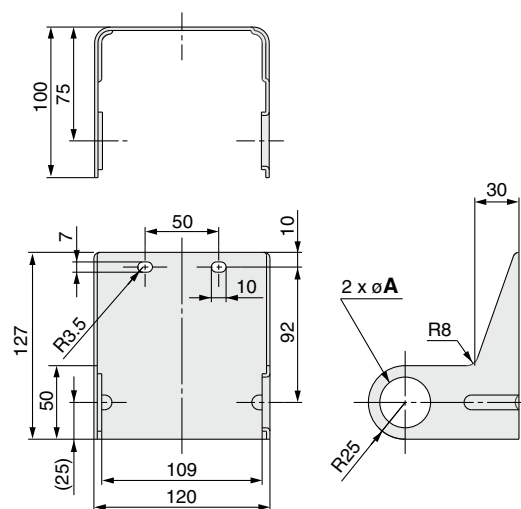
## Replacement Parts

| Description            | Part number       | Material                                                         | Applicable model | Part no.                                                                                             | Note                                        |
|------------------------|-------------------|------------------------------------------------------------------|------------------|------------------------------------------------------------------------------------------------------|---------------------------------------------|
| Case assembly          | <b>FQ1-CA001N</b> | Stainless steel 304<br>Note) O-ring material<br>N: NBR<br>V: FKM | FQ1010N          | ①, ⑥, ⑧, ⑨, ⑩, ⑪: 1 pc. each<br>Note) Only the FQ1-CA003□ includes ⑫ intermediate holder in the set. | Element size: L125                          |
|                        | <b>FQ1-CA001V</b> |                                                                  | FQ1010V          |                                                                                                      |                                             |
|                        | <b>FQ1-CA002N</b> |                                                                  | FQ1011N          |                                                                                                      | Element size: L250                          |
|                        | <b>FQ1-CA002V</b> |                                                                  | FQ1011V          |                                                                                                      |                                             |
|                        | <b>FQ1-CA003N</b> |                                                                  | FQ1012N          |                                                                                                      | Element size: L500 (L250 x 2)               |
|                        | <b>FQ1-CA003V</b> |                                                                  | FQ1012V          |                                                                                                      |                                             |
| V-band for replacement | <b>FQ-BA001</b>   | Stainless steel 304                                              | FQ1 series       | ③                                                                                                    |                                             |
| O-ring kit             | <b>FQ-KT005N</b>  | NBR                                                              | FQ101□N          | ④, ⑦, ⑪: 1 pc. each                                                                                  | ④: OR NBR-70-1 P85<br>⑦, ⑪: OR NBR-70-1 P11 |
|                        | <b>FQ-KT005V</b>  | FKM                                                              | FQ101□V          |                                                                                                      | ④: OR FKM-70 P85<br>⑦, ⑪: OR FKM-70 P11     |
| Quick plug             | <b>AG-9S</b>      | Stainless steel 304                                              | FQ1 series       | ⑥                                                                                                    |                                             |
| Upper element holder   | <b>L-131S</b>     | Stainless steel 304                                              | FQ1 series       | ⑧                                                                                                    |                                             |
| Lower element holder   | <b>L-135S</b>     | Stainless steel 304                                              | FQ1 series       | ⑨, ⑩: 1 pc. each                                                                                     |                                             |
| Intermediate holder    | <b>FQ-OP001</b>   | Stainless steel 304                                              | FQ1 series       | ⑫                                                                                                    |                                             |
| Bracket                | <b>BP-15S</b>     | SPC                                                              | FQ101□□-04       |                                                                                                      | For port size Rc 1/2                        |
|                        | <b>BP-14S</b>     |                                                                  | FQ101□□-06       |                                                                                                      | For port size Rc 3/4                        |
|                        | <b>BP-13S</b>     |                                                                  | FQ101□□-10       |                                                                                                      | For port size Rc 1                          |

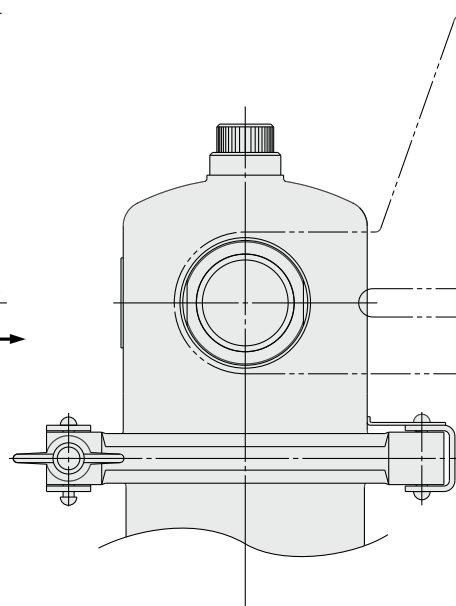
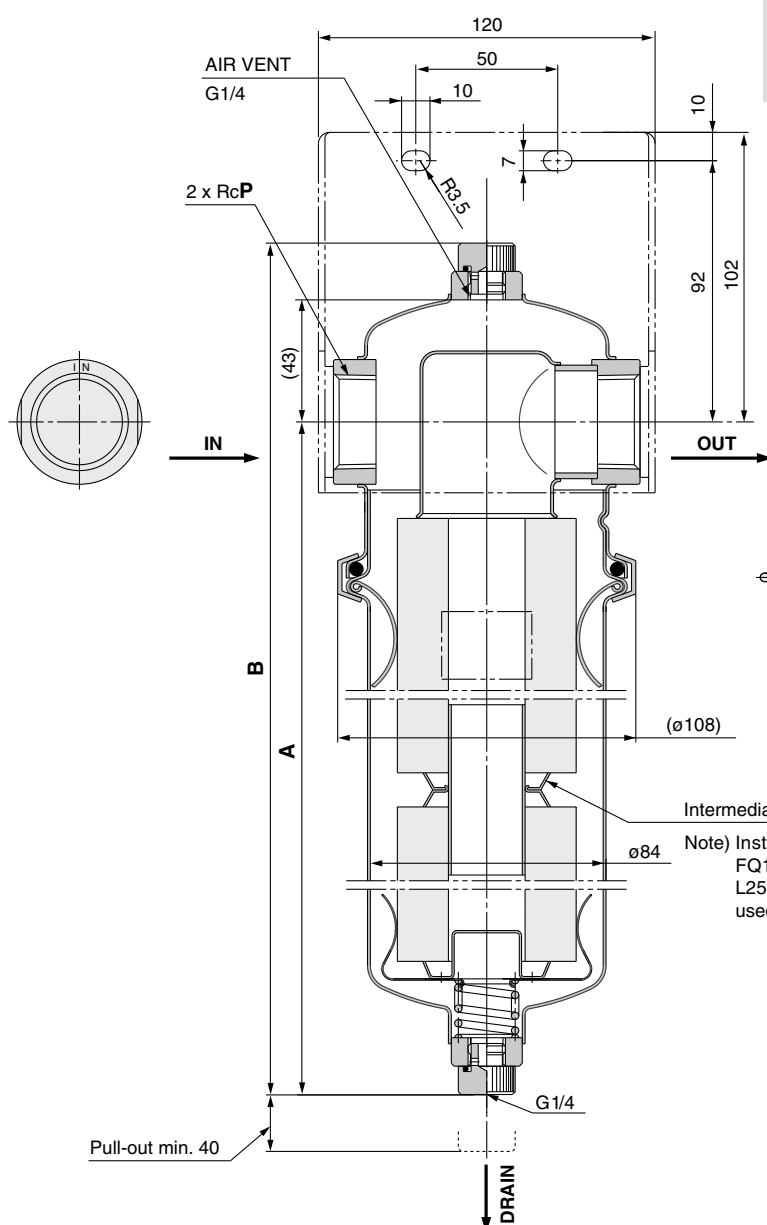
## Dimensions



## Bracket



| Part number   | A    | Applicable port size |
|---------------|------|----------------------|
| <b>BP-13S</b> | 34.5 | Rc 1                 |
| <b>BP-14S</b> | 27.5 | Rc 3/4               |
| <b>BP-15S</b> | 22   | Rc 1/2               |



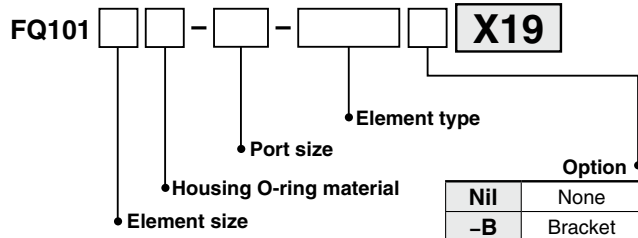
Intermediate holder

Note) Installed only for FQ1012 when two L250 elements are used.

| Model         | A   | B   | P           | No. of elements |
|---------------|-----|-----|-------------|-----------------|
| <b>FQ1010</b> | 204 | 267 | 1/2, 3/4    | L125 x 1        |
| <b>FQ1011</b> | 332 | 395 | 1/2, 3/4, 1 | L250 x 1        |
| <b>FQ1012</b> | 593 | 656 | 3/4, 1      | L250 x 2        |

## 1 Without V-band Support Symbol X19

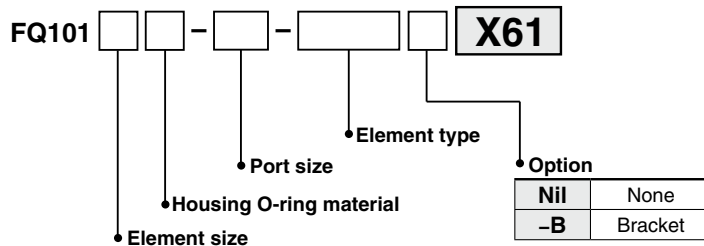
Useful for reverse IN-OUT installation, as the position of the V-band can be changed.



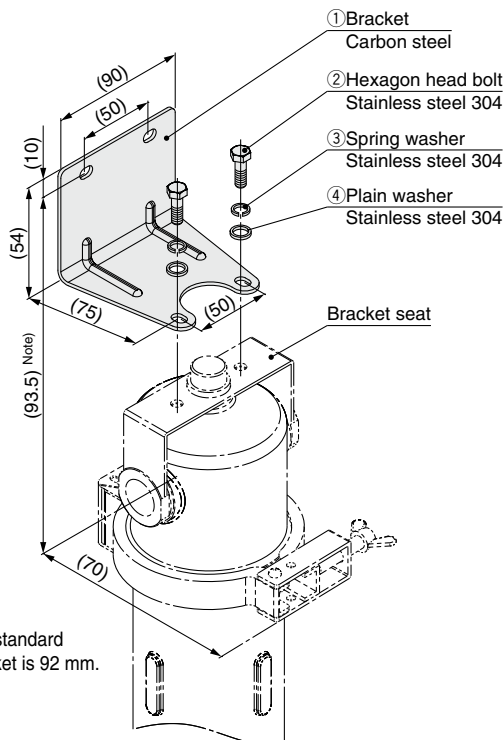
## 2 Cover with Bracket Seat Symbol X61

Reliable securing is possible.

- Use the bracket assembly (Part no.: BP-12S-A).
- (The standard bracket cannot be used.)



### Dimensions



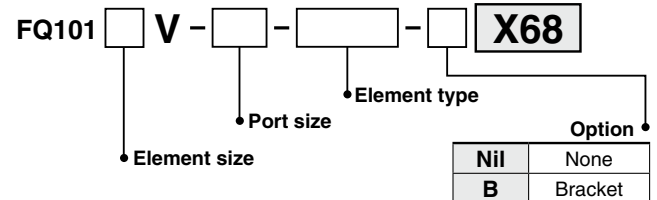
Note) The standard bracket is 92 mm.

### Replacement Parts

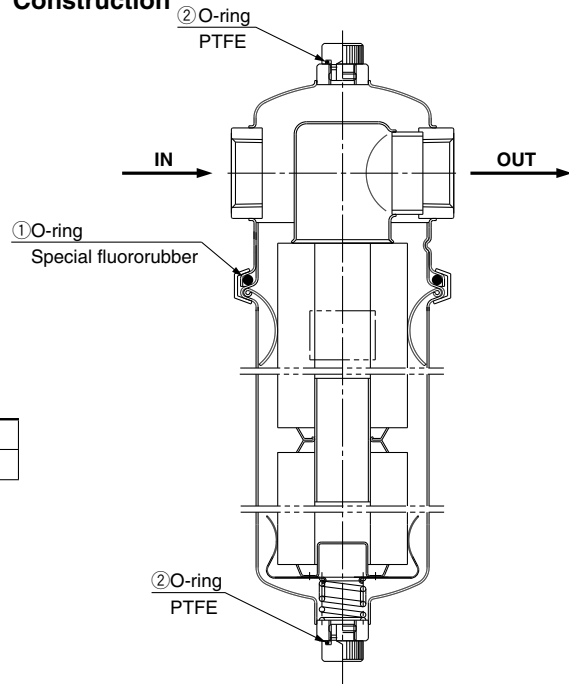
| Description      | Part number | Part no. (Set contents)          |
|------------------|-------------|----------------------------------|
| Bracket assembly | BP-12S-A    | ①: 1 pc.<br>②, ③, ④: 2 pcs. each |

## 3 Chemical Resistant Type Symbol X68

O-ring materials have been changed to special fluororubber and PTFE, improving chemical resistance.



### Construction



### Replacement Parts

| Description | Part number | Part no. (Set contents)       |
|-------------|-------------|-------------------------------|
| Seal kit    | FQ-KT002    | ①: 1 pc.<br>②: 2 pcs. ] 1 set |

### Special fluororubber O-ring chemical resistance

| Applicable solvents <small>Note)</small> |                          |
|------------------------------------------|--------------------------|
| Hydrocarbon                              | Fuel C                   |
|                                          | Hexane                   |
|                                          | Benzene                  |
|                                          | Toluene                  |
| Hydrogen halide                          | Chloroform               |
| Ketone                                   | Acetone                  |
|                                          | MEK                      |
| Ester                                    | Ethyl acetate            |
| Amide                                    | Formaldehyde             |
|                                          | DMF                      |
| Alcohol                                  | Methanol                 |
|                                          | Ethylene glycol          |
| Ether                                    | 1, 4-dioxane             |
|                                          | MTBE                     |
|                                          | TAME                     |
| Amine                                    | Pyridine                 |
|                                          | Butyl amine              |
| Gasohol                                  | Fuel C: Methanol = 75/25 |
|                                          | Fuel C: Methanol = 50/50 |
|                                          | Fuel C: Methanol = 25/75 |

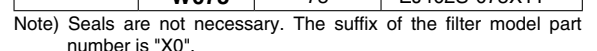
\* Consult SMC for fluids other than those listed.

Note) When using with liquids that contain flammable ingredients, implement safety measures, such as fire prevention and leakage detection sensors, and measures against static.

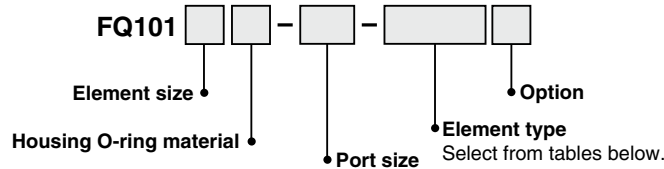


\* The standard element is shared with the element of the FG series. (For details, refer to the standard elements on page 44. Additionally, for element selection, refer to the selection on page 10.)

**RoHS**



## 5 Nonstandard Elements for Precision Cleaning



### HEPO II element "EJ101S Series"

RoHS



- Material: PET
- Optimal for high precision filtration (99% or more) of a wide range of fluids
- Dimensions:  $\phi 70 \times L250$  (EJ101S)

#### Recommended flow rate

| Absolute filtration accuracy ( $\mu\text{m}$ ) | Recommended flow rate (L/min)* |
|------------------------------------------------|--------------------------------|
| 2                                              | 20                             |
| 4                                              |                                |
| 6                                              |                                |
| 13                                             |                                |

- \* Pressure loss: 0.01 to 0.02 MPa
- Operating temperature: 0 to 80°C
- Differential pressure resistance: 0.5 MPa/25°C

#### Element and seal part numbers

| Dimensions           | Element symbol | Absolute filtration accuracy ( $\mu\text{m}$ ) | Element part number (single part) |
|----------------------|----------------|------------------------------------------------|-----------------------------------|
| $\phi 70 \times 250$ | J002□          | 2                                              | EJ101S-002□                       |
|                      | J004□          | 4                                              | EJ101S-004□                       |
|                      | J006□          | 6                                              | EJ101S-006□                       |
|                      | J013□          | 13                                             | EJ101S-013□                       |

Note) Specify seal material in place of "□" (N for NBR, V for FKM, T for PTFE, C for CR (chloroprene rubber)).  
The suffix of the filter model part number is not necessary.

### HEPO II element "EJ102S Series"

RoHS



- All parts of this element are made of polypropylene, which is optimal for various cleaning fluids including alkali and organic solvents.
- Nearly fiber separation or release of chemicals, since fibers themselves are directly fused and no adhesives are used.
- Pressure loss is low and relatively long service life is provided due to a larger filtration area
- Dimensions:  $\phi 70 \times L250$

#### Recommended flow rate

| Absolute filtration accuracy ( $\mu\text{m}$ ) | Recommended flow rate (L/min) |
|------------------------------------------------|-------------------------------|
| 2                                              | 20                            |
| 4                                              |                               |
| 6                                              |                               |
| 13                                             |                               |

- Operating temperature: 0 to 80°C
- Differential pressure resistance: 0.5 MPa

#### Element and seal part numbers

| Dimensions           | Element symbol | Absolute filtration accuracy ( $\mu\text{m}$ ) | Element part number (single part) |
|----------------------|----------------|------------------------------------------------|-----------------------------------|
| $\phi 70 \times 250$ | R002□          | 2                                              | EJ102S-002□X0                     |
|                      | R004□          | 4                                              | EJ102S-004□X0                     |
|                      | R006□          | 6                                              | EJ102S-006□X0                     |
|                      | R013□          | 13                                             | EJ102S-013□X0                     |

Note) Specify seal material in place of "□" (N for NBR, V for FKM, T for PTFE, E for EPR, or S for Silicon).

Can be also combined with elements for industrial filter (FG Series).  
For details, see the selection method on page 10.



# FQ1 Series

## Specific Product Precautions

Be sure to read this before handling the products.  
Refer to page 419 for safety instructions.

### Design

#### Caution

1. Do not apply pressure beyond the operating pressure range.
2. Do not use at temperatures beyond the operating temperature range.
3. **Fluid**
  - Do not use with gases.
  - Do not use any liquid that corrodes, deteriorates, or swells the materials used for this product and any toxic fluid.
  - Customers are responsible for confirming the compatibility of the liquid to be used.
4. **Fatigue fracture**

Be sure to implement necessary measures for the following operating conditions:

  - 1) When surge pressure is applied to the filter.
  - 2) When exposed to sliding or vibration due to insecure filter installation
  - 3) When the expansion, contraction, etc., is repeated due to thermal influence on the filter.
5. **Pressure drop**

Adjust initial pressure drops to 0.02 MPa or less.
6. **Corrosion**

Be aware that corrosion can be caused depending on operating conditions or environments.

### Selection

#### Warning

1. When selecting a model, a model that does not specification ranges after due consideration of the purpose of use, specification requirements, and operating conditions (fluid, pressure, flow rate, temperature, environment).
2. Do not use at temperatures at or above the boiling point of the fluid.
3. Never use with gases, including air.
4. Do not use in locations where peak pressure rises to 1 MPa or more due to water hammer, surge pressure, etc.

#### Caution

1. Design circuits so that back pressure or back flow will not occur. If back pressure occurs, it may damage the element.

### Fluid

#### Warning

1. Use a quick change filter for filtration of water, alkali and cleaning fluids, etc.
2. There may be circumstances where a seal or an O-ring deteriorates, causing leakage.

### Piping

#### Caution

1. When performing the piping, secure the width across flats of the piping connection part so that any load such as bending moment or twisting is not applied to it.
2. Be sure to install and secure the piping firmly so that any external vibration or load is not applied to the piping connection part during operation.
3. Install and connect piping ensuring space necessary for maintenance work and inspections.
4. Before piping is connected, air blow (flush) or wash it thoroughly to remove chips, cutting oil and other impurities from inside the piping.
5. Install piping after confirming IN and OUT.
6. **Connection**

Be sure that chips from the pipe threads and sealing material do not get inside the piping.  
Further, when sealant tape is used, leave 1.5 to 2 thread ridges exposed at the end of male threads.
7. **Line flushing**

Flush the piping lines at the time of initial use and when replacing the element.
8. **Element replacement**
  - 1) Replace the element after removing the liquid from the piping and confirming that pressure inside the filter is zero (to assure safety).  
Further more, conduct replacement using an IN, OUT differential pressure of 0.1 MPa as a guide.
  - 2) Start replacement after confirming that the temperature of the filter body is within a range of 0 to 40°C.
  - 3) When setting the element, be sure that it does not tilt inside the case.

### Operating Environment

#### Caution

1. Discoloration or material deterioration may occur, in locations or atmospheres where there is a danger of corrosion. If corrosion progresses, the filter will lose its functions.
2. When used in locations where exposed to vibration or impact, fatigue fracture may occur.  
Use it by implementing appropriate reinforcement.

### Maintenance

#### Caution

1. The pressure drop fluctuates depending on operating conditions. Since the pressure drop is one of the factors indicating filter characteristics, use the filter by setting a controlling standard.