Filter for Cleaning Fluid/Quick Change Filter

Series FQ1

No tools required.
Takes only 60 seconds
for element replacement.

Quick Change Filter

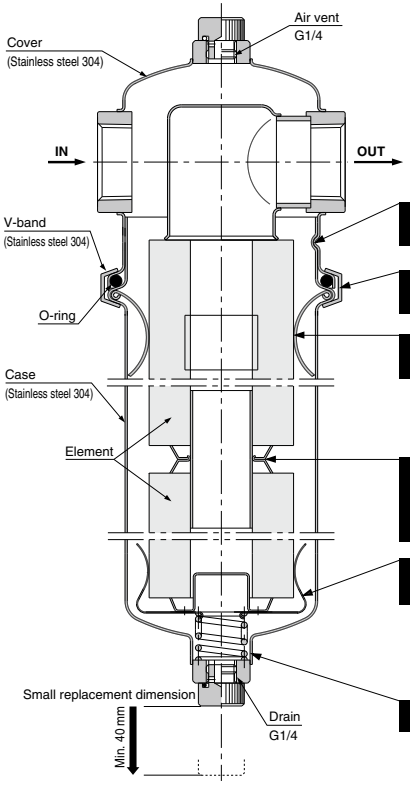
Element replacement in only 60 seconds

Replacement in less than two minutes is possible including removal of liquid.

Removing liquid ···· 45 seconds

Removing the case
Replacing the element
Installing the case
···· 51 seconds

PATENT PENDING



Case holding mechanism
Facilitates element replacement.

V-band holding mechanism
Facilitates V-band fastening.

Upper element holder
Facilitates centering of the element.

Intermediate element holder
Connects upper and lower elements securely.
(Two L250 elements substitute for one L500 element.)

Lower element holder
Prevents the element from tilting.

Smooth drainage of liquid

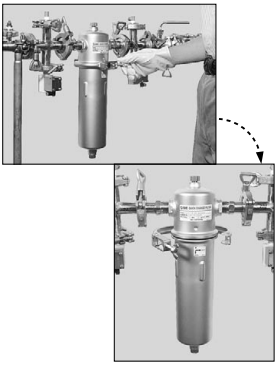
Quick Change Filter

Series FQ1

No tools required, easy element replacement

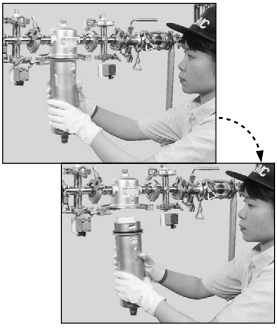
Removing the element

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 two L250 elements are used, do not discard the intermediate holder and lower element holder attached under the element, since they are reused.

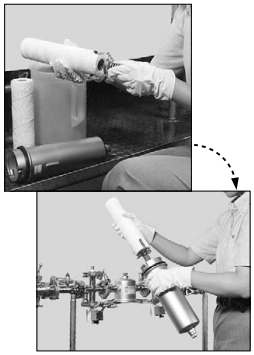


6. Clean the inside of the case, gaskets, seals, holders, plugs, etc., with a pure fluid or solvent.

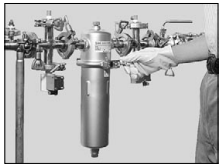
Installing the element

1. Make sure that O-rings are not damaged or deformed. If needed, replace with new ones.
2. Set the lower element holder under the element, and place them in the case.

   [When using two L250 elements]
   Insert the intermediate holder into the lower part of the second element (upper level), and then place them into the case after inserting one side of the intermediate holder into the upper part of the element that is attached to the lower holder.



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)

Filter Elements

(Standard elements)

Fiber element

- Nominal filtration accuracy: 0.5 to100 μm
- Ideal for a relatively high level of impurities
- Ideal for use as a prefilter
- Material: P.P. (EHM)
  Cotton (EH)

Micromesh element

- Nominal filtration accuracy: 5 to 105 μm
- High filtration accuracy with stainless steel micromesh
- Pleated type provides three times more filtration area than a cylinder.
- Easy element cleaning and regeneration
- Material: Stainless steel 304 (EM100, EM200)
  Stainless steel 316 (EM500, EM600)

(Made to order elements)

HEPO II element

- Absolute filtration accuracy: 2 to 13 μm
- US FDA compatible
- Nonwoven 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 μm
- Material: P.P.
  EJ202S ... x 11 (L125)
  EJ302S ... x 11 (L250)
  EJ402S ... x 11 (L500)

Membrane element

- Absolute filtration accuracy: 0.2, 0.4 μm
- Material: P.P. (ED102S ... x 0)
  CA (ED111S ... x 0)

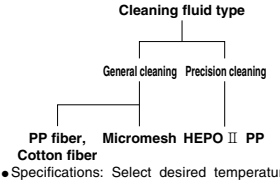
Note) P.P. : Polypropylene

Series FQ1
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.



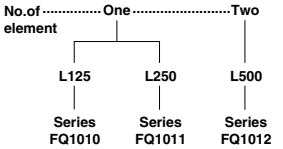
- Specifications: Select desired temperature conditions and filtration accuracy from the "Standard Element Selection Guide" on the right.

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

Cleaning level and Element / Cleaning fluid type		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		
		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	PP	NBR	FKM
		Element part no.	EHM··· x 3	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 hydroxde		Optimal	△(Note)	Optimal	Suitable	Optimal	Optimal	Unsuitable
Chlorine, Fluorine	Trichlorethylene		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
- 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) Pressure loss: 0.01 to 0.02 MPa 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	15	
						5	25	
		H	Cotton	EH	0 to 100	10		
						20		
						50	30	
						75		
						100		
	Micromesh element	M	Stainless steel 304	EM1, 2	0 to 100	5 (Nominal)	25	0.7
						10		
						20		
		L	Stainless steel 316	EM5, 6	0 to 250	40	30	
						74		
						105		
Precision cleaning	HEPO Ⅱ ∗ element	R	P.P.	EJ	0 to 80	2 (Absolute)	30	0.5
						4		
						6		
						13		

∗ Made to order

Quick Change Filter
Series FQ1

RoHS

∗ When combined with sintered elements (bronze), it is no longer compliant with 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 (D.O.E)

Element size

Symbol	Element size
0	L125
1	L250
2	L500 (L250 x 2)

Housing O-ring material

Symbol	Material
N	NBR
V	FKM

Element type
Select from tables below.

Port size

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

Options

Nil	N/A
B	Bracket

Made to order specifications

Nil	Note
X19	Without V-band Supprt (details on page 1203)
X68	Chemical Resistant Type (details on page 1203)

∗ For other made to order specifications, refer to page 1203.

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□
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

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

4. Micromesh element (Stainless steel 316) Bonding material: Nickel solder

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□
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

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

Made to Order

Made to order specifications

Elements other than 1 to 4 listed above are also available.
Refer to "Made to Order" elements on pages 1204 and 1205 for details.

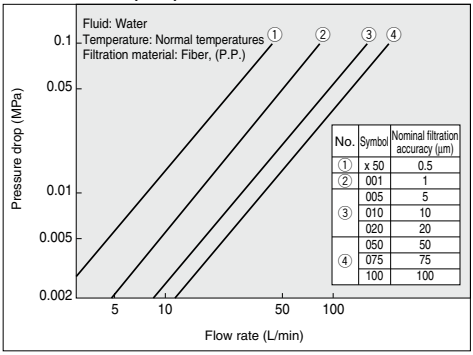
Specifications

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., ∗ Can not 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. 2.3

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

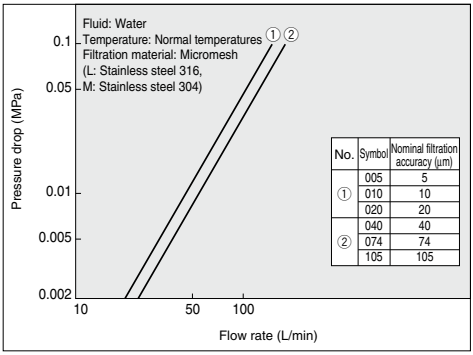
Flow Characteristics

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



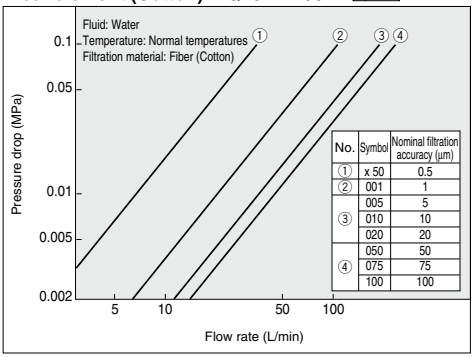
No.	Symbol	Nominal filtration accuracy (μm)
①	x 50	0.5
②	001	1
③	005	5
	010	10
	020	20
④	050	50
	075	75
	100	100

Micromesh element: FQ1011N-06-L Symbol



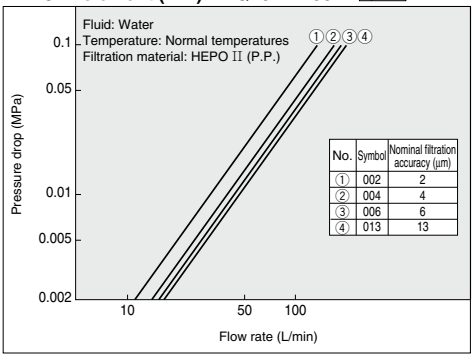
No.	Symbol	Nominal filtration accuracy (μm)
①	005	5
	010	10
	020	20
②	040	40
	074	74
	105	105

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



No.	Symbol	Nominal filtration accuracy (μm)
①	x 50	0.5
②	001	1
③	005	5
	010	10
	020	20
④	050	50
	075	75
	100	100

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

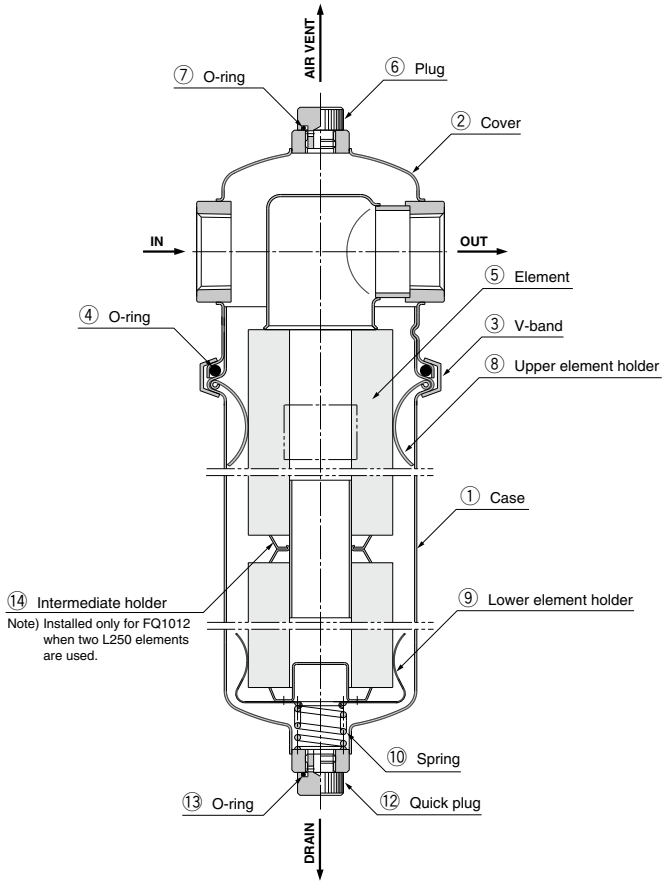


No.	Symbol	Nominal filtration accuracy (μm)
①	002	2
②	004	4
③	006	6
④	013	13

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

∗ Made to order

Construction

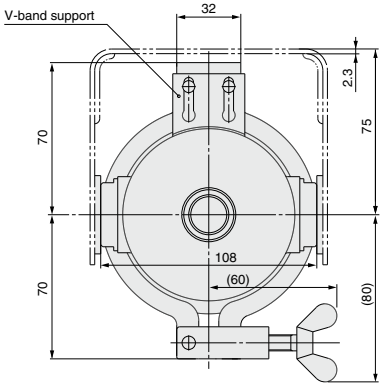


Replacement parts: Seals

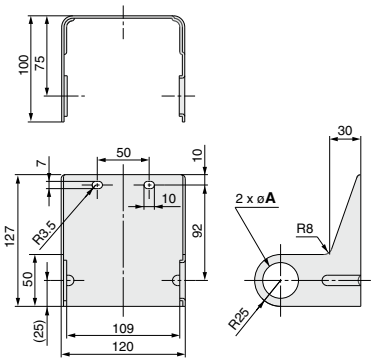
No.	Description	Part number	Material	Note
3	**V-band (V-band for replacement)**	FQ-BA001	Stainless steel 304	
4	**O-ring**	KT-FQ1-N Note 1)	NBR	JIS B2401-1A-P85
7, 13	**O-ring**			JIS B2401-1A-P11
4	**O-ring**	KT-FQ1-V Note 1)	FKM	JIS B2401-4D-P85
7, 13	**O-ring**			JIS B2401-4D-P11
6, 12	**Quick plug**	AG-9S	Stainless steel 303	
8	**Upper element holder**	L-131S	Stainless steel 304	
9	**Lower element holder**	L-135S	Stainless steel 304	
14	**Intermediate holder**	FQ-ÕP001	Stainless steel 304	
	Bracket	BP-13S	Stainless steel 304	For port size Rc 1
		BP-14S		For port size Rc 3/4
		BP-15S		For port size Rc 1/2

Note 1) 10 O-rings are included each for the KT-FQ1-□.

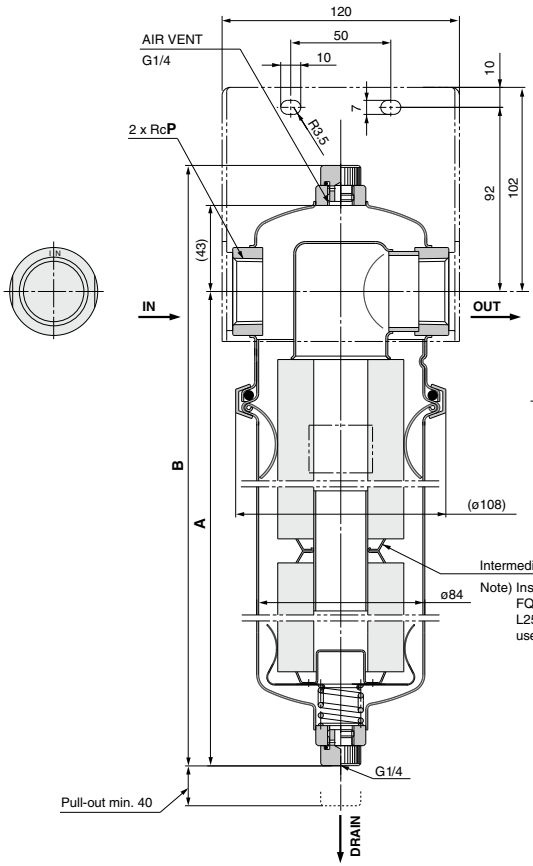
Dimensions

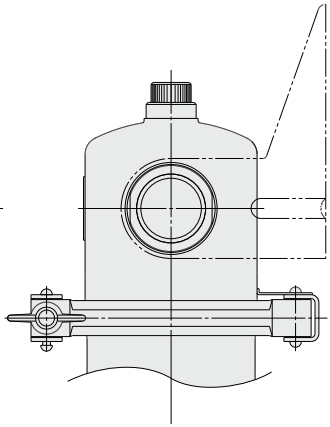


Bracket



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





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

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

Made to Order Specifications:

Please consult with SMC for detailed size, specifications and delivery.

Made to Order

1 Without V-band Support

Symbol: **X19**

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

FQ101 □ □ – □ – □ □ **X19**

- Option
- Element type
- Port size
- Housing O-ring material
- Element size

2 Conventional Bracket Type

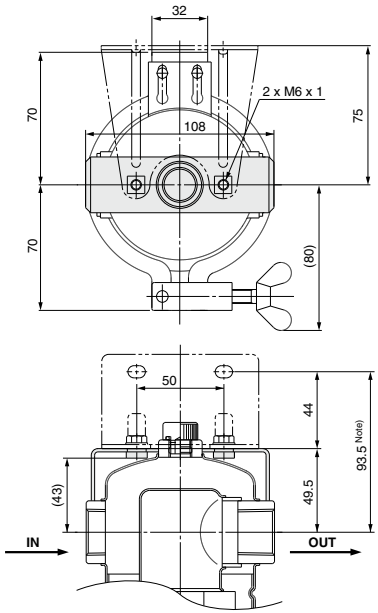
Symbol: **X61**

Conventional brackets can be installed.

FQ101 □ □ – □ – □ □ **X61**

- Option
- Element type
- Port size
- Housing O-ring material
- Element size

Dimensions



Note) FQ is 92 mm, the same as current model.

3 Chemical Resistant Type

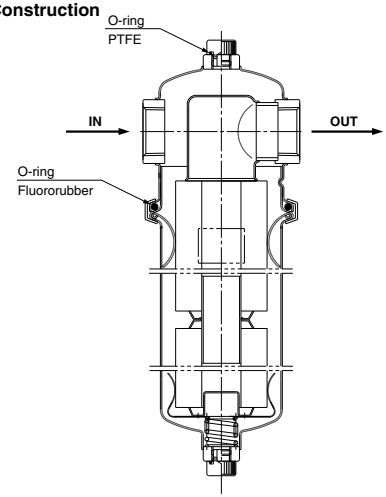
Symbol: **X68**

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

FQ101 □ **V** – □ – □ □ **X68**

- Option
- Element type
- Port size
- Element size

Construction



■ **Special fluororubber O-ring (FQ-KT002) chemical resistance**

Applicable solvents	
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.

Made to Order Specifications:

Please consult with SMC for detailed size, specifications and delivery.

Made to Order

4 Nonstandard Elements for Precision Cleaning

FQ101 □ □ – □ – □ □ **X0**

- **X0**: Made to Order — Combined with non-standard elements.
- Option
- Element type — Select from tables below.
- Port size
- Housing O-ring material
- Element size

Membrane P.P. element "Series ED102S"

RoHS

- Material: P.P.
- Optimal for high precision filtration (99% or more) of various cleaning fluids (mainly alkali-base)
- Dimensions: ø70 x L250

Recommended flow rate

Absolute filtration accuracy (μm)	Recommended flow rate (L/min)*
0.2	5
0.4	

* Pressure loss: 0.01 to 0.02 MPa
- Operating temperature: 0 to 70°C
- Differential pressure resistance: 0.5 MPa/25°C

Element and seal part numbers

Dimensions	Element symbol	Nominal filtration accuracy (μm)	Element part number (single part)
ø70 x 250	**UX20□**	0.2	ED102S-X20□X0
	UX40□	0.4	ED102S-X40□X0

Note) Specity seal material in place of "□" (N for NBR, V for FPM or T for PTFE).
The suffix of the filter model part number is "X0".

Membrane CA element "Series ED111S"

RoHS

- Material: CA
- Optimal for high precision filtration (99% or more) of various kinds of water
- Dimensions: ø70 x L250

Recommended flow rate

Absolute filtration accuracy (μm)	Recommended flow rate (L/min)*
0.2	5
0.4	

* 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	Nominal filtration accuracy (μm)	Element part number (single part)
ø70 x 250	**DX20□**	0.2	ED111S-X20□X0
	DX40□	0.4	ED111S-X40□X0

Note) Specity seal material in place of "□" (N for NBR, V for FPM, T for PTFE, E for EPRS, or S for Silicon).
The suffix of the filter model part number is "X0".

P.P. depth element "Series EJ202S, 302S, 402S"

RoHS

- Material: Polypropylene and polyethylene
- No fiber separation due to thermal fusion of fibers
- A wide range of applications to various cleaning fluids
- Dimensions
  EJ202S: ø65 x L125
  EJ302S: ø65 x L250
  EJ402S: ø65 x L500

Recommended flow rate

Nominal filtration accuracy (μm)	Recommended flow rate (L/min)*
1, 3, 5, 10 25, 50, 75	30

* Pressure loss: 0.01 to 0.02 MPa
- Operating temperature: 0 to 60°C
- Differential pressure resistance: 0.2 MPa

Element and seal part numbers

Dimensions	Element symbol	Nominal filtration accuracy (μm)	Element part number (single part)
ø65 x 125	**W001**	1	EJ202S-001X11
	W003	3	EJ202S-003X11
	W005	5	EJ202S-005X11
	W010	10	EJ202S-010X11
	W025	25	EJ202S-025X11
	W050	50	EJ202S-050X11
	W075	75	EJ202S-075X11
ø65 x 250	**W001**	1	EJ302S-001X11
	W003	3	EJ302S-003X11
	W005	5	EJ302S-005X11
	W010	10	EJ302S-010X11
	W025	25	EJ302S-025X11
	W050	50	EJ302S-050X11
	W075	75	EJ302S-075X11
ø65 x 500	**W001**	1	EJ402S-001X11
	W003	3	EJ402S-003X11
	W005	5	EJ402S-005X11
	W010	10	EJ402S-010X11
	W025	25	EJ402S-025X11
	W050	50	EJ402S-050X11
	W075	75	EJ402S-075X11

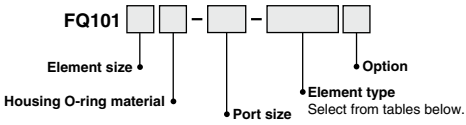
Note) Seals are not necessary. The suffix of the filter model part number is "X0".

Made to Order Specifications:

Please consult with SMC for detailed size, specifications and delivery.

Made to Order

5 Nonstandard Elements for Precision Cleaning



HEPO II element "Series EJ101S"

RoHS

- Material: PET
- Optimal for high precision filtration (99% or more) of a wide range of fluids
- Dimensions: ø70 x L250 (EJ101S)

Recommended flow rate

Absolute filtration accuracy (μm)	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	Nominal filtration accuracy (μm)	Element part number (single part)
ø70 x 250	**J002**□	2	EJ101S-002□
	J004□	4	EJ101S-004□
	J006□	6	EJ101S-006□
	J013□	13	EJ101S-013□

Note) Specity 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 "Series EJ102S"

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: ø70 x L250

Recommended flow rate

Absolute filtration accuracy (μm)	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	Nominal filtration accuracy (μm)	Element part number (single part)
ø70 x 250	**R002**□	2	EJ102S-002□X0
	R004□	4	EJ102S-004□X0
	R006□	6	EJ102S-006□X0
	R013□	13	EJ102S-013□X0

Note) Specity 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 (Series FG).
For details, see the selection method on page 1121.

Series FQ1
Specific Product Precautions

Be sure to read before handling.
Refer to front matter 41 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.
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 0.01 MPa 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. **Install and connect piping ensuring space necessary for maintenance work and inspections.**
2. **Before piping is connected, air blow (flush) or wash it thoroughly to remove chips, cutting oil and other impurities from inside the piping.**
3. **Install piping after confirming IN and OUT.**
4. **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.
5. **Line flushing**
   Flush the piping lines at the time of initial use and when replacing the element.
6. **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.**
2. **Use tightening torque of 7.4 to 8.3 N·m for the V-band coupling nut.**