

Industrial Filters Selection 1

1 Selecting the element

Narrow down the element types according to the operating environment, filtration level and element usage.

- Filtration level: Nominal filtration, absolute filtration.....
 - Nominal filtration
 - Absolute filtration
- Element usage:.....
 - Disposable: Element must be replaced after clogging.
 - Reusable: Element can be cleaned after clogging for continuous usage.

Select element and seal types to meet necessary requirements, from the element selection list.

<Selection requirements>

- Applicable fluid: Select an applicable element according to "applicable fluid" / "material".
- Temperature: Select an element within the operative temperature range.
- Filtration accuracy: Select an element with the required filtration accuracy.

② Calculating the number of elements

- Check the recommended flow for the selected element from the element selection list.
- Determine the value for "required flow rate Π recommended flow rate".
This value equals the number of elements required.

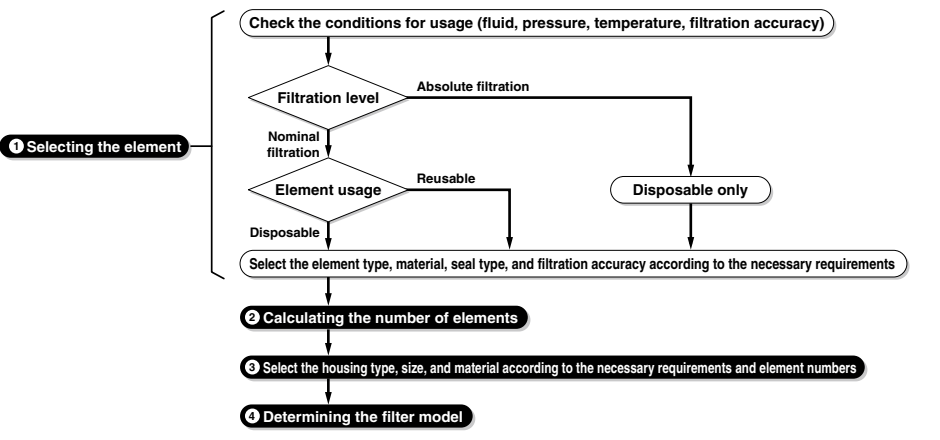
③ Selecting the housing

- Select a housing that can fit the number of elements determined in (2) from the housing selection list.
- Check that the housing selected meets the necessary requirements.
- <Selection requirements>
- Applicable fluid: Select a housing with an applicable seal according to "applicable fluid" / "material".
- Temperature:
- Pressure:

④ Determining the filter model

- Select a model by incorporating the symbols for the element and housing selected in (1) and (3).

Filter model: Housing model + element symbol



Industrial Filters Selection 2

Selecting the Element

Element category		Element type			Applicable fluid check										Element material	
Filtration level	Disposable/Reusable	Element description	Element model	Element symbol	Fluid applicability								Cutting oil Grinding oil		Filter media	Core
					Pure water	Industrial water	Cleaning fluid Alkali-based	Acid	Petroleum	Flourine	Alcohol					
Nominal filtration	Disposable	Fiber element	EH	H	×	○	○	×	○	○	○	○	○		Cotton	Stainless steel 304
			EHM	T	×	○	○	○	○	×	○	○	○		Polypropylene	Polypropylene
			EHK	G	×	○	○	○	○	○	○	○	○		Glass fiber	Stainless steel 316
		P.P. depth element	EJ	W	○	○	○	○	○	×	○	○	○		Polypropylene Polyethylene	Polypropylene
		Paper element	EP	P	×	×	×	×	○	×	○	○	○		Cotton	Polypropylene
		Bag element	EJ	E	×	○	○	○	○	○	○	○	○		Polyester	—
	Reusable	Micromesh element	EM	M	×	○	○	○	○	○	○	○	○		Stainless steel 304 (Epoxy parts)	Stainless steel 304
				L	×	○	○	○	○	○	○	○	○		Stainless steel 316 (Brazing)	Stainless steel 316
		Sintered metal element	EB	B	×	×	×	×	○	○	×	○	○		Bronze	—
			ES	S	×	○	○	○	○	○	○	○	○		Stainless steel 316	—
		Filter plate laminated element	END	S	×	○	○	○	○	×	○	○	○		Stainless steel 304	—

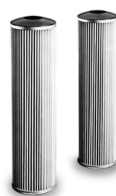
○: Optimal ○: Applicable △: Caution ×: Not applicable



EH/EHM/EHK



EJ



EP

Note) Operating temperature given per element. For actual usage, consider the operating temperature for seal and filter body.

Operating temperature

Operating temperature (Note)	Nominal filtration accuracy	Recommended flow rate (per element)	Element seal (Symbol)				Applicable housing models											
			NBR (N)	FKM (V)	PTFE (T)	Non-asbestos (A)	FGA	FGC	FGD	FGE	FGG	FQ	FGH	FGF	FN			
-20 to 100°C	0.5 μm	3 L/min	N/A				○	○	○	○	○	○	×	×	×			
	1 μm																	
	5 μm	10 L/min					○	○	○	○	○	○	×	×	×			
	10 μm																	
	20 μm	15 L/min					○	○	○	○	○	○	×	×	×			
0 to 50°C	50 μm	20 L/min																
	75 μm																	
	100 μm																	
0 to 400°C	1 μm	10 L/min					N/A				○	○	○	○	○	○	×	×
	5 μm																	
	10 μm	15 L/min																
	20 μm																	
0 to 60°C	1 μm	30 L/min	N/A				△	△	△	△	△	△	×	×	×			
	3 μm																	
	5 μm																	
	10 μm																	
	25 μm																	
	50 μm																	
0 to 80°C	5 μm	10 L/min	●	●	—	—	○	○	○	○	○	○	×	×	×			
	10 μm	15 L/min																
	20 μm																	
0 to 80°C	5 μm	400 L/min	N/A				×	×	×	×	×	×	×	○	×			
	10 μm																	
	25 μm																	
	50 μm																	
	100 μm																	
0 to 100°C	5 μm	15 L/min	●	●	—	—	○	○	○	○	○	○	×	×	×			
	10 μm																	
	20 μm																	
	40 μm																	
0 to 150°C	74 μm	15 L/min	●	●	●	●	○	○	○	○	○	×	×	×				
	105 μm																	
0 to 120°C	2 μm	10 L/min	●	●	●	—	○	○	○	○	○	×	×	×				
	5 μm																	
	10 μm																	
	20 μm																	
	40 μm																	
0 to 150°C	70 μm	15 L/min	●	●	●	●	○	○	○	○	○	×	×	×				
	100 μm																	
	120 μm																	
0 to 80°C	5 μm	40 L/min	●	●	—	—	×	×	×	×	×	×	×	×	○			
	20 μm																	

These values are for water
(The flow rates will differ if the fluids are of other, higher viscosity types.)

● : Compatible seal

○ : Standard △ : Made to Order specification × : Cannot be incorporated



EJ



EM



EB/ES



END

Industrial Filters Selection 3

Selecting the Element

Element category		Element type			Applicable fluid check										Element material	
Filtration level	Disposable	Element name	Element model	Element symbol	Fluid applicability								Element material			
					Pure water	Industrial water	Cleaning fluid Alkali-based	Acid	Petroleum	Solutions Flourine	Alcohol	Cutting oil Grinding oil	Filter media	Core		
High filtration accuracy	Disposable	HEPO II element	EJ	J	⊙	○	×	×	⊙	○	⊙	⊙	Polyester	Polypropylene		
		P.P. HEPO II element	EJ102S	R	○	○	○	○	○	△	○	○	Polypropylene	Polypropylene		
		Membrane element	ED	D	⊙	○	○	○	○	○	×	Polyether Sulphone (0.2 μm)	Polypropylene			
					⊙	○	×	×	○	×	○	×		Cellulose acetate (0.4 μm)		
		Membrane P.P. element	ED102S	U	○	○	○	○	○	△	○	×	Polypropylene	Polypropylene		
	Membrane CA element	ED111S	D	○	○	×	×	⊙	×	⊙	×	Polyester	Polypropylene			

⊙: Optimal ○: Applicable △: Caution ×: Not applicable

⊙: Optimal ○: Applicable △: Caution ×: Not applicable



EJ



EJ102S



ED

Operating temperature

Operating temperature	Filtration accuracy (Filtration efficiency 99% or more)	Recommended flow rate	Element seal (Symbol)				Applicable housing models								
			NBR (N)	FKM (V)	PTFE (T)	Non-asbestos (A)	FGA	FGC	FGD	FGE	FGG	FQ	FGH	FGF	FN
0 to 80°C	2 μm	20 L/min	●	●	—	—	△	△	◎	◎	×	◎	×	×	×
	4 μm		—	—	●	—	×	×	×	×	×	◎	×	×	
	6 μm		—	—	●	—	×	×	×	×	×	×	◎	×	×
	13 μm		—	—	●	—	×	×	×	×	×	×	◎	×	×
0 to 80°C	2 μm	20 L/min	●	●	—	—	△	△	△	△	×	◎	×	×	×
	4 μm		—	—	●	—	×	×	×	×	×	×	◎	×	×
	6 μm		—	—	●	—	×	×	×	×	×	×	◎	×	×
	13 μm		—	—	●	—	×	×	×	×	×	×	◎	×	×
0 to 80°C	0.2 μm	5 L/min	●	●	●	—	△	△	△	△	×	△	×	×	×
	0.4 μm		—	—	●	—	×	×	×	×	×	◎	×	×	
	0.2 μm		●	●	—	—	△	△	△	△	×	△	×	×	×
	0.4 μm		—	—	●	—	×	×	×	×	×	×	◎	×	×
0 to 70°C	0.2 μm 0.4 μm	5 L/min	●	●	—	—	△	△	△	△	×	△	×	×	×
0 to 80°C	0.2 μm 0.4 μm	5 L/min	●	●	●	—	△	△	△	△	×	△	×	×	×

These values are for water
(The flow rates will differ if the fluids are of other, higher viscosity types.)

● : Compatible seal
◎ : Standard
△ : Made to Order specification
× : Cannot be incorporated

●: Compatible seal

◎: Standard △: Made to Order specification ×: Cannot be incorporated

These values are for water
(The flow rates will differ if the fluids are of other, higher viscosity types.)



ED102S



ED111S

Industrial Filters Selection 4

Selecting the Element Seal

		Applicable fluid check							Operating temperature	
		Fluid applicability							Operating temperature	
Seal material	Symbol	Pure water	Industrial water	Cleaning fluid		Solutions				Cutting oil Grinding oil
				Alkali-based	Acid	Petroleum	Flourine	Alcohol		
NBR	N	○	◎	×	△	×	×	×	○	0 to 80°C
FKM	V	○	○	○	○	△	△	×	○	0 to 120°C
Fluororesin	T	○	○	○	○	◎	◎	◎	○	0 to 120°C
Non-asbestos	A	○	○	△	△	△	○	○	○	0 to 150°C

◎: Optimal ○: Applicable △: Caution ×: Not applicable

◎: Optimal ○: Applicable △: Caution ×: Not applicable

Applicable housing models									
FGA	FGC	FGD	FGE	FGG	FQ	FGH	FGF	FN	
—	—	⊙	⊙	⊙	⊙	—	⊙	⊙	
—	—	—	⊙	⊙	⊙	—	⊙	⊙	
—	—	⊙	⊙	—	—	⊙	—	—	
⊙	⊙	—	—	—	—	—	—	—	

⊙: Standard

Applicable element symbols															
H	T	G	W	P	E	M	L	B	S	J	R	D	U	D	
N/A	N/A	N/A	N/A	●	N/A	●	●	●	●	●	●	▲	●	●	
N/A	N/A	N/A	N/A	●	N/A	●	●	●	●	●	●	▲	●	●	
N/A	N/A	N/A	N/A	—	N/A	—	●	●	●	▲	—	●	—	●	
N/A	N/A	N/A	N/A	—	N/A	—	●	—	●	—	—	—	—	—	

●: Applicable ▲: Partially applicable

FGD

FGE

FGG

FGA

FGC

FGF

FGH

FQ1

FN

EB

ES

Industrial Filters Selection 5

Selecting the Housing

Filter type	Series	Model	Product specification		Material		
			Maximum operating pressure	Operating temperature	Housing	Seal	□1
Cartridge	FGH	FGH□2-□3-※1※2	1.0 MPa	0 to 80°C	Stainless steel 316	Fluoropolymer	—
	FQ	FQ101□2□1-□3-※1※2	1.0 MPa	0 to 80°C	Stainless steel 304	NBR	N
						FKM	V
	FGD	FGD□1□2-□3-※1※2	0.7 MPa	0 to 80°C	Aluminum SPCD	NBR	C
			1.0 MPa		SCS14 Stainless steel 316L	Fluoropolymer	T
	FGE	FGE□1□2-□3-※1※2	0.7 MPa	0 to 80°C	Stainless steel 304	NBR	S
						FKM	L
						Fluoropolymer	T
	FGG	FGG□1□2-□3-※1※2	0.7 MPa	0 to 80°C	Stainless steel 304	NBR	S
						FKM	L

□1: Housing/seal material
 □2: Number of elements
 □3: Port size
 ※1: Element symbol
 ※2: Element seal



FGH



FQ



FGD

Number of elements				Port size		Applicable element												
Element placement	Element levels	Number of elements	□2	Port size	□3	*1												
						H	T	G	P	M	L	W	B	S	J	R	D	U
1 line	×	0.5	= 0.5	100	Rc 3/8	03												
		1	= 1		Rc 1/2	04												
		2	= 2		Rc 3/4	06												
					Rc 1	10												
1 line	×	0.5	= 0.5	0	Rc 1/2	04												
		1	= 1		Rc 3/4	06												
		2	= 2		Rc 1	10												
1 line	×	1	= 1	A	Rc 3/8	03												
		2	= 2		Rc 1/2	04												
					Rc 3/4	06												
4 lines	×	1	= 4	A	R 1	10												
		2	= 8		R 2	20												
		3	= 12															
7 lines	×	2	= 14	B	Rc 2	20												
		3	= 21															
		4	= 28															

FGD

FGE

FGG

FGA

FGC

FGF

FGH

FQ1

FN

EB

ES



FGE



FGG

Industrial Filters Selection 6

Selecting the Housing

Filter type	Series	Model	Product specification		Material		
			Maximum operating pressure	Operating temperature	Housing	Seal	□1
Cartridge	FGA	FGA□1□2-□3-*1*2	1.0 MPa	0 to 80°C	Stainless steel 304 SS400	Non-asbestos	S C
	FGC	FGC□1□2-□3-*1*2	1.0 MPa 2.0 MPa 4.0 MPa	0 to 80°C	Stainless steel 304 SS400	Non-asbestos	S C
	FGF	FGF□1□2-□3-*1*2	0.5 MPa	0 to 80°C	Stainless steel 304	NBR FKM	S L
Bag	FGF	FGF□1□2-□3-*1*2	0.5 MPa	0 to 80°C	Stainless steel 304 SS400 Stainless steel 304 SS400	NBR FKM	S C L R
	FN	FN□2□1-□3-*1*2	1.0 MPa	0 to 80°C	Stainless steel 304	NBR FKM	N V
Back-flushing type	FN	FN□2□1-□3-*1*2	1.0 MPa	0 to 80°C	Stainless steel 304	NBR FKM	N V

□1: Housing/seal material
 □2: Number of elements
 □3: Port size
 *1: Element symbol
 *2: Element seal



Number of elements				Port size		Applicable element																										
Element placement	Element level	Number of elements				*1																										
						H	T	G	P	M	L	W	B	S	J	R	D	U														
4 to 83 lines	×	1 to 4	=	4 to 332	Refer to p. 35	1B to 6B	Refer to p. 35																									
1 line	×	1	=	1	A	1/2 B	04																									
		2	=	2	B	3/4 B	06																									
Bag element	ø190 x L440	1 L440		1A	Rc 2	20	Bag element																									
	ø190 x L770	1 L770		1B																												
Bag element	ø190 x L440	3 L440		3A	4 B	40	Back-flushing element																									
		3 L770		3B																												
		5 L440		5A																												
		5 L770		5B																												
Back-flushing element	Element type · Cylindrical · Multilevel type	Cylindrical 1 L250		1101	Rc 1	10																										
		Multilevel 1 L250		1111																												
	Element length · L250 · L500	Cylindrical 1 L500		1102	Rc 2	20																										
		Multilevel 1 L500		1112																												
		Cylindrical 4 L500		4102																												

For L250

For L250



FGF



FN