

Bag Filter

Series FGF



Optimum for the large flow filtration

The bag-stated element (made of non-woven cloth) makes it possible to filtrate the large flow with lower pressure drop. Easy to dispose of the collected foreign matters. Collecting the foreign matters inside an element realizes the easy disposal. The case inside and surroundings are not soiled.

Easy maintenance

Easy to remove and install the element and basket, and easy to exchange elements.

Select from a wide range of filtration accuracy

Nominal filtration accuracy 5 to 100 μm

Major operating fluids

- Coolant (Oil-based, Aqueous)
- Weak alkali-based cleaning fluid
- Cutting fluid
- Industrial water

* Contact us for other kinds of fluids.

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Options

Description	Applicable models (number of elements)		
	FGF□1 (one element)	FGF□3 (three elements)	FGF□5 (five elements)
Davit for element	●	●	●
Companion flange	—	●	●
Foundation bolt (3 pcs)	●	●	●

Variations

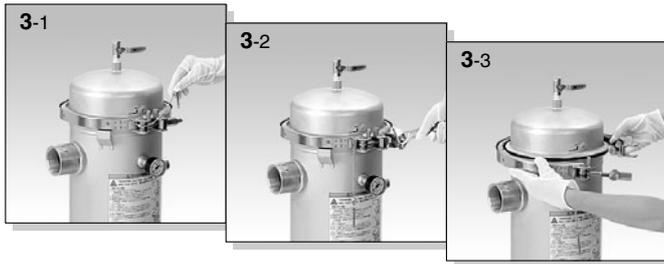
Series	Material		Number of elements	Element size	Port size	Max. flow (water, at $\Delta P = 7 \text{ kPa}$)
	Body	Gasket, O-ring				
FGF□1	Stainless steel 304	NBR FKM	1	$\phi 190 \times \ell 440$ $\phi 190 \times \ell 770$	Rc2	Approx. 400 ℓ/min
FGF□3	Stainless steel 304		3		4 ^B JIS10 ^K FF	Approx. 1200 ℓ/min
FGF□5	SS400		5		6 ^B JIS10 ^K FF	Approx. 2000 ℓ/min

Feature (Effortless replacement of elements)

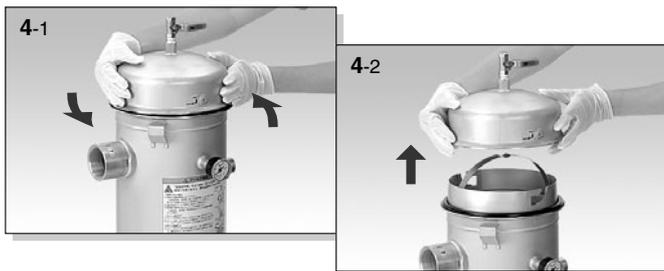
(one element including type)

How to remove an element

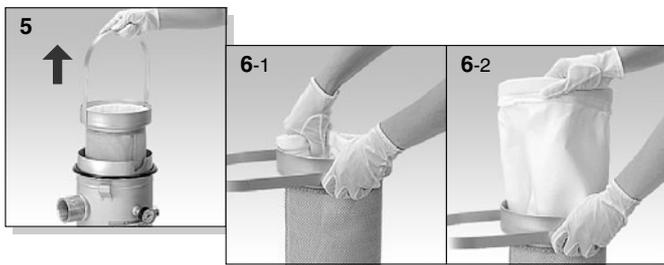
1. After stopping the operation, close the valve in the order of inlet and outlet.
2. Open the air release valve to let the internal pressure of a filter be zero, and open the drain valve and liquid discharging valve to let out the internal fluid completely.
3. After pulling the pin for confirming the tightening position, loosen the tightening nut, and then remove the T-bracket from the latch. (It is convenient to use a wrench commercially available with the nominal size 17.)



4. Remove the cover upward by turning it counterclockwise.



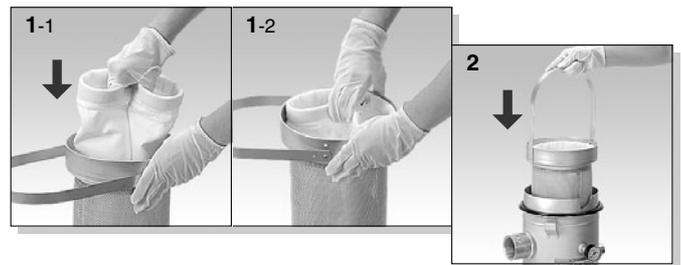
5. Using the handle, remove the basket vertically.
* Inspect a gasket in the case, and replace it with a new one if it is expanded. (Refer to page 784, Seal list, Part nos.)
6. A handle made of cloth is attached to the element so that elements can be pulled out of the basket by fingers or using sticks, pulling them to the center.



Note) Please use caution for burns in the case of a high temperature.

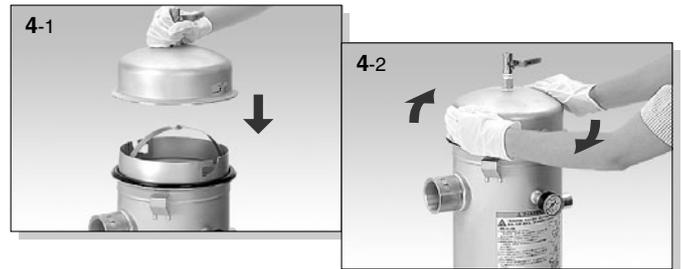
How to attach an element

1. Pull a new element by the cloth handle toward the center, and put it inside the basket, folding the edge of an element. Further, push the edge of an element to the bottom plate's flange surface of the basket thoroughly.
2. Grasp the handle and put the basket in the case.



Note) Set the handle avoiding attaching it to the notch (guide groove) of the case.

3. Set the O-ring to the case.
* Replace the O-ring with a new one if it is expanded. (Refer to page 784, Seal list, Part nos.)
4. Adjust the pins (two locations) to the guide slit of the case inside the cover, and push them thoroughly and turning clockwise.



5. * Install the V-band in the edge of the cover and case correctly.
6. * Gently strike the circumference around the V-band with a plastic hammer, etc. to fit the connection.
7. * Install the T-bracket correctly in the latch. After fastening the tightening nut to the prescribed position, insert the pin for confirming the tightening position.
* Refer to the back of page 796, Specific Product Precautions 4.



⚠ Caution

When restarting this product or performing the air release works after replacing the elements, refer to the back of page 796, Specific Product Precautions 4.

Variations of Bag Filters



Available combination between an element and a vessel		Vessel			
		Standard products			Made to Order
		FGF□1 Vessel with one element 0.5 MPa type	FGF□3 Vessel with three elements 0.5 MPa type	FGF□5 Vessel with five elements 0.5 MPa type	High pressure spec. Vessel with one element 1.0 MPa type (P.792)
Element					
Standard elements		P.782	●	●	●
Made to Order	Sub-element + Standard element	P.788		●	
	Sub-element			●	
	HEPO element	P.789	●		
	Long service life element				—
	Branch type element + One-touch type V-band	P.790		—	
	PP (Polypropylene) bag element			●	●
Filter paper element	P.791		●	●	

Note) Combinations between standard or made-to-order elements and standard or made-to-order vessels are marked (●) as above.

Types of Element

Standard element	Made-to-order elements		
Bag element (For coarse filtration) 	Sub-element (For coarse filtration) 	HEPO element (For precision filtration) 	Long service life element (For coarse filtration)
	Branch type element (For coarse filtration) 	PP (Polypropylene) bag element (For coarse filtration) 	Filter paper element (For coarse filtration)

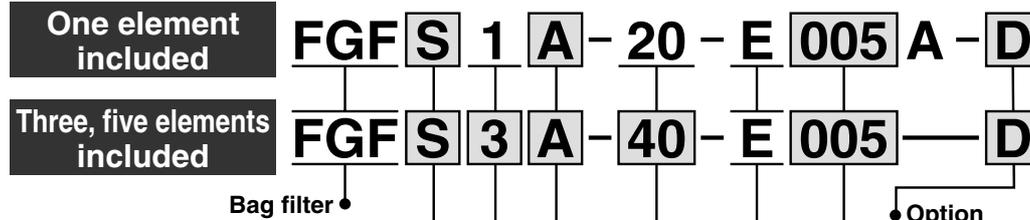
Note) Refer to page 788 through to 792 for details on made-to-order elements and vessels.

Bag Filter

Series FGF



How to Order



Material

Symbol	Vessel material	Gasket, O-ring	Applicable model		
			FGF□1	FGF□3	FGF□5
S	Stainless steel 304	NBR	●	●	●
C	SS400		—	●	●
L	Stainless steel 304	FKM	●	●	●
R	SS400		—	●	●

Number of elements

Symbol	No. of elements
1	1 pcs included (FGF□1)
3	3 pcs included (FGF□3)
5	5 pcs included (FGF□5)

Element size

Symbol	Element size
A	ø190 x ø440
B	ø190 x ø770

Element material (Polyester)

Port size

Symbol	Port size	Applicable model
20	Rc2	FGF□1
40	4 ^B JIS10 ^{FF}	FGF□3
60	6 ^B JIS10 ^{FF}	FGF□5

Option

Symbol	Option*	Applicable model		
		FGF□1	FGF□3	FGF□5
Nil	None	●	●	●
D	Davit for element	●	●	●
F	Companion flange	—	●	●
L	Foundation bolt (3 pcs)	●	●	●

* In the case of multiple options, indicate symbols in an alphabetical order.

Nominal filtration accuracy ^{Note 1)}

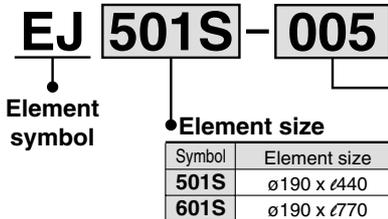
Symbol	Nominal filtration accuracy (µm)	Filtration efficiency ^{Note 2)}
005	5	93 wt % eliminated
010	10	87 wt % eliminated
025	25	80 wt % eliminated
050	50	74 wt % eliminated
100	100	65 wt % eliminated

Note 1) Nominal filtration accuracy is the name given for the filtration accuracy calculated as a percentage of a load, and will differ from the actual filtration accuracy that is achieved from a fluid flow.

Note 2) Test condition
 Operating fluid: Water
 Dust in use: ACCTD*
 Pressure drop: ΔP = at 0.01 MPa

* SAE standards in the United States of America
 J726C
 Dust for test use for air cleaner for automobiles

Part number of element for replacement



Made to order specifications.
 (For details, refer to page 788 to 792).

Specifications

Model		FGF□1A-20	FGF□1B-20	FGF□3A-40	FGF□3B-40	FGF□5A-60	FGF□5B-60	
Common	Operating pressure	MAX. 0.5 MPa ^{Note 2)}						
	Operating temperature	MAX. 80°C						
	Maximum flow rate ^{Note 1)}	Approx. 400 ℓ/min		Approx. 1200 ℓ/min		Approx. 2000 ℓ/min		
	Applicable fluid	Aqueous coolant, Weak alkali cleaning fluid, Industrial water (vessel material: Stainless steel 304) Oil-based coolant, Cutting oil (vessel material: SS400)						
Vessel	Material	Stainless steel 304		Stainless steel 304, SS400				
	Port size	Rc2		4 ^B JIS10 ^{FF}		6 ^B JIS10 ^{FF}		
	Internal volume	19 ℓ	31 ℓ	104 ℓ	156 ℓ	214 ℓ	307 ℓ	
	Mass	19 kg	23 kg	170 kg	190 kg	270 kg	315 kg	
	Accessory	Pressure gauge	Part No.: G46-10-02M					
		Air release valve	1/4 ^B ball valve					
		Handle for picking elements	Basket integrated			Part No.: AK-1S		
Davit for elements		None			Yes			
Element	Material	Polyester						
	Nominal filtration accuracy	5, 10, 25, 50, 100 µm						
	Basket withstand differential pressure strength	0.3 MPa						
	Number of elements	1 element included		3 elements included		5 elements included		
Size	ø190 x ø440	ø190 x ø770	ø190 x ø440	ø190 x ø770	ø190 x ø440	ø190 x ø770		

Note 1) Conditions: Fluid water, Pressure drop 7 kPa, Nominal filtration accuracy 100 µm

Note 2) Refer to page 792, Made to Order for the maximum operating pressure of 1.0 MPa type.

Model Selection and Flow Characteristics

1. Determine the material for the vessel, gasket and O-ring after confirming operating fluids.
2. Select a vessel model by referring to the maximum flow rate in the specifications, (page 782) after confirming the operating flow rate.
3. Confirm whether the operating pressure and temperature is within the specification range (page 782) or not.
4. Calculate the nominal filtration accuracy of an element that is required.
5. Confirm the flow rate and pressure drop based on the below flow characteristics when selecting a vessel and an element.
6. Determine a model by the element size, (ø190 x 770) when many contaminants (pollutants) are contained in the fluid.
7. Select the required option.
8. Determine the filter model according to the model selection procedures above. (Refer to page 782.)

Flow Characteristics

Flow rate per element

The flow rate per element can be obtained as follows using Graph A and Table B.

Note 1) The flow characteristics does not change according to the element size.

The life expectancy changes in proportion to the filtration area.

Note 2) We recommend that the pressure drop be calculated by 7 kPa.

Much pressure drop in the initial stage will substantially shorten the service life in an element in the case of a highly turbid fluid.

<Calculation methods>

(Example) Viscosity 100 m²/sec
 Pressure drop 7 kPa
 Nominal filtration accuracy ... 100 μm

- 1) According to Graph A, Flow Characteristics, the flow rate, 400 l/min is obtained from the point of intersection of the 100 μm line and the y-axis.
- 2) Next, according to Table B, Viscosity Conversion Table, the flow coefficient is obtained as 85% for 100 m²/sec.
- 3) The flow rate 400 l/min multiplied by the flow coefficient 85%, that is 280 l/min, gives the flow rate per element.
 $400 \text{ l/min (flow rate)} \times 85\% \text{ (flow coefficient)} = 340 \text{ l/min}$

Graph A: Flow Characteristics of Series FGF

Fluid: Water, Temperature: Room temp.

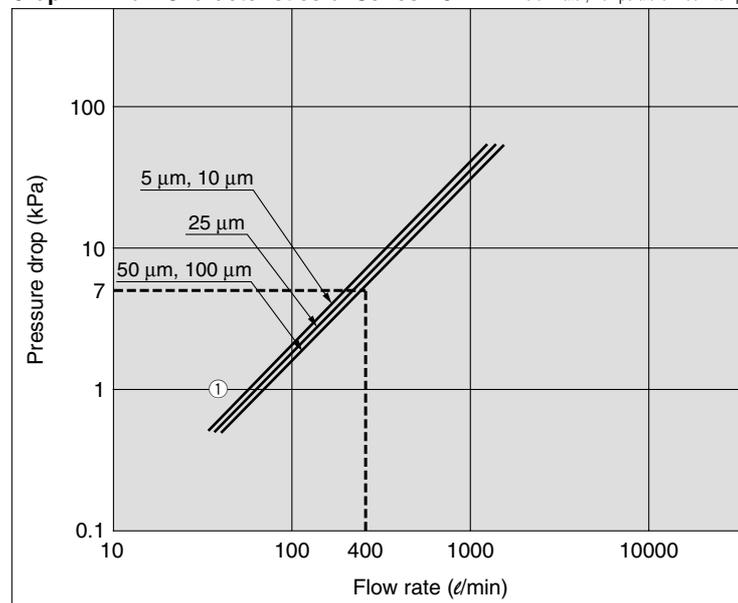


Table B: Viscosity Conversion Table

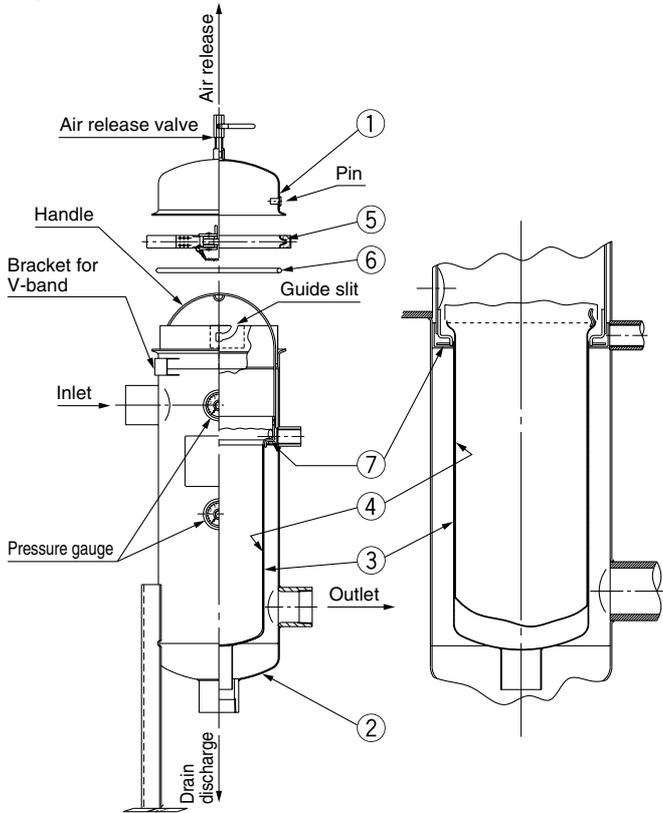
Viscosity (mm ² /sec)	10,000	8,000	6,000	4,000	2,000	1,500	1,000	800	600	400	200	100	1
Flow coefficient (%)	2.1	2.6	3.5	5	8	11	16	17	25	35	58	85	100

* Multiply the number of elements by the flow rate per one element in case that the flow rate of including 3 or 5 elements is calculated.

Series FGF

Construction

FGF□1



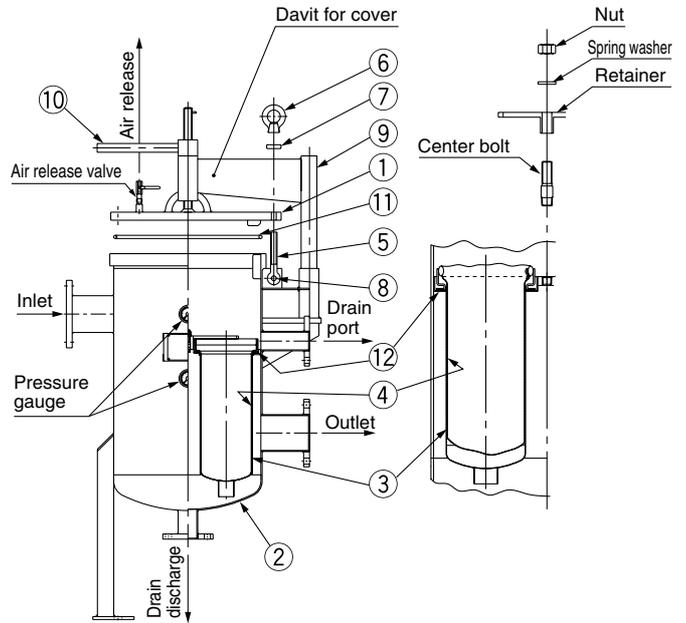
Component Parts and Seal List

No.	Description	Part No.	Material	Qty.	Applicable model ^(Note)
1	Cover	—	Stainless steel 304	1	—
2	Filter case	—	Stainless steel 304	1	—
3	Basket	BT-7S#1	Stainless steel 304	1	FGF□1A-20
		BT-8S#1			FGF□1B-20
4	Element	Refer to page 782, How to Order.	Polyester	1	—
5	V-band	CY-19S	Stainless steel 304	1	—
6	O-ring	AL-25S	NBR	1	FGFS1□-20
		AL-22S	FKM		FGFL1□-20
7	Gasket	AL-20S	NBR	1	FGFS1□-20
		AL-21S	FKM		FGFL1□-20

Note) Refer to "How to Order" on page 782 for the □ part of the part number.

FGF□3□-40

FGF□5□-60



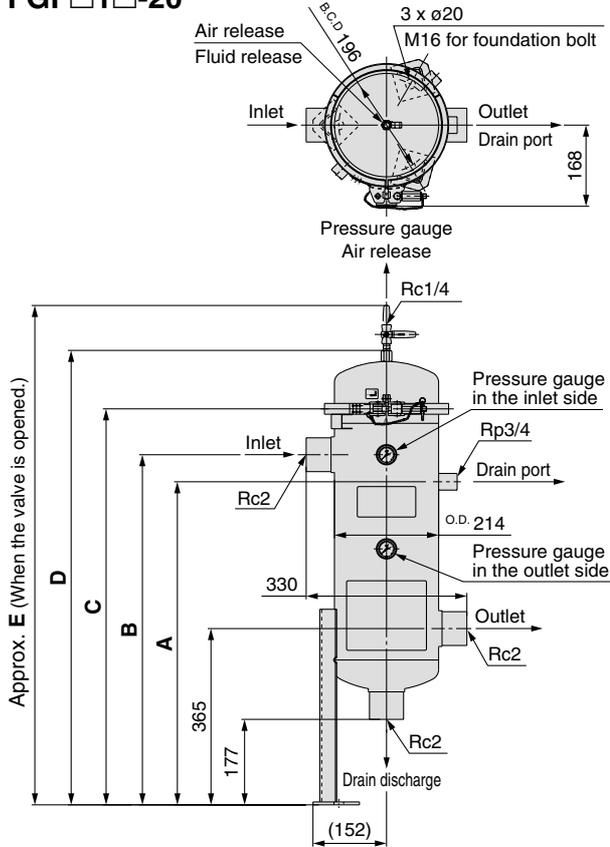
Component Parts and Seal List

No.	Description	Part No.	Material	Qty.	Applicable model ^(Note)	
1	Cover	—	Stainless steel 304	1	—	
2	Filter case	—	Stainless steel 304	1	—	
3	Basket	BT-3S	Stainless steel 304	3	FGF□3A-40	
					FGF□5A-60	
		BT-4S	Stainless steel 304	3	FGF□3B-40	
					5	FGF□5B-60
4	Element	Refer to page 782, How to Order.	Polyester	3	FGF□3□-40	
5				5	FGF□5□-60	
5	Hinge bolt	—	SF440A	—	—	
6	Eyebolt	—	SF440A	—	—	
7	Washer	—	SS400	—	—	
8	Parallel pin	—	S45C	—	—	
9	Lifter	—	SS400	—	—	
10	Handle	—	SS400	—	—	
11	O-ring	AL-26S	NBR	1	FGFS3□-40	
					FGFC3□-40	
		AL-27S	FKM		FGFS5□-60	
					FGFL3□-40	
AL-23S	FKM	FGFR3□-40				
		AL-24S	FGFL5□-60			
FGFR5□-60						
12	Gasket	AL-20S	NBR	3	FGFS3□-40	
					FGFC3□-40	
					5	FGFS5□-60
		AL-21S	FKM		3	FGFL3□-40
					5	FGFR3□-40
					5	FGFL5□-60
				5	FGFR5□-60	

Note) Refer to "How to Order" on page 782 for the □ part of the part number.

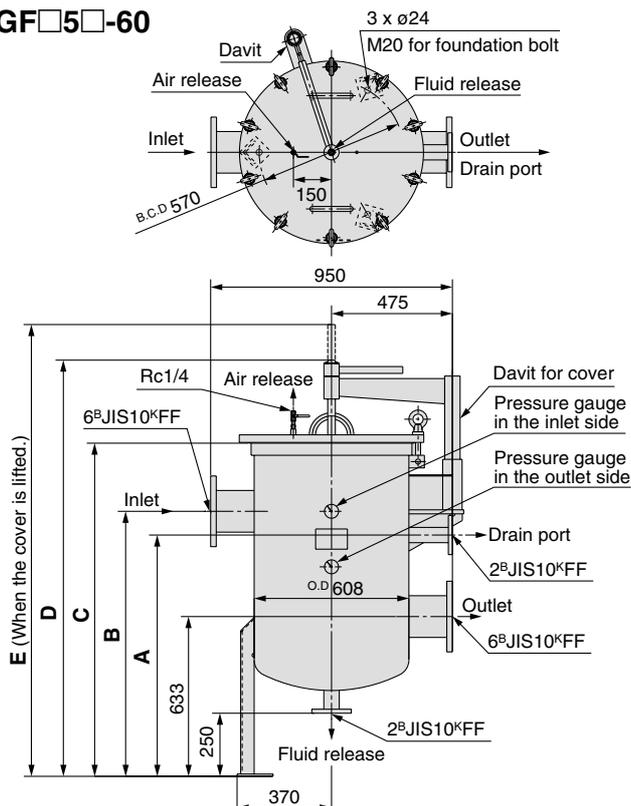
Dimensions

FGF□1□-20

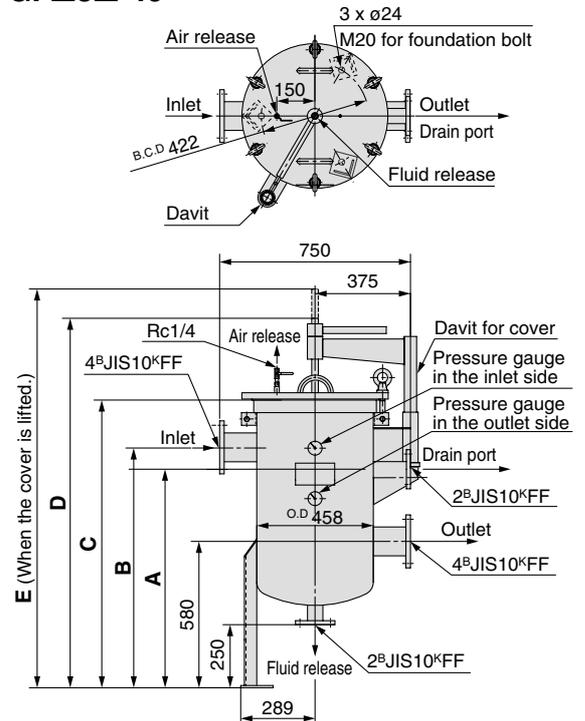


Model	A	B	C	D	E
FGFS1A-20	669	725	820	941	1040
FGFL1A-20					
FGFS1B-20	999	1055	1150	1271	1370
FGFL1B-20					

FGF□5□-60



FGF□3□-40



Model	A	B	C	D	E
FGFS3A-40	866	950	1140	1464	1580
FGFC3A-40					
FGFL3A-40					
FGFR3A-40					
FGFS3B-40	1196	1280	1470	1794	1910
FGFC3B-40					
FGFL3B-40					
FGFR3B-40					

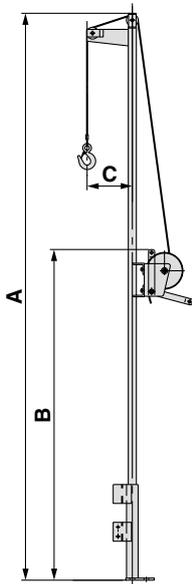
Model	A	B	C	D	E
FGFS5A-60	956	1050	1320	1649	1790
FGFC5A-60					
FGFL5A-60					
FGFR5A-60					
FGFS5B-60	1286	1380	1650	1979	2120
FGFC5B-60					
FGFL5B-60					
FGFR5B-60					

Series FGF

Options

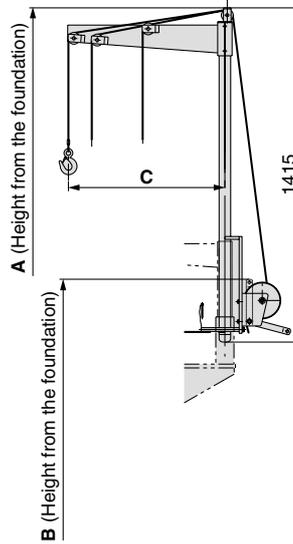
Davit for hanging an element

BO-136S



Model	Applicable model	A	B	C
BO-136S	FGFS1A-20	2400	1400	190
	FGFL1A-20			
	FGFS1B-20			
	FGFL1B-20			

BO-134S, 135S

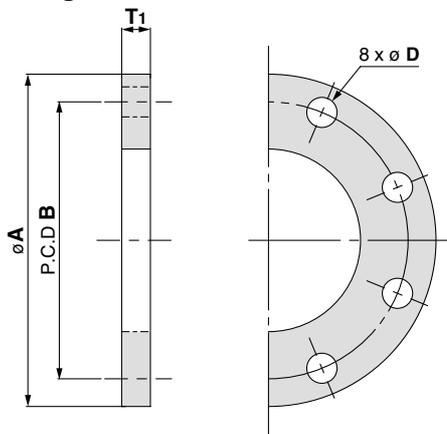


Model	Applicable model	A	B	C
BO-134S	FGFS3A-40	2400	1330	446
	FGFC3A-40			
	FGFL3A-40			
	FGFR3A-40	2730	1660	446
	FGFS3B-40			
	FGFC3B-40			
FGFR3B-40				

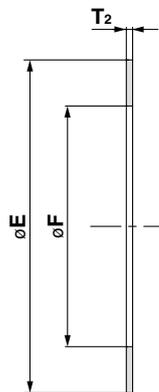
Model	Applicable model	A	B	C
BO-135S	FGFS5A-60	2530	1460	657
	FGFC5A-60			
	FGFL5A-60			
	FGFR5A-60	2860	1790	657
	FGFS5B-60			
	FGFC5B-60			
FGFR5B-60				

Companion flange

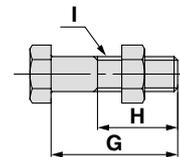
Flange



Gasket



Hexagon bolt and nut



Part No.	Applicable model	Material	G	H	I
AI-17S	FGF□3□-40	SS400	60	38	M16 x 2
AI-18S	FGF□5□-60	(Zinc chromated)	70	46	M20 x 2.5

Note) 16 pieces are required per filter unit.

Part No.	Applicable model	Flange standards	Material	A	B	C	D	T
F-86S	FGFC3□-40	4 ^B JIS10 ^K	SS400	210	175	115.4	19	18
	FGFR3□-40							
F-87S	FGFS3□-40	PL, FF	SUSF304	280	240	166.6	23	22
	FGFL3□-40							
F-88S	FGFC5□-60	6 ^B JIS10 ^K	SS400	280	240	166.6	23	22
	FGFR5□-60							
F-89S	FGFS5□-60	PL, FF	SUSF304	280	240	166.6	23	22
	FGFL5□-60							

Note) 2 pieces are required per filter unit.

Part No.	Applicable model	Material	E	F	T ₂
AL-79S	FGF□3□-40	V#6500	159	115	3
AL-80S	FGF□5□-60		220	167	3

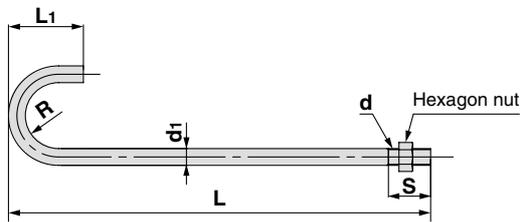
Note) 2 pieces are required per filter unit.

Set of Components for a Companion Flange

Part No.	Applicable model	Flange	Gasket	Hexagon bolt
F-90S	FGFC3□-40	F-86S	AL-79S	AI-17S
	FGFR3□-40			
F-91S	FGFS3□-40	F-87S	AL-80S	AI-18S
	FGFL3□-40			
F-92S	FGFC5□-60	F-88S	AL-80S	AI-18S
	FGFR5□-60			
F-93S	FGFS5□-60	F-89S	AL-80S	AI-18S
	FGFL5□-60			

Options

Foundation bolt



(mm)

Part no.	Applicable model	Nominal size of thread d	d₁	S	L₁ (Approx.)	R (Approx.)	K (Approx.)	L
AI-2S	FGF□1□-20	M16	16	40	71	31.5	2	400
AI-3S	FGF□3□-40	M20	20	50	90	40	2.5	500
	FGF□5□-60							

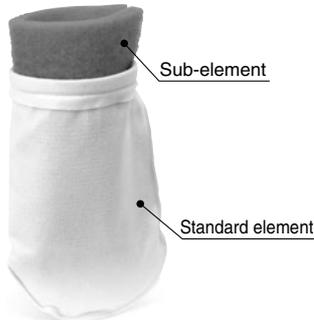
Note) 3 foundation bolts are required per filter unit. If ordering only foundation bolts, order 3 bolts using the above part no.



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

“Sub-element and Standard element” equipped

(For coarse filtration)



It has a structure such that the spongiform filtration material, which is made of Polyvinylidene Chlorides Saran staple fibers, is in the form of a bag. It is then fixed by a ring inside the standard element.

Note 1) Refer to "How to Order" (page 782) for the □ part of the part number.

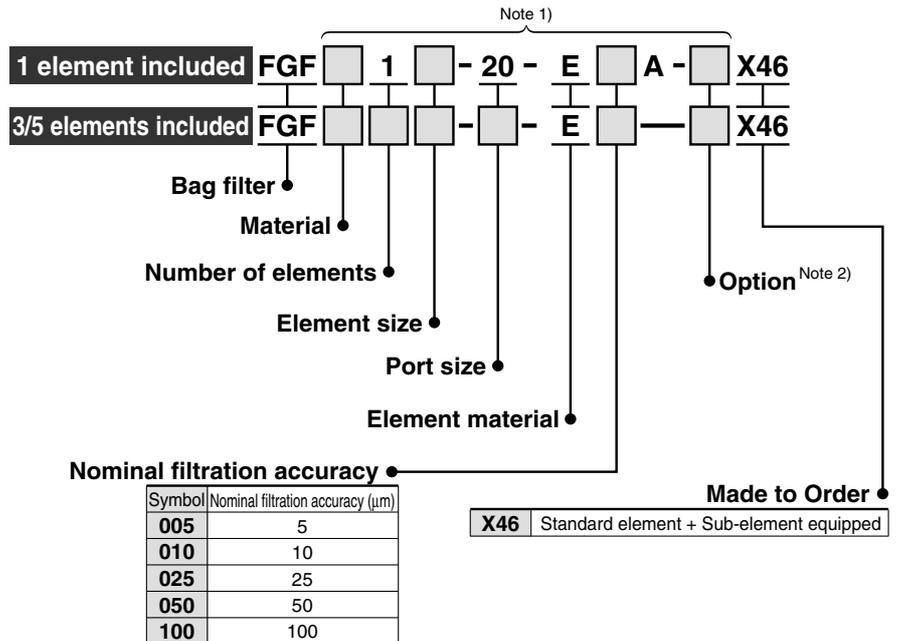
Note 2) When there is no option, the option symbol and the hyphen before the option symbol is not necessary.
eg) FGFS1A-20-E005AX46

- Effective for extending the service life in a standard element.
- Enclosed in the standard element to eliminate large foreign matter.

Specifications

Element size	Flow rate (ℓ/min)		Normal filtration accuracy (μm)	Filtration area (cm ²)
	Aqueous coolant	Weak alkali cleaning fluid		
ø190 x ø440	15 to 50	25 to 100	5 to 100	1770
ø190 x ø770	30 to 100	50 to 200		3420

How to Order (“Sub-element + Standard element” equipped)



Sub-element equipped

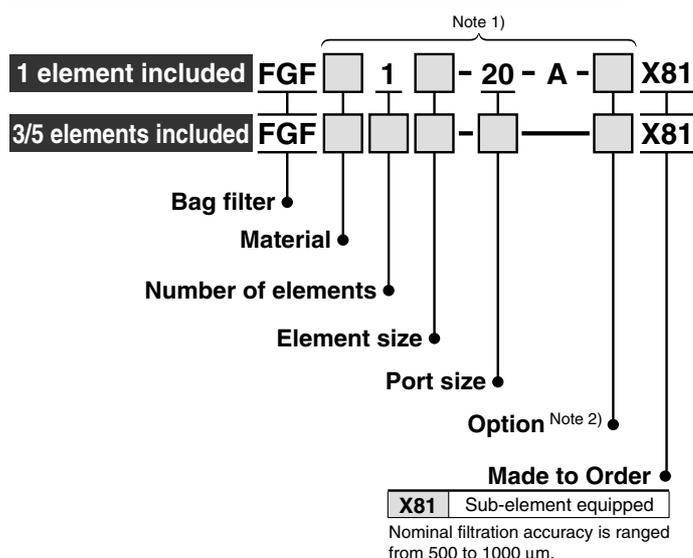
(For coarse filtration)



Note 1) Refer to "How to Order" (page 782) for the □ part of the part number.

Note 2) When there is no option, the option symbol and the hyphen before the option symbol is not necessary.
eg) FGFS1A-20-AX81

How to Order (Sub-element equipped)



Sub-element/Ring Part No.

Element size	Sub-element (single part)	Sub-element with ring	Ring (single part)
ø440	EZS340S	EZS320S	FZS310S
ø770	EZS330S	EZS310S	

Note) Order a sub-element with a ring when you have already purchased a standard product.



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

HEPO element equipped

(For precision filtration)



A cylindrical element in which the filter material made of P.G.P. (Polyester + Glass fiber) is sandwiched by a stainless steel mesh and pleated.

Note 1) Refer to "How to Order" (page 782) for the □ part of the part number.

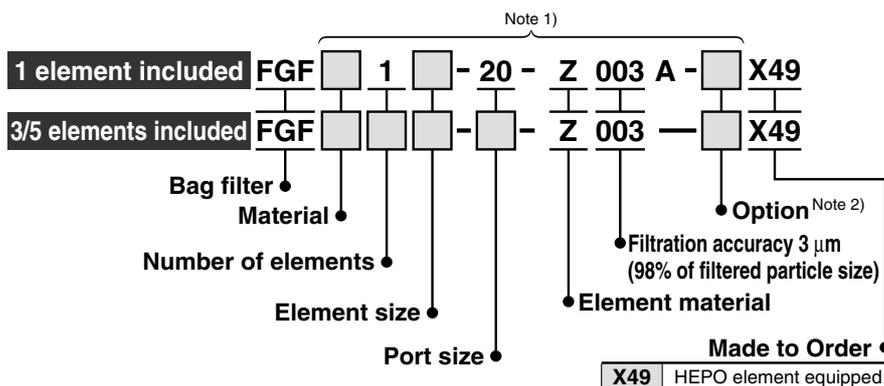
Note 2) When there is no option, the option symbol and the hyphen before the option symbol is not necessary.
eg) FGFS1A-20-Z003AX49

- A high performance filter material eliminates as much as 98% of the foreign matter with a size of 3 μm.
- Filtration area is large which allows the service life to be extended.
- Optimum for filtration of precision machine fluids, precision cleaning fluids, etc.
- Effective for the grinding powders.

Specifications

Element size	Flow rate (ℓ/min)	Filtration accuracy (μm) (98% of filtered particle size)	Filtration area (cm ²)
ø190 x ℓ440	50 to 100	3	16470
ø190 x ℓ770	150 to 200		31640

How to Order (HEPO element equipped)



Element/Fixing Band/Spacer Part No.

Element size	HEPO element (single part)	Fixing band	Spacer
ℓ440	EZFN20AS	CY-2XS	CO-3XS
ℓ770	EZFN30AS		

Note) Order a HEPO element (single part), a fixing band and a spacer together when you have already purchased a standard product.

Long service life element equipped

(For rough filtering)



A cylindrical element in which the non-woven material made of P.P. (Polypropylene) is sandwiched by a PET mesh and pleated.

Note 1) Refer to "How to Order" (page 782) for the □ part of the part number.

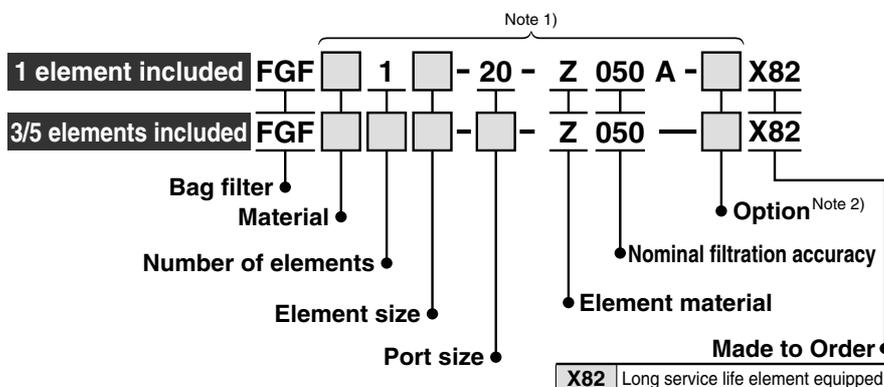
Note 2) When there is no option, the option symbol and the hyphen before the option symbol is not necessary.
eg) FGFS1A-20-Z050AX82

- Long service life: Four to five times longer (compared with the standard elements)
- Cost for maintenance is substantially reduced.

Specifications

Element size	Flow rate (ℓ/min)		Normal filtration accuracy (μm)	Filtration area (cm ²)
	Aqueous coolant	Weak alkali cleaning fluid		
ø190 x ℓ440	15 to 50	25 to 100	Approx. 50	9350
ø190 x ℓ770	30 to 100	50 to 200		12400

How to Order (Long service life element equipped)



Element/Fixing Band/Spacer Part No.

Element size	Long service life element (single part)	Fixing band	Spacer
ℓ440	EZD810AS-050	CY-2XS	CO-3XS
ℓ770	EZF730AS-050		

Note) Order a long service life element (single part), a fixing band and a spacer together when you have already purchased a standard product.



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

Branch type element

(For coarse filtration)



Two-bag construction made of polyester non-woven material.

Note 1) Refer to "How to Order" (page 782) for the □ part of the part number.

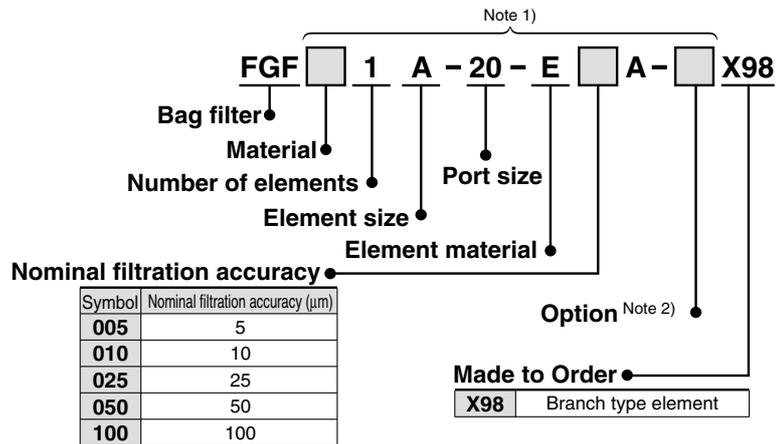
Note 2) When there is no option, the option symbol and the hyphen before the option symbol is not necessary.
eg) FGFS1A-20-E005AX98

- Element with $\varnothing 440$ achieves the same life service as a $\varnothing 770$ in a more compact size.

Specifications

Element size	Flow rate (ℓ/min)		Normal filtration accuracy (μm)	Filtration area (cm ²)
	Water-soluble coolant	Weak alkali cleaning fluid		
ø190 x $\varnothing 440$	15 to 50	25 to 100	5 to 100	3280

How to Order (Branch type element equipped)



Element Part No.

Element size	Branch type element (single part)	Basket
$\varnothing 440$	EJ111S-□ ^{Note 1)}	BT-25XS

Note 1) Enter the symbol for nominal filtration accuracy in the □ part. (Refer to page 782, How to Order.)

Note 2) Order a branch type element (single part) and a basket together when you have already purchased a standard product.

P.P. (Polypropylene) bag element equipped

(For coarse filtration)



Note 1) Refer to "How to Order" (page 728) for the □ part of the part number.

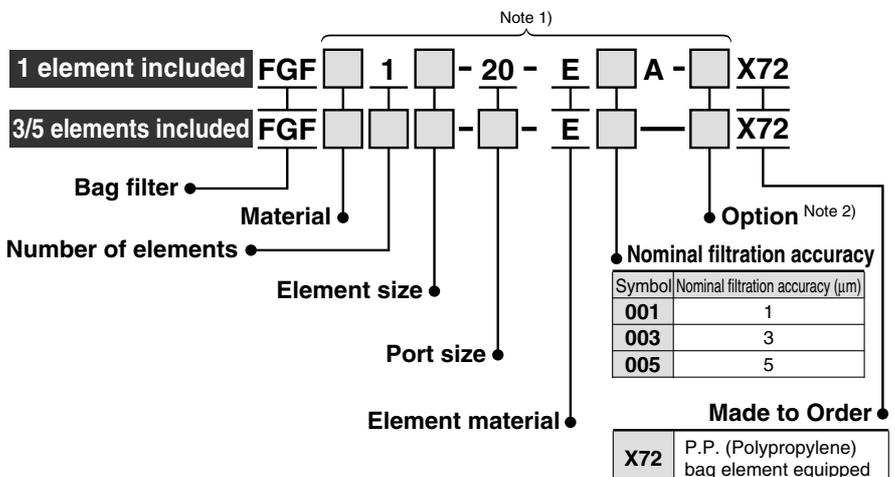
Note 2) When there is no option, the option symbol and the hyphen before the option symbol is not necessary.
eg) FGFS1A-20-Z005AX72

- Applicable for strong alkali-based cleaning fluid
- Can be used in various fields such as chemical plants, food plants, etc.

Specifications

Element size	Flow rate (ℓ/min)	Normal filtration accuracy (μm)	Filtration area (cm ²)
ø190 x $\varnothing 440$	50 to 100	1 to 5	1770
ø190 x $\varnothing 770$	150 to 200		3420

How to Order (P.P. [Polypropylene] bag element equipped)



Element Part No.

Element size	P.P. (Polypropylene) bag element (single part)
$\varnothing 440$	EJ501S-□X30 ^{Note)}
$\varnothing 770$	EJ601S-□X30 ^{Note)}

Note) Enter the symbol for nominal filtration accuracy in the □ part. (Refer to page 782, How to Order.)



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

Filter paper element equipped

(For coarse filtration)



A cylindrical element with a cotton-made filter inside and a pleated material on the outside for reinforcement.

Note 1) Refer to "How to Order" (page 782) for the □ part of the part number.

Note 2) When there is no option, the option symbol and the hyphen before the option symbol is not necessary.

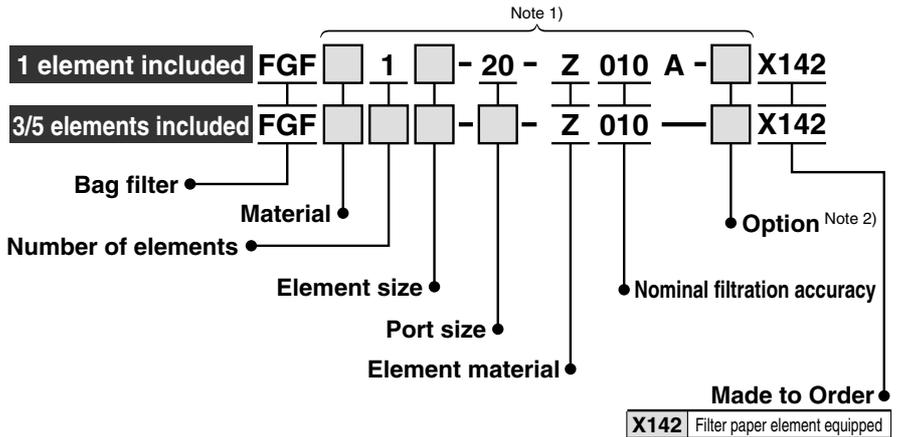
eg) FGFS1A-20-Z010AX142

- Low pressure drop (approx. 1/3 compared with the standard type) and large filtration area makes it suitable for filtrating cutting fluids containing highly dense contaminants.

Specifications

Element size	Flow rate (l/min)	Normal filtration accuracy (μm)	Filtration area (cm ²)
φ190 x φ440	50 to 100	10	8930
φ190 x φ770	150 to 200		18469

How to Order (Filter paper element equipped)



Element/Fixing Band/Spacer Part No.

Element size	Filter paper element (single part)	Fixing band	Spacer
φ440	EJ501S-010X6	CY-2XS	CO-3XS
φ770	EJ601S-010X6		

Note) Order a filter paper element (single part), a fixing band and a spacer together when you have already purchased a standard product.



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

- Flange type cover is available with up to 1.0 MPa pressure.
- A hinge mechanism and stopper mechanism are added to the cover to improve the job performance and safety.



How to Order (High Pressure Spec., 1.0 MPa Type)

FGF **1** - **20** - **E** **X190**

Bag filter **Material** **Port size** **Element material** **Made to Order** **Nominal filtration accuracy**

Symbol	Body material	Gasket, O-ring
S	Stainless steel	HNBR
L	304	FKM

Symbol	Port size
20	Rc2

Symbol	Nominal filtration accuracy (µm)
005	5
010	10
025	25
050	50
100	100

Symbol	Element size
A	ø190 x ø440
B	ø190 x ø770

Number of elements

Element size

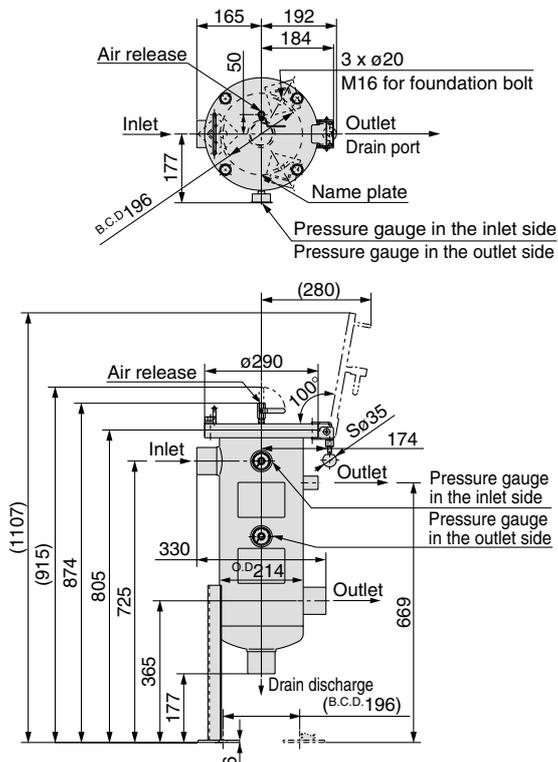
X190 High pressure spec. (1.0 MPa)

Specifications

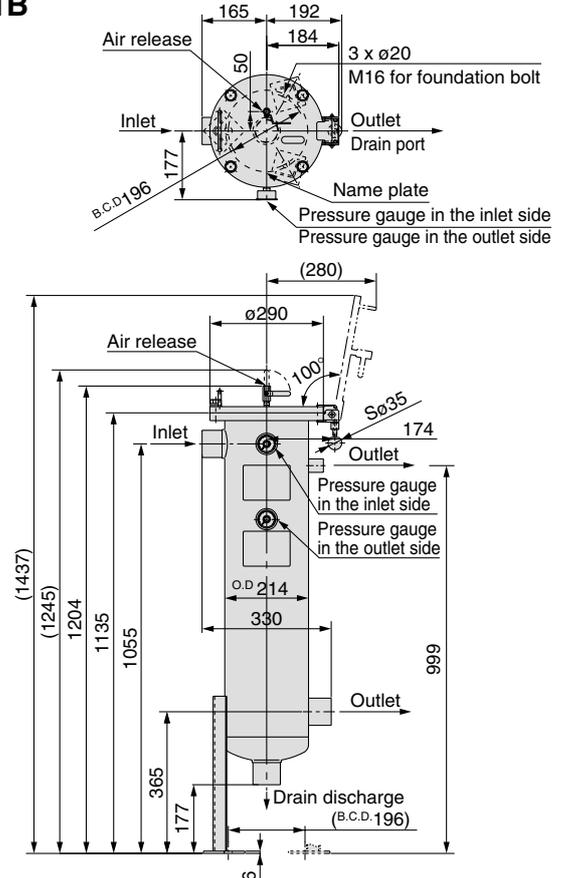
Model		FGFS	FGFL
Vessel	Operating pressure	MAX. 1.0 MPa	
	Operating temperature	MAX. 80°C	
	Gasket, O-ring material	HNBR	FKM
	Accessory	Pressure gauge	Part No.: G46-15-02M, R1/4 x ø42 x 1.5 MPa
	Air release valve	1/4 ^B ball valve	
Element	Material	Polyester	
	Nominal filtration accuracy	5, 10, 25, 50, 100 µm	
	Basket withstand differential pressure strength	0.3 MPa	

Dimensions

FGF□1A



FGF□1B





Series FGF

Specific Product Precautions 1

Be sure to read this before handling. Refer to front matters 42 and 43 for Safety Instructions and consult instruction manuals for details

Mishandling will likely cause fluid leakage or removal of a cover, which may lead to an unexpected accident. Also, adaptability of equipment should be determined by a fully knowledgeable and experienced system designer.

Operating Condition Range

Warning

- 1. Operating pressure**
Do not use the product above its pressure range.
- 2. Operating temperature**
Do not use the product above its temperature range
- 3. Operating fluids**
 - 1) Never use the product with gases
 - 2) Do not use the product with corrosive fluids
 - 3) Do not use the product with fluids which will likely cause the expansion and deterioration of O-rings or the element.
- 4. Operating environment**
 - 1) Do not use the product in an atmosphere if it may be corrosive.
 - 2) Do not use this product in a place where shock or vibrations occur.

Caution on Operation

Warning

- 1. Replace the elements only after confirming that the pressure is zero. (Open the air release valve.)**
- 2. The parts used for tightening the cover (V-band, etc.) must be properly positioned when attached.**
- 3. Replace the deteriorated or expanded O-ring or gasket. O-ring or gasket replacement should be performed within one year after usage or when fluid leakage occurs. (Refer to page 784. Component parts and Seal list.)**
- 4. When applying pressure for starting a pump, etc., be sure to release the air by opening the release valve on the top.**
- 5. If a part used for tightening the cover is deformed or the threads are galled, it must not be used. (Refer to page 784, Component parts and Seal list.)**

Caution on Design and Installation

Caution

- 1. Pressure drop (ΔP)**
Use the product with a flow which has an initial pressure drop which will become 7 kPa or less
- 2. Installation space**
Arrange the necessary space for inspection, before installing and piping the product.
- 3. Flushing**
Flush the piping line when the product is used during the initial stage.
- 4. Confirm IN/OUT before piping**
- 5. Provide a circuit for releasing the air**
- 6. When using the product at a high temperature, take measures to prevent a burn from occurring**
- 7. Provide circuits for releasing drainage and fluids.**

Caution on Operation

Caution

- 1. Replacement of elements**
Replace the element only when the pressure drops (ΔP) reaches 0.1 MPa
- 2. Surface temperature of a filter**
Confirm that the surface temperature of the filter is 40°C or less, to prevent a burn from occurring.
- 3. Cleaning of each component**
In order for firm sealing to take place, clean the sealing surface of the O-ring or gasket and/or remove the paint which is left on the tightened parts of the cover or the thread parts.
- 4. When applying a pressure to start up a pump, confirm that the valves in the piping are sealed when opened or closed and that each connecting parts are completely sealed. If any abnormality is found, such as air leakage, stop the product immediately. The possible cause of the failure should be located. Resume operation after taking appropriate measures to stop the air leakage, such as replacing the O-rings, or additionally tightening the fittings.**



Series FGF Specific Product Precautions 2

Be sure to read this before handling. Refer to front matters 42 and 43 for Safety Instructions and consult instruction manuals for details

Be sure to following the precautions below, taking into consideration that the bag filter should not be damaged, the product performance should be maintained, and or inspection and maintenance should be conducted easily.

Caution on Installation and Piping

⚠ Caution

1. Use the product with a circuit having lesser fluctuation to the filter caused by pressure or flow.

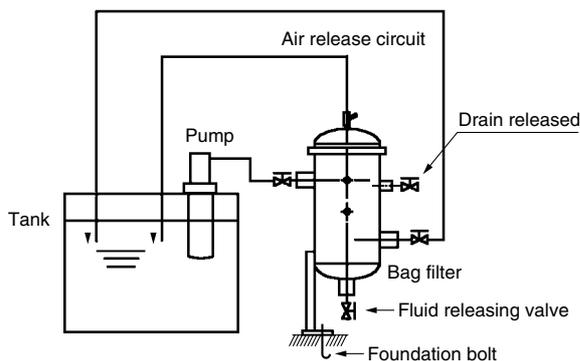


Fig. 1 Example of circuit (Circulating filtration circuit)

2. Firmly fix the bottom to the ground using foundation bolts, etc.
3. Connect the valves or fittings suited to the operating conditions by confirming the size of each connection port. Prior to operating, flush the piping line and check for abnormalities, such as fluid leakage.
4. Provide a drain releasing valve and a fluid releasing valve.

5. Pipe so that air releasing is absolutely performed.

The air releasing job can be done firmly if you make the piping in order to flow a small flow constantly into a tank by resin tubing, etc. from the air releasing valve. (Refer to Fig. 2.)

But, when the position of a pump is high, please use caution for an idle run when restarting.

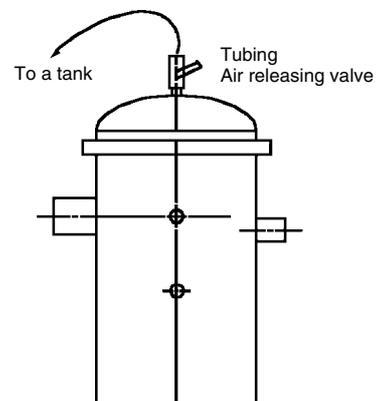


Fig. 2 Air releasing circuit

6. Piping such as for the INLET and OUTLET should be firmly fixed to the mounting frame using a saddle, to avoid vibration and or force caused from the weight.



Series FGF Specific Product Precautions 3

Be sure to read this before handling. Refer to front matters 42 and 43 for Safety Instructions and consult instruction manuals for details

Element Replacement

Cover Removal

Warning

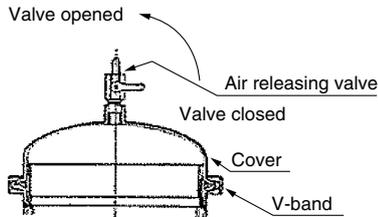


Fig. 3 Opening/Closing the air releasing valve

1. Stop operation
2. Close the valve, starting from the inlet, then outlet.
3. Open the air release valve to allow the internal pressure of the filter to reach zero. Then open the drain valve and liquid discharging valve to completely drain the internal fluid. (Refer to fig. 3)
4. To remove the cover and O-ring for inspection, loosen the nuts on the parts fastening the cover (V-band, etc.)
 - * Remove the cover by pulling upwards and turning it counterclockwise. (in the case of one element only)
5. Replace the expanded O-rings with new ones. (Refer to page 784 for Component parts and Seal list.)

Basket Removal

Caution

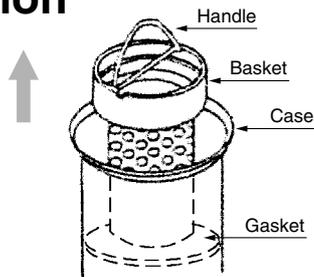


Fig. 4 Basket removal

1. Attach a handle to the notch and remove the basket by pulling upwards. (Refer to Fig. 4). (A handle is provided with the basket of the one element type).
2. Inspect the gasket in the case and replace it with a new one, if it is expanded.

Also, remove any foreign matter where the gasket is set.

[Gaskets for replacement] Part No.: AL-20S (Material: NBR)
Part No.: AL-21S (Material: FKM)

Element Removal

Caution

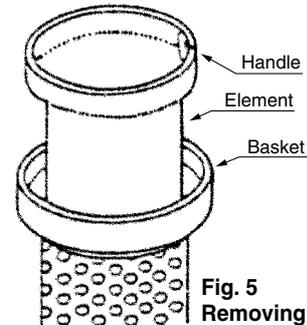


Fig. 5 Removing an element

1. A handle made of cloth is attached to the element so that it can be pulled out of the basket by using your fingers or a stick. Pull the handle towards the center. (Refer to Fig. 5)

[Elements for replacement] Part No.: EJ501S-□
(Size: ø190 x ø440)
Part No.: EJ601S-□
(Size: ø190 x ø770)

Symbol for nominal filtration accuracy (Refer to "How to order" on page 782.)

* Example of symbol for part number In the case of 10 µm
EJ501S-010

Caution

1. Please use caution in the case of high temperature to prevent burns.

Element Installation

Caution

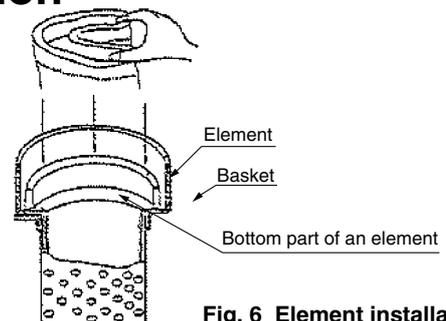


Fig. 6 Element installation

1. Pull the cloth handle of a new element towards the center and fold the edge of the element. Then place it inside of the basket. Thoroughly push the edge of the element to the bottom plate's flange surface of the basket. (Refer to Fig. 6)
2. Attach a handle to the notch. (The handle is provided with the basket of the one element type)
3. Grasp the handle and place the basket in the case.
4. Remove the handle from the basket.
5. Place the O-rings in the cover or case.
6. Attach the cover to the case.



Series FGF Specific Product Precautions 4

Be sure to read this before handling. Refer to front matters 42 and 43 for Safety Instructions and consult instruction manuals for details

Installation and Fastening the Cover and V-band (Applicable only with one element included)

Warning

1. Install the V-band in the edge of the cover and case correctly. (Refer to Fig. 7, 8.)
2. Gently strike the circumference around the V-band with a plastic hammer, etc. to fit the connection.

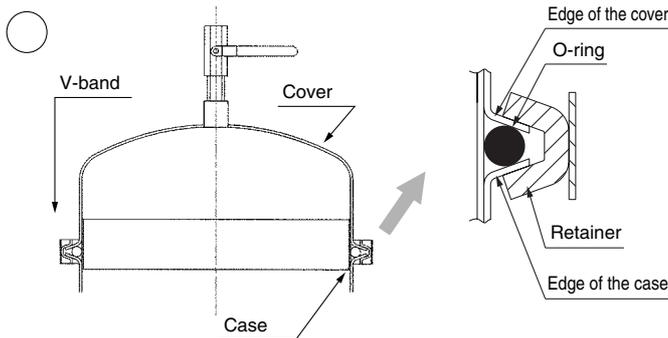


Fig. 7 How to install the V-band correctly.

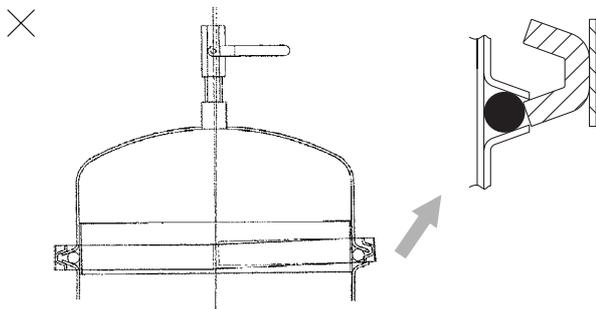
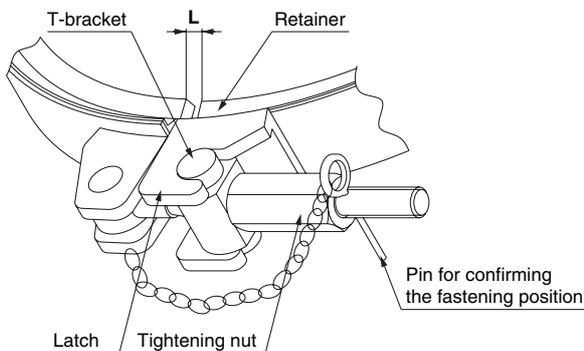


Fig. 8 Example of installing the V-band incorrectly. (Fitting slanted)

Warning

1. Install the T-bracket correctly in the latch. (Refer to Fig. 9.)



L = Tighten it until it becomes 3 to 7 mm.
(Reference tightening torque: 1.2 to 1.6 N·m)

Fig. 9 Tightening position of the V-band

Warning

2. After fastening the tightening nut to the prescribed position, insert the pin for confirming the tightening position. (Refer to Fig. 9.)

Replace the V-band and O-ring with genuine parts when difficult to install the V-band. (Refer to page 784, Component Parts and Seal List.)

Caution

Clean the contact surface of the V-band, cover and case prior to the attachment.

Warning

When there are deformation or galling in the threads for the V-band, replace it with a new one.

[V-band for replacement] Part No.: CY-19S

Warning

In the event of setting the cover to the case, adjust the pins (two locations) to the guide slit of the case inside the cover, and push them thoroughly and turning clockwise. (Refer to Fig. 10.)

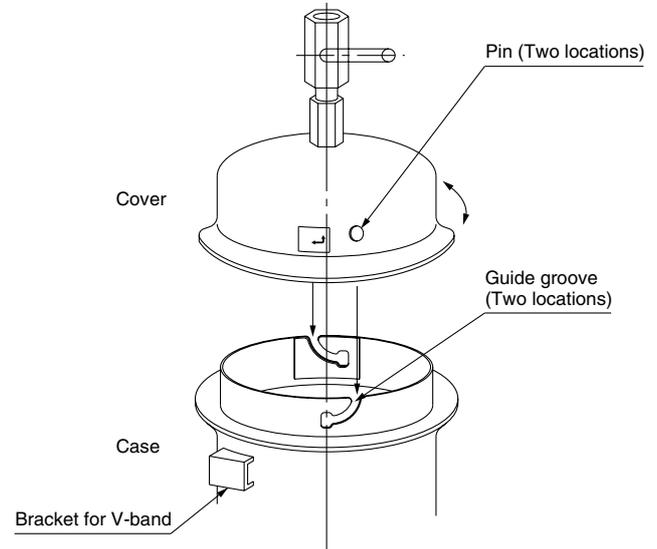


Fig. 10 How to set the cover

Restart and Air Release

Caution

1. When restarting this product after replacing the elements, follow the cautions on operation described in the back of page 793.
2. When restarting, be sure to open the air releasing valve on the top to release the air.