Inline Filter

FSL Series

● Port size: ø4 to ø10

RoHS

■ Compact, lightweight and space saving inline-type
Resin body achieves light weight and compactness

■ Diverse range of model variations
3 series available by flow rate (100, 200, 500), selectable connection port sizes ø4, ø6, ø8, ø10

■ Use either positive or negative pressure
Retains the ease of use of conventional inline vacuum filters while also being usable with positive pressure

■ Easy Maintenance
Maintenance is easy as main body removal and installation during element replacement can be done easily without tools

Model No. Notation

●Inline Filter

FSL **500** - **1010** - **B**

- FSL: Model No.
- 500: ❶ Series
- 1010: ❷ Vacuum Side Connection Port Size - Pad Side Connection Port Size
- B: ❸ Attached Option

Rechargeable Battery Compatible Specification (Catalog No. CC-1226AA)

●Design compatible with rechargeable battery manufacturing process

FSL□00 - ..... - P4*

*Please inquire for details.

❶ Series

Code	Content
100	FSL100 Series
200	FSL200 Series
500	FSL500 Series

❷ Vacuum Side Connection Port Size - Pad Side Connection Port Size

Code	Content
44	ø4 Push-in fitting - ø4 Push-in fitting
66	ø6 Push-in fitting - ø6 Push-in fitting
88	ø8 Push-in fitting - ø8 Push-in fitting
1010	ø10 Push-in fitting - ø10 Push-in fitting

❸ Attached Option

Code	Content
Blank	None
B	Bracket

◆ Series - Connection Port Size Combination Table

Connection Port Size / Model No.	44	66	88	1010
FSL100	●	●		
FSL200	●	●		
FSL500		●	●	●

indicates not available.

Specifications

Model No. / Item		FSL100		FSL200		FSL500		
Port size	mm	ø4	ø6	ø4	ø6	ø6	ø8	ø10
Operating Fluid		Air						
Operating Temperature	°C	0 to 50 (However, no freezing)						
Max. working pressure	MPa	0.8 (*1)						
Vacuum working pressure	kPa	-100						
Proof Pressure	MPa	1.2						
Nominal filtration rating	µm	10 (Collection efficiency 95%)						
Filtration Area	cm²	4.7		7.5		12.7		
Recommended processing flow rate (*2)	L/min (ANR)	10		15	20	25	50	60
Weight	g	8	8.5	21	22	35	34	39

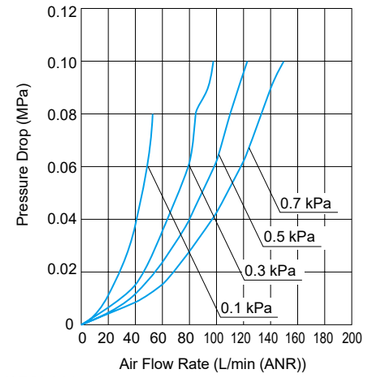
*1: Maximum operating pressure is the value at 20°C. When using in other temperature ranges,P. 1119 Refer to the "Relation of operating ambient temperature and max. working pressure" for .

*2: Initial flow rate at an initial pressure loss of 3 kPa or less during negative pressure. Use with positive pressure is P. 1119 Refer to the "flow characteristics".

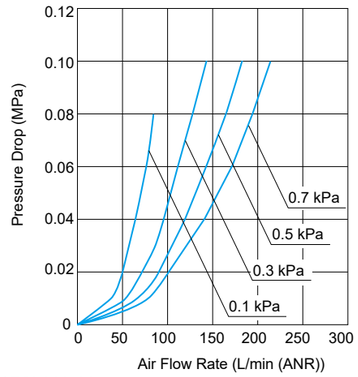
Flow Characteristics

*The flow characteristic graphs are reference values and do not guarantee the values.

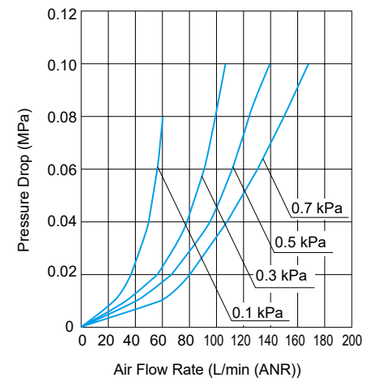
●FSL100-44



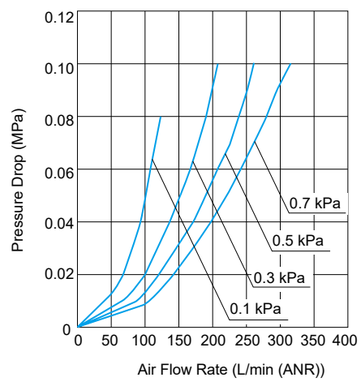
●FSL100-66



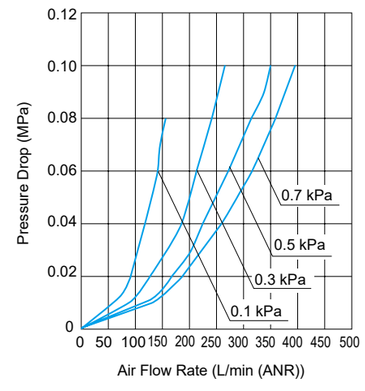
●FSL200-44



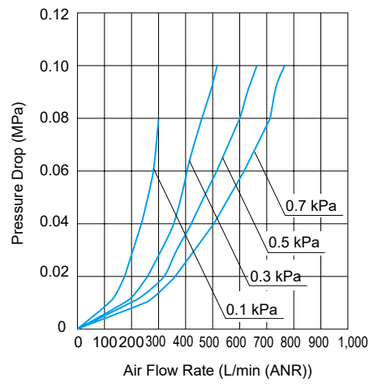
●FSL200-66



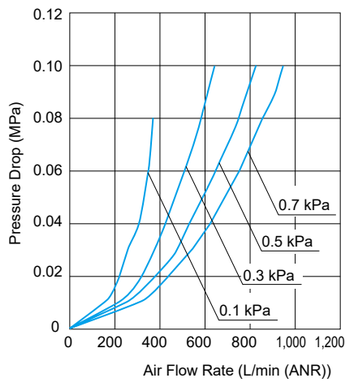
●FSL500-66



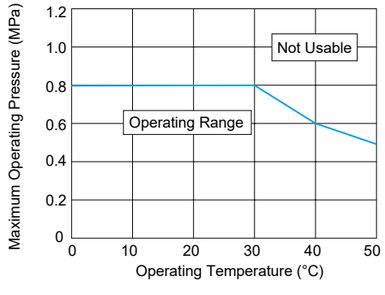
●FSL500-88



●FSL500-1010



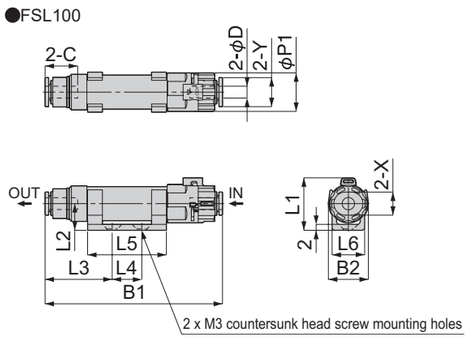
Operating Temperature and Maximum Operating Pressure Relationship Diagram



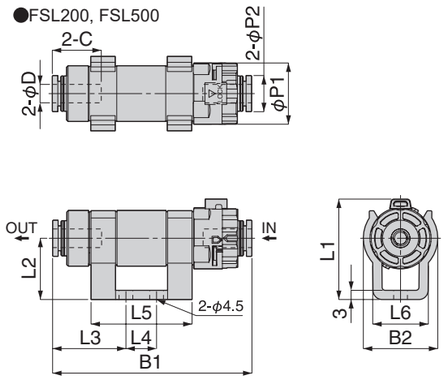
External Dimension Drawings

*The external dimension diagrams below are for the case with the attached option bracket.

●FSL100



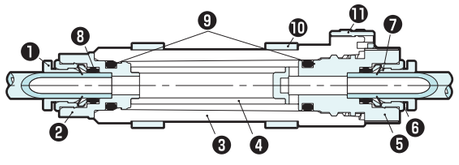
●FSL200, FSL500



Unit: mm

Model	Tube Outer Diameter øD	C	B1	B2	L1	L2	L3	L4	L5	L6	øP1	øP2	X	Y
FSL100-44-□	4	11.3	60.7	13.5	17.9	9	22.95	10	26.6	11	13	-	7.8	9.8
FSL100-66-□	6	11.8	64.8	13.5	17.9	9	25.25	10	26.6	11	13	-	9.8	11.8
FSL200-44-□	4	14.9	61.1	24.3	33	20	20.2	10	33	18.2	20	9.9	-	-
FSL200-66-□	6	16	65.3	24.3	33	20	23.95	10	33	18.2	20	11.8	-	-
FSL500-66-□	6	17	71.9	28.3	39.5	24	19.5	14	39.5	20.2	25	11.8	-	-
FSL500-88-□	8	17.9	71.1	28.3	39.5	24	20.75	14	39.5	20.2	25	13.8	-	-
FSL500-1010-□	10	19.2	77.3	28.3	39.5	24	26.65	14	39.5	20.2	25	16.8	-	-

Internal Structure Diagram/Materials



Part No.	Part Name	Material
1	Release Ring	Acetal Resin
2	Resin Body A	Polybutylene terephthalate resin
3	Cover	Special polycarbonate resin
4	Filter Element	Polyvinyl formal
5	Resin Body B	Polybutylene terephthalate resin
6	Guide Ring	Brass (Electroless nickel plating)
7	Locking Finger	Stainless Steel
8	Elastomer Sleeve	Nitrile rubber
9	O-ring	Nitrile rubber
10	Bracket	Acetal Resin
11	Slide Lock	Acetal Resin

●Maintenance Parts

• Filter Element (Part No. 4)

Filter Element Model No.	Applicable Model No.	Element Size
VSFU-1L-E	FSL100	ø6 x ø4 x L25
FSL200-E	FSL200	ø11 x ø7 x L22
FSL500-E	FSL500	ø15 x ø11 x L27

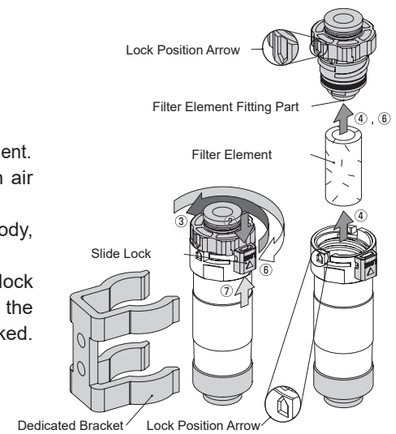
• Bracket(Part No. 11)

Bracket Model No.	Applicable Model No.
FSL100-B	FSL100
VSFU-2-B	FSL200
VSFU-3-B	FSL500

How to Use

1. Regarding Filter Element Replacement Method

①. Bring the internal pressure of the filter to atmospheric pressure.
②. Release the red slide lock. (Opposite direction to the LOCK arrow)
③. Rotate the fitting body counterclockwise 180°.
④. Remove the rotated fitting body from the filter cover and replace the filter element.
⑤. If necessary, remove dust, etc., adhering inside the filter cover with an air blow, etc.
⑥. Attach the element to the filter element fitting part, insert it into the main body, then rotate the fitting body clockwise until it stops.
⑦. After confirming that the lock position arrow of the fitting body and the lock position arrow of the filter cover are aligned in the tightened state, raise the slide lock (in the LOCK arrow direction) and confirm that it is securely locked.

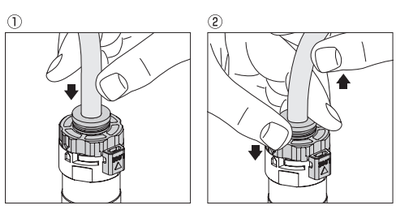


2. Regarding Connection Part Attaching/Detaching Method

1. Tube Attaching/Detaching Method

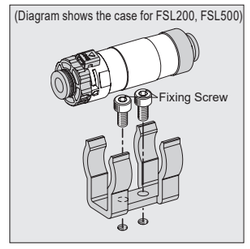
①. Tube Attachment
For the Inline Filter FSL(filter with push-in fitting), simply insert the tube to the tube end, and the locking fingers will fix it, and the elastomer sleeve will seal the outer circumference of the tube.

②. Tube Detachment
To detach the tube, push the release ring, which opens the locking fingers, allowing the tube to be pulled out. When detaching, always stop the air supply first.



2. Screw Tightening Method

①. Screw Tightening
Use the fixing holes on the dedicated bracket and tighten and fix with the screws below.
(Refer to the Dimensions diagram for the fixing hole pitch.)
Fixing Screw ►FSL100: M3 countersunk head screw, FSL200, FSL500: M4 screw



To Use This Product Safely

Be sure to read this before use.

For general pneumatic components precautions, Intro 15 for details.

Individual Precautions: Inline Filter FSL Series

Design / Selection

Warning

■Do not apply tensile, torsion, or bending loads to the body. Do not drop or apply excessive impact. The main body may be damaged or disassembled.

■Always lock the slide lock during use.

Caution

■Avoid installing this product where it is subject to direct sunlight.

■Note that when using in a circuit where vacuum and vacuum burst air are alternately applied, the dust removed by the element could be discharged by the burst air.

■Check the arrow indicating the air flow on the body before connecting the pipes. Reverse connection will prevent the filter function from being satisfactory.

■After removing the dust and replacing the element, securely fix the case and confirm that there are no leaks.

■When disassembling or assembling for maintenance, make sure that the O-ring is not damaged. Using a damaged O-ring may cause problems such as leakage.

■When rotating the fitting body for disassembly or assembly, make sure not to apply excessive force with the tools, etc. The main body may be damaged.

MEMO

Vacuum Components
Vacuum Related Components
VSRL
VSECV
VSRVV
VRA2000
VSLF
VSFB, VSFU, VSFJ
FSL
VFA
VSUS
VST
Ending