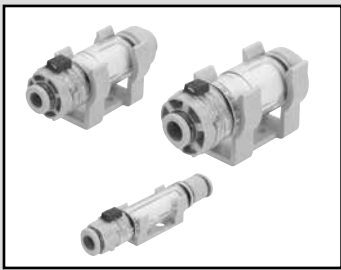


F.R.L.  
F.R.  
F (Filtr)  
R (Reg)  
L (Lub)  
Drain Separ  
Mech Press SW  
Res press exh valve  
SlowStart  
Anti-bac/Bac-remove Filtr  
Film Resist FR  
Oil-ProhrR  
Med Press FR  
No Cu/PTFE FRL  
Outdrs FRL  
Adapter Joiner Press Gauge  
CompFRL  
LgFRL  
PrecsR  
VacF/R  
Clean FR  
ElecPneR  
AirBoost  
Speed Ctrl  
Silncr  
CheckV/other  
Fit/Tube  
Nozzle  
Air Unit  
PrecsCompn  
Electro Press SW  
ContactSW  
AirSens  
PresSW Cool  
Air Flo Sens/Ctrl  
WaterRtSens  
TotAirSys (Total Air)  
TotAirSys (Gamma)  
Gas generator  
RefrDry  
DesicDry  
HiPolymDry  
MainFiltr  
Dischrg etc  
Ending



# Inline filter FSL Series

● Port size:  $\varnothing 4$  to  $\varnothing 10$

JIS symbol



## Features

- Compact, lightweight and space saving inline  
Uses a lightweight, compact resin body.
- Diverse range of model variations  
Select the flow rate from 100, 200 or 500 and the port size from  $\varnothing 4$ ,  $\varnothing 6$ ,  $\varnothing 8$  or  $\varnothing 10$ .
- Use either positive or negative pressure  
Positive pressure can also be used in the same way as a conventional vacuum inline filter.
- Easy maintenance  
Replacing the element is easy as the main body can be removed and attached without tools.

## Specifications

Model No.	FSL100		FSL200		FSL500			
Item								
Port size mm	$\varnothing 4$	$\varnothing 6$	$\varnothing 4$	$\varnothing 6$	$\varnothing 6$	$\varnothing 8$	$\varnothing 10$	
Working fluid	Air							
Operating ambient temperature °C	0 (32°F) to 50 (122°F) (no freezing)							
Max. working pressure MPa	0.8 (≈120 psi, 8 bar) (*1)							
Vacuum working pressure kPa	-100 (≈-15 psi, -1 bar)							
Proof pressure MPa	1.2 (≈170 psi, 12 bar)							
Nominal filtration rating $\mu\text{m}$	10 (Collection efficiency 95%)							
Filtration area $\text{cm}^2$	4.7		7.5		12.7			
Recommended process flow (*2) $\text{l/min(ANR)}$	10		15		20	25	50	60
Weight g	8	8.5	20.5	21.5	34.5	33.5	39	

\*1: The max. working pressure is the value at 20°C.

When using in other temperature ranges, refer to the "Relation of working temperature and max. working pressure" on page 408.

\*2: Initial flow rate at initial pressure loss 3 kPa or less under negative pressure. When using with positive pressure, refer to the "Flow characteristics" on page 407.

## How to order

● Inline filter

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

**A** Series

**B** Vacuum side port size -  
Pad side port size

**C** Included options

◆ Series port size combination table

Port size	44	66	88	1010
Model No.				
FSL100	●	●		
FSL200	●	●		
FSL500		●	●	●

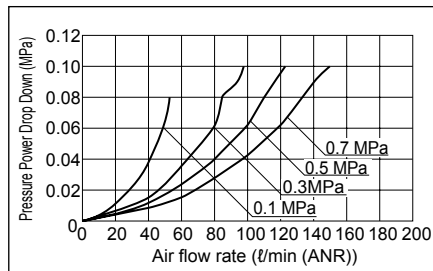
■ Not available

Code	Description
<b>A Series</b>	
<b>100</b>	FSL100 Series
<b>200</b>	FSL200 Series
<b>500</b>	FSL500 Series
<b>B Vacuum side port size - Pad side port size</b>	
<b>44</b>	Push-in fitting $\varnothing 4$ - Push-in fitting $\varnothing 4$
<b>66</b>	Push-in fitting $\varnothing 6$ - Push-in fitting $\varnothing 6$
<b>88</b>	Push-in fitting $\varnothing 8$ - Push-in fitting $\varnothing 8$
<b>1010</b>	Push-in fitting $\varnothing 10$ - Push-in fitting $\varnothing 10$
<b>C Included options</b>	
<b>Blank</b>	None
<b>B</b>	Bracket

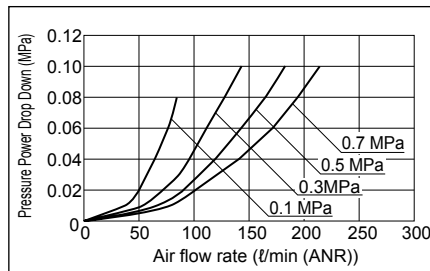
### Flow characteristics

\*The flow characteristics graph gives reference values and does not guarantee the values.

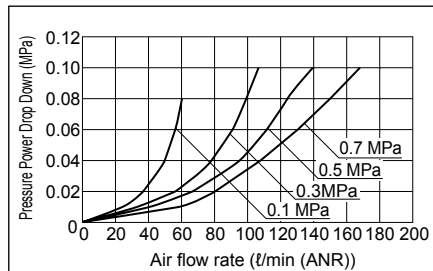
#### ● FSL100-44



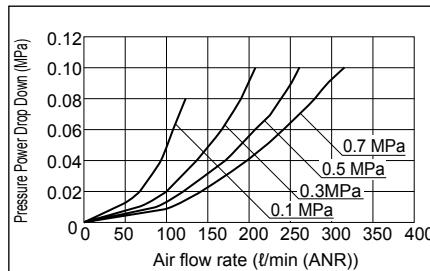
#### ● FSL100-66



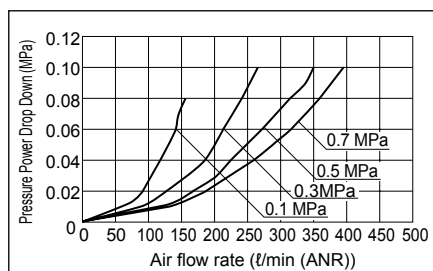
#### ● FSL200-44



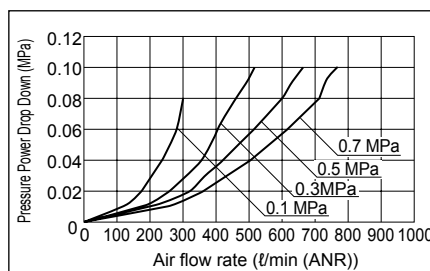
#### ● FSL200-66



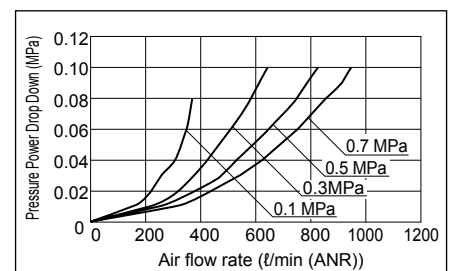
#### ● FSL500-66



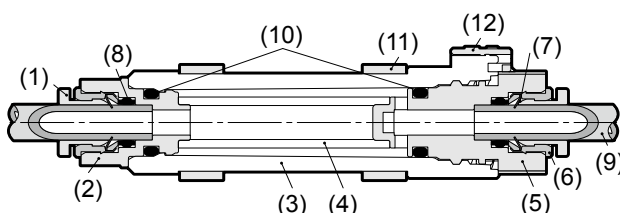
#### ● FSL500-88



#### ● FSL500-1010



### Internal structure and parts list



No.	Part name	Material
(1)	Release ring	Acetal resin
(2)	Resin body A	Polybutylene terephthalate resin
(3)	Cover	Polyester resin
(4)	Filter element	Polyvinyl formal resin
(5)	Resin body B	Polybutylene terephthalate
(6)	Guide ring	Copper alloy, electroless nickeling
(7)	Lock claw	Stainless steel
(8)	Elastic sleeve	Nitrile rubber
(9)	Tube	-
(10)	O-ring	Nitrile rubber
(11)	Bracket	Acetal resin
(12)	Slide lock	Acetal resin

#### ● Maintenance part

· Filter element (No. (4))

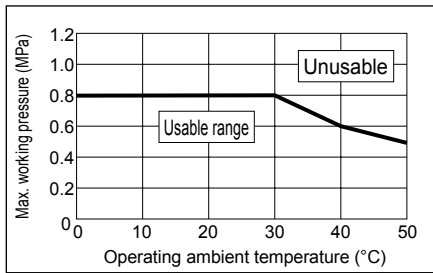
Filter element model No.	Compatible model No.	Element size
VSFU-1L-E	FSL100	ø6 × ø4 × L25
FSL200-E	FSL200	ø11 × ø7 × L22
FSL500-E	FSL500	ø15 × ø11 × L27

· Bracket (No. (11))

Bracket model No.	Compatible model No.
FSL100-B	FSL100
VSFU-2-B	FSL200
VSFU-3-B	FSL500

F.R.L.  
F.R.  
F (Filtr)  
R (Reg)  
L (Lub)  
Drain Separ  
Mech Press SW  
Res press exh valve  
SlowStart  
Anti-bac/Bac-remove Filtr  
Film Resist FR  
Oil-ProhR  
Med Press FR  
No Cu/ PTFE FRL  
Outdrs FRL  
Adapter Joiner Press Gauge  
CompFRL  
LgFRL  
PrecsR  
VacF/R  
Clean FR  
ElecPneuR  
AirBoost  
Speed Ctrl  
Silncr  
CheckV/ other  
Fit/Tube  
Nozzle  
Air Unit  
PresCompn  
Electro Press SW  
ContactSW  
AirSens  
PresSW Cool  
Air Flo Sens/Ctrl  
WaterRSens  
TotAirSys (Total Air)  
TotAirSys (Gamma)  
Gas generator  
RefrDry  
DesicDry  
HiPolymDry  
MainFiltr  
Dischrg etc  
Ending

## F.R.L. Relation of operating ambient temperature and max. working pressure

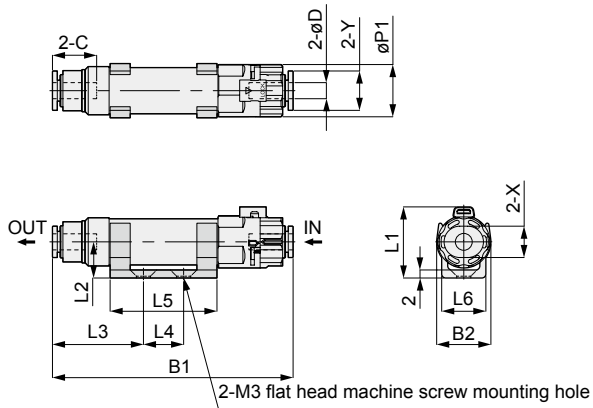


## Dimensions

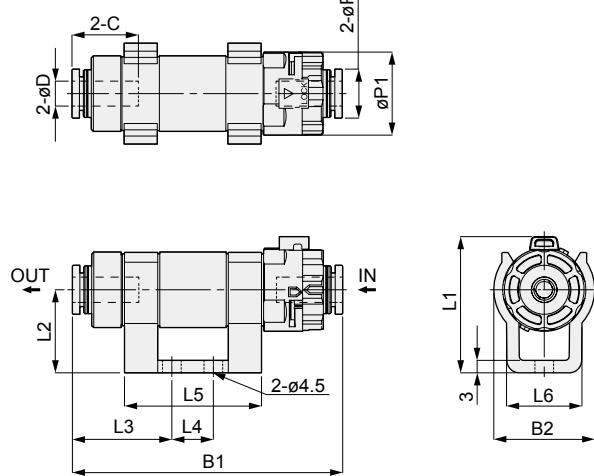


\* The following dimensions shows the state with the enclosed optional bracket mounted.

### ● FSL100



### ● FSL200, FSL500



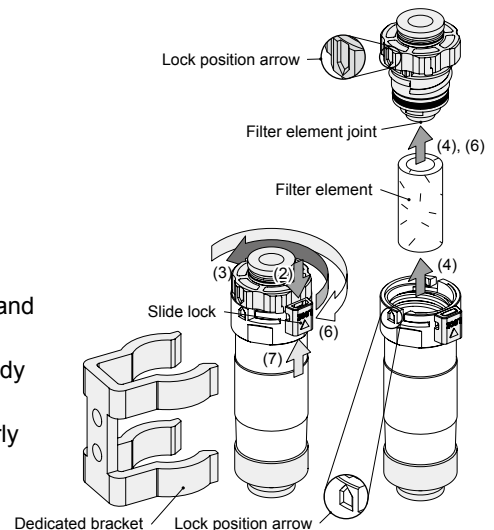
Unit: mm

Type	Tube O.D. øD	C	B1	B2	L1	L2	L3	L4	L5	L6	P1	P2	X	Y
FSL100-44-□	ø4	11.3	60.7	13.5	18	9	23	10	26.6	11	13	-	7.8	9.8
FSL100-66-□	ø6	11.8	64.8	13.5	18	9	25.3	10	26.6	11	13	-	9.8	11.8
FSL200-44-□	ø4	14.9	61.1	24.3	33	20	20.3	10	33	18.2	20	9.9	-	-
FSL200-66-□	ø6	16	65.5	24.3	33	20	24.2	10	33	18.2	20	11.8	-	-
FSL500-66-□	ø6	17	72	28.3	39.6	24	19.6	14	39.5	20.2	25	11.8	-	-
FSL500-88-□	ø8	18.1	71.2	28.3	39.6	24	20.9	14	39.5	20.2	25	13.8	-	-
FSL500-1010-□	ø10	19.2	77.4	28.3	39.6	24	26.8	14	39.5	20.2	25	16.8	-	-

## Usage methods

### 1. Replacing the filter element

- (1) Release the filter's inner pressure to the atmosphere.
- (2) Release the red slide lock. (In opposite direction from LOCK arrow)
- (3) Turn the fitting body 180° counterclockwise.
- (4) Remove the turned fitting body from the filter cover and replace the filter element.
- (5) If necessary, remove the dust accumulated in the filter cover using compressed air, etc.
- (6) Mount the element into the filter element fitting, insert into the main body and turn the fitting body clockwise until it stops.
- (7) In the tightened state, confirm that the lock position arrow on the fitting body and the lock position arrow on the filter cover are aligned and then lift the slide lock up (in the direction of the LOCK arrow). Confirm that it is properly locked.



## Usage methods

### 2. Removing and attaching the connection

#### 1. Removing and attaching the tube

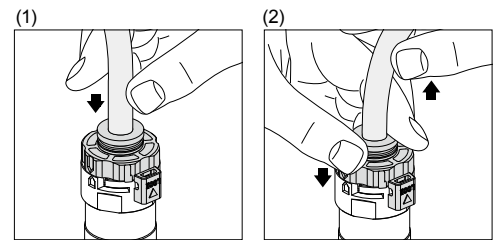
##### (1) Attaching the tube

With the inline filter FSL (filter with push-in fitting), the locking hook is fixed and the elastic sleeve seals the outer periphery of the tube when the tube is inserted completely to the end.

##### (2) Removing the tube

To remove the tube, press the release ring. The locking hook will open and the tube can be pulled off.

Always stop the air before removing the tube.



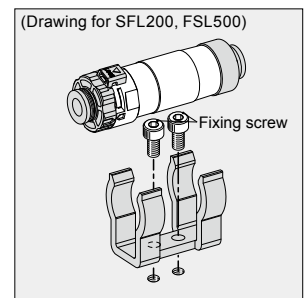
#### 2. Tightening the screw

##### (1) Tightening the screw

Use the fixing hole on the dedicated bracket and fix with the following screws.

(Refer to the dimensions for the fixing hole pitch.)

Fixing screw ▶ FSL100: M3 flat head machine screw,  
FSL200, FSL500: M4 screw



F.R.L.
F.R.
F (Filtr)
R (Reg)
L (Lub)
Drain Separ
Mech Press SW
Res press exh valve
SlowStart
Anti-bac/Bac-remove Filtr
Film Resist FR
Oil-ProhR
Med Press FR
No Cu/ PTFE FRL
Outdrs FRL
Adapter Joiner Press Gauge
CompFRL
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Speed Ctrl
Silncr
CheckV/ other
Fit/Tube
Nozzle
Air Unit
PrecsCompn
Electro Press SW
ContactSW
AirSens
PresSW Cool
Air Flo Sens/Ctrl
WaterRISens
TotAirSys (Total Air)
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Gas generator
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DesicDry
HiPolymDry
MainFiltr
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Ending