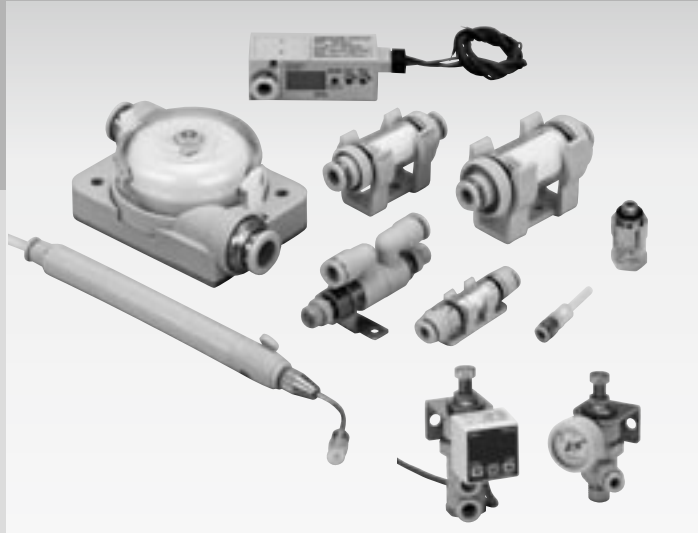


# Related vacuum products


## ■ Vacuum component



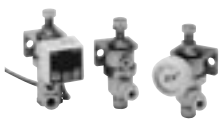
### CONTENTS

Series variation	420
● Position locking valve (VSECV)	422
● Compact vacuum regulator (VSRVV)	426
● Vacuum break unit (VSLF)	436
● Vacuum filter large volume union type (VSFB)	440
● Compact vacuum filter union type (VSFU)	440
● Compact vacuum filter socket type (VSFJ)	440
● Vacuum switch (VSUS)	448
● Air tweezers (VST)	454


### (Position locking valve)

Series	Model no.	Port size		Remarks	Page
		Vacuum generator side	Workpiece side		
<b>VSECV Series</b> <ul style="list-style-type: none"> <li>Separate circuit workpiece maintains vacuum even if workpiece deviates.</li> <li>This is applicable for vacuum pads.</li> </ul> 	VSECV-M3	M3			422
	VSECV-M4	M4			
	VSECV-M5	M5			
	VSECV-M6	M6			
	VSECV-6A	R (c) 1/8			

### (Compact vacuum regulator)

Series	Model no.	Port size		Remarks	Page
		ø6	ø8		
<b>VSRVV Series</b> <ul style="list-style-type: none"> <li>Terminal pressure can be controlled in addition to main pressure.</li> <li>Select either a vacuum pressure switch with a digital indicator or a vacuum pressure gauge.</li> </ul> 	VSRVV-*A*	○	○	Elbow (Output: male thread)	426
	VSRVV-*B*	○	○	Elbow (Supply: male thread)	
	VSRVV-*U*	○	○	Union type	

### (Vacuum break unit)




Series	Model no.	Port size		Remarks	Page
		Vacuum generator side	Workpiece side		
<b>VSLF Series</b> <ul style="list-style-type: none"> <li>Control vacuum break air while maintaining vacuum characteristics of vacuum ejector.</li> <li>Reduction of vacuum break time realized by vacuum break circuit relief function.</li> </ul> 	VSLF-44	ø4	ø4		436
	VSLF-66	ø6	ø6		
	VSLF-46A	ø4	R1/8		
	VSLF-66A	ø6	R1/8		

# Related vacuum products


Series variation

## (Vacuum filter)


●: Standard, ○: Option

Series	Model no.	Port size						Remarks	Page
		M5	ø4	ø6	ø8	ø10	ø12		
<b>VSFB Series</b> Large volume union type • Dust and water drops are eliminated with the cyclone effect and element. • The entire dust case is removed with a single touch, preventing dust from scattering. 	VSFB-66			●				Filtration area: 20cm <sup>2</sup>	440
	VSFB-88				●			Filtration area: 20cm <sup>2</sup>	
	VSFB-1010					●		Filtration area: 20cm <sup>2</sup>	
	VSFB-1212						●	Filtration area: 20cm <sup>2</sup>	
<b>VSFU Series</b> Compact union type • Tools are not required to replace or clean the element. • In-line types are easily installed in piping. 	VSFU-1S	○	○	○				Filtration area: 2.8cm <sup>2</sup>	
	VSFU-1L	○	○	○				Filtration area: 4.7cm <sup>2</sup>	
	VSFU-2	○	○	○				Filtration area: 7.5cm <sup>2</sup>	
	VSFU-3			○	○	○		Filtration area: 12.5cm <sup>2</sup>	
<b>VSFJ Series</b> Compact socket type • This is appropriate for discrete ejector, not integrating vacuum filter. 	VSFJ-44		●					Filtration area: 0.8cm <sup>2</sup>	
	VSFJ-66			●				Filtration area: 1.1cm <sup>2</sup>	

## (Vacuum switch)

Series	Model no.	Port size						Remarks	Page
		M5	ø4	ø6	ø8	direct			
<b>VSUS Series</b> • 2 point output and analog output are available. • Push-in joint, M5 female thread, or direct installation piping connection is available. 	VSUS-NW	○	○	○	○	○	NPN: 2 point output	448	
	VSUS-NA	○	○	○	○	○	NPN: Analog output		
	VSUS-PW	○	○	○	○	○	PNP: 2 point output		
	VSUS-PA	○	○	○	○	○	PNP: Analog output		

## (Air tweezers)

Series	Model no.	Pad diameter				Rubber Material	Holder shape	Page
		ø2	ø4	ø6	ø8			
<b>VST Series</b> • Vacuum pad and ejector are integrated into a pen shape component. • Appropriate for assembly, etc., of small part • A package type is also available. 	VAT-A*N	○	○	○	○	Nitrile rubber	Type without valve	454
	VAT-A*S	○	○	○	○	Silicon rubber	Type without valve	
	VAT-B*N	○	○	○	○	Nitrile rubber	Valve integrated type	
	VAT-B*S	○	○	○	○	Silicon rubber	Valve integrated type	

Related vacuum products

VSECV

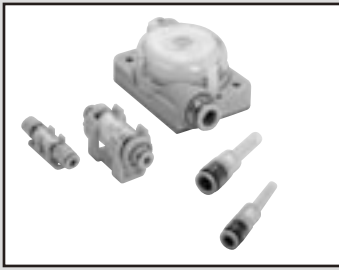
VSRVV

VSLF

VSFV-VSFB  
VSFJ

VSUS

VST



Vacuum filter for different vacuum piping  
Vacuum filter

# VSFB · VSFU · VSFJ Series

● Port size: M5, ø4, ø6, ø8, ø10, ø12



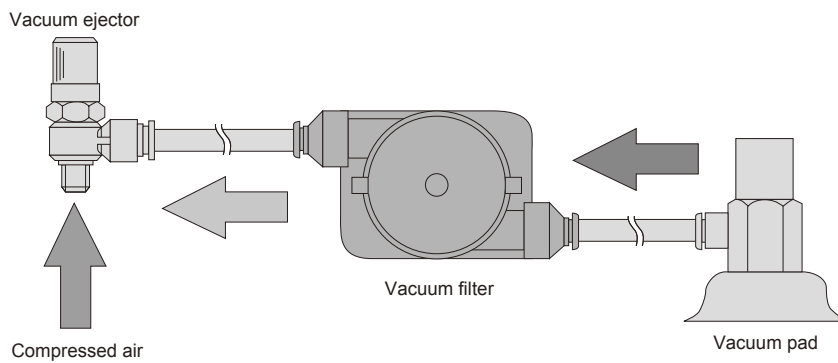
## Features

### Union type VSFB/VSFU

- Dust and water sucked in by the vacuum ejector are eliminated with the cyclone effect and element. (Large volume union type: VSFB)
- Large dust case reduces maintenance.
- The entire dust case is removed with a single touch, preventing dust from scattering. (Large volume union type: VSFB)
- The compact vacuum filter is ideal for applications requiring a high-cycle vacuum. (Compact union type: VSFU)

### Example of piping

- When piped between the vacuum ejector and vacuum pad, dust and dirt, etc., entering from the pad is removed and vacuum ejector problems prevented.



### Socket type VSFJ

- Body and nipple integrated. Achieving light weight with resins.
- A filter function has been incorporated in the socket.
- Ideal for the discrete vacuum ejector having no built-in filter, such as the VSH.

## Specifications

Descriptions	VSFB/VSFU/VSFJ
Working fluid	Air
Working pressure range kPa	-100 to 0
Filtration precision μm	10
Ambient temperature range °C	0 to 60 (no freezing)

## How to order

- Large volume union type

**VSFB - 1010**

Ⓐ Vacuum side port size - pad side port size

Symbol	Descriptions
<b>Ⓐ Vacuum side port size - pad side port size</b>	
<b>66</b>	ø6 push-in joint - ø6 push-in joint
<b>88</b>	ø8 push-in joint - ø8 push-in joint
<b>1010</b>	ø10 push-in joint - ø10 push-in joint
<b>1212</b>	ø12 push-in joint - ø12 push-in joint

- Model no.

· Filter element

**VSFB-E**

- Compact union type

**VSFU - 3 - 1010**

Ⓐ Filter size

Ⓑ Vacuum side port size - pad side port size

Symbol	Descriptions
<b>Ⓐ Filter size</b>	
<b>1S</b>	Filtration area 2.8cm <sup>2</sup> (element length: 15mm)
<b>1L</b>	Filtration area 4.7cm <sup>2</sup> (element length: 25mm)
<b>2</b>	Filtration area 7.5cm <sup>2</sup>
<b>3</b>	Filtration area 12.5cm <sup>2</sup>
<b>Ⓑ Vacuum side port size - pad side port size</b>	
<b>44</b>	ø4 push-in joint - ø4 push-in joint
<b>66</b>	ø6 push-in joint - ø6 push-in joint
<b>88</b>	ø8 push-in joint - ø8 push-in joint
<b>1010</b>	ø10 push-in joint - ø10 push-in joint
<b>M55</b>	M5 x 0.8 - M5 x 0.8

- Filter size - Port size combination table

Port size / Model no.	44	66	88	1010	M55
VSFU-1S	●	●			●
VSFU-1L	●	●			●
VSFU-2	●	●			
VSFU-3		●	●	●	

- Model no.

· Bracket

**VSFU - 3 - B**

Ⓐ Size

Symbol	Descriptions
<b>Ⓐ Size</b>	
<b>1</b>	Filter size 1S, 1L common
<b>2</b>	Filter size 2
<b>3</b>	Filter size 3

- Filter element

**VSFU - 3 - E**

Ⓐ Filter size

Symbol	Descriptions
<b>Ⓐ Filter size</b>	
<b>1S</b>	Filtration area 2.8cm <sup>2</sup> (element length: 15mm)
<b>1L</b>	Filtration area 4.7cm <sup>2</sup> (element length: 25mm)
<b>2</b>	Filtration area 7.5cm <sup>2</sup>
<b>3</b>	Filtration area 12.5cm <sup>2</sup>

- Socket type

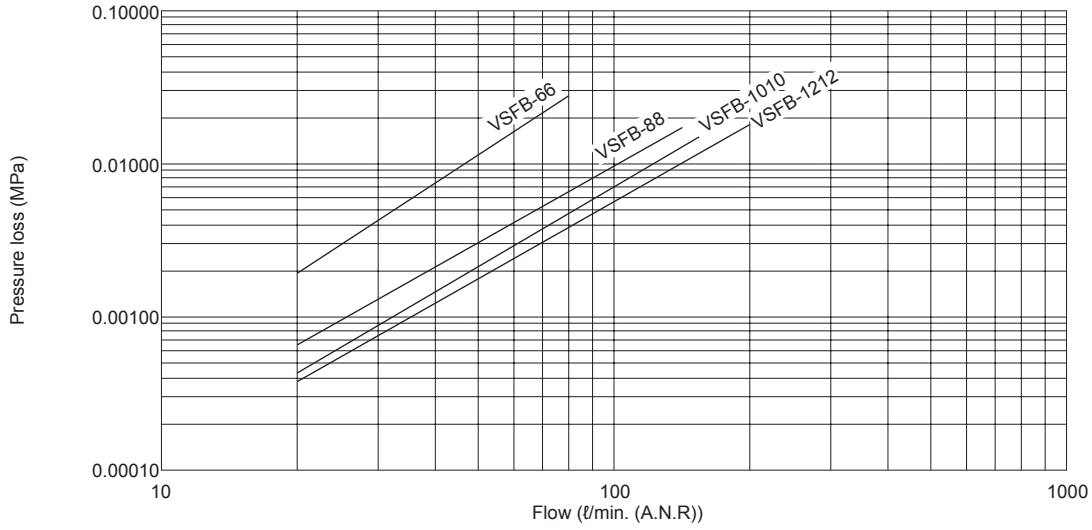
**VSFJ - 44**

Ⓐ Port size

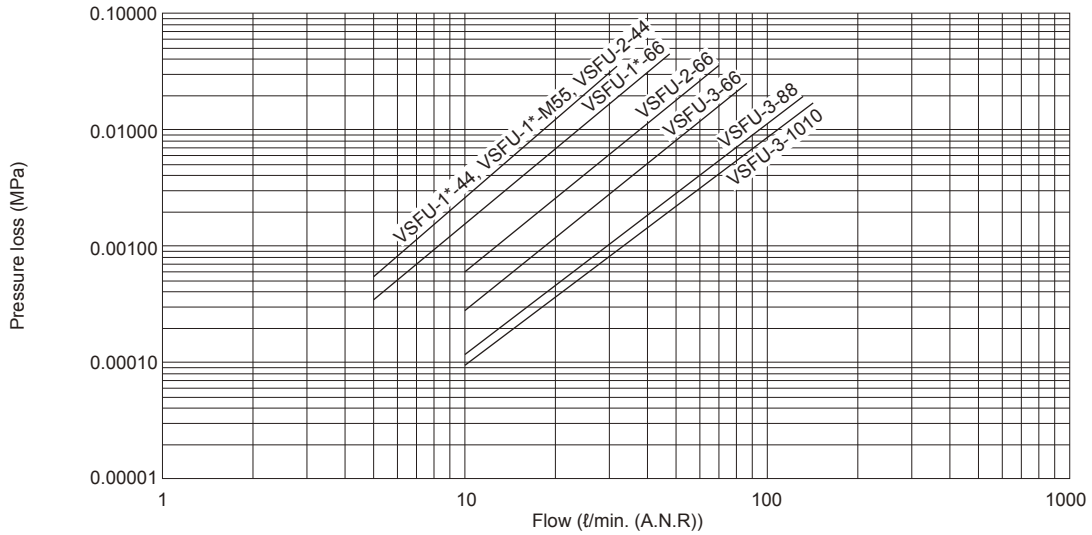
Symbol	Descriptions
<b>Ⓐ Port size</b>	
<b>44</b>	ø4 push-in joint
<b>66</b>	ø6 push-in joint

## Pressure loss

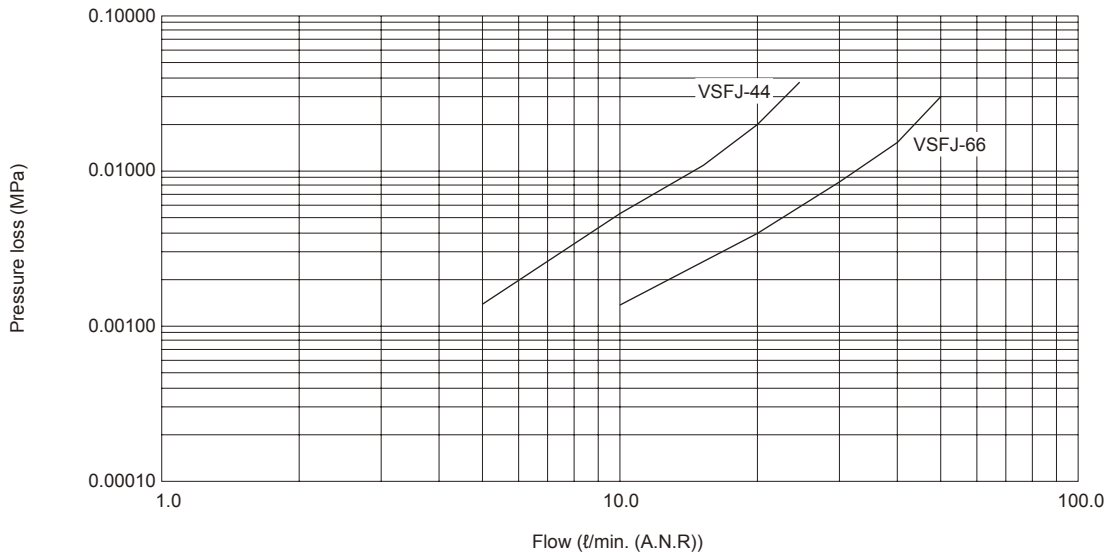
### ● Large volume union type VSFB



### ● Compact union type VSFU



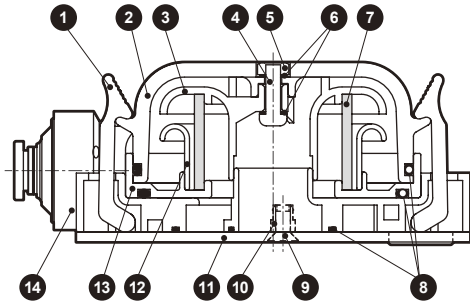
### ● Socket type VSFJ



\* Data indicate actually measured values and is not guaranteed.

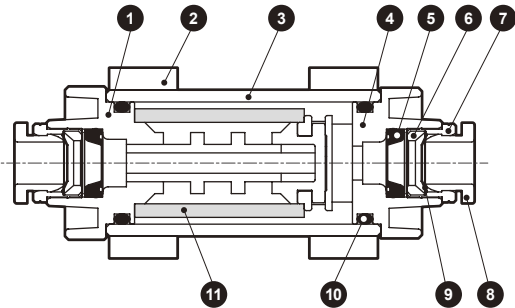
## Internal structure and parts list

### ● Large volume union type VSFB



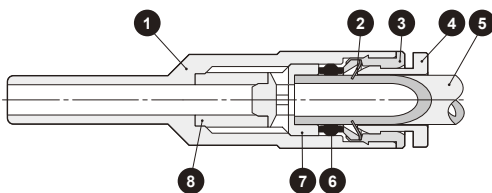
Model no.	Parts name	Material	Remarks
1	Fastener	Acetar resin	
2	Case	Polycarbonate	
3	Air guide	Acetar resin	
4	Pan head machine screw		
5	Hexagon nut		
6	Gasket	Stainless steel + nitrile rubber	
7	Filter element	PVF resin	
8	O ring	Nitrile rubber	
9	Flat head screw		
10	Socket	Brass	Electroless nickeling
11	Base plate	Brass	Electroless nickeling
12	Dust guide	Acetar resin	
13	Case guard	ABS resin	
14	Resin		

### ● Compact union type VSFU



Model no.	Parts name	Material	Remarks
1	Resin A	PBT resin	
2	Holder	Acetar resin	
3	Guard	Polyamide resin	
4	Resin B	PBT resin	
5	Rubber sleeve	Nitrile rubber	
6	Lock ring	Brass	Electroless nickeling
7	Guide ring	Brass	Electroless nickeling
8	Release ring	Acetar resin	
9	Lock jaw	Stainless steel	
10	O ring	Nitrile rubber	
11	Filter element	PVF resin	

### ● Socket type VSFJ



Model no.	Parts name	Material
1	Resin	Polypropylene
2	Lock jaw	Stainless steel
3	Guide ring	Brass, electroless nickeling
4	Release ring	Acetar resin
5	Tube	Urethane or nylon
6	Rubber sleeve	Nitrile rubber
7	Element holder	Acetar resin
8	Filter element	PVF

Related vacuum products

VSECV

VSRVV

VSLF

VSFB·VSFU  
VSFJ

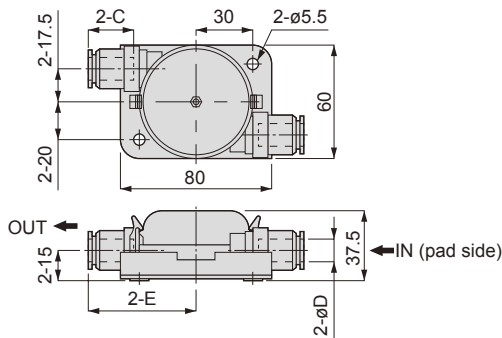
VSUS

VST

# VSFB · VSFU · VSFJ Series

## Dimensions

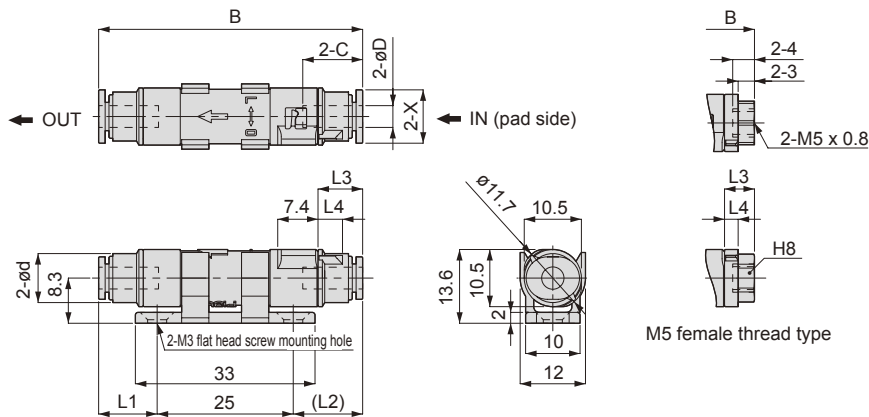
### ● Large volume union type VSFB



Model no.	Tube outer diameter øD	C	E	Filtration area (cm <sup>2</sup> )	Weight (g)
VSFB-66	6	17	52.6	20	206
VSFB-88	8	18.2	53.9		204.5
VSFB-1010	10	20.7	54.8		198
VSFB-1212	12	23.3	56.4		190.5

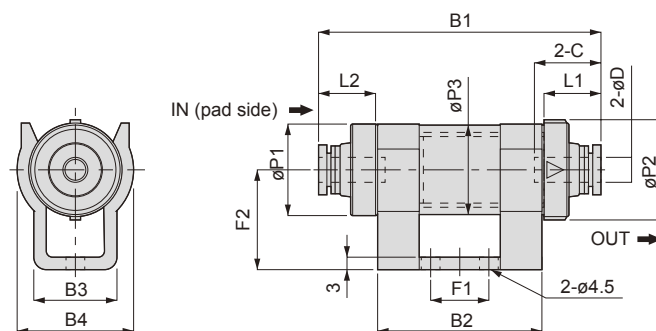
\* Replacement element: VSFB-E

### ● Compact union type · VSFU-1\*



Model no.	Tube outer diameter øD	B	C	L1	(L2)	L3	L4	ød	X	Element long	Filtration area (cm <sup>2</sup> )	Weight (g)
VSFU-1S-44	4	49.1	11.3	11.1	13.0	8.5	4	10.5	9.8	15	2.8	5.1
VSFU-1L-44		59.1		17.1	17.0					25	4.7	5.4
VSFU-1S-66	6	53.8	11.8	13.4	15.4	10.8	4.5	10.5	11.8	15	2.8	6
VSFU-1L-66		63.8		19.4	19.4					25	4.7	6.4
VSFU-1S-M55	-	40.6	-	5.6	10	5.5	2.5	10.5	-	15	2.8	7.6
VSFU-1L-M55		50.6		11.6	14					25	4.7	8

### · VSFU-<sub>3</sub><sup>2</sup>

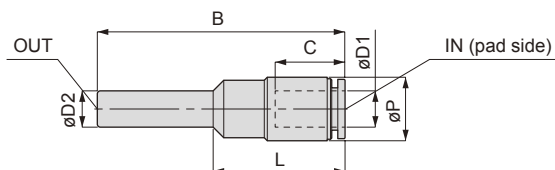


Model no.	Tube outer diameter øD	B1	B2	B3	B4	L1	L2	øP1	øP2	øP3	C	F1	F2	Filtration area (cm <sup>2</sup> )	Weight (g)
VSFU-2-44	4	57.8	33	18	24	11.9	11.9	18.2	20	17.5	14.9	10	20	7.5	18
VSFU-2-66	6	59.9				13	13				16				19
VSFU-3-66	6	67.7	39.5	20	28	13.5	13.8	22.1	24	21.5	16.5	14	24	12.5	27
VSFU-3-88	8	70.1				14.9	14.7				18				29
VSFU-3-1010	10	72.7				16.2	16.0				19.2				32



### Dimensions

#### ● Socket type VSFJ



Model no.	Tube outer diameter øD1	Tube outer diameter øD2	B	L	C	øP	Weight (g)	Filtration area (cm <sup>2</sup> )
VSFJ-44	4	4	38.9	21.8	11.3	8	1.5	0.8
VSFJ-66	6	6	41.2	22	11.8	10.5	2.5	1.1

#### Safety precautions

##### Union type VSFB/VSFU

#### ⚠ WARNING

- Large volume union type: Do not apply positive pressure for vacuum break on the large volume union type (VSFB) vacuum filter. The filter does not have an explosion proof structure, and pressure resistance is low. Damage to the unit could result in personal injury.
- Compact union type, union type: VSFU is a vacuum filter. Avoid using in applications where pressurized state continues. The filter does not have an explosion proof structure, and damage to the unit could result in personal injury.
- Regularly service and inspect the vacuum filter's filter element. Performance could drop or problems result if the element is clogged. When replacing the element, see the procedures of cleaning and replacing the vacuum filter element. Release the filter's inner pressure to atmospheric pressure before replacing the element.

#### ⚠ CAUTION

- Refer to Precautions on Intro 7 for details on the vacuum filter's working environment.
- Confirm the unit and IN and OUT ports when connecting piping. The filter's functions will not be satisfied if the connection is reversed.
- After cleaning out the dust and replacing the element, securely fix the case and check that the vacuum does not leak.

##### Socket type VSFJ

#### ⚠ WARNING

- Compact socket type: VSFJ is a vacuum filter. Avoid using in applications where pressurized state continues. The filter does not have an explosion proof structure, and damage to the unit could result in personal injury.
- Compact socket type: Regularly inspect the filter element. Performance could drop or problems result if the element is clogged. When replacing, the vacuum filter cannot be replaced using individual filter element. The entire filter must be replaced.
- The filter is polypropylene, so resin could deteriorate if exposed to direct sunlight or ultraviolet rays. When using in an environment where chemicals are present or could come in contact, see the CKD Chemical Resistance Materials and confirm the effect of the chemical onto the material before starting use.

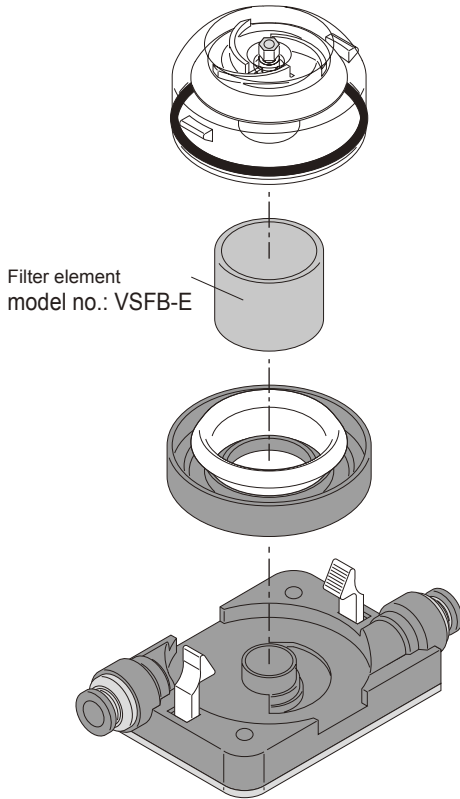
#### ⚠ CAUTION

- Compact socket type: Piping is connected so that the nipple comes to the vacuum generator port and the joint comes to the workpiece port. Reverse connection is possible, but the filter surface area will decrease. Clogging of the element cannot be confirmed when used in this state.

## How to use

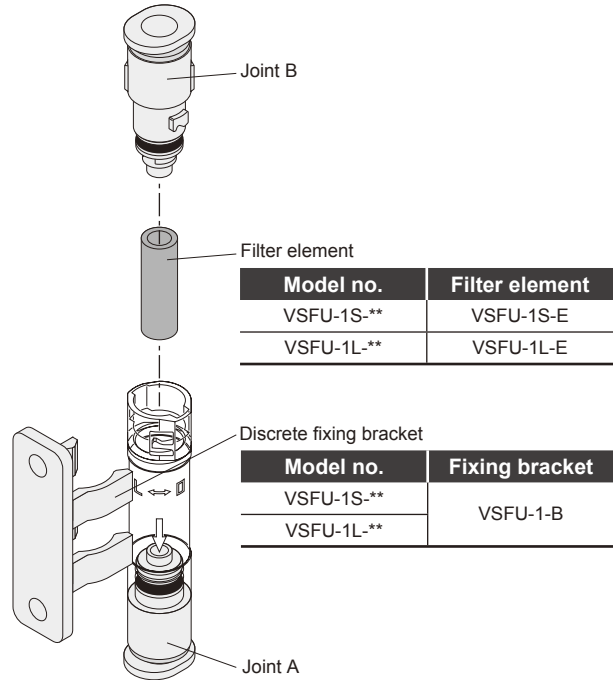
### Vacuum filter replacement element

● Large volume union type VSFB



Filter element  
model no.: VSFB-E

● Compact union type VSFU-1\*



Model no.	Filter element
VSFU-1S-**	VSFU-1S-E
VSFU-1L-**	VSFU-1L-E

Model no.	Fixing bracket
VSFU-1S-**	VSFU-1-B
VSFU-1L-**	

Related vacuum products

VSECV

VSRVV

VSLF

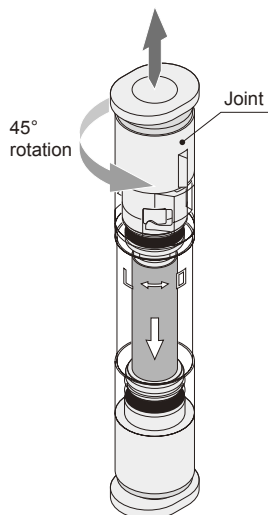
VSFB·VSFU  
VSFJ

VSUS

VST

### Replacing the compact union type element

① Turn the joint body 45° in the "O" direction. (After replacing, turn the joint body in the "L" direction until it locks.)



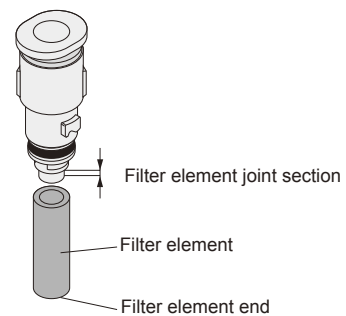
45° rotation

Joint

② Remove the rotated joint body from the filter cover, and replace the filter element. When replacing, insert half of the filter element into the filter element joint section, and insert into the joint body A while taking care not to crush the end of the filter element.

Note 1. There are two replacement filters 15mm and 25mm. Check before replacing.

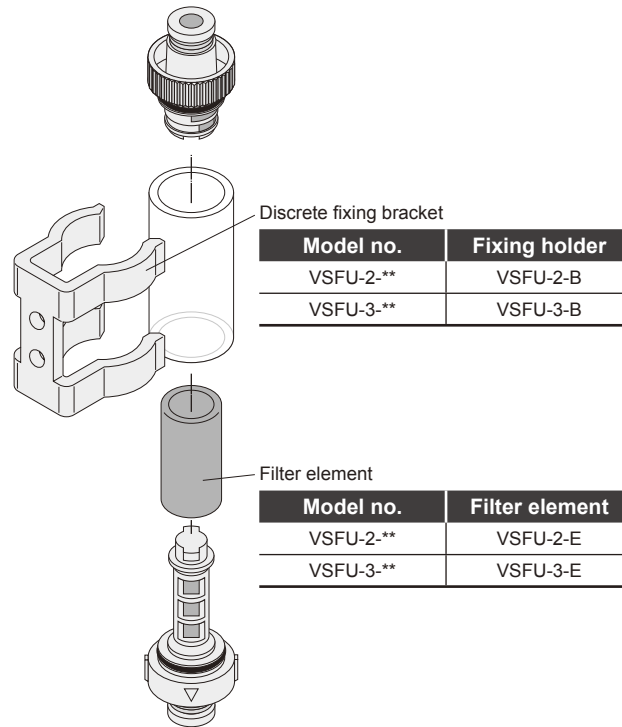
Note 2. After replacing, install parts following the above procedures in reverse, and securely lock the joint body.



## How to use

### Vacuum filter replacement element

● Union type VSFU- $\frac{2}{3}$



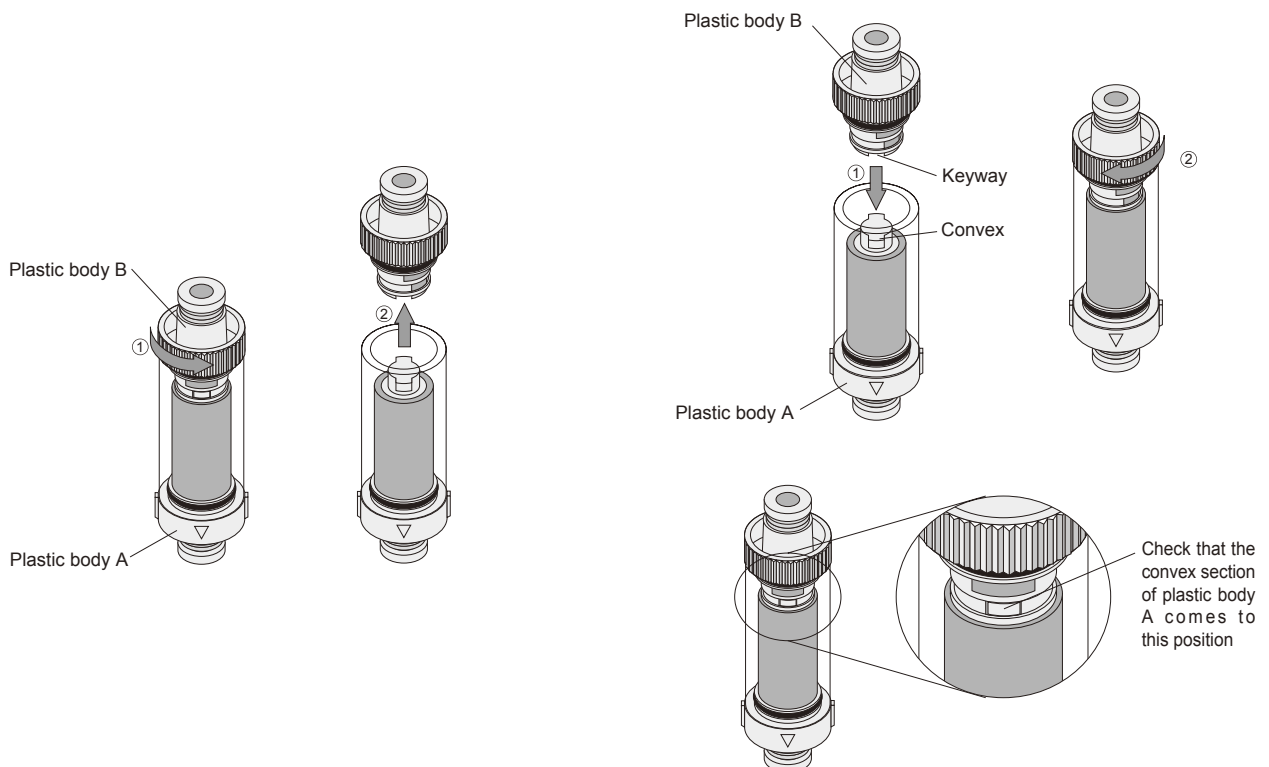
### Removing and locking the body when replacing the union type element

#### ■ Removing the body

- ① Rotate the plastic body B 45° counterclockwise\*.
  - ② Pull out plastic body B.
- \* Do not rotate plastic body B by more than 45°. The body could be damaged.

#### ■ Locking the body

- ① Align the convex section of plastic body A with the keyway on plastic body B, and push in until it contacts the end.
  - ② Rotate plastic body B 45° clockwise<sup>1</sup>, and lock it.
- \*1. Do not rotate plastic body B by more than 45°. The body could be damaged.
- \*2. When locking, check that the convex section of plastic body A comes to the center of plastic body B's hole as shown below.



Related vacuum products

VSECV

VSRVV

VSLF

VSFB·VSFU  
VSFU

VSUS

VST