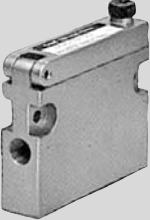




# Air Suction Filter

## Series ZF

Prevent from occurring vacuum equipment trouble due to dust from vacuum pad

Series	Features	Port size		Air flow (ℓ/min(ANR))	Filtration (μm)	Page
		Screw-in	Applicable tubing O.D. for one-touch fittings			
<b>ZFA</b> 	<ul style="list-style-type: none"> <li>● Long maintenance cycle type (Large filter surface)</li> <li>● Adaptable for a manifold application</li> <li>● Metal body</li> </ul>	1/8, 1/4	—	1/8: 50 1/4: 200	30	P.1105
<b>ZFB</b> Universal joint type 	<ul style="list-style-type: none"> <li>● Unrestricted 360° piping tube mounting</li> <li>● With one-touch fitting</li> <li>● Light and compact molded resin parts</li> </ul>	—	ø4, ø6 ø8, ø10  ø3/16", ø1/4" ø3/8", ø1/2"	ø4: 10 ø6: 30 ø8: 50 ø10: 75	30	P.1108
<b>ZFC</b> In-line type 	<ul style="list-style-type: none"> <li>● IN/OUT straight piping</li> <li>● With one-touch fitting</li> <li>● Light and compact molded resin parts</li> </ul>	—	ø2, ø3.2 ø4, ø6, ø8  ø1/8", ø5/13" ø5/32", ø1/4" ø5/16"	ø2 : 2 ø3.2: 7 ø4 : 10 ø6 : 30 ø8 : 50	10	P.1111

ZA
ZX
ZR
ZM
ZMA
ZQ
ZH
ZU
ZL
ZY□
<b>ZF□</b>
ZP□
SP
ZCUK
AMJ
AMV
AEP
HEP

Related Equipment

# Air Suction Filter

## Series ZFA

Prevents vacuum equipment trouble due to airborne contaminants.

The collected dust does not remain in the case.

Compact and lightweight

Max. 10 station manifold is possible.

Large filter element surface

Possible to replace element without tools

Mountable in any direction

### Model

Model	Port size	Recommended air flow (ℓ/min (ANR))	Mass (kg)	Internal capacity (cm <sup>3</sup> )
ZFA100	1/8	50	0.14	30
ZFA200	1/4	200	0.19	49

### Specifications

Fluid	Air, Nitrogen
Operating pressure range <sup>Note 1)</sup>	-100 to 0 kPa
Proof pressure <sup>Note 1)</sup>	0.5 MPa
Operating temperature range	5 to 60°C
Nominal filtration	30 μm
Element differential pressure resistance	0.15 MPa



Note 1) Do not use it in a line that is kept pressurized because it could cause the body to break.

Note 2) Please consult with SMC when INLET and OUTLET are to be prepared on the bottom of the case or if a vacuum switch is to be installed on the filter.

### Accessory/Option

Model	ZFA100	ZFA200	Note
Bracket assembly	BP-1H-1A	BP-1H-2A	With Bolt, Nut, Washer
Bracket for manifold (1 to 10 stations)	ZZFA1- <input type="text"/> Stations	ZZFA2- <input type="text"/> Stations	With Bracket, Connection bolt, Nut, Washer, each 2 pcs.

### Principal Parts Material

Description	Material
Cover	Zinc die-casted
Case	Aluminum die-casted
Gasket/Seal	NBR
Element	Polyester, ABS

### Element Part No.

Part no.	Applicable filter model	Element size (mm)
EJ001H-030N	ZFA100	43 x 42 x 12
EJ101H-030N	ZFA200	43 x 40 x 22

### How to Order

**ZFA 100 - 01**

Air suction filter

Type (Recommended flow rate)

100	50 ℓ/min (ANR)
200	200 ℓ/min (ANR)

Thread type

Nil	Rc
T	NPTF
F	G

Bracket

Nil	None
L	With bracket (1 pc. on the left)
R	With bracket (1 pc. on the right)

\* L or R shows the left or right of the filter IN when viewed from front.

Port size

01	1/8 <sup>B</sup> (ZFA100)
02	1/4 <sup>B</sup> (ZFA200)

### How to Order Manifold

Indicate both the symbols for air suction filter and bracket for manifold.

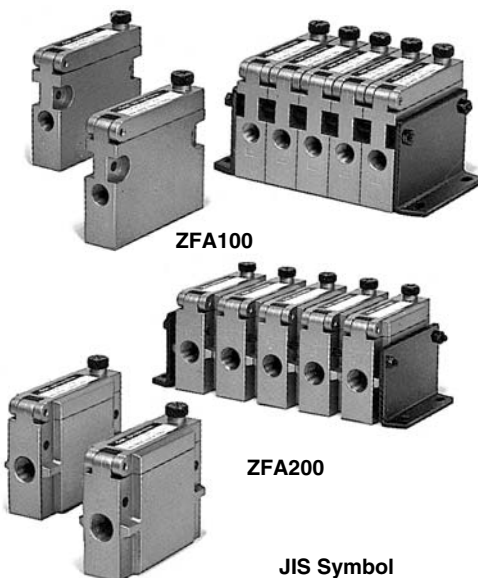
Example: In case of 6 stations of air suction filter ZFA (single)

ZFA100-01..... 6 pcs.

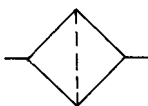
(Brackets for 6 stations)\*

ZZFA1-06 ..... 1 pc.

\* Both left and right brackets.



JIS Symbol



ZA

ZX

ZR

ZM

ZMA

ZQ

ZH

ZU

ZL

ZY□

ZF□

ZP□

SP

ZCUK

AMJ

AMV

AEP

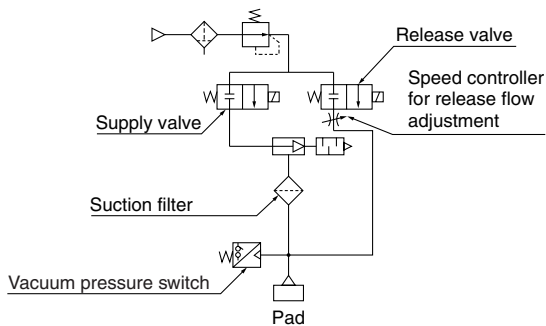
HEP

Related Equipment

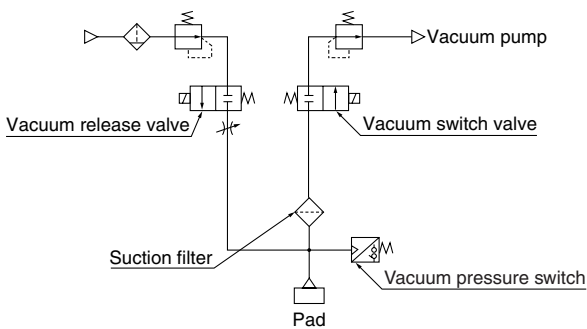
# Series ZFA

## Application Example

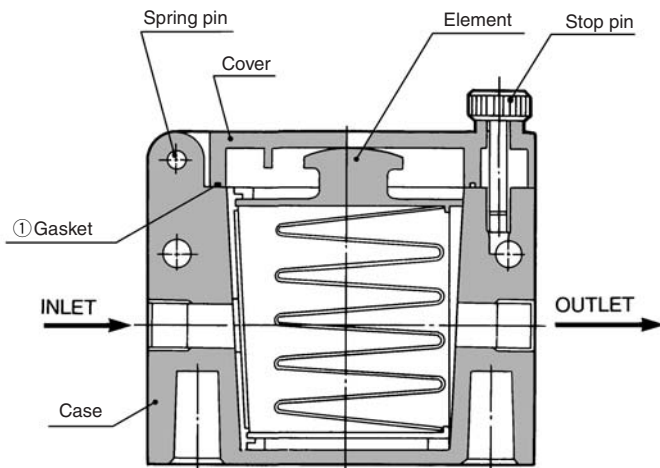
### Application to ejector system



### Application to vacuum pump system



## Construction

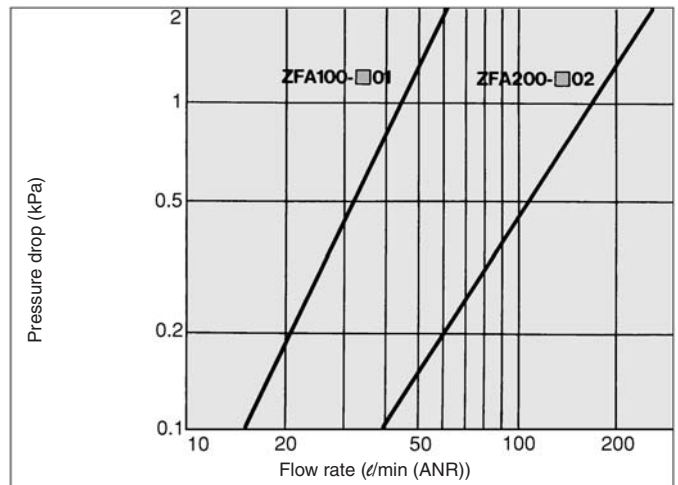


### Replacement Parts

No.	Description	Part no.	
		ZFA100	ZFA200
1	Gasket for cover case	AL-204H	AL-205H

## Flow Characteristics

Fluid — Air Pressure — Downstream side atmospheric release (pressurized)  
 Filtration — 30 μm



## ⚠ Precautions

Be sure to read before handling.  
 Refer to front matters 38 and 39 for Safety Instructions and pages 844 to 846 for Vacuum Equipment Precautions.

### Mounting

### ⚠ Warning

1. Be extremely careful with the piping connection screw seal to prevent leakage. Failure to observe this precaution could cause a picking malfunction.

### ⚠ Caution

1. Verify the "▷" marks for IN and OUT that are indicated on the body to ensure a proper connection. It is not possible to ensure the sealing performance of the filter element if connections are reversed.

### Maintenance

### ⚠ Warning

1. If the filter element becomes clogged, stop operation. After the internal pressure in the filter has reached atmospheric pressure, replace the filter element.

### ⚠ Caution

1. Replace the filter element when the pressure drops approximately 0.02 MPa.
2. During disassembly or reassembly, make sure the gaskets and the seals are not cut or damaged.
3. To install the filter element in the case, verify the IN and OUT flow direction that are indicated on the filter element. If the direction is reversed, the filter element will not be properly installed on the cover.
4. For maintenance purposes, provide ample space on the side of the cover so that the filter element can be removed.

### Selection

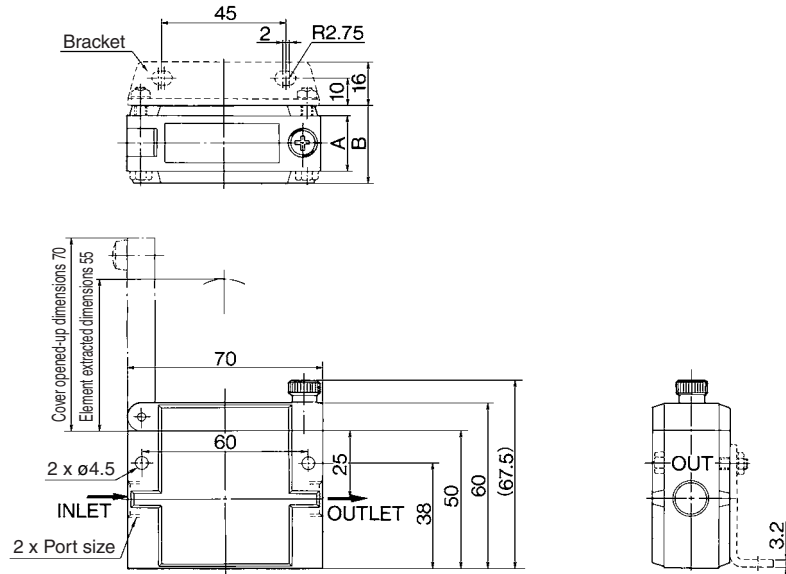
### ⚠ Warning

1. Do not use it in a line that is kept pressurized because it could cause the body to break.



Dimensions: ZFA <sup>100</sup>/<sub>200</sub> - □ □ □ □

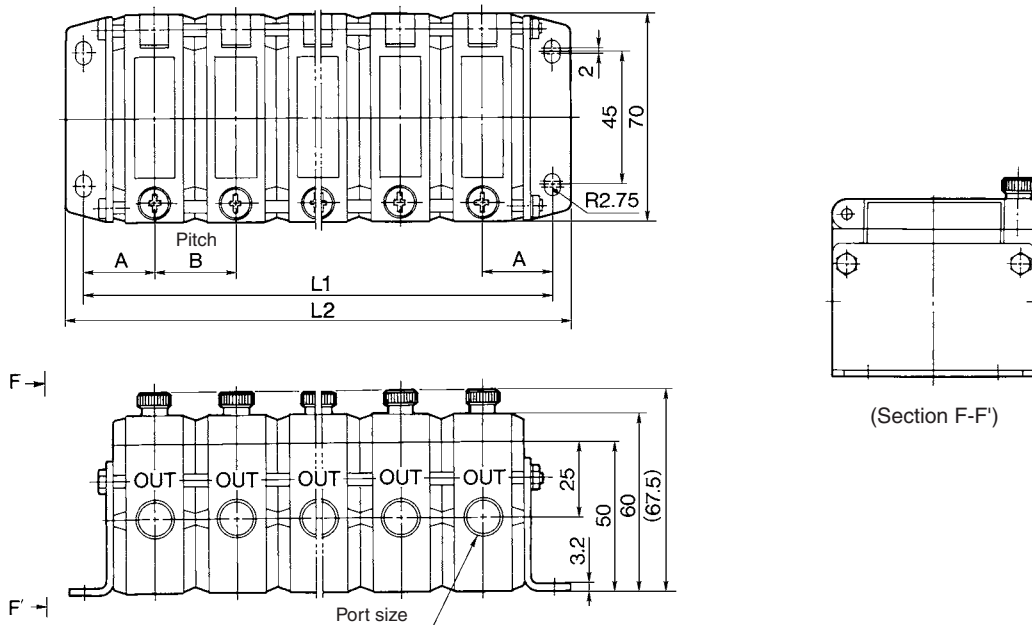
## Single unit



Note) The above diagram is for ZFA200.  
The bracket location shows L side.

Model	Symbol	Port size	A	B
ZFA100		1/8	—	18
ZFA200		1/4	20	28

## Manifold



(The above diagram is for ZFA200)

Model	Symbol	Port size	A	B
ZFA100		1/8	19	18
ZFA200		1/4	24	28

Model	Symbol	Number of manifold stations									
		1	2	3	4	5	6	7	8	9	10
ZFA100	L1	38	56	74	92	110	128	148	164	182	200
	L2	50	68	86	104	122	140	158	176	194	212
ZFA200	L1	48	76	104	132	160	188	216	244	272	300
	L2	60	88	116	144	172	200	228	256	284	312

- ZA
- ZX
- ZR
- ZM
- ZMA
- ZQ
- ZH
- ZU
- ZL
- ZY□
- ZF□
- ZP□
- SP
- ZCUK
- AMJ
- AMV
- AEP
- HEP
- Related Equipment

# Air Suction Filter With One-touch Fittings Series ZFB

**Prevents vacuum equipment trouble due to airborne contaminants.**

**Unrestricted 360° piping tube mounting.**

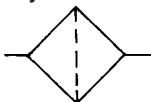
**Easily replaced filter element**

**Piping tube can be connected or disconnected with one touch.**

**Compact and lightweight**



JIS Symbol



## Model

Tubing size	Model	Port size (Applicable tubing O.D.)		Recommended air flow (l/min (ANR)) <sup>(1)</sup>	Mass (g)	Internal capacity (cm <sup>3</sup> )
		IN side, OUT side				
Metric size	ZFB100-04	ø4		10	22	7
	ZFB100-06	ø6		20	22	7
	ZFB200-06	ø6		30	30	12
	ZFB200-08	ø8		50	30	12
	ZFB300-08	ø8		75	39	16
Inch size <sup>(2)</sup>	ZFB101-05	ø 3/16"		20	22	7
	ZFB101-07	ø 1/4"		20	22	7
	ZFB201-07	ø 1/4"		30	30	12
	ZFB301-11	ø 3/8"		75	40	16
	ZFB401-13	ø 1/2"		100	62	19

- Note 1) Flow rate is less than 0.003 MPa of the initial pressure drop.  
 Note 2) Will be manufactured upon receipt of order.  
 Note 3) Avoid use under pressurization.

## Specifications

Fluid <sup>Note 1)</sup>	Air, Nitrogen
Operating pressure <sup>Note 2)</sup>	-100 to 0 kPa
Withstand pressure <sup>Note 2)</sup>	0.5 MPa
Operating and ambient temperature range	0 to 60°C (No freezing)
Nominal filtration	30 μm
Element differential pressure resistance	0.15 MPa
Applicable tubing material <sup>Note 3)</sup>	Nylon/Soft Nylon/Polyurethane

- Note 1) Do not use the product in an atmosphere and place where there is direct contact with chemicals. It may cause damage to the body. (Alcohol, acetone, etc. also cause damage, so be sure for the product not to be close to them.)  
 Note 2) Do not use it in a line that is kept pressurized because it could cause the body to break.  
 Note 3) Refer to page 1110 for applicable tubing model.

## How to Order

**ZFB 100 - 04**

Air suction filter  
with One-touch fittings

Basic type

Tubing size	Symbol	Flow (l/min (ANR))
Metric size	<b>100</b>	20
(Release button):	<b>200</b>	50
Blue	<b>300</b>	75
Inch size	<b>101</b>	20
(Release button):	<b>201</b>	30
Red	<b>301</b>	60
	<b>401</b>	100

IN/OUT applicable tubing O.D.

Size	Symbol	Tubing size	Applicable model
Metric size	<b>04</b>	ø4	ZFB100
	<b>06</b>	ø6	ZFB100
	<b>08</b>	ø8	ZFB200
	<b>10</b>	ø10	ZFB300
Inch size	<b>05</b>	ø 3/16"	ZFB101
	<b>07</b>	ø 1/4"	ZFB101
	<b>11</b>	ø 3/8"	ZFB201
	<b>13</b>	ø 1/2"	ZFB301
			ZFB401

## Principal Parts Material

Description	Material
Body	Polyester
Clear cover	Special transparent nylon*
Universal joint	Polyester
Plug	Brass (Electroless nickel plated)
Element	PVF
O-ring, Seal	NBR

\* Wiping with alcohol, etc., may cause damage.

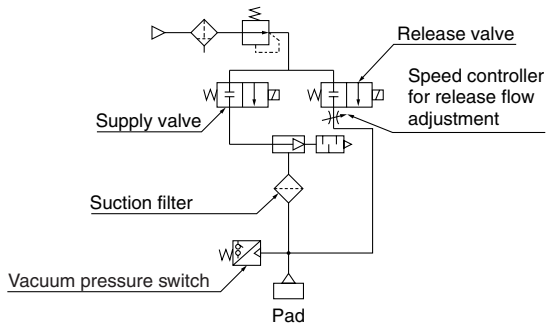
## Element Part No.

Part no.	Applicable filter model	Element size (mm)	Kit components	
			Spare element	O-ring for cover
I-34S-A	ZFB100	ø10 x ø6 x L33	10 pcs.	10 pcs.
	ZFB101			
I-35S-A	ZFB200	ø12 x ø8 x L42	10 pcs.	10 pcs.
	ZFB201			
I-36S-A	ZFB300	ø14 x ø10 x L45	10 pcs.	10 pcs.
	ZFB301			
I-39S-A	ZFB401	ø16 x ø14 x L60	10 pcs.	10 pcs.

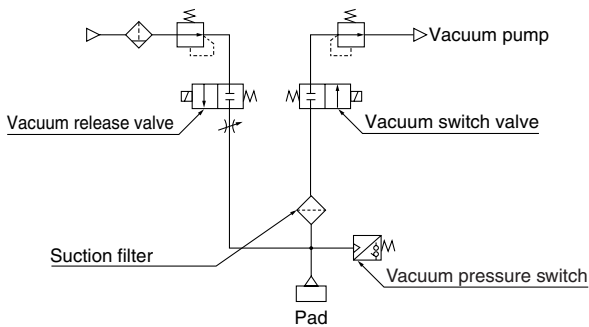
- Note) Spare elements and O-rings for the cover are sold in sets of 10 pieces each.

## Application Example

### Application to ejector system

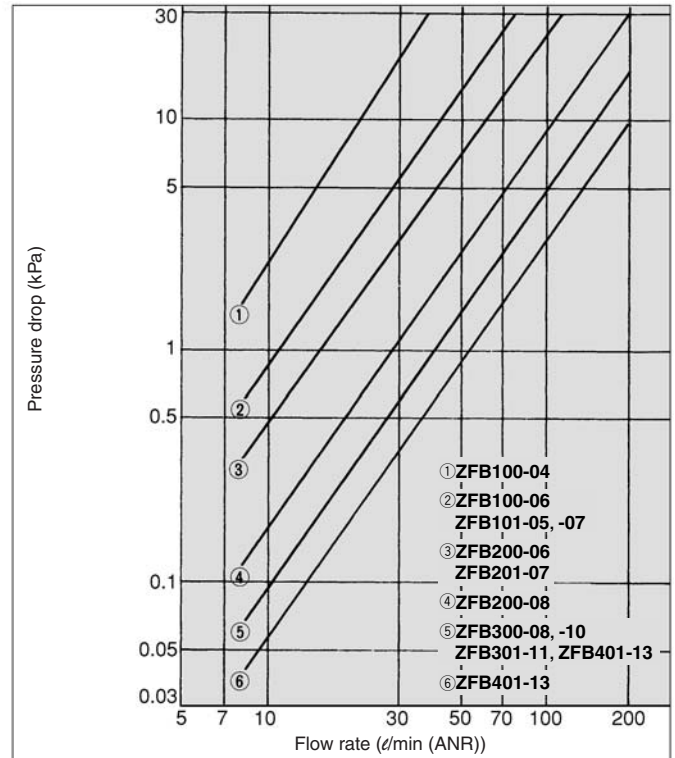


### Application to vacuum pump system

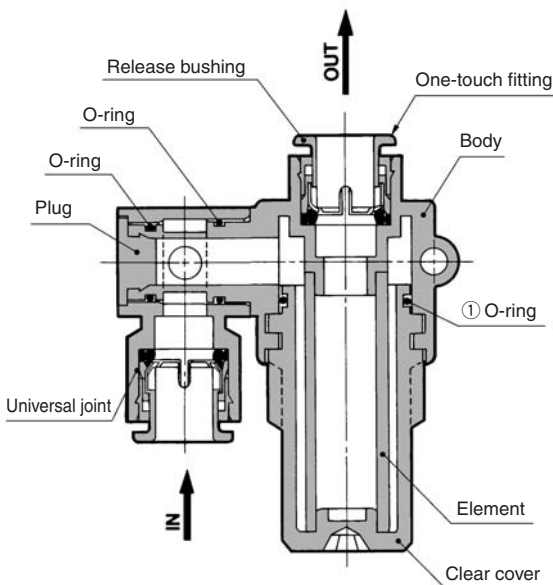


## Flow Characteristics

Fluid ——— Air                      Pressure ——— Downstream side atmospheric release (pressurized)  
 Temperature ——— Room temperature



## Construction



### Replacement Parts

No.	Description	Part no.			
		ZFB100, 101	ZFB200, 201	ZFB300, 301	ZFB401
1	O-ring for clear cover	S11.2	S12.5	S16	S18

\* O-ring is a set with spare element (I-□□S-A).

## ⚠ Precautions

**Be sure to read before handling.**  
 Refer to front matters 38 and 39 for Safety Instructions and pages 844 to 846 for Vacuum Equipment Precautions.

### Mounting

#### ⚠ Warning

- To connect the tubing to the IN and OUT one-touch fitting, observe the precautions that are provided for using one-touch fittings.

#### ⚠ Caution

- Verify the "▷" marks for IN and OUT that are indicated on the body to ensure a proper connection. It is not possible to ensure the sealing performance of the filter element if the connections are reversed.

### Maintenance

#### ⚠ Warning

- If the filter element becomes clogged, stop operation. After the internal pressure in the filter has reached atmospheric pressure, clean or replace the filter element.

#### ⚠ Caution

- Replace the filter element when the pressure drops approximately 0.02 MPa.
- During disassembly or reassembly, make sure that the O-ring is not cut or damaged.

### Selection

#### ⚠ Warning

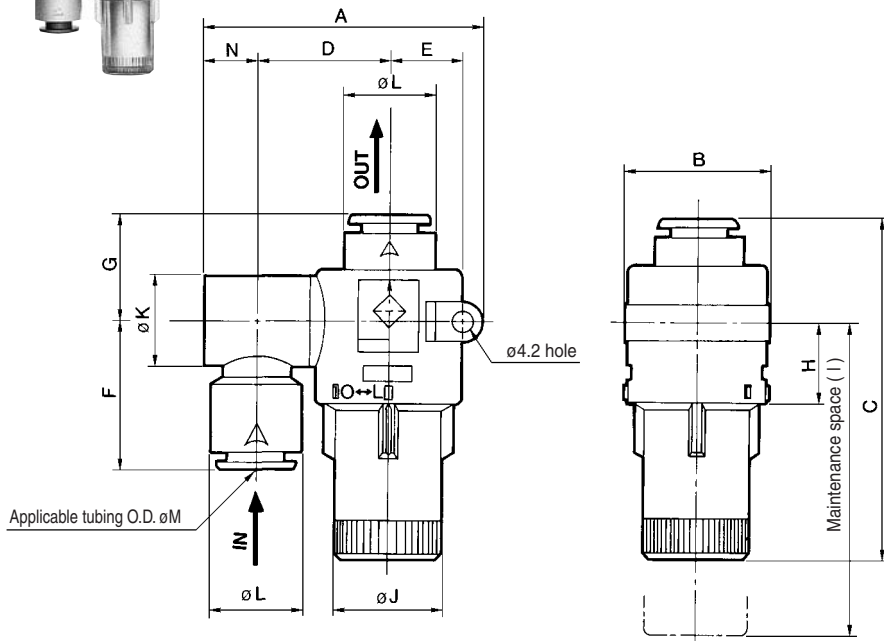
- Do not use it in a line that is kept pressurized because it could cause the body to break.

ZA  
 ZX  
 ZR  
 ZM  
 ZMA  
 ZQ  
 ZH  
 ZU  
 ZL  
 ZY□  
 ZF□  
 ZP□  
 SP  
 ZCUK  
 AMJ  
 AMV  
 AEP  
 HEP  
 Related Equipment

# Series ZFB



## Dimensions

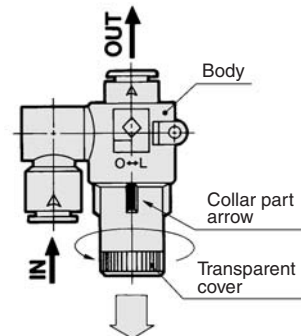


Size	Model	A	B	C	D	E	F	G	H	I	J	K	L	M	N
Metric size	ZFB100-04	48	26	53	22.5	12.5	24	17.5	15	50	15.5	14.4	12.8	4	8.5
	ZFB100-06													6	
	ZFB200-06	52	28	65	24.5	13.5	27	19.5	16	61	17.5	16.6	15.2	6	9.5
	ZFB200-08													8	
	ZFB300-08	57	30	69.5	27	14.5	29.5	21	17	65	21.5	18	18.5	8	11
ZFB300-10													10		
Inch size	ZFB101-05	48	26	53	22.5	12.5	24	17.5	15	50	15.5	14.4	12.8	3/16"	8.5
	ZFB101-07			54			24.2	17.7						1/4"	
	ZFB201-07	52	28	65	24.5	13.5	27.2	19.7	16	61	17.5	16.6	15.2	1/4"	9.5
	ZFB301-11	57	30	70	27	14.5	30.2	21.7	17	65	21.5	18	18.5	3/8"	11
	ZFB401-13	64.5	34	87.5	30.5	16.5	34	24	21.5	81	25.6	23	21.7	1/2"	13.5

## Element Replacement

1. Stop the operation and reduce the internal pressure of the filter to atmospheric pressure.
2. Turn the transparent cover in counterclockwise direction and position the arrowhead of the collar in the transparent cover from the protruding in the "L" (LOCK) side to the protruding portion in the "O" (OPEN) side.
3. Pull the transparent cover downward to take out the element. Eliminate any dust in the transparent cover by blowing air. (Make sure there is no damage of the O-ring.)
4. Insert a new element into the body.
5. Set the arrowhead on the collar of the transparent cover to the protruding portion on the "O" side, push the transparent cover into the body and set the arrowhead from the protruding portion on the "O" side to the protruding portion on the "L" side to make the LOCK complete.
6. Restart operation.

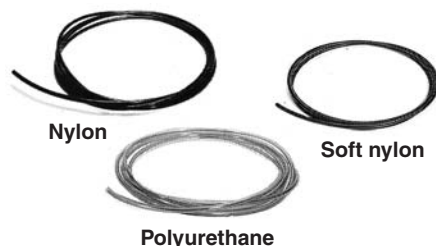
## Element Replacement Procedure



## Related Products/Tubing: Nylon, Soft Nylon, Polyurethane

Use the kind of tubing indicated at the right for suction filter with one-touch fitting (Series ZFB).

Refer to "Best Pneumatics No. 6" for details on valves.



## How to Order Tubing

**T 0604 B - 20**

		Tubing material	
Symbol	Material	Symbol	Material
Metric size	<b>T</b> Nylon	Inch size	<b>TI</b> Nylon
	<b>TS</b> Soft nylon		<b>TIS</b> Soft nylon
	<b>TU</b> Polyurethane		<b>TIU</b> Polyurethane

Length per roll (m)

Symbol	Length
<b>20</b>	20 m (Standard)

Color

Symbol	Color	Symbol	Color
<b>B</b>	Black	<b>B</b>	Black
<b>W</b>	White	<b>BU</b>	Blue
<b>R</b>	Red	<b>W</b>	White
<b>BU</b>	Blue		
<b>Y</b>	Yellow		
<b>G</b>	Green		
<b>C</b> (Note)	Clear		



Note) Polyurethane only. For polyurethane tubes, 22 colors other than the above ones are available.

		Tubing size			
Symbol	Size	Symbol	Size	O.D.	Bore size
Metric size	<b>0425</b> ø4 ø2.5	Inch size	<b>A05</b>	3/16"	4.76 3.48
	<b>0604</b> ø6 ø4		<b>A07</b>	1/4"	6.35 4.57
	<b>0805</b> ø8 ø5		<b>A11</b>	3/8"	9.53 6.99
	<b>0806</b> ø8 ø6		<b>A13</b>	1/2"	12.7 9.56
	<b>1065</b> ø10 ø6.5		<b>B05</b>	3/16"	4.76 3.18
	<b>1075</b> ø10 ø7.5	<b>B07</b>	1/4"	6.35 4.23	
		<b>B11</b>	3/8"	9.53 6.35	
		<b>B13</b>	1/2"	12.7 8.46	

# Air Suction Filter / In-line Type With One-touch Fittings Series ZFC

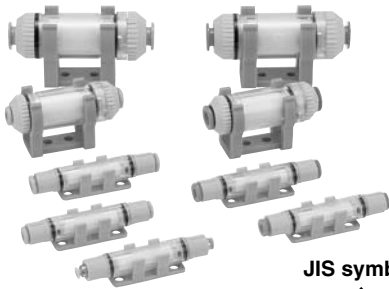
In-line type air suction filter is used to prevent vacuum equipment trouble from occurring due to dust in the air

IN/OUT straight piping

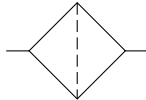
Easy installation and removal with one-touch fittings

Light and compact molded resin parts

Cartridge type allows element replacement



JIS symbol



**Made to Order**  
(Refer to page 1115 for details.)

## Model

Model	Port size (Applicable tubing O.D.)		Recommended flow rate <sup>Note1)</sup> ( $\ell$ /min (ANR))	Mass (g)	Internal capacity ( $\text{cm}^3$ )
	IN side	OUT side			
Metric size	ZFC050-02	$\phi 2$	2	4.9	1.7
	ZFC050-23	$\phi 3.2$	7	4.3	1.7
	ZFC050-04	$\phi 4$	10		
	ZFC100-04	$\phi 4$	10	11.5	4.5
	ZFC100-06	$\phi 6$	20		
	ZFC200-06	$\phi 6$	30	21.5	6
ZFC200-08	$\phi 8$	50			
Inch size	ZFC051-01	$\phi 1/8"$	7	4.3	1.7
	ZFC051-03	$\phi 5/32"$	10	11.5	4.5
	ZFC101-03	$\phi 5/32"$	10		
	ZFC101-07	$\phi 1/4"$	20	21.5	6
	ZFC201-07	$\phi 1/4"$	30		
	ZFC201-09	$\phi 5/16"$	50		

Note) Flow rate when the initial pressure drop is 3 kPa or less.

## Specifications

Fluid <sup>Note 1)</sup>	Air, Nitrogen
Operating pressure	-100 to 0 kPa
Vacuum release pressure <sup>Note 2)</sup>	Max. 0.5 MPa (Unable to hold when pressurized)
Operating and ambient temperature range	0 to 60°C (No freezing)
Nominal filtration rating	10 $\mu\text{m}$
Element differential pressure resistance	[ZFC10□, 20□] 0.15 MPa [ZFC05□] 0.10 MPa
Applicable tubing material <sup>Note 3)</sup>	Nylon, Soft nylon, Polyurethane, Soft polyurethane

Note 1) Do not use in atmospheres of chemicals, or where there is direct contact with it since the body may be damaged. (Alcohol, acetone, etc. may cause damage to the product.)

Note 2) Do not use in a line where a pressurized condition is maintained since the body may be damaged.

Note 3) Polyurethane is only applicable for the ZFC050-02.

## How to Order

**Metric size** (Release button: Light gray)

**Metric size** ZFC 05 0 - 02 B

**Inch size** ZFC 05 1 - 01 B

**Body type**

Symbol	Flow rate ( $\ell$ /min (ANR))	Filtration area ( $\text{mm}^2$ )
05	10	470
10	20	750
20	50	1255

**Option (With/Without bracket)**

Symbol	Option
Nil	None (Without bracket)
B	With bracket

**Made to Order**  
X17 Metal case  
Refer to page 1115 for details.

**Applicable tubing size**

**Metric size**

Symbol	Bore size	Applicable model		
		ZFC05	ZFC10	ZFC20
02	$\phi 2$	●	—	—
23	$\phi 3.2$	●	—	—
04	$\phi 4$	●	●	—
06	$\phi 6$	—	●	●
08	$\phi 8$	—	—	●

**Inch size**

Symbol	Bore size	Applicable model		
		ZFC05	ZFC10	ZFC20
01	$\phi 1/8"$	●	—	—
03	$\phi 5/32"$	●	●	—
07	$\phi 1/4"$	—	●	●
09	$\phi 5/16"$	—	—	●

## Replacement Element Part No.

Part no.	Applicable filter model	Element size (mm)	Set description	
			Spare element	O-ring for cover
I-68S-A	ZFC05	$\phi 6 \times \phi 4 \times \text{L}25$	10 pcs.	—
I-62S-A	ZFC10	$\phi 12 \times \phi 8 \times \text{L}20$	10 pcs.	10 pcs.
I-63S-A	ZFC20	$\phi 16 \times \phi 12 \times \text{L}25$	10 pcs.	10 pcs.

Note) Spare elements and O-rings for the cover (Applicable filter: ZFC10, 20) are sold in sets of 10 pieces each.

## Principal Parts Material

Description	Material
Case	Special clear nylon*
Cover	PBT
Element	PVF
O-ring, Seal	NBR

\*Do not wipe with alcohol, etc.  
It may cause damage to the parts.

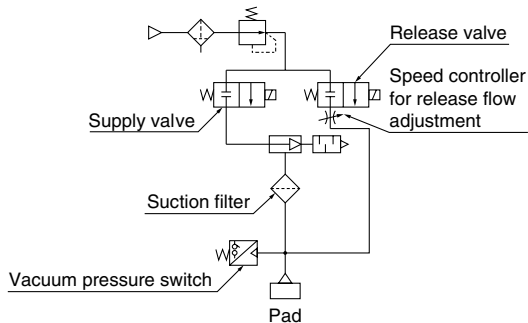


# Series ZFC

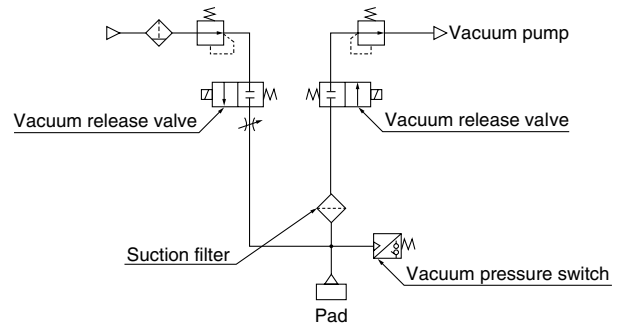
## Application Example

Fields: Semiconductor and electrical, automobile assembly, food and medical equipment, and various types of manufacturing and assembly equipment  
 Machines: Robotic hand/material handling, automotive assembling machines, automatic transfer equipment, pick and place, printing machinery  
 Applications: Vacuum adsorption transfer, vacuum adsorption retention, vacuum generated air flow

### Application to ejector system

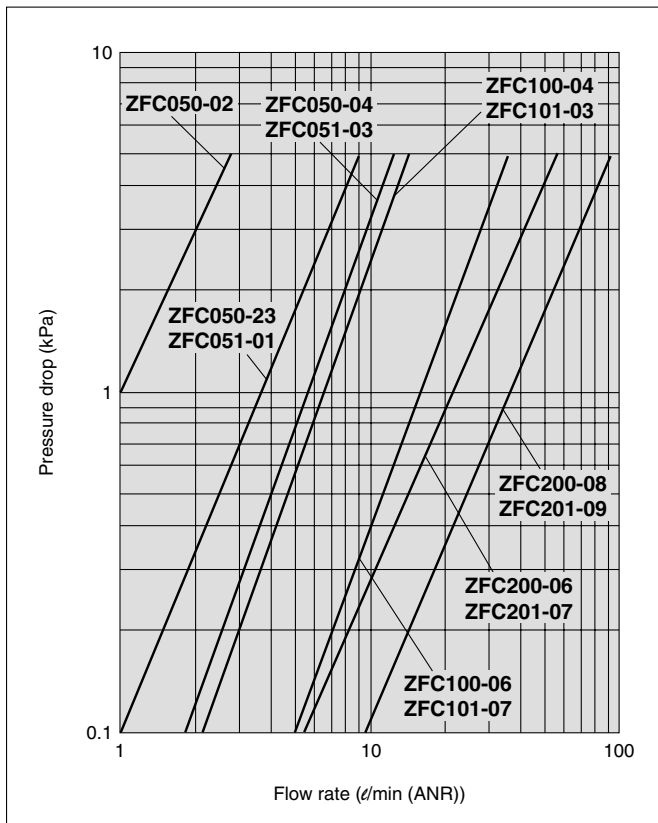


### Application to vacuum pump system



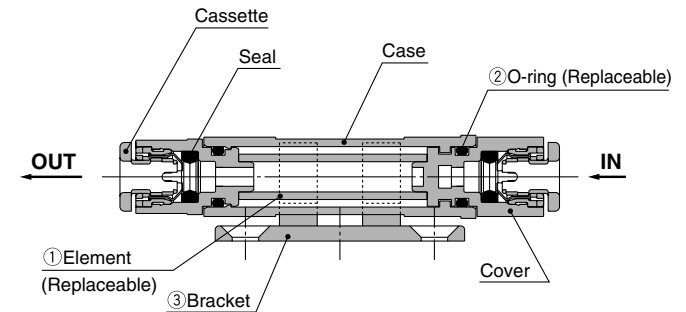
## Flow Characteristics (Piping tube: Metric size, Inch size)

Fluid: Air Measured pressure:  
 Temperature: Room temperature Downstream release to atmosphere (pressurized)

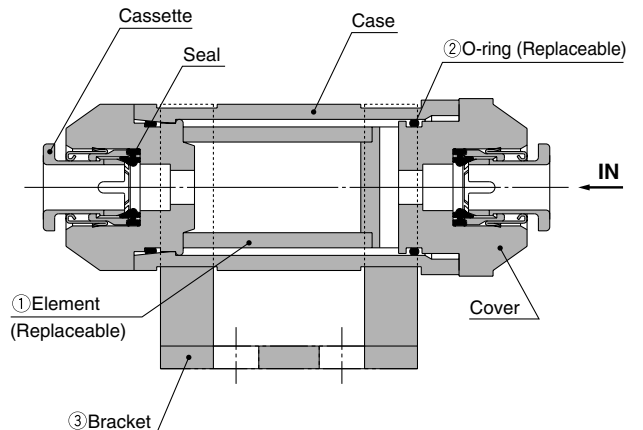


## Construction

### ZFC05



### ZFC10, 20

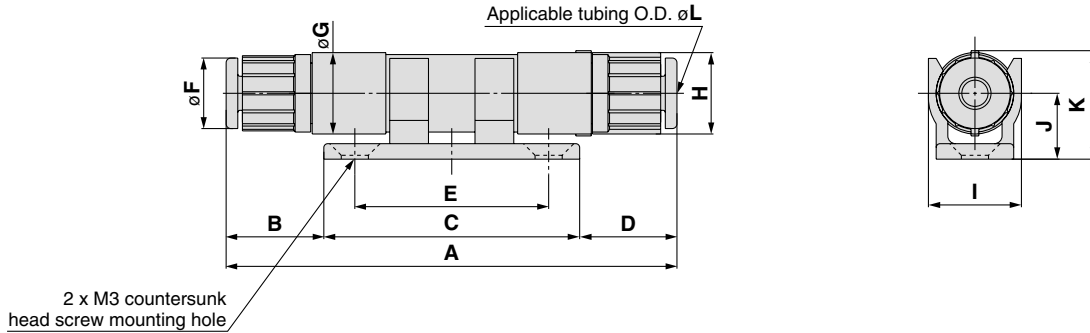


### Replacement Parts

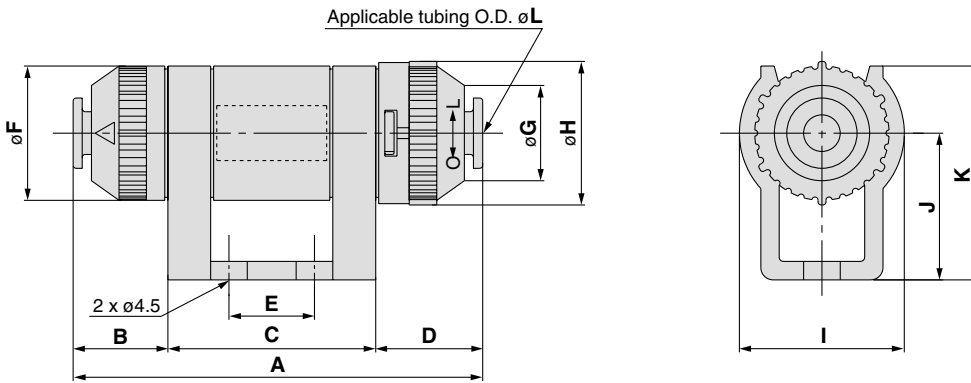
No.	Description	Part no.		
		ZFC05	ZFC10	ZFC20
1	Element	Refer to the replacement element part number on page 1111.		
2	O-ring			
3	Bracket	BP-25S	BP-16S	BP-17S

**Dimensions**

**ZFC05**



**ZFC10, 20**



Model	A	B	C	D	E	F	G	H	I	J	K	L
ZFC050-02	58.5	12.75		12.75								2
ZFC050-23												3.2
ZFC050-04	58	12.5	33	12.5	25	10	10.5	10.5	12	8.5	13.75	4
ZFC051-01												1/8"
ZFC051-03												5/32"
ZFC100-04												4
ZFC100-06	53.2	9.1	30	14.1	10	18	11.6	19.5	23	20	29	6
ZFC101-03												5/32"
ZFC101-07												1/4"
ZFC200-06												6
ZFC200-08												8
ZFC201-07	67	15.5	34	17.5	14	22	15.6	23.1	27	24	35	1/4"
ZFC201-09												5/16"

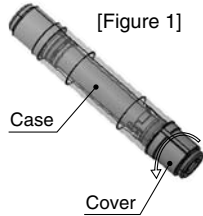
- ZA
- ZX
- ZR
- ZM
- ZMA
- ZQ
- ZH
- ZU
- ZL
- ZY□
- ZF□**
- ZP□
- SP
- ZCUK
- AMJ
- AMV
- AEP
- HEP
- Related Equipment

# Series ZFC

## Element Replacement

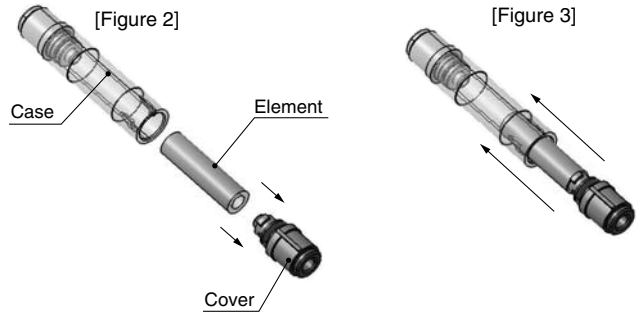
### Element replacement procedure

1. Stop operation and reduce the filter's internal pressure to atmosphere.
2. Rotate the cover counterclockwise ("O" on the cover ⇌ L marking). Refer to Figure 1.



3. Pull the cover out of the case to remove the element. Remove dust and other debris remaining inside the case by blowing it out with air, etc. (Also, confirm that the O-ring is not damaged.)

4. Install a new element on cover and insert it into the case. Refer to Figure 2 and 3.

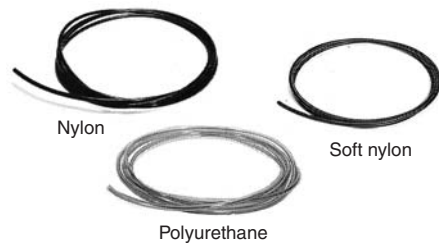


5. Adjust the protrusion on the cover and the slit on the case so that they match up, then push the cover into the end of the case. Next, confirm that the cover is locked by attempting to rotate it clockwise ("O" on the cover ⇌ L marking).
6. Restart operation.  
[Figure: ZFC05□. The procedures for the ZFC10□, 20□ are alike.]

## Related Products/Tubing: Nylon, Soft Nylon, Polyurethane

Use the kind of tubing indicated at the right for suction filter with one-touch fitting (Series ZFC).

Refer to "Best Pneumatics No. 6" for details on valves.



### How to Order Tubing

**T 0604 B - 20**

#### Tubing material

Metric size	Symbol	Material	Inch size	Symbol	Material
	<b>T</b>	Nylon		<b>TI</b>	Nylon
	<b>TS</b>	Soft nylon		<b>TIS</b>	Soft nylon
	<b>TU</b>	Polyurethane		<b>TIU</b>	Polyurethane

#### Length per roll (m)

Symbol	Length
<b>20</b>	20 m (Standard)

#### Color

Metric size	Symbol	Color	Inch size	Symbol	Color
	<b>B</b>	Black		<b>B</b>	Black
	<b>W</b>	White		<b>BU</b>	Blue
	<b>R</b>	Red		<b>W</b>	White
	<b>BU</b>	Blue			
	<b>Y</b>	Yellow			
	<b>G</b>	Green			
	<b>C</b> (Note)	Clear			

Note) Polyurethane only. For polyurethane tubes, 22 colors other than the ones above are available.

#### Tubing size

Metric size	Symbol	Size		
		O.D.	Bore size	
	<b>0425</b>	ø4	ø2.5	
	<b>0604</b>	ø6	ø4	
	<b>0805</b>	ø8	ø5	
	<b>0806</b>	ø8	ø6	
	<b>1065</b>	ø10	ø6.5	
	<b>1075</b>	ø10	ø7.5	

Inch size	Symbol	Size		
		Size	O.D.	Bore size
	<b>A05</b>	3/16"	4.76	3.48
	<b>A07</b>	1/4"	6.35	4.57
	<b>A11</b>	3/8"	9.53	6.99
	<b>A13</b>	1/2"	12.7	9.56
	<b>B05</b>	3/16"	4.76	3.18
	<b>B07</b>	1/4"	6.35	4.23
	<b>B11</b>	3/8"	9.53	6.35
	<b>B13</b>	1/2"	12.7	8.46



Please contact SMC for detailed specifications, dimensions and delivery.

## 1 Air Suction Filter with Metal Case



**Max. operating pressure 0.5 MPa**

For the standard type, the max. operating pressure is up to 0 kPa.

**Case is made of metal (aluminum)**

The standard-type case is made of nylon.

### How to Order

**ZFC 100 - 04 X17**

In-line type air suction filter with one-touch fittings

Air suction filter with metal case

Type (Recommended flow rate)

Tubing size	Symbol	Flow rate $l/min$ (ANR)
Metric size	<b>100</b>	Max. 20
(Release bushing: Light gray)	<b>200</b>	Max. 50

IN/OUT applicable tubing O.D.

Metric size

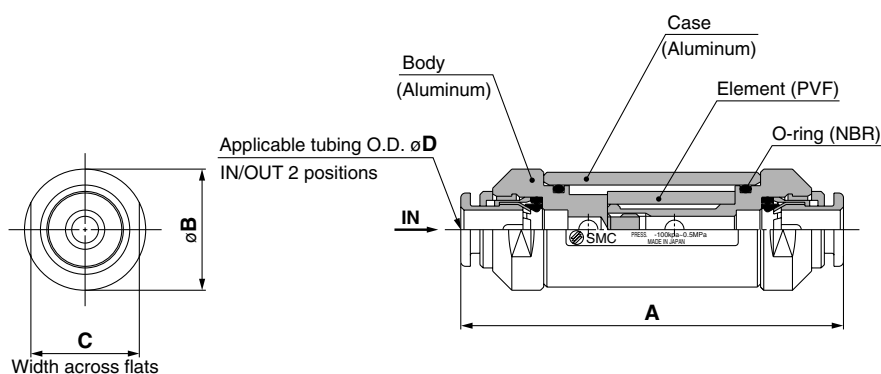
Symbol	Tubing size	Applicable model
<b>04</b>	$\phi 4$	ZFC100
<b>06</b>	$\phi 6$	ZFC100
		ZFC200
<b>08</b>	$\phi 8$	ZFC200

## Specifications

Model	ZFC100-04X17	ZFC100-06X17	ZFC200-06X17	ZFC200-08X17
Connecting tube O.D. (IN/OUT sides)	$\phi 4$	$\phi 6$	$\phi 6$	$\phi 8$
Recommended flow rate $l/min$ (ANR) (Note)	10	20	30	50
Fluid	Air			
Operating pressure	-100 kPa to 0.5 MPa			
Withstand pressure	0.75 MPa			
Ambient operating fluid temperature	0 to 60°C (No freezing)			
Nominal filtration	10 $\mu m$			
Element differential pressure resistance	0.15 MPa			
Element replacement differential pressure	0.02 MPa			
Applicable tubing material	Nylon, Soft nylon, Polyurethane, Soft polyurethane			

(Note) Flow rate when initial pressure drop is 3 kPa or less.

## Construction/Dimensions



### Dimensions

Model		A	B	C	D
ZFC100-	<b>04</b>	60	19	17	4
	<b>06</b>	60	19	17	6
ZFC200-	<b>06</b>	68	23.5	21	6
	<b>08</b>	68	23.5	21	8

- ZA
- ZX
- ZR
- ZM
- ZMA
- ZQ
- ZH
- ZU
- ZL
- ZY□
- ZF□
- ZP□
- SP
- ZCUK
- AMJ
- AMV
- AEP
- HEP
- Related Equipment



## Series ZFC

# Specific Product Precautions

Be sure to read before handling.

Refer to front matters 38 and 39 for Safety Instructions and pages 844 to 846 for Vacuum Equipment Precautions.

### Selection

#### Warning

1. Do not use in a line where a pressurized condition is maintained since the body may be damaged.

### Mounting

#### Warning

1. Connect tubing to the IN and OUT one-touch fittings in accordance with the precautions for one-touch fittings.

#### Caution

1. Connect the piping in accordance with the flow direction marked on the case. Proper sealing of the element cannot be guaranteed if connections are reversed.

### Maintenance

#### Warning

1. When the element becomes clogged, stop operation and adjust the internal pressure of the filter to atmospheric pressure before replacing the element.

#### Caution

1. As a rule, replace the element when the pressure drops by 20 kPa.
2. During disassembly and assembly, confirm that there are no scratches or damage, etc., on the O-ring.
3. Before using, confirm there is no leakage after replacing elements.

### Operating Environment

#### Warning

1. Do not use tubings in atmospheres of corrosive gases, chemicals, salt water, water steam, or where there is direct contact with any of these.
2. Do not wipe the product with alcohol, acetone, etc. or use it in an atmosphere and place where these elements are likely to adhere to the equipment.

### Handling of One-touch Fittings

#### Caution

1. Tubing attachment/detachment for one-touch fittings
  - 1) Installing of tubing
    - (1) Use tubing with no flaws on its periphery and cut it off at a right angle. When cutting the tubing, use a tube cutter, TK-1, 2 or 3. Do not use pinchers, nippers or scissors, etc. If cutting is done with tools other than tube cutters, the tubing may be cut diagonally or become flattened, etc. This can make a secure installation impossible, and cause problems such as the tubing pulling out after installation or air leakage. Allow some extra length in the tubing.
    - (2) The outside diameter of the polyurethane tubing swells when internal pressure is applied to it. Therefore, it may not be possible that the tubing can be re-inserted into the one-touch fitting. Confirm the tubing outside diameter, and when the accuracy of the outside diameter is +0.15 or larger, re-insert the tubing into the one-touch fitting without cutting it. When the tubing is re-inserted into the one-touch fitting, confirm that the tubing goes through the release button smoothly.
    - (3) Grasp the tubing and push it in slowly, inserting it securely all the way into the fitting.
    - (4) After inserting the tubing, pull on it lightly to confirm that it will not come out. If it is not installed securely all the way into the fitting, this can cause problems such as air leakage or the tubing pulling out.
  - 2) Removal of tubing
    - (1) Push in the release button sufficiently. When doing this, push the collar evenly.
    - (2) Pull out the tubing while holding down the release button so that it does not come out. If the release button is not pressed down sufficiently, there will be increased bite on the tubing and it will become more difficult to pull it out.
    - (3) When the removed tubing is to be used again, cut off the portion which has been chewed before reusing it. If the chewed portion of the tubing is used as it is, this can cause trouble such as air leakage or difficulty in removing the tubing.
2. Do not install the SMC's KQ one-touch fitting series with a metal rod into the ZFC05/10 series fittings. The metal rod will not be held and the fitting will shoot out.

### Other Tube Brands

#### Caution

1. When tubing of brands other than SMC's are used, verify that the tubing O.D. satisfies the following accuracy;
  - 1) Nylon tubing : Within  $\pm 0.1$  mm
  - 2) Soft nylon tubing : Within  $\pm 0.1$  mm
  - 3) Polyurethane tubing: Within +0.15 mm, within -0.2 mmDo not use tubing which does not meet these outside diameter tolerances.

It may not be possible to connect them, or they may cause other trouble, such as air leakage or the tube pulling out after connection.
2. Tubing O.D:  $\varnothing 2$ 

Other tube brands cannot be used. It may not be possible to connect them, or they may cause other trouble, such as air leakage or the tube pulling out after connection.