

# Air Suction Filter Series ZFA

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

**The collected dust does not remain in the case.**

Dust is removed easily at the time the filter element is replaced. As a result, the dust does not remain in the case.

**Compact and lightweight**

The aluminum alloy case and box-shaped exterior design create a lightweight and compact package.

**Adaptable for a manifold application**

Up to 10 units can be linked in a manifold to save space.

**Large filter element surface**

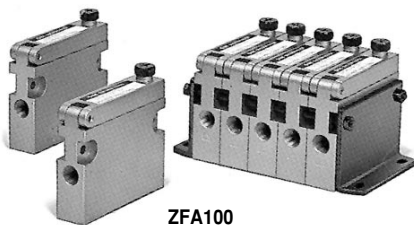
The pleat-shaped element provides a large filtering surface so that maintenance can be performed at longer intervals.

**Easily replaced filter element**

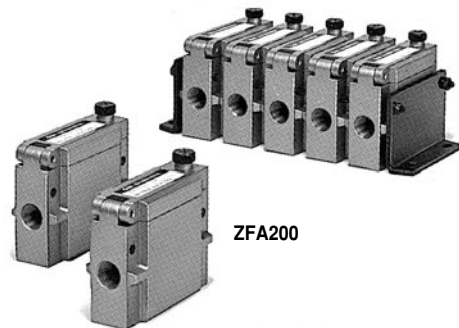
The filter element can be replaced in a short time without requiring any tools.

**Mountable in any direction**

The function of the filter is not affected by its mounting orientation.

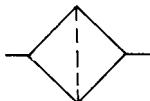


ZFA100



ZFA200

Symbol



## Model

Model	Port size	Recommended air flow (l/min (ANR))	Weight (kg)
ZFA 100	1/8	50	0.14
ZFA 200	1/4	200	0.19

## Specifications

Fluid	Air/Nitrogen
Operating pressure range	Negative pressure
Proof pressure	0.5MPa
Operating temperature range	5 to 60°C
Filtration	30μm
Element proof pressure differential	0.15MPa



Note 1) Consult 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.

Note 2) Avoid use under pressurization.

## Accessories/Options

Model	ZFA100	ZFA200	Note
Bracket Assembly	BP-1H-1A	BP-1H-2A	With bolt, nut, washer
Bracket for manifold (1 to 10 stations)	ZZFA1-[Number of station]	ZZFA2-[Number of station]	With bracket, connection bolt, nut, washer, each 2 pcs.

## Base Material

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

## Part No. of Element

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

Applicable filter  
(Recommended air flow)

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

Port thread

—	Rc(PT)
T	NPTF
F	G(PF)

Accessories (Bracket)

—	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.

# Series ZFA

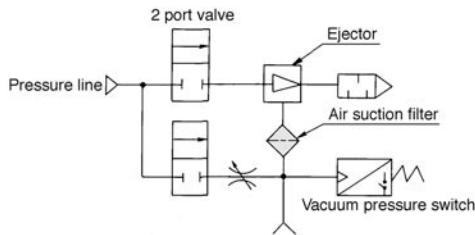
## Application Example

**Field** Semiconductor/Electronics Related Industry, Automobile Assembly, Food Industry, Medical Instruments, General Assembly Machines.

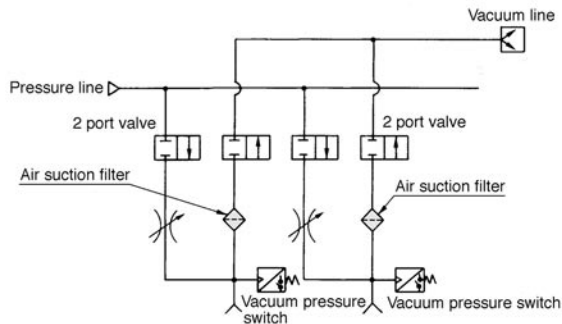
**Machines** Robot Hand/Material Handling, Automatic Assembly Machine, Automatic Transport Machine, Pick And Place, Printing.

**Functions** Vacuum Adsorption Transporting, Vacuum Adsorption Affixing, Vacuum Generated Air Flow.

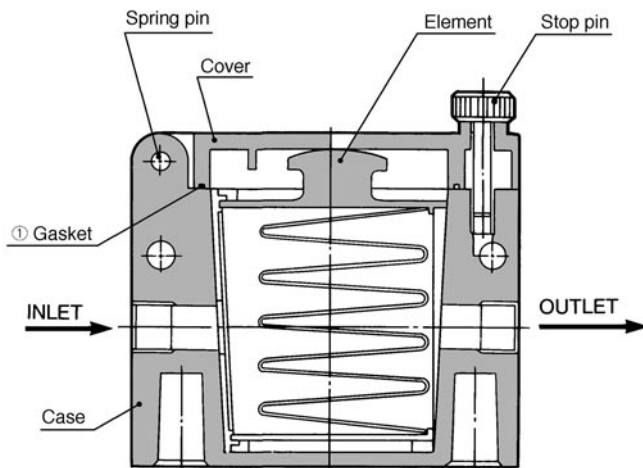
### Application of Ejector System



### Application of External Vacuum Supply System



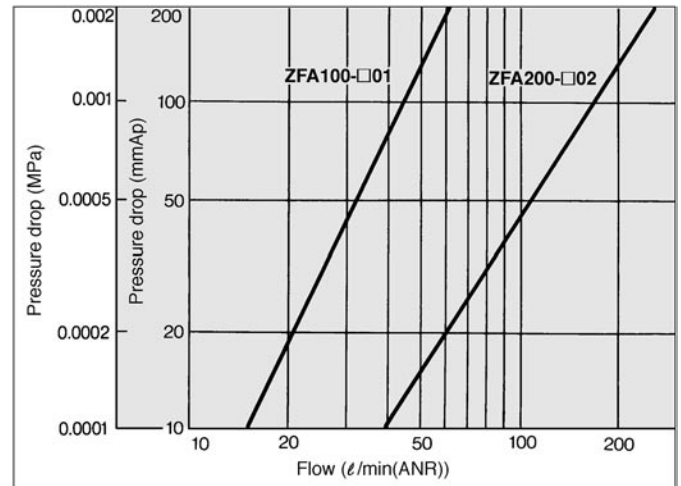
## Construction



## Replacement Parts

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

## Flow Characteristics



Fluid — Air  
Material — Polyester  
Filtration — 30 $\mu$ m  
Pressure — Secondary pressure side is opened to air

## ⚠ 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, clean or replace the filter element.

#### ⚠ Caution

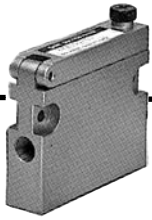
- ① Replace the filter element when the pressure drops approximately 0.02 MPa {0.2 kgf/cm<sup>2</sup>}.
- ② During disassembly or reassembly, make sure the gaskets and the seals are not cut or damaged.
- ③ To install the filter element in the case, verify the IN and OUT flow directions that are indicated 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

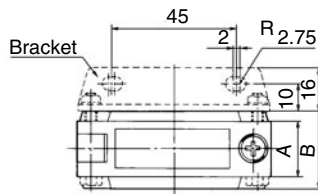
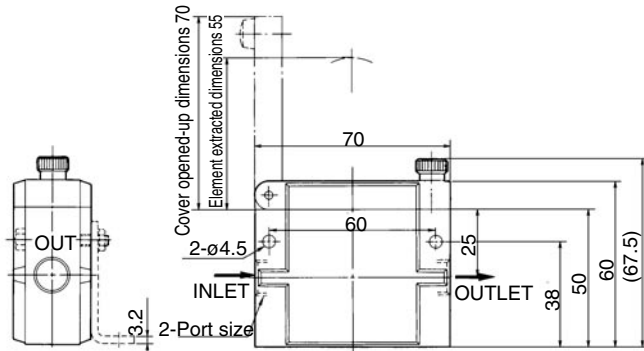
#### ⚠ Warning

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

# Air Suction Filter/Series ZFA

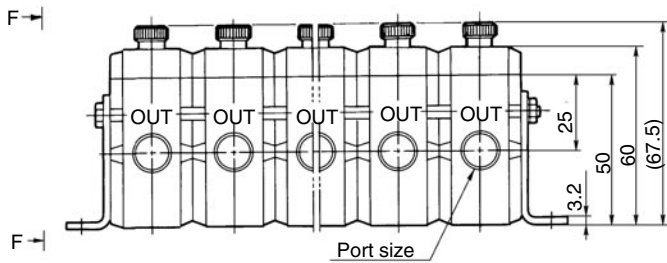


Series ZFA: ZFA<sup>100</sup>/<sub>200</sub> -□□□

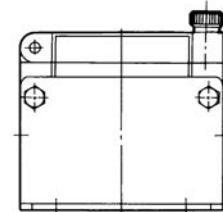
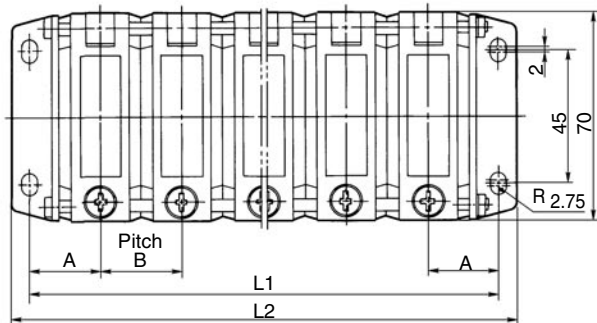


Note) The diagram on the left is for ZFA200.  
The bracket location is on the left side.

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



(The above diagram is for ZFA200)



F-F' Cross-sectional drawing

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

Model	Symbol	Number of 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

# Air Suction Filter With One-touch Fittings Series ZFB

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

## Unrestricted 360° piping tube mounting

The connector for the IN side is a universal joint type that enables a tube to be connected in any direction within 360°.

## Easily replaced filter element

The filter element can be replaced quickly through One-touch removal of the transparent cover without having to disconnect the tubing.

## One-touch tube installation and removal

The metric size tube connector has a blue release bushing and the inch size tube connector has a red release bushing.

## Lightweight and compact

It has been made compact with composite formed resin.



## Part No. of Element

Part No.	Applicable filter model	Element size (mm)
I-34S	ZFB100	ø10 X ø6 X L33
	ZFB101	
I-35S	ZFB200	ø12 X ø8 X L42
	ZFB201	
I-36S	ZFB300	ø14 X ø10 X L45
	ZFB301	
I-39S	ZFB401	ø18 X ø14 X L60

Note) Place a "-A" at the end of the part number when ordering spare elements. 10 spare elements and 10 O rings are included in one set.  
Example) I-34S-A

## Model

	Model	Port size (Applicable tube O.D.)		Recommended air flow $l/min$ (ANR) <sup>(1)</sup>	Weight g
		IN side	OUT side		
Metric size	ZFB100-04	ø4		10	22
	ZFB100-06	ø6		20	22
	ZFB200-06	ø6		30	30
	ZFB200-08	ø8		50	30
	ZFB300-08	ø8		75	39
	ZFB300-10	ø10		75	39
Inch size <sup>(2)</sup>	ZFB101-05	ø <sup>3</sup> / <sub>16</sub> "		20	22
	ZFB101-07	ø <sup>1</sup> / <sub>4</sub> "		20	22
	ZFB201-07	ø <sup>1</sup> / <sub>4</sub> "		30	30
	ZFB301-11	ø <sup>3</sup> / <sub>8</sub> "		75	40
	ZFB401-13	ø <sup>1</sup> / <sub>2</sub> "		100	62



Note 1) Flow rate is less than 0.003MPa of the initial pressure drop.

Note 2) Will be manufactured upon receipt of order.

Note 3) Avoid use under pressurization.

## Specifications

Fluid	Air/Nitrogen
Operating pressure	Negative pressure
Proof pressure	0.5MPa
Operating and ambient range	0 to 60°C (Non-freezing)
Filtration	30μm
Element proof pressure differential	0.15MPa
Applicable tube material <sup>(1)</sup>	Nylon/Soft Nylon/Polyurethane



Note 1) Refer to p.10-10 for applicable tube model.

## How to Order

ZFB		100	04
Air suction filter with One-touch fittings			
Basic			
	Symbol	Flow $l/min$ (ANR)	
Metric size	100	MAX.20	
(Release button: Light grey)	200	MAX.50	
	300	MAX.75	
Inch size	101	MAX.20	
(Release button: Orange)	201	MAX.30	
	301	MAX.60	
	401	MAX.100	
	IN/OUT applicable tube O.D.		
Metric size	04	ø4	ZFB100
	06	ø6	ZFB100
	08	ø8	ZFB200
			ZFB300
10	ø10	ZFB300	
Inch size	05	ø <sup>3</sup> / <sub>16</sub> "	ZFB101
	07	ø <sup>1</sup> / <sub>4</sub> "	ZFB101
			ZFB201
	11	ø <sup>3</sup> / <sub>8</sub> "	ZFB301
	13	ø <sup>1</sup> / <sub>2</sub> "	ZFB401

## Component Parts

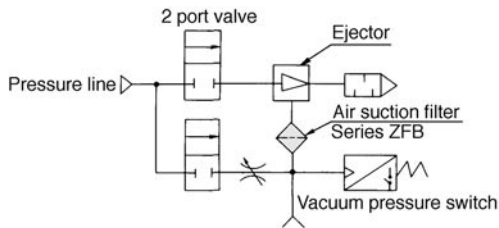
Description	Material
Body	Polyester
Cover	Transparent special nylon
Universal joint	Polyester
Plug	Brass (Electroless nickel plated)
Element	PVF
O ring/Seal	NBR

# Air Suction Filter with One-touch Fittings/Series ZFB

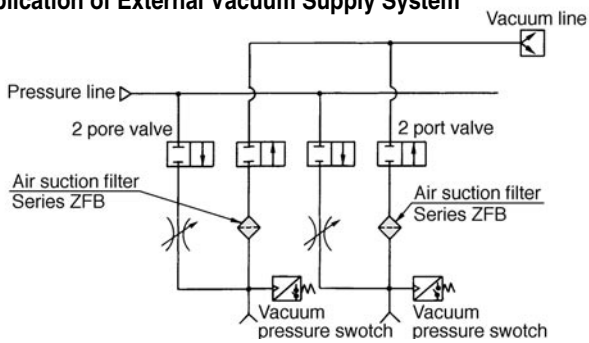
## Application Example

<b>Field</b>	Semiconductor/Electronics Related Industry, Automobile Assembly, Food Industry, Medical Instruments, General Assembly Machines
<b>Machines</b>	Robot Hand/Material Handling, Automatic Assembly machine, Automatic Transport Machine, Pick And Place, Printing
<b>Functions</b>	Vacuum Adsorption Transporting, Vacuum Adsorption Affixing, Vacuum Generated Air Flow

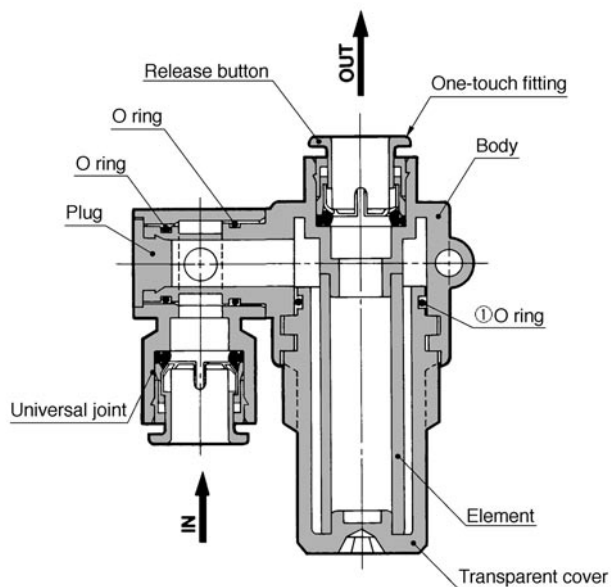
## Application of Ejector System



## Application of External Vacuum Supply System



## Construction

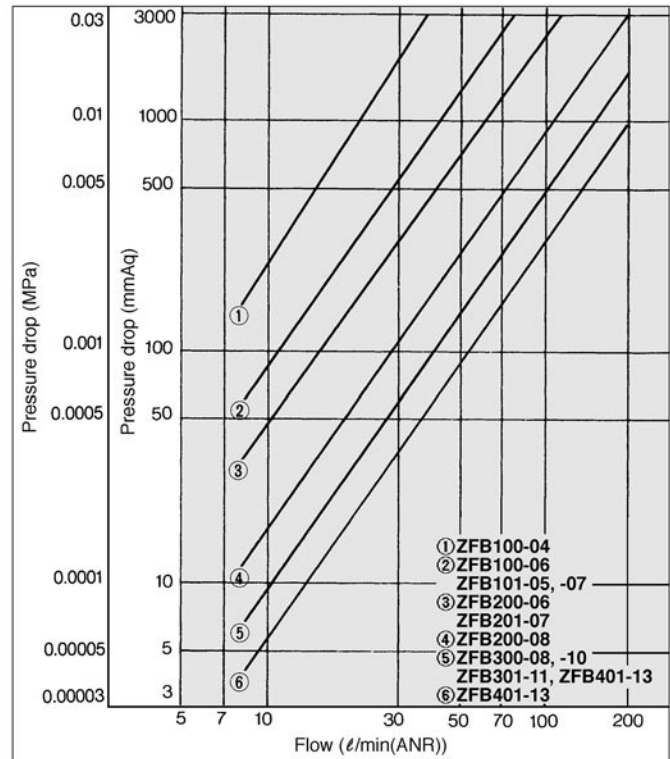


No.	Description	Part No.			
		ZFB100/101	ZFB200/201	ZFB300/301	ZFB401
①	O ring for transparent cover	S11.2	S12.5	S16	S18

\*O ring is a set with spare element.

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

Fluid ——— Air      Temperature ——— Ambient temperature  
Measuring pressure ——— Secondary pressure side is opened to air  
(Pressurization)



## ⚠ Precaution

## Mounting

### ⚠ Warning

① To connect the tube to the IN and OUT One-touch fitting, observe the precautions that are provided for using One-touch fittings.

### ⚠ 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 the 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, clean or 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 that the O ring is not cut or damaged.

## Selection

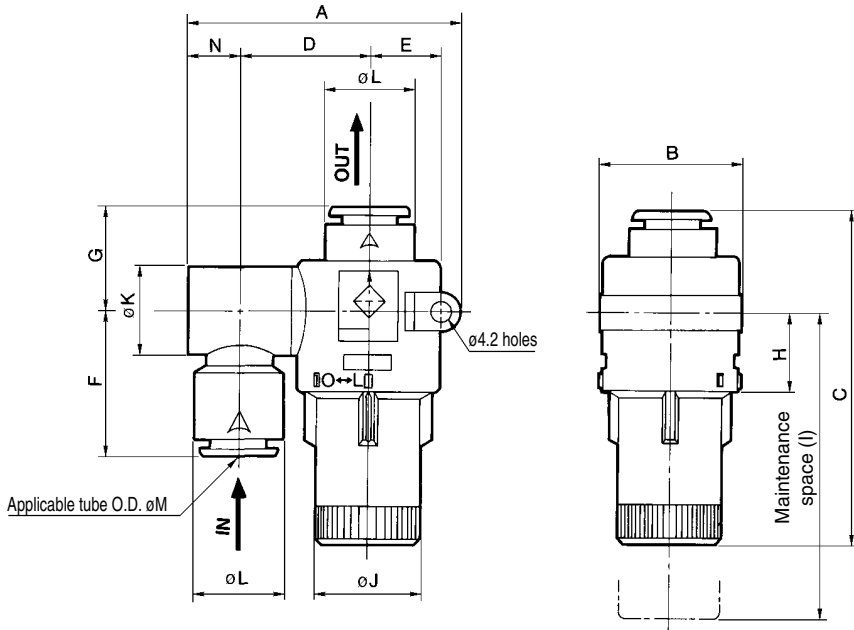
### ⚠ Warning

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

# Series ZFB



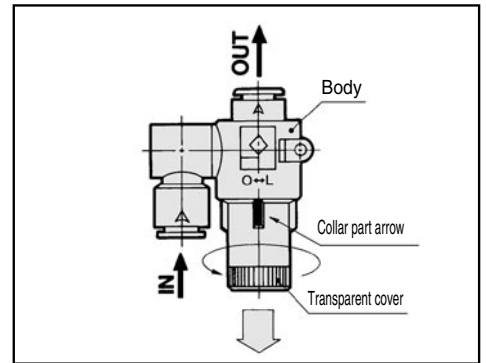
## Dimensions



### Element Changing Procedure

- 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 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 the operation.

### Element Exchange Procedure Diagram



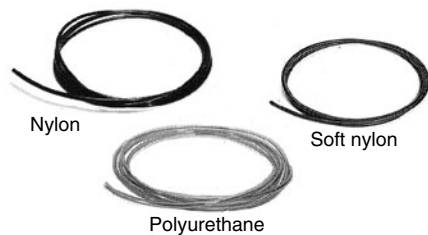
	Model	A	B	C	D	E	F	G	H	I	J	K	L	M	N
Metric size	ZFB100-04	48	26	53	22.5	12.5	24	17.5	15	50	15.5	14.4	12.8	4	8.5
	ZFB100-06													6	
	ZFB200-06	52	28	65	24.5	13.5	27	19.5	16	61	17.5	16.6	15.2	6	9.5
	ZFB200-08													8	
Metric size	ZFB300-08	57	30	69.5	27	14.5	29.5	21	17	65	21.5	18	18.5	8	11
	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

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

### How to Order/Tubing

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

Refer to p.7-145 to 7-147 in Best Pneumatics 4 for details.



Metric size	Tube Material		Inch size	Tube Material	
	Symbol	Material		Symbol	Material
	T	Nylon		TI	Nylon
	TS	Soft nylon		TIS	Soft nylon
	TU	Polyurethane		TIU	Polyurethane

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

T 0604 B 20

Length per roll (m)	
Symbol	Winding
20	20m (Standard)

Metric size	colour		Inch size	colour	
	Symbol	colour		Symbol	colour
	B	Black		B	Black
	W	White		BU	Blue
	R	Red		W	White
	BU	Blue			
	Y	Yellow			
	G	Green			
	C (Note)	Transparent			

Note) Polyurethane only.