

# **INSTRUCTION MANUAL**

## **CLEAN EXHAUST FILTER**

FAC3000 series

- Please read this instruction manual carefully before using this product, particularly the section describing safety.
- Retain this instruction manual with the product for further consultation whenever necessary.

## For safety use

To use this product safely, basic knowledge of pneumatic equipment, including materials, piping, electrical system and mechanism, is required. (to the level pursuant to JIS B 8370 Pneumatic system rules)

We do not bear any responsibility for accidents caused by any person without such knowledge or arising from improper operations.

Our customers use this product for a very wide range of applications, and we cannot keep track of all of them. Depending on operating conditions, the product may fail to operate to maximum performance, or cause an accident. Thus, before placing an order, examine whether the product meets your application, requirements, and how to use it.

This product incorporates many functions and mechanisms to ensure safety. However, improper operation could result in an accident, **read this operation manual carefully for proper operation.**

Observe the cautions on handling described in this manual, as well as the following instructions:



### **DANGER**

Failure to pay attention to DANGER notice may cause a situation that result in fatality or serious injury and that requires urgent addressing.



### **WARNING**

Failure to pay attention to WARNING notice may result in a fatality or serious injury.



### **CAUTION**

Failure to pay attention to CAUTION notice may result in injury or damage to equipment or facilities.

※ 1)ISO4414: Pneumatic fluid power . . . Recommendations for the application of equipment to transmission and control systems.

※2)JIS B 8730: General rule for pneumatic systems

[SM-346334-A]

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FAC3000 series

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## 1. Unpacking



### Caution

1) Please unpack this product in a clean room

This product has been packaged in a clean environment. We recommend you to unpack this product just before piping in a clean room.

- Please confirm that the model number of the product and the model you ordered is the same.
- Please check for exterior damage on the product.
- Please read this manual and the cautionary note beforehand.

## 2. Installation

### 2.1 Installation environment



### Warning

1) Load torque on the piping

Lateral load on the body and the piping section could cause damage to the piping section. Please use this product under the specified torque.

FAC 3000	
Max. torque N·m	50

2) Please do not use this product where static build up causes a problem.

- Load on the product is a leading cause of external leakage. In the worst case scenario, there is a risk of a joint falling off.



### Warning

1) Please keep the product away from the following,

- Vibration or shock
- Area where the ambient temperature exceeds the operating ambient temperature range of this product.
- Area where the working fluid freezes.
- Cutting oil or water
- Humid areas where there is a risk of dew condensation
- Salt breeze, seawater.
- Atmosphere with corrosive gas, fluid and chemicals.
- Direct sunlight.
- Direct UV radiation

- 2) Please install where the product is not affected by exposure to dust.
- 3) Please install in a direction in which the exhaust air does not go in your eyes.
- 4) Please avoid installation in a area in which the exhaust air is blown directly on to the workpiece, etc.

- Vibration, shock and corrosive gas could cause damage that leads to external leakage.
- Please consult us when using this product as a filter.



### 3. Appropriate usage



#### Warning

- 1) Please use this product within the specified conditions.
- 2) This is an industrial product. Do not use it for medical purposes and circuits and equipment that involve human lives.



#### Caution

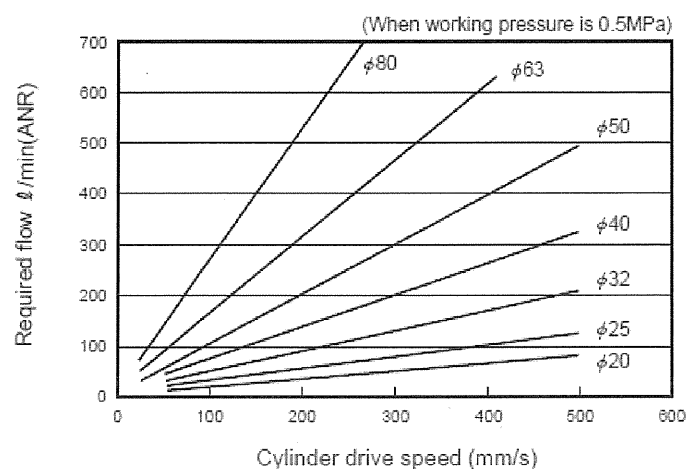
- 1) Please check the working fluid and circuit.  
Please install a drier, air filter and oil mist filter to the pneumatic pressure source side to remove moisture and oil.
- 2) This product can not remove water.  
The hydrophobic element membrane does not circulate nonpressurized water. When pressurized, water flows to the discharge side.
- 3) Use the product within maximum working pressure and working temperature range  
If any sources of heat are present near devices, check that the product's working temperature range is not exceeded. Not observing this could damage the product or element membrane.
- 4) Do not flow over the maximum flow rate.  
Calculate the treating flow rate of solenoid valve and actuator, and select the model with the flow rate less than maximum flow rate. Circulating air exceeding the maximum flow could reduce the cleanness of the exhaust air and
- 5) The solenoid valve could malfunction due to reverse flow when common piping, etc., is used. Install a check valve, etc., to prevent reverse flow  
Refer to the flow characteristics chart on page 9 to check the relationship between the treating flow rate and primary pressure. Please use the product in a range or circuit even if the primary pressure is reversed.

- This product is for compressed air only. Do not apply other fluids.
- When supplying compressed air for the first time after connecting pipes, do not apply high pressure suddenly
- Check for leakage from the piping section when supplying compressed air for the first time after piping.

### 4 Selection guide

The clean exhaust filter model is selected based on the working circuit's required flow.

- (1) Calculate the required flow for the actuator used
  - (2) Multiply the calculated required flow by 1.4
  - (3) Select a model having a flow exceeding the required flow multiplied by 1.4.
- The graph on the right shows the required flow multiplied by 1.4 for each air cylinder size. Use these as a reference for selecting the model.




## 5. Maintenance

### 5. 1 Inspections

#### 1) Regular inspection

- Inspect the product each month to use the product in an optimal condition.
- Please confirm that the primary pressure does not exceed 0.1mpa and flow is not exceeding the maximum treatable flow.
- Check if the air components are operating normally.

### 5. 2 Maintenance precautions



**Caution**

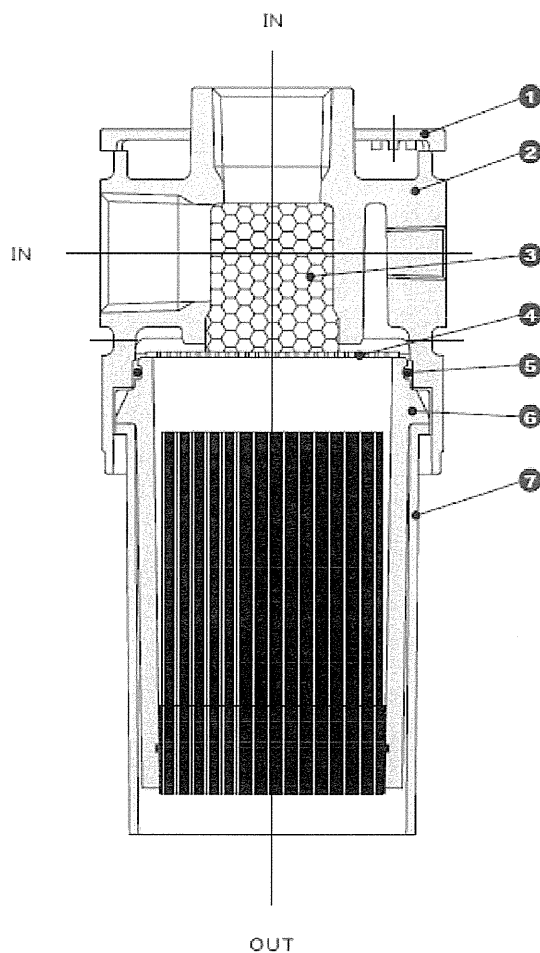
- 1) Stop supplying flow and make sure that there is no residual pressure remaining before servicing.
- 2) Do not modify this product.
- 3) Storing  
Keeping the product in an environment with high temperature and humidity that exceeds the specification could cause damage to resin parts.
- 4) Clogging will decrease performance so service the product regularly.  
As for FAC3000, please replace the product.

## 6. Troubleshooting

Problem	Cause	Countermeasure
Increase in primary pressure	Insufficiency in flow rate is causing the primary pressure to increase	Install two or more in parallel.
The primary pressure started to increase, even though it was fine after it has been installed.	Primary pressure is increased due to clogging.	Please replace this product. The performance can not be recovered by disassembly and cleansing.

## 7. Internal structure, parts and dimensions

●FAC3000



No.	Parts name		Material
1	Plate cover		ABS resin
2	Body		Aluminum alloy die-casting
3	Noise reduction material		Vinylidene chloride
4	Rectification plate		Stainless steel
5	O ring		Special nitrile rubber
6	Hollow string	Housing	Polycarbonate
	Membrane	Filter	Polypropylene
	element	Potting material	Urethane
7	Bowl guard		Polyamide resin, stainless steel



8. Product specification and model number

8. 1 Product specification

Model No.		FAC3000
Working fluid		Compressed air
Max. working pressure	MPa	0.1
Min. working pressure	MPa	0
Withstanding pressure	MPa	0.3
Working temperature range		5 to 45
Port size		Rc3/8, Rc1/2
Product mass	g	290
Filtration rating	μm	0.01 (removal efficiency 99.99% and over)
Secondary side cleanliness factor		100% removal of 0.1 μm. or larger particles <span>Note 1</span>
Max. flow rate	ℓ /min(ANR)	600

Note 1: Measurement conditions: 28.3 ℓ/min (ANR) flow

8. 2 Model number

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Model No.

A Port size

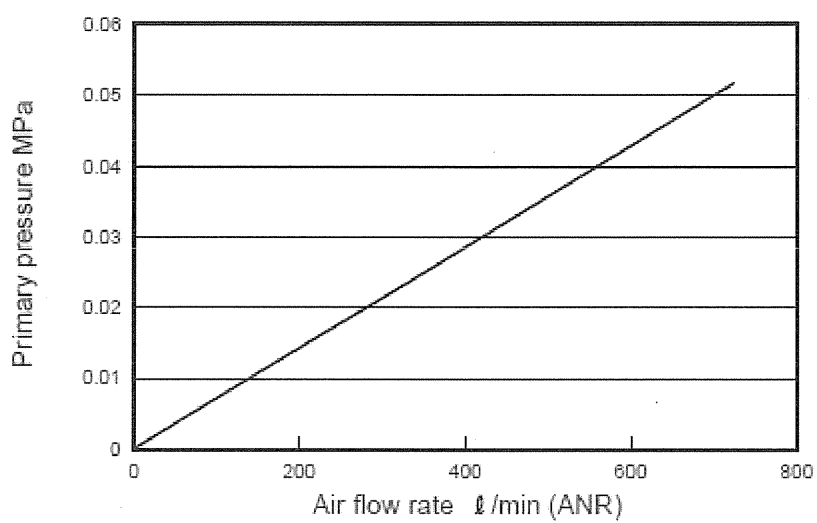
B Attachment

Symbol	Descriptions
A Port size	
10	Rc3/8
15	Rc1/2
B Attachment (attached)	
Blank	No attachments
B	C type bracket: B320-P70

Note: Two attachments are included, one R1/8 plug and one plug corresponding to the connection bore size (R3/8 or R1/2).

## 9. Characteristics chart

### 9. 1 Flow characteristics



### 9. 2 Sound noise

