CKD

SM-8137-A /1

INSTRUCTION MANUAL

Exhaust fumes cleaner

FA331, 431, 531, 631, 731 & 831

- 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.

CKD Corporation

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 operation.

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. To prevent such accidents, read this instruction manual carefully for proper operation.

INDEX

Exhaust fumes cleaner
FA311, 431, 531, 631, 731, 831
Manual No. SM-8137-A

NOTE : Letters & figures enclosed within Gothic style bracket (examples such as [C2-4PP07] · [V2-503-B] etc.) are editorial symbols being unrelated with contents of the book.

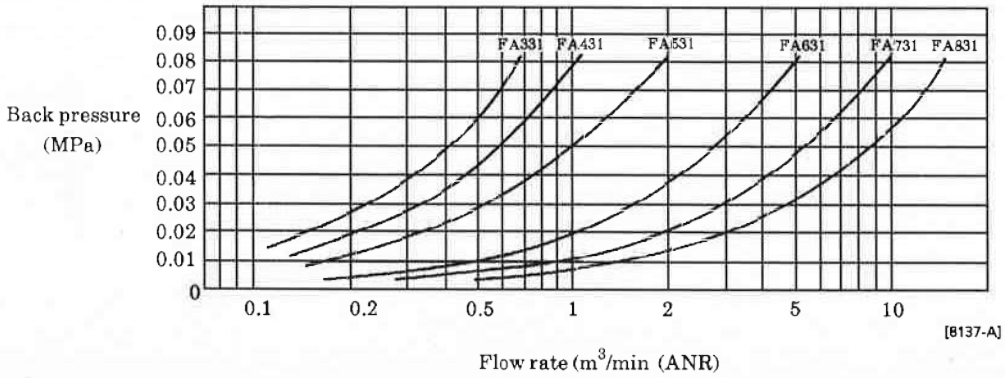
Jun.16.1990

1. PRODUCT

1.1 Specifications

Model No. / Item	FA331-10A	FA431-15A	FA531-20A	FA631-25A	FA731-40A	FA831-50A
Connecting port dia.(Rc)	3/8	1/2	3/4	1	1 1/2	2
Effective sectional area (mm^2)	16	33	55	165	330	550
Max. processing flow (m^3/min ANR)	0.3	0.6	1	3	6	10
Max. working temperature (℃)	65					
Noise suppressing effect (dB)	Better than 35					
Oil mist recovery efficiency (%)	Better than 99.9					
Weight of cleaner (g)	200	300	400	600	1100	1500
Bracket No. (Optional)	B351-10A	B451-15A	B551-20A	B651-25A	—	—

1.2 Flow characteristics

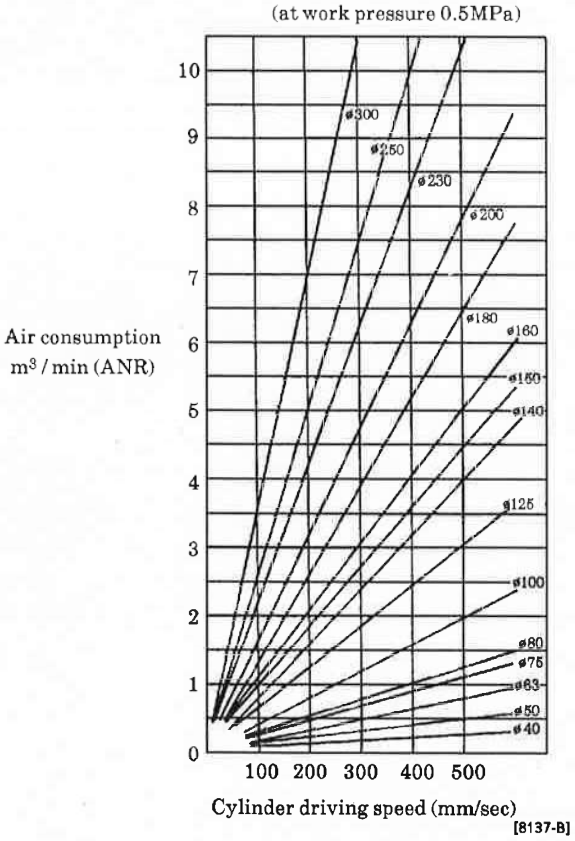


1.3 Guide line of selecting appropriate model

Select model depending upon the volume of air consumption of the circuit.

1) Calculate the volume of air the actuator consumes.
2) Multiply the result by 1.4.
3) Select the model with capacity over the multiplication.

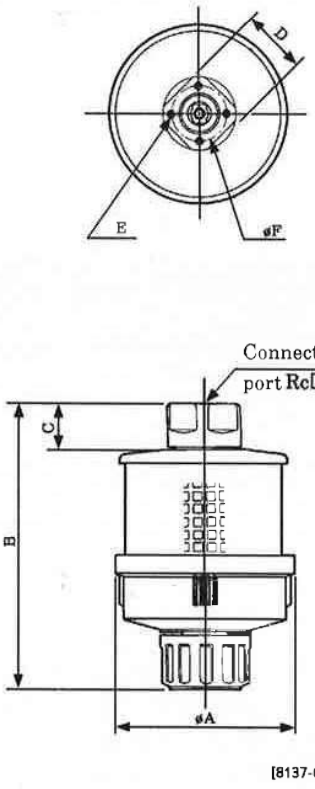
The graphs shown to the right are 1.4 times of calculated air consumption of cylinders with



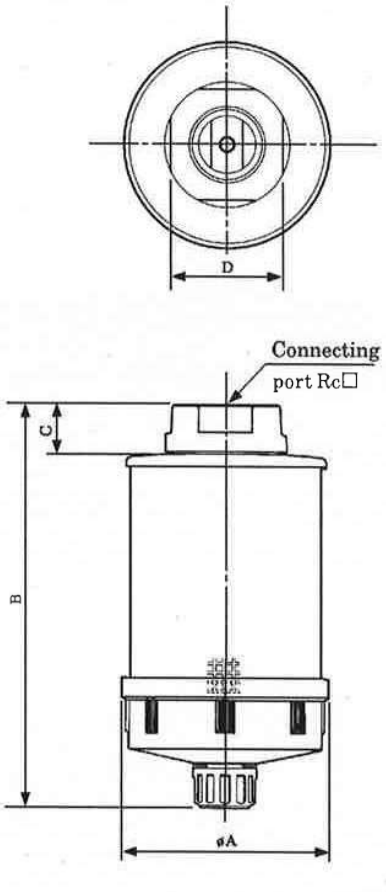
1.4 External dimensions and internal structure

1) External dimensions

- FA331 - FA631

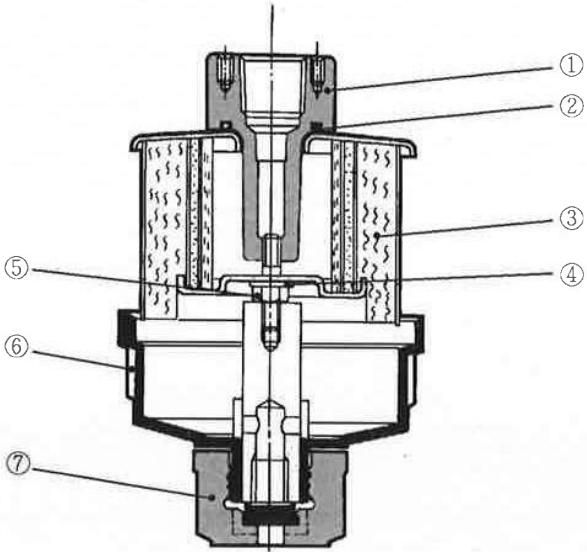


- FA731 - FA831



Model No. / Item	FA331	FA431	FA531	FA631	FA731	FA831
A	80	90	100	112	132	150
B	129	147	171	195	259	312
C	20	23	25	28	32	36
D	27	32	41	46	70	80
E	4-M3(Depth 7)	4-M4(Depth 7)	4-M4(Depth 7)	4-M4(Depth 7)	—	—
F	24	32	40	48	—	—
Connecting port dia.	Rc $^{3}/_{8}$	Rc $^{1}/_{2}$	Rc $^{3}/_{4}$	Rc 1	Rc 1 $^{1}/_{2}$	Rc 2

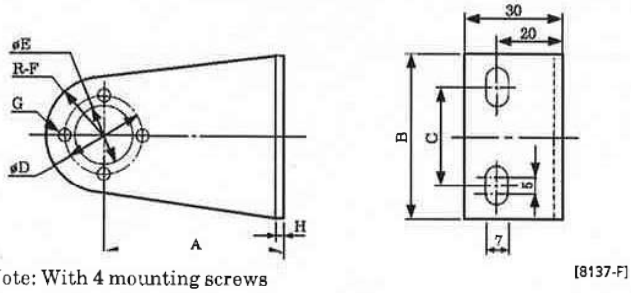
2) Internal structure and parts list



No	Parts	Material					
		FA331	FA431	FA531	FA631	FA731	FA831
①	Adaptor assembly	Aluminum alloy die-casting, steel					
②	O-ring	Nitrile rubber					
③	Element assembly	Aluminum alloy, steel, glass fiber					
④	Gasket	Polyacetal resin					
⑤	Nut	Steel					
⑥	Case assembly	Polycarbonate resin, aluminum alloy					
⑦	Drain cock	Nitrile rubber, polyamide resin					

No	Maintenance Parts model No.					
	FA331	FA431	FA531	FA631	FA731	FA831
②、③、④、⑤	FA331-ELEMENT	FA431-ELEMENT	FA531-ELEMENT	FA631-ELEMENT	FA731-ELEMENT	FA831-ELEMENT
⑥	FA331-CASE	FA431-CASE	FA531-CASE	FA631-CASE	FA731-CASE	FA831-CASE
⑦	FA331-COCK					

3) Optional bracket, external dimensions



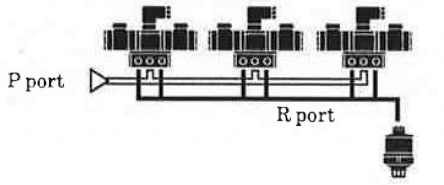
Note: With 4 mounting screws

[8137-F]

Marking / Model coding	A	B	C	D	E	F	G	H
B351-10A	55	50	30	24	ø18	16.5	4-ø3.5	t2.3
B451-15A	60	60	40	32	ø23	20	4-ø4.5	t2.3
B551-20A	70	70	40	40	ø29	25.4	4-ø4.5	t3.2
B651-25A	80	70	40	48	ø37	27.5	4-ø4.5	t3.2

2. INSTALLATION CAUTIONS

1) Install cleaner perpendicularly to have drain port positions downward.
2) Install it as close by the subject air equipment as possible.
3) Preferably use connecting dia. of cleaner same with that of air circuit tubing.
4) While mounting cleaner to system, apply either adjustable wrench or pipe wrench to six sided portion of cleaner.
5) It is recommended to adopt collective exhausting system when intending to install group of valves within the same spot.
   (1) Be sure the max. processing capacity of this cleaner is large enough to cover the grand total of simultaneous exhaust, in case of that exhaust timing of all valves sometimes overlaps. Otherwise, re-selct appropriate one.
   (2) When exhaust timing does not overlap, the max. processing capacity of the cleaner can be large enough to cover exhaust of the largest valve among them. Otherwise, also, select appropriate



[8137-G]

6) Select large enough capacity of cleaner to cover the flow of the system.
7) Avoid installation of this cleaner within the place where environment temperature rises higher than 65°C.

2
CAUTION

Kind of chemicals	Classification of chemicals	Major products of each chemicals
Inorganic compound	Acid	Hydrochloric acid · Sulfuric acid · Nitric acid · Flouride acid · Phosphoric acid · Chromate acid, etc
	Alcohol	Canstic soda · Canstic potassium · Hydrated lime · Ammonia solvent · Carbonate soda
	Inorganic hydrochlorine	Sulfide soda · Potassium nitrate · Chromic potassium · Sulfa soda
Organic compound	Aromatic hydrocarbons solvent	Benzene · Toluene · Xylene · Ethyl benzene · Styrene
	Chlorinated aliphatic hydrocarbons	Methyl chloride · Ethylene chloride · Methylene chloride · Acetylene chloride · Chloroform · Trichloroethylene · Perchlene · Carbon tetrachloride
	Chlorinated aromatic hydrocarbons	Chlorobenzene · Dichloro benzene · Benzene hexachloride
	Petroleum solvent	Solvent · Naphtha · Gasoline
	Alcohol	Methyl alcohol · Ethyl alcohol · Cyclohexanol · Benzyl alcohol
	Phenol	Carbolic acid · Cresol · Naphthol
	Ether	Methyl ether · Methyl-ethyle ether · Ethyl ether
	Ketones	Acetone · Methyl-ethyl keton · Cyclohexanone · Acetophenone
	Carbonic acid	Formic acid · Acetic acid · Buthylene acid · Acrylic acid · Oxalic acid · Biphthalate acid
	Phosphoric ester	Dimethyl phthalate (DMP) · Diethyl phthalate (DEP) · Dibuthyl phethalate (DBP) · Diothyl phethalate (DOP)
	Oxy acid	Glycol acid · Lactic acid · Malic acid · Citrate acid · Tartaric acid
	Nitro Compound	Nitromethane · Nitro ethane · Nitro ethylene · Nitro benzene
	Amin	Methyl amin · Diothyl amin · Ethyl amin · Aniline · Aceto anilido
	Nitril	Acetonitrile · Acrylonitrile · Benzenitrile · Acetoirinitril

8) Avoid installation of it within the area where any one of such chemicals exists as listed in the table on the next page.

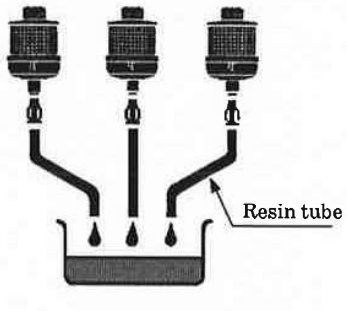
9) Whenever oil or drain accumulates, be sure to drain it by opening drain cock before it reaches to element.

10) In case manual draining is not frequent enough due to much drain discharge, remove drain cock of cleaner, mount a half union of R 1/8 male thread in place then mount resin tube over it as per illustrated..

To accomplish it, take the following steps.

(1) Remove a drain cock.

(2) Screw in half union of R 1/8, male then attach resin tube.



[8137-H]

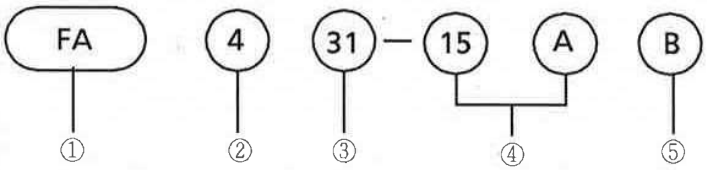
11) When loading of element accumulate, replace element ass'y before back pressure reaches at 0.1MPa.

3. EXHAUST CLEANER DISASSEMBLING

Refer to the Internal structure drawing and parts list when engaged in disassembling the cleaner.

1) Make element ass'y (①②③④⑤) separated from case ass'y (⑥⑦) by turning the bowl ass'y ⑥ counterclockwise by hand.
2) Adaptor ass'y ①, packing ②, element ass'y ③, gasket ④ and nut ⑤ come out separately when take nut ⑤ out.
3) Follow the reversed order of disassembling when to assemble it back.

4. HOW TO ORDER



①Model Coding	
FA	Filter

②Class of series	
3	Compact
4	Standard
5	Large size
6	Large connecting port
7	Large connecting port
8	Large connecting port

③Class of product	
31	Exhaust fume cleaner

④Connecting port dia.	
10A	Rc $^{3}/_{8}$
15A	Rc $^{1}/_{2}$
20A	Rc $^{3}/_{4}$
25A	Rc 1
40A	Rc 1 $^{1}/_{2}$
50A	Rc 2

⑤Option	
B	Bracket (Delivered together w/Cleaner)