

Operation Manual

PRODUCT NAME

AIR FILTER

MODEL / Series / Product Number

AF10-M5(C)(-2,6,R,Z)-A

 $AF20-(F,N)01 \sim (F,N)02(B,C)(-2,6,C,J,R,Z)-A$

 $AF30-(F,N)02\sim(F,N)03(B,C,D)(-2,6,8,J,R,W,Z)-A$

 $AF40-(F,N)02\sim(F,N)04(B,C,D)(-2,6,8,J,R,W,Z)-A$

AF40-(F,N)06(B,C,D)(-2,6,8,J,R,W,Z)-A

 $AF50-(F,N)06 \sim (F,N)10(B)(-2,6,8,J,R,W,Z)-A$

AF60-(F,N)10(B)(-2,6,8,J,R,W,Z)-A

SMC Corporation

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Safety Instructions

These safety instructions are intended to prevent hazardous situations and/or equipment damage. These instructions indicate the level of potential hazard with the labels of "Caution," "Warning" or "Danger." They are all important notes for safety and must be followed in addition to International Standards (ISO/IEC)*1), and other safety regulations.

*1) ISO 4414: Pneumatic fluid power - General rules and safety requirements for systems and their components ISO 4413: Hydraulic fluid power - General rules and safety requirements for systems and their components IEC 60204-1: Safety of machinery - Electrical equipment of machines - Part 1: General requirements ISO 10218-1: Robots and robotic devices - Safety requirements for industrial robots - Part 1:Robots



Danger indicates a hazard with a high level of risk which, if not avoided, will result in death or serious injury.

Warning indicates a hazard with a medium level of risk which, if not avoided, could result in death or serious injury.

Caution indicates a hazard with a low level of risk which, if not avoided, could result in minor or moderate injury.

/ Warning

1. The compatibility of the product is the responsibility of the person who designs the equipment or decides its specifications.

Since the product specified here is used under various operating conditions, its compatibility with specific equipment must be decided by the person who designs the equipment or decides its specifications based on necessary analysis and test results. The expected performance and safety assurance of the equipment will be the responsibility of the person who has determined its compatibility with the product. This person should also continuously review all specifications of the product referring to its latest catalog information, with a view to giving due consideration to any possibility of equipment failure when configuring the equipment.

- 2. Only personnel with appropriate training should operate machinery and equipment.

 The product specified here may become unsafe if handled incorrectly. The assembly, operation and maintenance of machines or equipment including our products must be performed by an operator who is appropriately trained and experienced.
- 3. Do not service or attempt to remove product and machinery/equipment until safety is confirmed.
 - 1. The inspection and maintenance of machinery/equipment should only be performed after measures to prevent falling or runaway of the driven objects have been confirmed.
 - 2. When the product is to be removed, confirm that the safety measures as mentioned above are implemented and the power from any appropriate source is cut, and read and understand the specific product precautions of all relevant products carefully.
 - 3. Before machinery/equipment is restarted, take measures to prevent unexpected operation and malfunction.
- 4. Our products cannot be used beyond their specifications. Our products are not developed, designed, and manufactured to be used under the following conditions or environments. Use under such conditions or environments is not covered.
 - 1. Conditions and environments outside of the given specifications, or use outdoors or in a place exposed to direct sunlight.
 - 2. Use for nuclear power, railways, aviation, space equipment, ships, vehicles, military application, equipment affecting human life, body, and property, fuel equipment, entertainment equipment, emergency shut-off circuits, press clutches, brake circuits, safety equipment, etc., and use for applications that do not conform to standard specifications such as catalogs and operation manuals.
 - 3. Use for interlock circuits, except for use with double interlock such as installing a mechanical protection function in case of failure. Please periodically inspect the product to confirm that the product is operating properly.



Safety Instructions

Caution

We develop, design, and manufacture our products to be used for automatic control equipment, and provide them for peaceful use in manufacturing industries.

Use in non-manufacturing industries is not covered.

Products we manufacture and sell cannot be used for the purpose of transactions or certification specified in the Measurement Act.

The new Measurement Act prohibits use of any unit other than SI units in Japan.

Limited warranty and Disclaimer/Compliance Requirements

The product used is subject to the following "Limited warranty and Disclaimer" and "Compliance Requirements". Read and accept them before using the product.

Limited warranty and Disclaimer

- 1. The warranty period of the product is 1 year in service or 1.5 years after the product is delivered, whichever is first.*2)
 - Also, the product may have specified durability, running distance or replacement parts. Please consult your nearest sales branch.
- 2. For any failure or damage reported within the warranty period which is clearly our responsibility, a replacement product or necessary parts will be provided.
 - This limited warranty applies only to our product independently, and not to any other damage incurred due to the failure of the product.
- 3. Prior to using SMC products, please read and understand the warranty terms and disclaimers noted in the specified catalog for the particular products.
 - *2) Vacuum pads are excluded from this 1 year warranty.

A vacuum pad is a consumable part, so it is warranted for a year after it is delivered. Also, even within the warranty period, the wear of a product due to the use of the vacuum pad or failure due to the deterioration of rubber material are not covered by the limited warranty

Compliance Requirements

- 1. The use of SMC products with production equipment for the manufacture of weapons of mass destruction (WMD) or any other weapon is strictly prohibited.
- 2. The exports of SMC products or technology from one country to another are governed by the relevant security laws and regulations of the countries involved in the transaction. Prior to the shipment of a SMC product to another country, assure that all local rules governing that export are known and followed.

Precautions for design



/!\ WARNING

- 1 If no leakage is allowed due to the environment, it cannot be used. Or operating fluid is not air, it cannot be used.
- 2 External parts including the handle (Material: polyacetal) and bowl (Material: polyacarbonate) are made of resin. Organic solvents including synthetic fluid, chemicals including acetone, alcohol, ethylene chloride, sulphuric acid, nitrate, hydrochrolic acid, cutting oil, kerosene, gasoline, lock material of screw are harmful. Do not use the filter regulator where containing those.

Effects organic solvents and chemicals, and where these elements are likely to adhere to the equipment.

Chemical data for substances causing degradation (Reference)

Type	Chemical name	Application examples	Material		
туре	.,		Polycarbonate	Nyron	
Acid	Hydrochloric acid Sulphuric acid, Phosphoric acid Chromic acid	Acid washing liquid for metals	Δ	×	
Alkaline	Sodium hydroxide (Caustic soda) Potash Calcium hydroxide (Slack lime) Ammonia water Carbonate of soda	Degreasing of metals Industrial salts Water-soluble cutting oil	×	0	
Inorganic salts	Sodium sulphide Sulphate of potash Sulphate of soda	_	×	Δ	
Chlorine solvents	Carbon tetrachloride Chloroform Ethylene chloride Methylene chloride	Cleaning liquid for metals Printing ink Dilution	×	Δ	
Aromatic series	Benzene Toluene Paint thinner	Coatings Dry cleaning	×	Δ	
Ketone	Acetone Methyl ethyl ketone Cyclohexane	Photographic film Dry cleaning Textile industries	×	×	
Alcohol	Ethyl alcohol IPA Methyl alcohol	Antifreeze Adhesives	Δ	×	
Oil	Gasoline Kerosene	_	×	0	
Ester	Phthalic acid dim ethyl Phthalic acid diethyl Acetic acid	Synthetic oil Anti-rust additives	×	0	
Ether	Methyl ether Ethyl ether	Brake oil additives	×	0	
Amino	Methyl amino	Cutting oil Brake oil additives Rubber accelerator	×	×	
Other	Thread -lock fluid Seawater Leak tester	_	×	Δ	
): Essentially safe \triangle : Sor	ne effects may occur	× : Effects will o		

When the above factors are present, or there is some doubt, use a metal case for safety.

- 3 Avoid the application where charge and discharge of pressure to bowl is switched frequently. This may damage the bowl. A metal bowl is recommended in these cases.
- 4 Protect from ultra violet ray and radiation heat by shield.

1 AD17-A and AD27-A with auto drain may leak during exhaust of pressure. (This leakage is allowed in their constructions and not failure.) Be sure to connect piping for drain.

Selection

WARNING

- (1) Grease used on the internal sliding parts and seals may flow to the outlet side.
- (2) N.O. type auto drain should be used under the following requirements to avoid operating failure. Output of compressor: 0.75kW or more.

Discharged flow rate: 100L/min (ANR) or more.

If multiple auto drains are used, confirm used compressor has capacity over the result of multiplying the above capacity and the number of used auto drains.

{For example, in case of two auto drain, the compressor need the capacity over 1.5kW [200L/min (ANR)].}

Operating pressure: 0.1MPa or more at min..

(3) N.C. type auto drain should be used under the following requirements to avoid operating failure. Operating pressure: 0.1MPa or more at min. for AD17-A and AD27-A, 0.15MPa or more at min. for AD37-A and AD47-A.

Installation



!\ CAUTION

- ① Do not drop nor apply impact during transportation or installation. This can cause damage to the product.
- (2) Do not install in areas of high humid or high temperature. It causes damage of the product and malfunction.
- ③ Connect the air filter ensuring the direction of "1" (IN) and "2" (OUT) for air direction or an arrow. Wrong connection may cause malfunction.
- (4) Install vertically so that outlet of drain would turned downward. Use with the outlet of drain turned horizontal or upward causes malfunction.
- (5) Make a space to provide easy access at the bottom when replacing element or draining bowl. The required space is shown on [11. DIMENSIONS] (P30).

Piping



∕! WARNING

- 1 Blow out or clean piping before piping to eliminate swarf, cutting oil, solid foreign material. Contamination of piping may cause damage or malfunction.
- (2) When installing piping, avoid chips and sealing materials from piping screws entering the inside of equipment. Or malfunction may occur. When a sealant tape is used, leave 1 thread ridge exposed at the end of the threads.
- 3 Hold the female screw side and screw in piping with recommended tightening torque. Insufficient tightening torque lead to cause loose piping or sealing failure. Excessive torque may lead to cause screw breakage. Tightening without holding female screw side applies excessive force to the piping bracket which lead to cause breakage.

Recommended torque unit: N·m

Screw	M5	1/8	1/4	3/8	1/2	3/4	1
Torque	*1	7 ~ 9	12~14	22~24	28~30	28~30	36~38

*1: First, tighten it by hand, then give it an additional 1/6 turn with a wrench.

- 4 Do not apply any torsional moment, or bending moment except the weight of the air filter itself. External piping needs to be supported separately. Hard piping like steel tube is susceptible to excessive moment load or vibration. Insert the flexible tube to cancel the influence.
- (5) Drain guide is not equipped with valve function. Be sure to connect piping for drain. No piping for drain allows the drain and compressed air to exhaust freely. Also, the piping should be performed with drain guide held by spanner to prevent breakage of bowl.

(6) The piping for drain from auto drain should be connected under the following requirements to avoid operating failure.

AD17-A, AD27-A: I.D. φ2.5 (φ3/32") at min., Length 5m (200") at max.

AD37, 47(N)-A: I.D. ϕ 4 (ϕ 3/16") at min., Length 5m (200") at max.

AD38, 48(N)-A:: I.D. \(\phi 6.5 \) (\(\phi 1/4\)") at min., Length 5m (200\)") at max.

Air Source



!\ WARNING

- ① Use clean air. Compressed air containing chemicals, organic solvent, synthetic oil or corrosive gas may lead to cause breakage of parts or malfunction.
- ② Air containing too much moisture may cause malfunction. Install the air drier or the aftercooler before the air filter.

Maintenance



<u>'!\</u> WARNING

- ① Maintenance and checks should be done by following the procedure in the operation manual. Incorrect handling of the product may cause breakage or malfunction of the equipment or device.
- (2) Perform periodical check to find cracks, flaws or other deterioration on resin bowl. If any of them is seen, as malfunction is caused, replace with new bowl.
- (3) Check for dirt in resin bowl periodically. If any dirt is seen, replace with new bowl. And if removing off the dirt by washing instead of using a replacement, never use washing material other than neutral detergent. Otherwise, the bowl is damaged.
- (4) Open and close drain cock manually. Open and close too much may damage the drain cock.
- (5) Replace the element before 2 years passed since purchase or pressure drop from initial outlet pressure reaches 0.1MPa. Or the element is broken.
- 6 Drain the bowl by opening drain cock before the drain level in the bowl reaches baffle.



!\ CAUTION

- ① Rotate the handle counterclockwise (O←direction) to exhaust the condensate of the C1SF-A, C2SF(-C)-A.
 - Press the push button to exhaust the condensate of the C3SF(-W)-A and C4SF(-W)-A.
- ② Check the element periodically and replace it with a new one if necessary. If it is found that outlet pressure drops or the flow is restricted, check the condition of the element.
- (3) The manual exhaust for emergency case can be performed by counterclockwise rotation of the handle in AD17-A and AD27-A. (O←direction)
 - For AD37-A, AD38-A, AD47-A and AD48-A, rotate the drain cock counterclockwise in that case.(O←direction)
- For the N.C. type auto drain, when there is no pressure, condensate which does not operate the auto drain mechanism will remain in the bowl. It is recommended to release the residual condensate manually at the end of the working day.

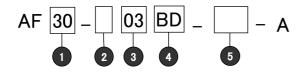
2. APPLICATION

This product aims at eliminating excess moisture and solid foreign material in the air line.

3. SPECIFICATIONS

Model	AF10-A	AF20-A	AF30-A	AF40-A	AF40-06-A	AF50-A	AF60-A		
Port size	M5	1/8, 1/4	1/4, 3/8	1/4, 3/8, 1/2	3/4	3/4, 1	1		
Fluid		Air							
Ambient and fluid		-5 ~ 60°C (Should be no freezing)							
temperature			-5 · • 60 C	(Should be II	o ireezirig)				
Proof pressure	1.5 MPa								
Max. operating pressure	1.0 MPa								
Filtration				5 µm					
Drain capacity (cm ³)	2.5	8	25		4	5			
Bowl material			ſ	Polycarbonate	Э				
Bowl guard		Semi-standard		Standa	ord (Polyoorh	onata)			
Dowi yuaru	_	(Steel plate)	Standard (Polycarbonate)						
Mass (kg)	0.06	0.08	0.18	0.36 0.41 0.87 1.00					

4. HOW TO ORDER

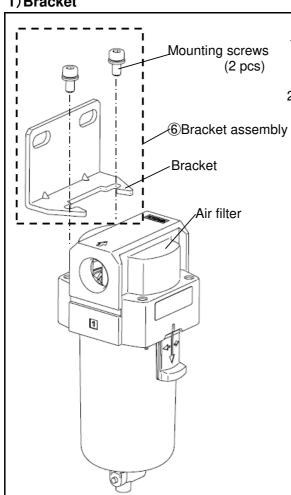


								1			
				Symbol	Description						
	Sym			Cymbol	Возоприоп		1	Body			
						10	20	30	40	50	60
					Meter thread (M5)	•	Ι_	I _	_	_	_
				Nil	Rc		•	•	•	•	•
2	2 Thread type		ead type	N	NPT	_	•	•	•	•	
			F	G	_	•	•	•	•	•	
	l			+	<u> </u>						
				M5	M5	•	_	_	_	_	_
			01	1/8	_	•	_	_	_	_	
				02	1/4	_	•	•	•	_	_
3		Р	ort size	03	3/8	_	_	•	•	_	_
				04	1/2	_	_	_	•	_	_
				06	3/4	_	_	_	•	•	_
				10	1	_	_	_	_	•	•
				+			•				
			Maunting	Nil	Without mounting option	•	•	•	•	•	•
		а	Mounting	В	With bracket	_	•	•	•	•	•
	Option			+							
4	Ö		Eleat type auto	Nil	Without auto drain	•	•	•	•	•	•
		b	Float type auto drain	С	With float type auto drain (N.C.)	•	•	•	•	•	•
			Grain	D	With float type auto drain (N.O.)	_	_	•	•	•	•
				+							
				Nil	Polycarbonate bowl	•	•	•	•	•	•
				2	Metal bowl Nyron bowl	•	•	•	•	•	•
		С	Bowl	6 8	Metal bowl with sight glass	_	-	•	•	•	•
				C	With bowl guard (steel plate)	_	•	_	_	_	_
				6C	With bowl guard (steel plate) • Nyron bowl	_	•	_	_	_	_
	70		•	+							
	dare			Nil	With drain cock	•	•	•	•	•	•
5	an	Ι.			Drain guide 1/8	_	•	_	_	_	_
	is-ic	d	Drain port	J	Drain guide 1/4	_	_	•	•	•	•
	Semi-standard			W	Drain cock with barb fitting (For φ6xφ4 nylon tube)	_	_	•	•	•	•
	0,			+	· · · · · · · · · · · · · · · · · · ·		•	•	U		
		_	Flow direction	Nil	Flow direction: Left to right	•	•	•	•	•	•
		е	Flow direction	R	Flow direction: Right to left	•	•	•	•	•	•
				+							
		f	Pressure unit	Nil	Name plate and caution plate for bowl in imperial units : MPa, °C	•	•	•	•	•	•
		L'	i ressure utilit	Z	Name plate and caution plate for bowl in imperial units : psi, °F	•	•	•	•	•	•

 $[\]ensuremath{\mathbb{X}}$ Please refer to the catalog when you select the model.

5. OPTIONAL BRACKET ASSEMBLY

1) Bracket



- 1) Installation of bracket Mount the bracket in the direction as shown in diagram.
- 2) Tightening of mounting screw Two mounting screws are tightened by cross pointed driver or hexagon spanner for holding.

Refer to the table below for correct tool and the tightening torque required.

Air filter	Tools	Tightening torque
AF20-A	Cross pointed driver	0.75±0.2 N·m
AF30-A	Hexagon spanner: nominal 3	0.75±0.2 N·m
AF40-A	Hexagon spanner: nominal 4	1.5±0.2 N∙m
AF50-A	Hoyagan anannar, naminal F	2.6±0.3 N•m
AF60-A	Hexagon spanner: nominal 5	∠.0±0.3 N°III

6. TROUBLESHOOTING

Refer to \$\int 7\$. CONSTRUCTION / PARTS LIST \(\text{P10} \), \$\int 10\$. DISASSEMBLY DRAWING \(\text{P28} \) to P29).

TROUBLE		POSSIBLE CAUSE	REMEDY
DEMARCATION PHENOMENON		POSSIBLE CAUSE	NEIVIED I
Flow rate	Large air resistance reduces flow rate.	1. Clog of the element.	1. Replace the element.
	Air leaks between the bowl and the body.	Breakage of bowl packing.	Replace the bowl packing. Grease up before assembling.
Air leaks	Air leaks from the bowl.	Breakage of bowl.	Replace the bowl assembly or with metal bowl.
	Air leaks from the drain cock.	1. The foreign matter caught in the valve of the drain cock.	Open the drain cock for a few seconds for blowing.
		2. Breakage of the seating part of the drain cock.	2. Replace the bowl assembly.
	No drainage when the drain cock is opened.	Blockage of outlet of the drain cock due to solid foreign matter etc.	Replace the bowl assembly.
Operational	Too much drain comes from the piping of outlet side.	1. Drain level reaches the baffle plate.	Open the drain cock for draining and replace the element.

Note) Grease pack for maintenance "GR-F-###" is recommended for use. (See table 1, table 2)

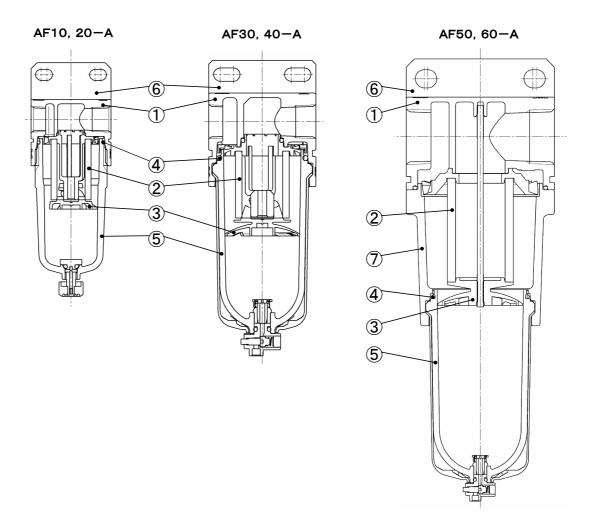
Table 1. Coating amount per unit

3 1				
Model	Mass(g)			
AF20-A	0.1			
AF30-A	0.15			
AF40-A	0.2			
AF50-A	0.25			
AF60-A	0.25			

Table 2. Grease pack No.

No.	Mass(g)
GR-F-005	5
GR-F-050	50
GR-F-100	100
GR-F-200	200
GR-F-500	500

7. CONSTRUCTION / PARTS LIST



Component Parts

No.	Description	Material	Applicable model	Note
1	Body	Zinc die cast	AF10-A	White
U)	body	Aluminium die cast	AF20-A~AF40-06-A	White
7	Housing	Aluminium die cast	AF50-A, AF60-A	White

Option / Replacement Parts

No.	Description	Matarial	Material Part No.								
INO.	Description	ivialeriai	AF10-A	AF20-A	AF30-A	AF40-A	AF40-06-A	AF50-A	AF60-A		
2	Element	Polyolefin	AF10P-060S	AF20P-060S	AF30P-060S	AF40P-060S		AF50P-060S	AF60P-060S		
3	Baffle	PBT	Note1)AF10P-040S	AF22P-040S	AF32P-040S	AF42F	AF42P-040S		AF60P-040S		
4	Bowl packing	NBR	C1SFP-260S	C2SFP-260S	C32FP-260S	C42FP-260S					
	Bowl assembly	Polycarbonate									
(5)	Auto drain (N.C.)	Polycarbonate		Refer to "8. SI	PECIFICATION	NS OF BOWL	ASSEMBLY"(P11 to P19).			
	Auto drain (N.O.)	Polycarbonate									
6	Note2) Bracket assembly	Steel plate	-	AF22P-050AS	AF32P-050AS	AF42P-050AS	AF42P-070AS	AF52P	-050AS		

Note 1) For AF10 baffle material : POM (AF10P-040S only).

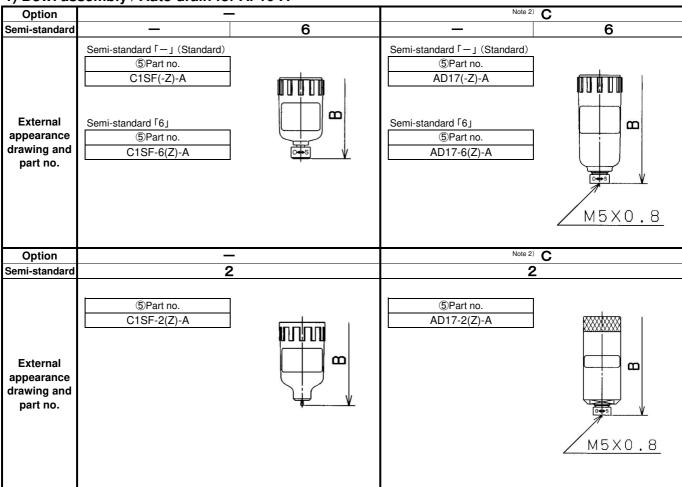
Note 2) Bracket with mounting screws.(2pcs)

Note 3) The number in the table is corresponding to the number in structural drawing (avobe-mentioned figure) and

"8. SPECIFICATIONS OF BOWL ASSEMBLY" (P11 to P19), "10. DISASSEMBLY DRAWING" (P28 to P29).

8. SPECIFICATIONS OF BOWL ASSEMBLY

1) Bowl assembly / Auto drain for AF10-A



Note 1) B in the table shows full dimensions of the product. Refer to 「11. DIMENSIONS」 (P30).

Note 2) Min. operating pressure is 0.1MPa.

Note 3) "Z" of the part with no. ⑤ is semi-standard for indicated unit of pressure and temperature, which is psi and °F

Note 4) The symbol for option and semi-standard are described as \(\begin{aligned} 4 \). HOW TO ORDER \(\begin{aligned} 1(P7) \).

	sembly / Auto drain for	AF20-A		
Option Semi-standard		6	C –	6C
External appearance drawing and part no.	Semi-standard 「—」 (Standard) Port thread ⑤Part no. Rc C2SF-A G NPT C2SF(-Z)-A Semi-standard 「6」 Port thread ⑤Part no. Rc G Part no. Rc G C2SF-6-A	6	Semi-standard 「C」 Port thread ⑤Part no. Rc C2SF-C-A G NPT C2SF-C(Z)-A Semi-standard 「6C」 Port thread ⑤Part no. Rc G C2SF-6C-A C2SF-6C-A	6C
Option	NPT C2SF-6(Z)-A		NPT C2SF-6C(Z)-A	
Semi-standard	J	6J	CJ	6CJ
External appearance drawing and part no.	Semi-standard ΓJJ Port thread ⑤Part no. Rc C2SF-J-A G C2SFF-J-A NPT C2SFN-J(Z)-A Semi-standard Γ6JJ Port thread ⑤Part no. Rc C2SF-6J-A G C2SFF-6J-A NPT C2SFN-6J(Z)-A	1/8 HEX.: 14	Port thread ⑤Part no. Rc C2SF-CJ-A G C2SFF-CJ-A NPT C2SFN-CJ(Z)-A Semi-standard 「6CJ」 Port thread ⑤Part no. Rc C2SF-6CJ-A G C2SF-6CJ-A NPT C2SFN-6CJ(Z)-A	1/8 HEX.: 14
Option	_			
External appearance drawing and part no.	Semi-standard 「2」 Port thread ⑤Part no. Rc C2SF-2-A NPT C2SF-2(Z)-A	B	Semi-standard 「2J」 Port thread ⑤Part no. Rc C2SF-2J-A G C2SFF-2J-A NPT C2SFN-2J(Z)-A	1/8 HEX.: 14
Option Semi-standard	Note 2)	C 6	Note 2)	6C
External appearance drawing and part no.	Semi-standard 「—」 (Standard) Port thread ⑤Part no. Rc AD27-A G NPT AD27(-Z)-A Semi-standard 「6」 Port thread ⑤Part no. Rc AD27-6-A G NPT AD27-6-A	M5 × 0.8	Semi-standard 「C」 Port thread ⑤Part no. Rc AD27-C-A NPT AD27-C(Z)-A Semi-standard 「6C」 Port thread ⑤Part no. Rc AD27-6C-A G AD27-6C-A	M5×0.8

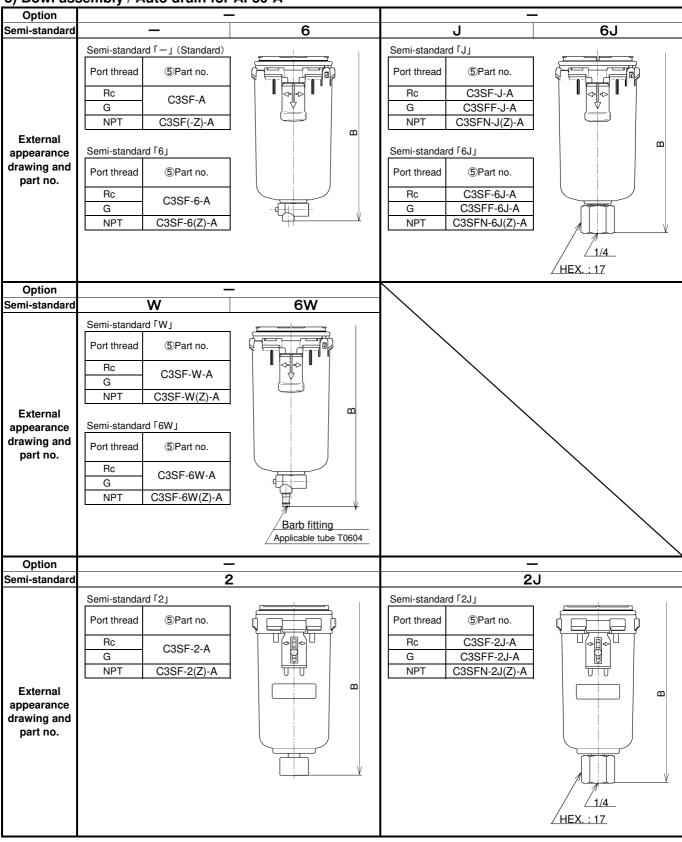
Option	Note 2)	С	
Semi-standard	2		
External appearance drawing and part no.	Semi-standard 「2」 Port thread ⑤Part no. Rc AD27-2-A G NPT AD27-2(Z)-A	M5 × 0.8	

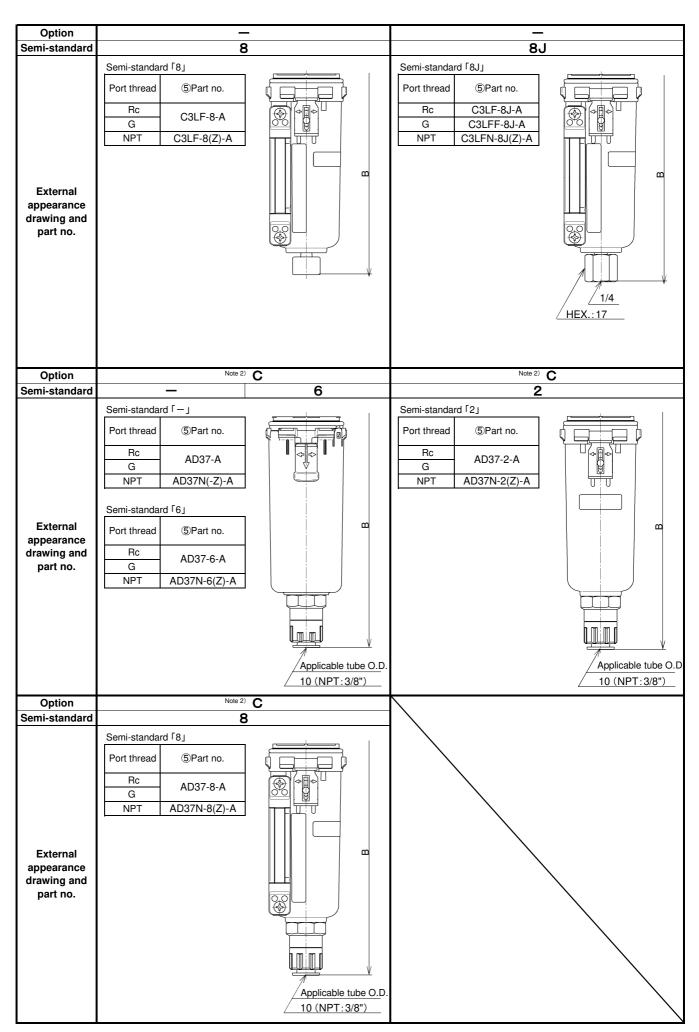
- Note 1) B in the table shows the distance from inlet piping centreline to drain port. Refer to "11. DIMENTIONS" (P30). Note 2) Min. operating pressure is 0.1MPa.

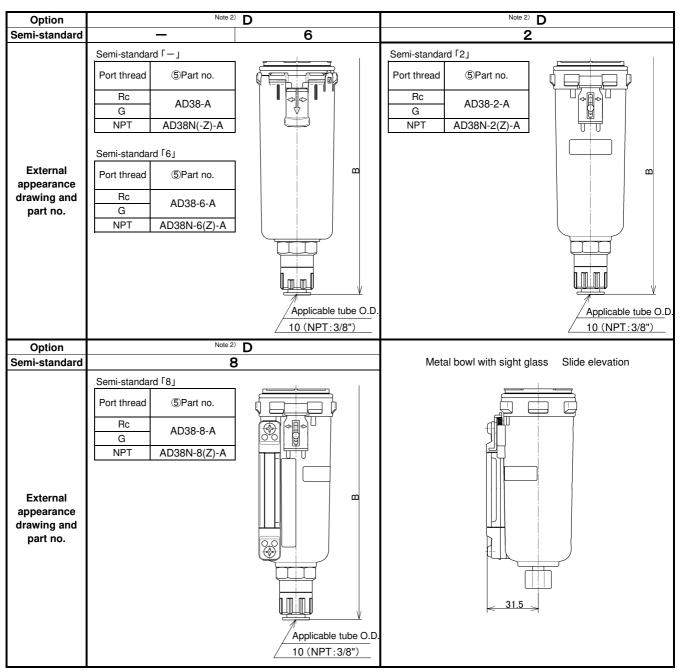
 Note 3) The part with no. ⑤ includes ④ Bowl packing. Refer to "10. DISASSEMBLY DRAWING" (P28 to P29).

 Note 4) "Z" of the part with no. ⑤ is semi-standard for indicated unit of pressure and temperature, which is psi and °F. Note 5) The symbol for option and semi-standard are described as "4. HOW TO ORDER" (P7).

3) Bowl assembly / Auto drain for AF30-A







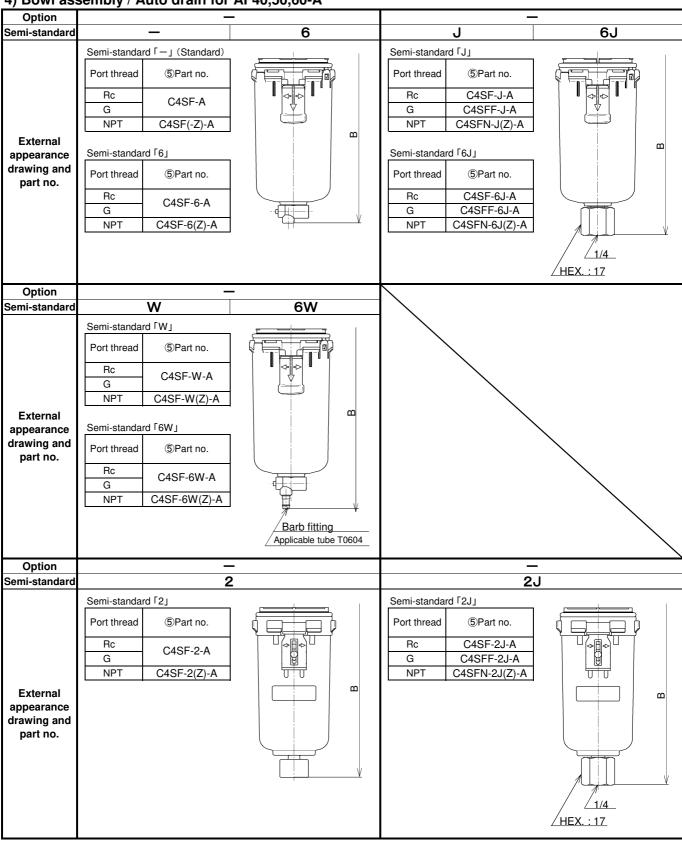
Note 1) B in the table shows the distance from inlet piping centreline to drain port. Refer to "11. DIMENTIONS" (P30).

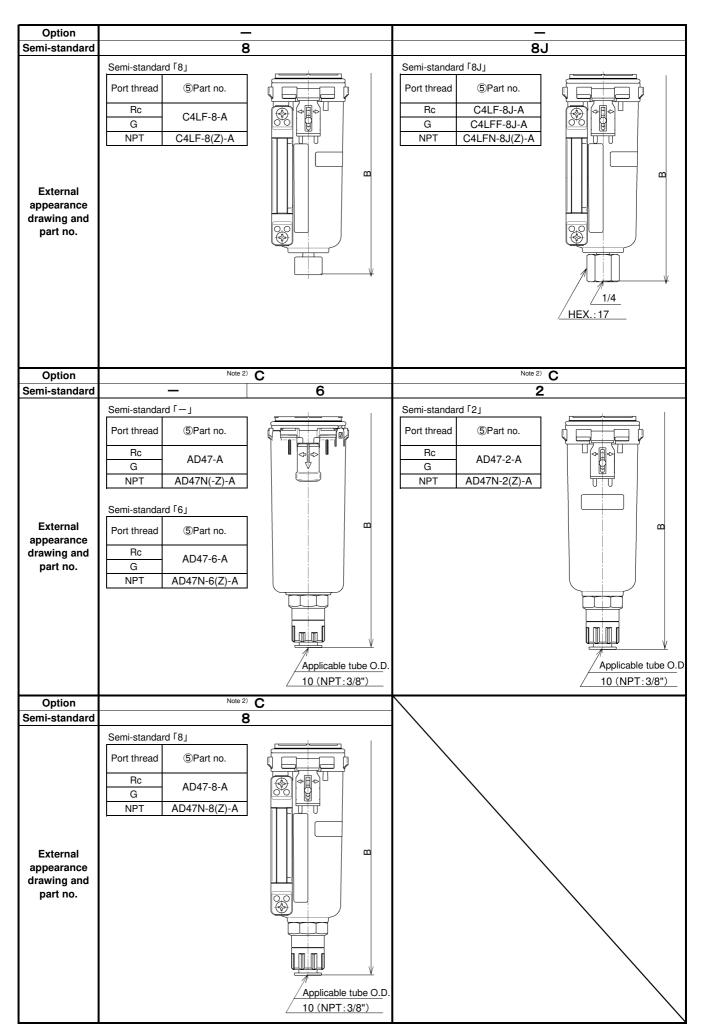
Note 2) Min. operating pressure is 0.15MPa for N.C. type and 0.1MPa for N.O. type.

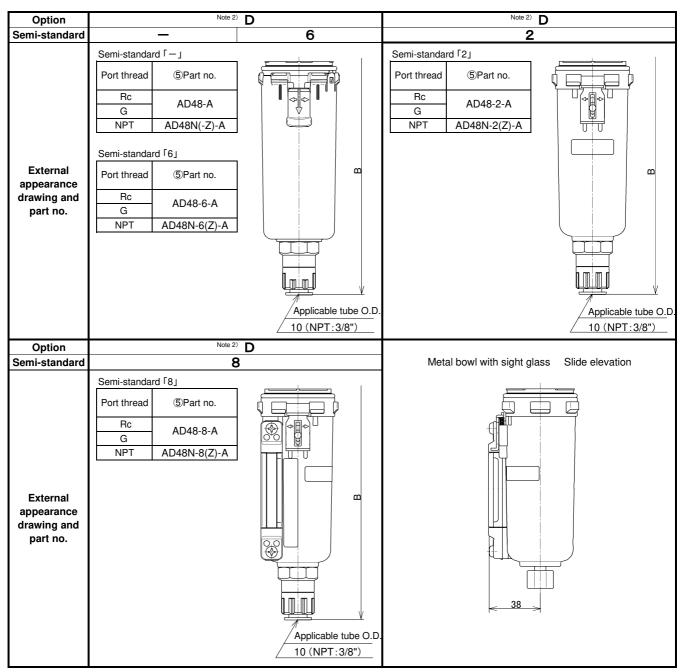
Note 3) The part with no. ⑤ includes ④ Bowl packing. Refer to "10. DISASSEMBLY DRAWING" (P28 to P29). Note 4) "Z" of the part with no. ⑤ is semi-standard for indicated unit of pressure and temperature, which is psi and °F.

Note 5) The symbol for option and semi-standard are described as "4. HOW TO ORDER" (P7).

4) Bowl assembly / Auto drain for AF40,50,60-A







Note 1) B in the table shows the distance from inlet piping centreline to drain port. Refer to "11. DIMENTIONS" (P30).

Note 2) Min. operating pressure is 0.15MPa for N.C. type and 0.1MPa for N.O. type.

Note 3) The part with no. ⑤ includes ④ Bowl packing. Refer to "10. DISASSEMBLY DRAWING" (P28 to P29). Note 4) "Z" of the part with no. ⑤ is semi-standard for indicated unit of pressure and temperature, which is psi and °F.

Note 5) The symbol for option and semi-standard are described as "4. HOW TO ORDER" (P7).

9. REPLACEMENT PROCEDURE

! WARNING

- •Before replacement, ensure that the air filter is not pressurized.
- •Replace refering to "10. DISASSEMBLY DRAWING" (P28 to P29).
- After replacement, ensure that specified function is satisfied and external leakage is not found before starting operation.

1) Bowl assembly / element

[AF10-A]

<Disassembly>

Step 1 Step 1 Remove the bowl assembly. Hold the bowl Rotate the baffle by hand and assembly by hand and rotate couterclockwise to counterclockwise to remove the baffle and element. remove the bowl assembly. If the bowl assembly is tightened too much to be removed, use hook spanner until it can be loosened by hand. (Hook spanner Nominal: 25/28) Element assembly Baffle Bowl assembly

[AF10-A]

<Assembly>

Step 1

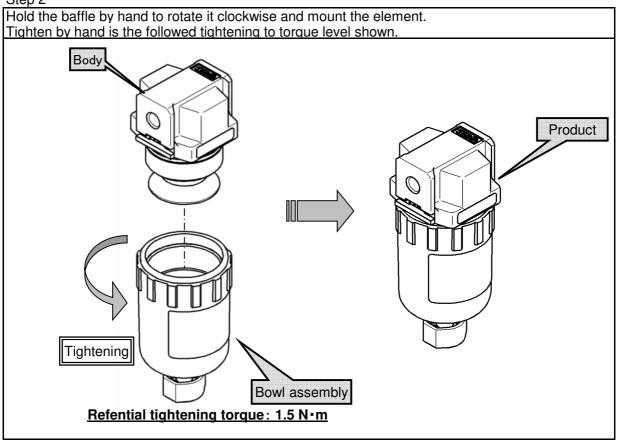
Mount the element to the element guide.
Hold the baffle by hand to rotate it clockwise and mount the element.

Element guide

Element (Direction is not specified.)

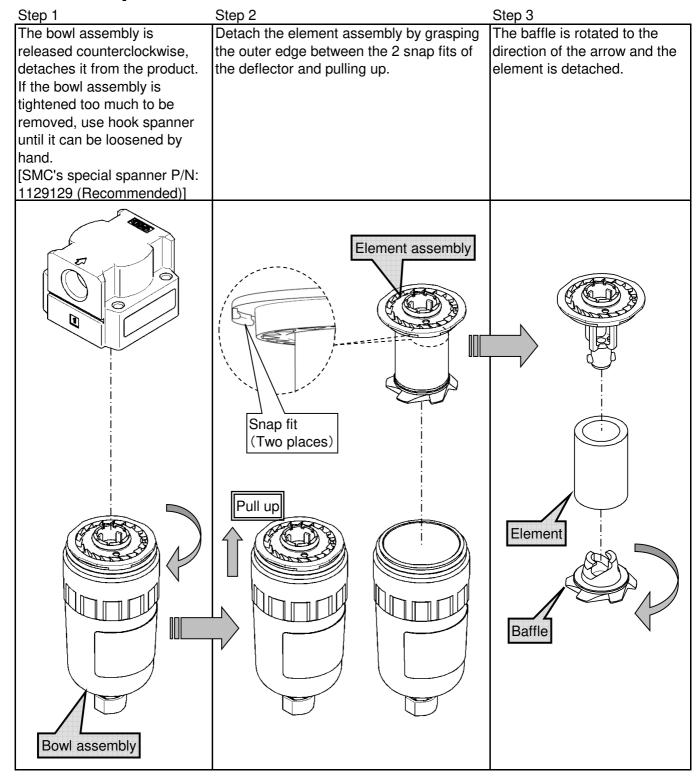
Screw the element guide until the end of the element guide is leveled with the bottom surface of the baffle.

Step 2



[AF20-A]

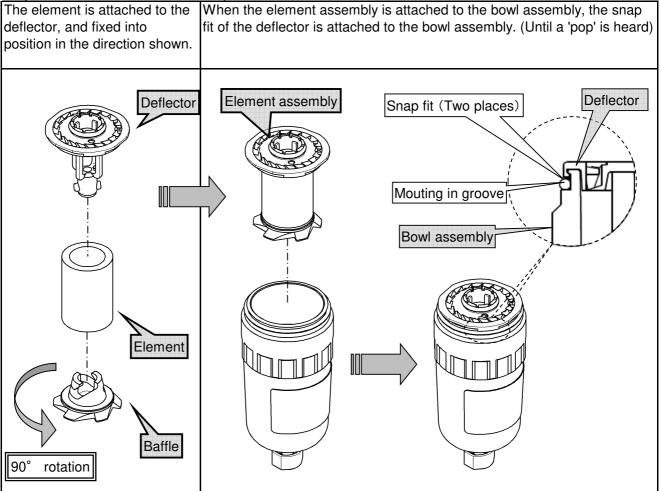
<Disassembly>



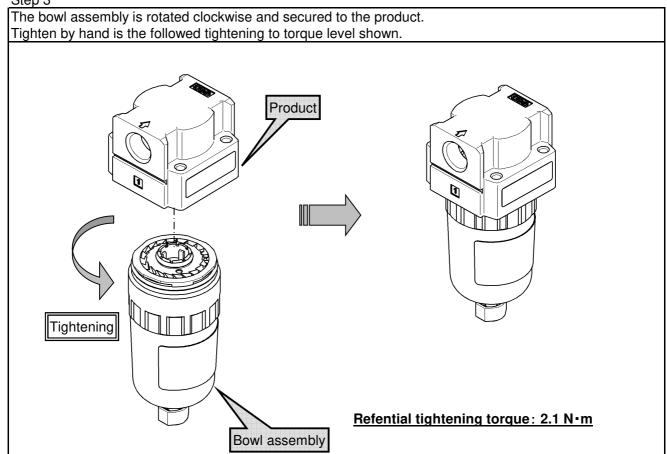
[AF20-A]

<Assembly>

Step 1 Step 2

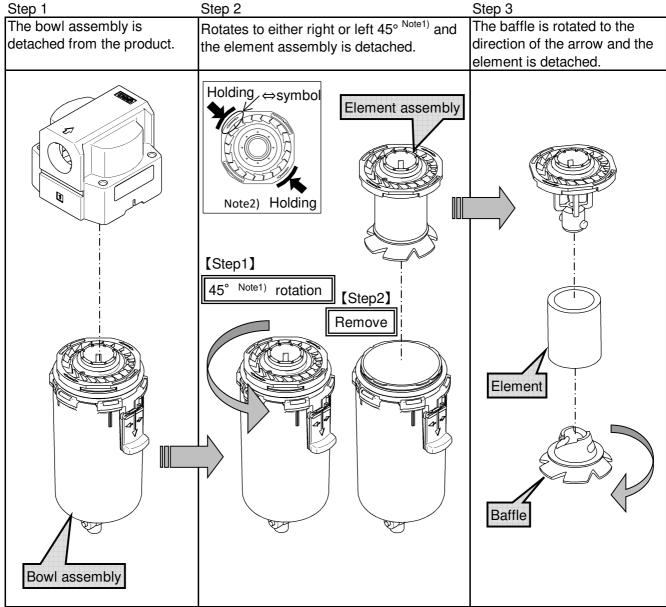


Step 3



[AF30, 40-A]

<Disassembly>



Note 1) Rotate 90 degrees to remove when -2 (Metal bowl), -8 (Metal bowl with level gauge).

Note 2) Rotate the element assembly holding the outer surface of the ⇔ symbol.

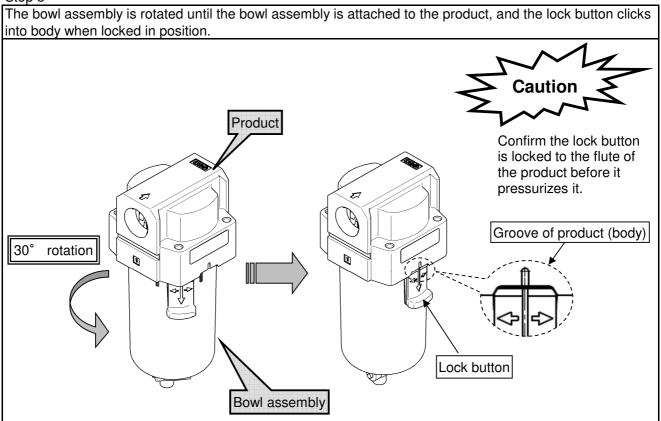
[AF30, 40-A]

<Assembly>

Step 1 Step 2 The element is attached to the To attach element assembly to the bowl assembly. Concave of the bowl deflector, and fixed into assembly is combined with convex of the element assembly. Rotate to position in the direction shown. either right and left by 45°. Holding_{∕⇔symbol} Deflector Note2) Holding Convex Element assembly [Step1] Note1) rotation [Step2] Insert Concave Element Baffle 90° rotation

Bowl assembly

Step 3

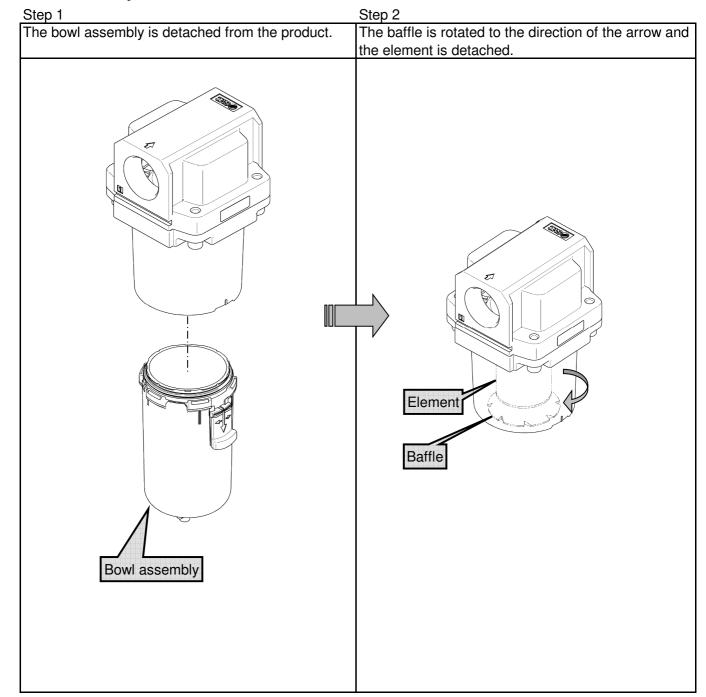


Note 1) Rotate 90 degrees to remove when -2 (Metal bowl), -8 (Metal bowl with level gauge).

Note 2) Rotate the element assembly holding the outer surface of the ⇔ symbol.

[AF50, 60-A]

<Disassembly>



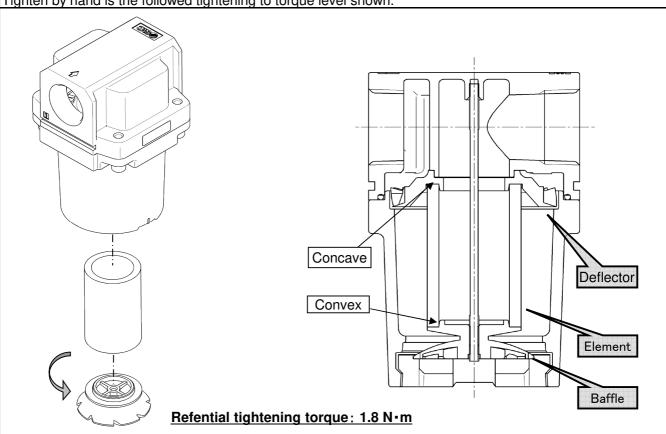
[AF50, 60-A]

<Assembly>

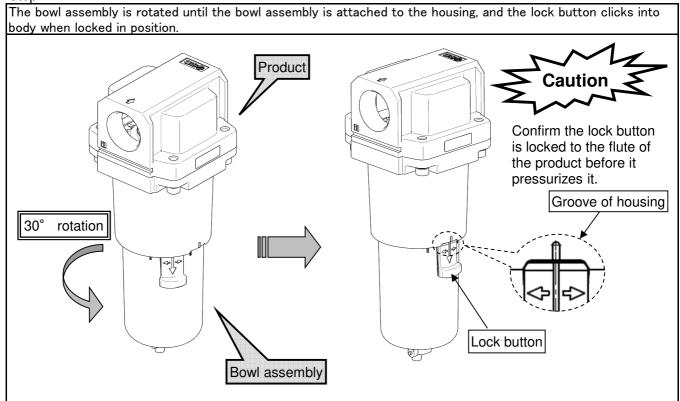
Step 1

Insert the element to the concave of the deflector.

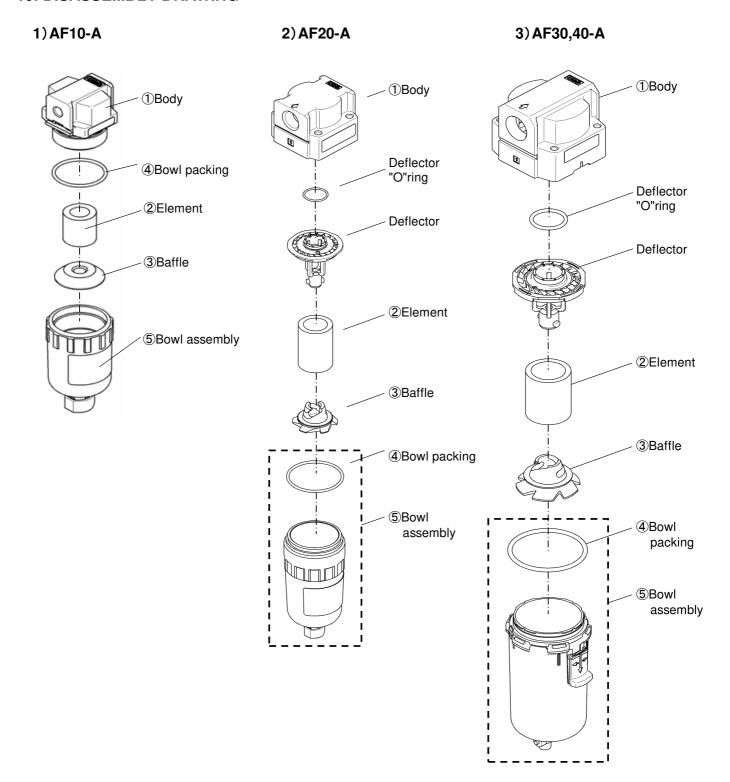
Careful to the direction (convex to the element side) of mount and insert the baffle to the element. Rotate it right with a hand till baffle will join element lightly. After that, rotate it right about 1/2 to tight it up. Tighten by hand is the followed tightening to torque level shown.



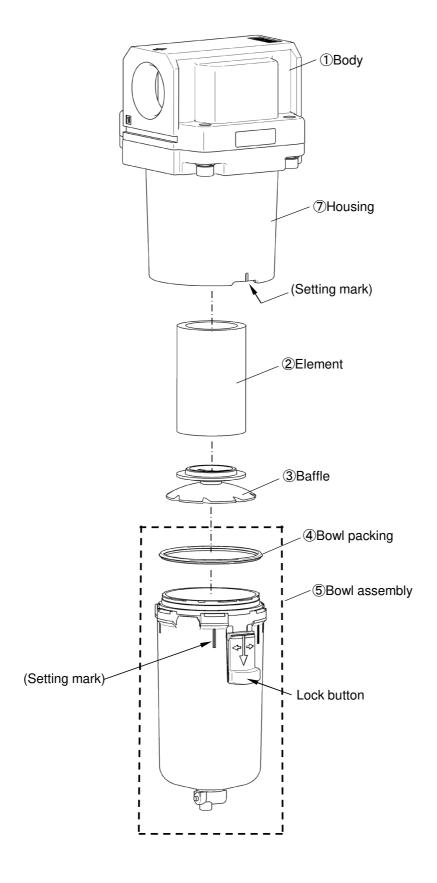
Step 2



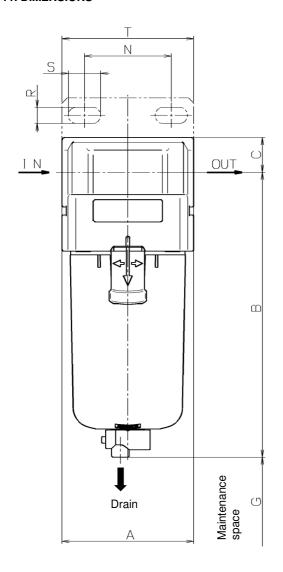
10. DISASSEMBLY DRAWING

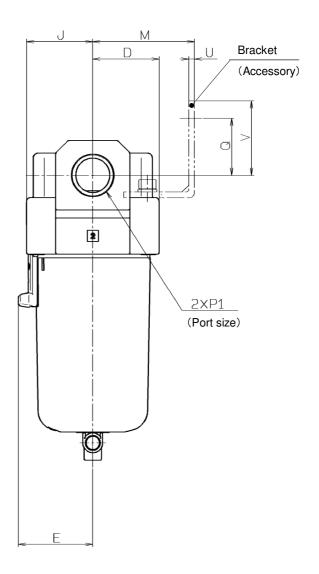


4) AF50,60-A



11. DIMENSIONS





Model	Standard specifications													
	P1	Α	В	С	D	Е	G	J						
AF10-A	M5	25	59.9	7	12.5	_	25	12.5						
AF20-A	1/8 • 1/4	40	87.6	9.8	20	_	25	20						
AF30-A	1/4-3/8	53	115.1	14	26.7	30	35	26.7						
AF40-A	1/4 • 3/8 • 1/2	70	147.1	18	35.5	38.4	40	35.5						
AF40-06-A	3/4	75	149.1	20	35.5	38.4	40	35.5						
AF50-A	3/4 • 1	90	220.1	24	45	ı	30	45						
AF60-A	1	95	234.1	24	47.5	_	30	47.5						

Model		Bracket mount dimensions												
	М	N	Q	R	S	Т	U	V						
AF10-A	_	_	_	_	_	_	_	-						
AF20-A	30	27	22	5.4	8.4	40	2.3	28						
AF30-A	41	35	23	6.5	13	53	2.3	30						
AF40-A	50	52	26	8.5	12.5	70	2.3	35						
AF40-06-A	50	52	25	8.5	12.5	70	2.3	34						
AF50-A	70	66	35	11	13	90	3.2	47						
ΔF60-Δ	70	66	35	11	13	90	32	47						

Dimension:B of auto-drain and optional bowl assembly

Optional Semi-		-													С						D			
standard	2	6	8	O	6C	J	2J	6J	8J	CJ	6CJ	W	6W	_	2	6	8	O	6C	-	2	6	8	
AF10-A	59.3	59.9	1	-	-	-	-	_	-	_	_	_	_	77.9	77.9	77.9	-	-	-	_	_	-	_	
AF20-A	87.4	87.6	-	87.6	87.6	91.4	93.9	91.4	1	91.4	91.4	_	1	104.9	104.6	104.9	_	104.9	104.9	1	_	ı	_	
AF30-A	117.6	115.1	137.6	_	ı	121.9	122.1	121.9	142.1	_	-	123.6	123.6	156.8	156.8	156.8	156.8	_	ı	156.8	156.8	156.8	156.8	
AF40-A	149.6	147.1	169.6	-	_	153.9	154.1	153.9	174.1	_	_	155.6	155.6	186.9	188.8	186.9	188.8	-	_	186.9	188.8	186.9	188.8	
AF40-06-A	151.6	149.1	171.6	_	ı	155.9	156.1	155.9	176.1	_	-	157.6	157.6	188.9	190.8	188.9	190.8	_	ı	188.9	190.8	188.9	190.8	
AF50-A	222.6	220.1	242.6	-	ı	226.9	227.1	226.9	247.1	_	ı	228.6	228.6	259.9	261.8	259.9	261.8	-	ı	259.9	261.8	259.9	261.8	
AF60-A	236.6	234.1	256.6	_	_	240.9	241.1	240.9	261.1	_	_	242.6	242.6	273.9	275.8	273.9	275.8	_	_	273.9	275.8	273.9	275.8	

Note 1) The specifications of auto-drain and optional bowl assembly are described in [8. SPECIFICATIONS OF BOWL ASSEMBLY] (P11 to P19).

Revision history

Model (AF10-A,AF50-A,AF60-A) and Option (-2,-6,-8) addition. 2015.6

B • P4 Fluorine grease is added.

- P8 Shape changing of bracket.
- P30 The page is deleted.
- 11. DIMENSIONS option addition,
 Shape changing of bracket. 2018.1

C • P4 Correction: 「Maintenance」
CAUTION④

- P23 Change:bowl tightening torque(AF20-A)
- P30 Correction: E dimensions(AF50~60-A)

N, S dimensions(AF30~40-A)

2021.12

D • Sayfety Instructions : Revision

2024.9

SMC Corporation

Tel: + 81 3 5207 8249 Fax: +81 3 5298 5362

URL https://www.smcworld.com