# Modular Type
# Air Filters
# *AF/AFM/AFD* Series

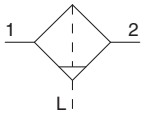
| | Model | Port size | Filtration μm | Options |
|---|---|---|---|---|
| **Air Filter AF Series**  **Pages 43 to 54** | **AF10-A** | M5 x 0.8 | 5 | Bracket (Except AF10-A)<br>Float type auto drain |
| | **AF20-A** | 1/8, 1/4 | | |
| | **AF30-A** | 1/4, 3/8 | | |
| | **AF40-A** | 1/4, 3/8, 1/2 | | |
| | **AF40-06-A** | 3/4 | | |
| | **AF50-A** | 3/4, 1 | | |
| | **AF60-A** | 1 | | |
| **Mist Separator AFM Series**  **Pages 55 to 63** | **AFM20-A** | 1/8, 1/4 | 0.3 | Bracket<br>Float type auto drain |
| | **AFM30-A** | 1/4, 3/8 | | |
| | **AFM40-A** | 1/4, 3/8, 1/2 | | |
| | **AFM40-06-A** | 3/4 | | |
| **Micro Mist Separator AFD Series**  **Pages 55 to 63** | **AFD20-A** | 1/8, 1/4 | 0.01 | Bracket<br>Float type auto drain |
| | **AFD30-A** | 1/4, 3/8 | | |
| | **AFD40-A** | 1/4, 3/8, 1/2 | | |
| | **AFD40-06-A** | 3/4 | | |

# Air Filter

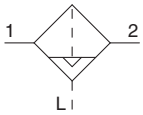
# AF10-A to AF60-A

**Symbol**

Air Filter




Air Filter with Auto Drain




AF10-A

AF20-A

AF40-A

## How to Order

**AF 30 – ❷ 03 BD – ❺ – A – Made to order**

❶ ❷ ❸ ❹ ❺

(Refer to pages 51 to 53 for details.)

- Option/Semi-standard: Select one each for **a** to **f**.
- Option/Semi-standard symbol: When more than one specification is required, indicate in alphanumeric order.

Example) AF30-03BD-R-A

| | | | Symbol | Description | ❶ Body size 10 | 20 | 30 | 40 | 50 | 60 |
|---|---|---|---|---|---|---|---|---|---|---|
| ❷ | Pipe thread type | | — | Metric thread (M5) | ● | — | — | — | — | — |
| | | | | Rc | — | ● | ● | ● | ● | ● |
| | | | N*1 | NPT | — | ● | ● | ● | ● | ● |
| | | | F*2 | G | — | ● | ● | ● | ● | ● |
| | | | + | | | | | | | |
| ❸ | Port size | | M5 | M5 x 0.8 | ● | — | — | — | — | — |
| | | | 01 | 1/8 | — | ● | — | — | — | — |
| | | | 02 | 1/4 | — | ● | ● | ● | — | — |
| | | | 03 | 3/8 | — | — | ● | ● | — | — |
| | | | 04 | 1/2 | — | — | — | ● | — | — |
| | | | 06 | 3/4 | — | — | — | ● | ● | — |
| | | | 10 | 1 | — | — | — | — | ● | ● |
| | | | + | | | | | | | |
| ❹ | Option | a | — | Without mounting option | ● | ● | ● | ● | ● | ● |
| | | Mounting | B*3 | With bracket | — | ● | ● | ● | ● | ● |
| | | | + | | | | | | | |
| | | b | — | Without auto drain | ● | ● | ● | ● | ● | ● |
| | | Float type auto drain | C*4 | N.C. (Normally closed) Drain port is closed when pressure is not applied. | ● | ● | ● | ● | ● | ● |
| | | | D*5 | N.O. (Normally open) Drain port is open when pressure is not applied. | — | — | ● | ● | ● | ● |
| | | | + | | | | | | | |
| ❺ | Semi-standard | c | — | Polycarbonate bowl | ● | ● | ● | ● | ● | ● |
| | | Bowl *6 | 2 | Metal bowl | ● | ● | ● | ● | ● | ● |
| | | | 6 | Nylon bowl | ● | ● | ● | ● | ● | ● |
| | | | 8 | Metal bowl with level gauge | — | — | ● | ● | ● | ● |
| | | | C | With bowl guard | — | ● | —*7 | —*7 | —*7 | —*7 |
| | | | 6C | With bowl guard (Nylon bowl) | — | ● | —*8 | —*8 | —*8 | —*8 |
| | | | + | | | | | | | |
| | | d | — | With drain cock | ● | ● | ● | ● | ● | ● |
| | | Drain port *9 | J*10 | Drain guide 1/8 | — | ● | — | — | — | — |
| | | | | Drain guide 1/4 | — | — | ● | ● | ● | ● |
| | | | W*11 | Drain cock with barb fitting | — | — | ● | ● | ● | ● |
| | | | + | | | | | | | |
| | | e | — | Flow direction: Left to right | ● | ● | ● | ● | ● | ● |
| | | Flow direction | R | Flow direction: Right to left | ● | ● | ● | ● | ● | ● |
| | | | + | | | | | | | |
| | | f | — | Name plate and caution plate for bowl in SI units: MPa | ● | ● | ● | ● | ● | ● |
| | | Pressure unit | Z*12 | Name plate and caution plate for bowl in imperial units: psi, °F | ○*13 | ○*13 | ○*13 | ○*13 | ○*13 | ○*13 |

*1 Drain guide is NPT 1/8 (applicable to the AF20-A) and NPT 1/4 (applicable to the AF30-A to AF60-A).
The auto drain port comes with Ø 3/8" One-touch fitting (applicable to the AF30-A to AF60-A).

*2 Drain guide is G 1/8 (applicable to the AF20-A) and G 1/4 (applicable to the AF30-A to AF60-A).
The auto drain port comes with Ø 10 One-touch fitting (applicable to the AF30-A to AF60-A).

*3 Option B is not assembled and supplied loose at the time of shipment. Assembly of a bracket and 2 mounting screws.

*4 When pressure is not applied, condensate which does not start the auto drain mechanism will be left in the bowl.
Releasing the residual condensate before ending operations for the day is recommended.

*5 If the compressor is small (0.75 kW, discharge flow is less than 100 l/min [ANR]), air leakage from the drain cock may occur during start of operations. N.C. type is recommended.

*6 Refer to chemical data on page 46 for chemical resistance of the bowl.

*7 A bowl guard is provided as standard equipment (polycarbonate).

*8 A bowl guard is provided as standard equipment (nylon).

*9 The combination of float type auto drain: C and D is not available.

*10 Without a valve function

*11 The combination of metal bowl: 2 and 8 is not available.

*12 For pipe thread type: M5, NPT.

*13 ○: For pipe thread type: M5, NPT only

## Standard Specifications

| Model | AF10-A | AF20-A | AF30-A | AF40-A | AF40-06-A | AF50-A | AF60-A |
|---|---|---|---|---|---|---|---|
| **Port size** | M5 x 0.8 | 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 temperature** | -5 to 60 °C (with no freezing) | | | | | | |
| **Proof pressure** | 1.5 MPa | | | | | | |
| **Maximum operating pressure** | 1.0 MPa | | | | | | |
| **Nominal filtration rating** | 5 µm | | | | | | |
| **Drain capacity [cm³]** | 2.5 | 8 | 25 | 45 | | | |
| **Bowl material** | Polycarbonate | | | | | | |
| **Bowl guard** | — | Semi-standard (Steel) | Standard (Polycarbonate) | | | | |
| **Weight [kg]** | 0.06 | 0.08 | 0.18 | 0.36 | 0.41 | 0.87 | 1.00 |

## Option/Part No.

| Optional specifications | Model | | | | | | |
|---|---|---|---|---|---|---|---|
| | **AF10-A** | **AF20-A** | **AF30-A** | **AF40-A** | **AF40-06-A** | **AF50-A** | **AF60-A** |
| **Bracket assembly** *1 | — | AF22P-050AS | AF32P-050AS | AF42P-050AS | AF42P-070AS | AF52P-050AS | |

*1 Assembly of a bracket and 2 mounting screws

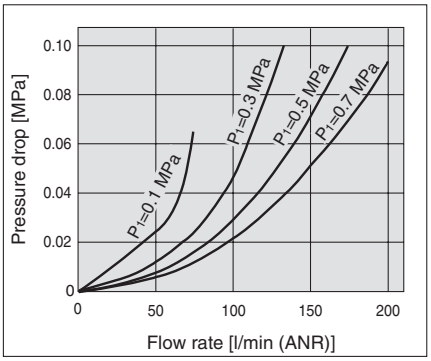
## Bowl Assembly/Part No.

| Bowl material | Drain discharge mechanism | Drain port | Other | Model | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | **AF10-A** | **AF20-A** | **AF30-A** | **AF40-A** | **AF40-06-A** | **AF50-A** | **AF60-A** |
| Polycarbonate | Manual | With drain cock | — | C1SF-A | C2SF-A | — | — | | | |
| | | | With bowl guard | — | C2SF-C-A | C3SF-A | C4SF-A | | | |
| | | Drain cock with barb fitting | With bowl guard | — | — | C3SF-W-A | C4SF-W-A | | | |
| | | With drain guide (without valve function) | — | — | C2SF□-J-A | — | — | | | |
| | | | With bowl guard | — | C2SF□-CJ-A | C3SF□-J-A | C4SF□-J-A | | | |
| | Automatic *1 (Auto drain) | Normally closed (N.C.) | — | AD17-A | AD27-A | — | — | | | |
| | | | With bowl guard | — | AD27-C-A | AD37□-A | AD47□-A | | | |
| | | Normally open (N.O.) | With bowl guard | — | — | AD38□-A | AD48□-A | | | |
| Nylon | Manual | With drain cock | — | C1SF-6-A | C2SF-6-A | — | — | | | |
| | | | With bowl guard | — | C2SF-6C-A | C3SF-6-A | C4SF-6-A | | | |
| | | Drain cock with barb fitting | With bowl guard | — | — | C3SF-6W-A | C4SF-6W-A | | | |
| | | With drain guide (without valve function) | — | — | C2SF□-6J-A | — | — | | | |
| | | | With bowl guard | — | C2SF□-6CJ-A | C3SF□-6J-A | C4SF□-6J-A | | | |
| | Automatic *1 (Auto drain) | Normally closed (N.C.) | — | AD17-6-A | AD27-6-A | — | — | | | |
| | | | With bowl guard | — | AD27-6C-A | AD37□-6-A | AD47□-6-A | | | |
| | | Normally open (N.O.) | With bowl guard | — | — | AD38□-6-A | AD48□-6-A | | | |
| Metal | Manual | With drain cock | — | C1SF-2-A | C2SF-2-A | C3SF-2-A | C4SF-2-A | | | |
| | | | With level gauge | — | — | C3LF-8-A | C4LF-8-A | | | |
| | | With drain guide (without valve function) | — | — | C2SF□-2J-A | C3SF□-2J-A | C4SF□-2J-A | | | |
| | | | With level gauge | — | — | C3LF□-8J-A | C4LF□-8J-A | | | |
| | Automatic *1 (Auto drain) | Normally closed (N.C.) | — | AD17-2-A | AD27-2-A | AD37□-2-A | AD47□-2-A | | | |
| | | | With level gauge | — | — | AD37□-8-A | AD47□-8-A | | | |
| | | Normally open (N.O.) | — | — | — | AD38□-2-A | AD48□-2-A | | | |
| | | | With level gauge | — | — | AD38□-8-A | AD48□-8-A | | | |

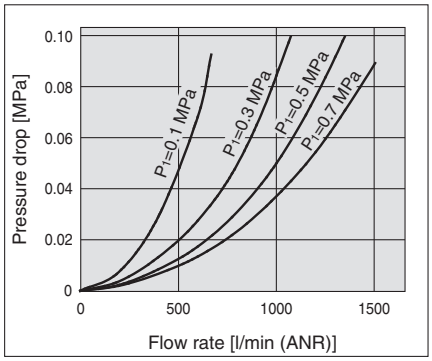
*1 Minimum operating pressure: N.O. type–0.1 MPa (AD38-A, AD48-A); N.C. type–0.1 MPa (AD17-A, AD27-A) and 0.15 MPa (AD37-A, AD47-A).
Bowl assembly for the AF20-A to AF60-A models comes with a bowl seal.
□ in bowl assembly part numbers indicates a pipe thread type (applicable tubing for auto drain).
No indication is necessary for Rc thread; however, indicate N for NPT thread, and F for G thread. (For auto drain, —: Ø 10, N: Ø 3/8")
Please consult with SMC separately for psi and °F unit display specifications.

## Flow Rate Characteristics (Representative values)

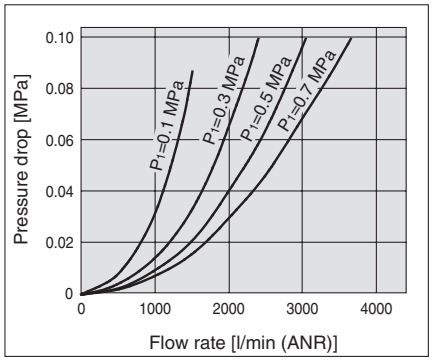
**AF10-A** M5



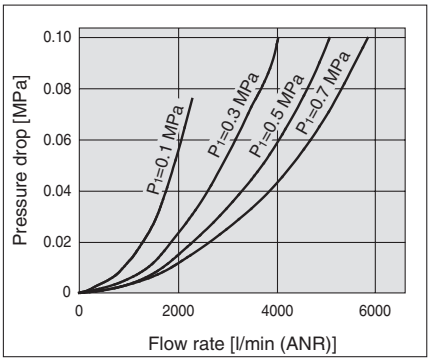

**AF20-A** Rc 1/4



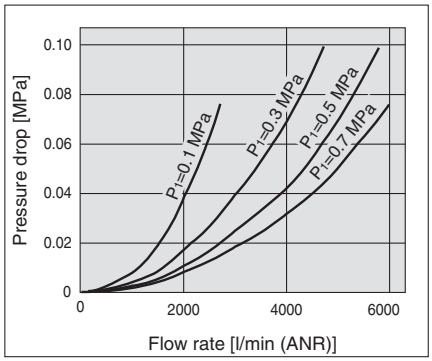

**AF30-A** Rc 3/8



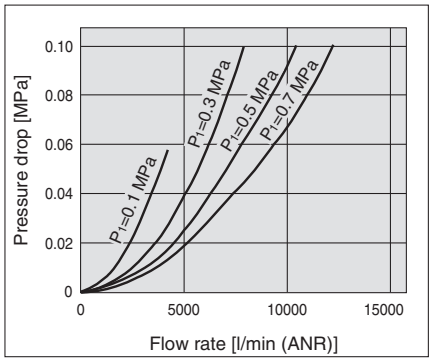

**AF40-A** Rc 1/2



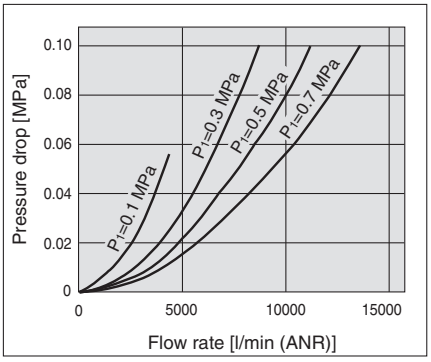

**AF40-06-A** Rc 3/4




**AF50-A** Rc 1




**AF60-A** Rc 1



# ⚠ Specific Product Precautions

**Be sure to read this before handling the products. Refer to the back cover for safety instructions. For F.R.L. units precautions, refer to the "Handling Precautions for SMC Products" and the "Operation Manual", http://www.smc.eu**

## Design/Selection

### ⚠ Warning

**1. The standard bowl for the air filter, filter regulator, and lubricator, as well as the sight dome for the lubricator are made of polycarbonate. Do not use in an environment where they are exposed to or come in contact with organic solvents, chemicals, cutting oil, synthetic oil, alkali, and thread lock solutions.**

**Effects of atmosphere of 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 | |
|---|---|---|---|---|
| | | | Polycarbonate | Nylon |
| Acid | Hydrochloric acid<br>Sulfuric acid, Phosphoric acid<br>Chromic acid | Acid washing liquid for metals | △ | × |
| Alkaline | Sodium hydroxide (Caustic soda)<br>Potash<br>Calcium hydroxide (Slack lime)<br>Ammonia water<br>Carbonate of soda | Degreasing of metals<br>Industrial salts<br>Water-soluble cutting oil | × | ○ |
| Inorganic salts | Sodium sulfide<br>Potassium nitrate<br>Sulfate of soda | — | × | △ |
| Chlorine solvents | Carbon tetrachloride<br>Chloroform<br>Ethylene chloride<br>Methylene chloride | Cleansing liquid for metals<br>Printing ink<br>Dilution | × | △ |
| Aromatic series | Benzene<br>Toluene<br>Paint thinner | Coatings<br>Dry cleaning | × | △ |
| Ketone | Acetone<br>Methyl ethyl ketone<br>Cyclohexane | Photographic film<br>Dry cleaning<br>Textile industries | × | × |
| Alcohol | Ethyl alcohol<br>IPA<br>Methyl alcohol | Antifreeze<br>Adhesives | △ | × |
| Oil | Gasoline<br>Kerosene | — | × | ○ |
| Ester | Phthalic acid dimethyl<br>Phthalic acid diethyl<br>Acetic acid | Synthetic oil<br>Anti-rust additives | × | ○ |
| Ether | Methyl ether<br>Ethyl ether | Brake oil additives | × | ○ |
| Amino | Methyl amino | Cutting oil<br>Brake oil additives<br>Rubber accelerator | × | × |
| Others | Thread-lock fluid<br>Seawater<br>Leak tester | — | × | △ |

○: Essentially safe △: Some effects may occur. ×: Effects will occur.

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

## Maintenance

### ⚠ Warning

**1.** Replace the element every 2 years or when the pressure drop becomes 0.1 MPa, whichever comes first, to prevent damage to the element.

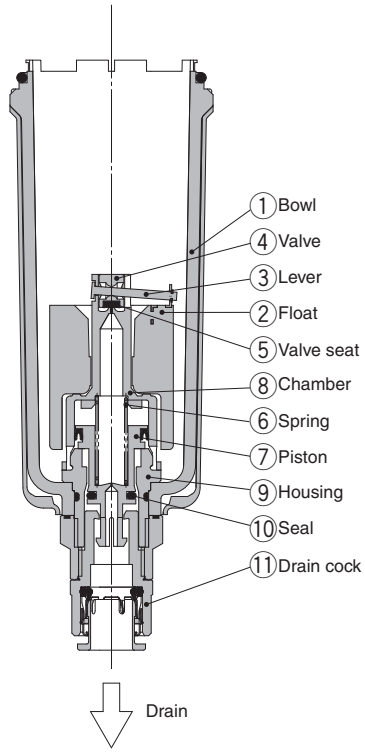
## Mounting/Adjustment

### ⚠ Caution

**1.** When the bowl is installed on the air filter (AF30-A to AF60-A), install them so that the lock button lines up to the groove of the front (or the back) of the body to avoid drop or damage of the bowl.

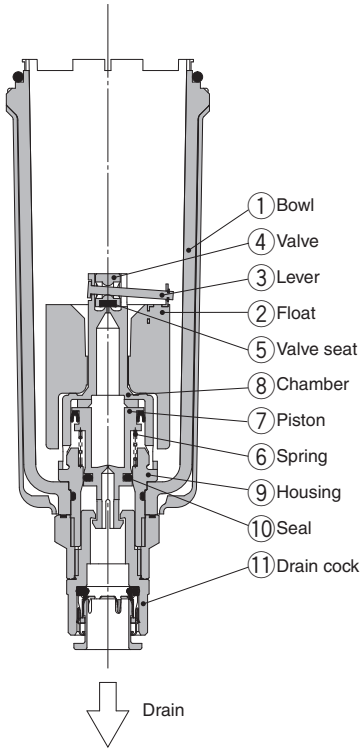
## Working Principle: Float Type Auto Drain

### N.O. type: AD38-A, AD48-A



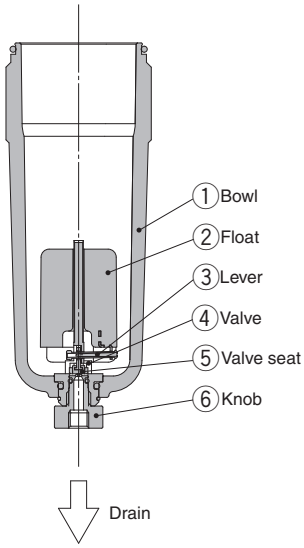

- **When pressure inside the bowl is released:**
  When pressure is released from the bowl ①, the piston ⑦ is lowered by the spring ⑥.
  The sealing action of the seal ⑩ is interrupted, and the outside air flows inside the bowl ① through the housing hole ⑨ and the drain cock ⑪.
  Therefore, if there is an accumulation of condensate in the bowl ①, it will drain out through the drain cock.
- **When pressure is applied inside the bowl:**
  When pressure is 0.1 MPa or more, the force of the piston ⑦ surpasses the force of the spring ⑥, and the piston goes up.
  This pushes seal ⑩ up so that it creates a seal, and the inside of the bowl ①, is shut off from the outside air.
  If there is no accumulation of condensate in the bowl ① at this time, the float ② will be pulled down by its own weight, causing the valve ④, which is connected to the lever ③, to seal the valve seat ⑤.
- **When there is an accumulation of condensate in the bowl:**
  The float ② rises due to its own buoyancy and the seal at the valve seat ⑤ is interrupted.
  This allows the pressure inside the bowl ① to enter the chamber ⑧. The result is that the combined pressure inside the chamber ⑧ and the force of the spring ⑥ lowers the piston ⑦.
  This causes the sealing action of the seal ⑩ to be interrupted, and the accumulated condensate in the bowl ① drains out through the drain cock ⑪.
  Turning the drain cock ⑪ manually counterclockwise lowers the piston ⑦, and causes the seal created by the seal ⑩ to be interrupted, thus allowing the condensate to drain out.

### N.C. type: AD37-A, AD47-A



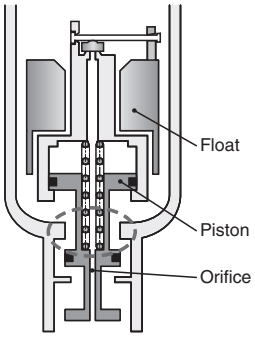
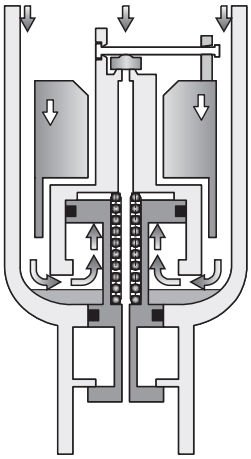
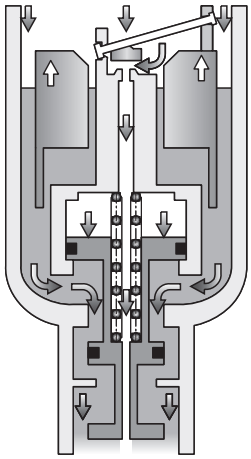
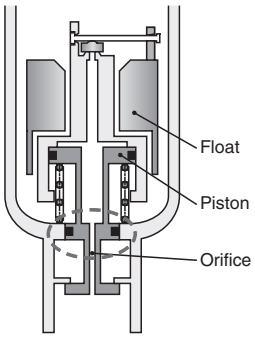

- **When pressure inside the bowl is released:**
  Even when pressure inside the bowl ① is released, spring ⑥ keeps the piston ⑦ in its upward position.
  This keeps the seal created by the seal ⑩ in place; thus, the inside of the bowl ① is shut off from the outside air.
  Therefore, even if there is an accumulation of condensate in the bowl ①, it will not drain out.
- **When pressure is applied inside the bowl:**
  Even when pressure is applied inside the bowl ①, the combined force of the spring ⑥ and the pressure inside the bowl ① keeps the piston ⑦ in its upward position.
  This maintains the seal created by the seal ⑩ in place; thus, the inside of the bowl ① is shut off from the outside air.
  If there is no accumulation of condensate in the bowl ① at this time, the float ② will be pulled down by its own weight, causing the valve ④, which is connected to the lever ③, to seal the valve seat ⑤.
- **When there is an accumulation of condensate in the bowl:**
  The float ② rises due to its own buoyancy and the seal at the valve seat ⑤ is interrupted. This allows the pressure inside the bowl ① to enter the chamber ⑧.
  The result is that the pressure inside the chamber ⑧ surpasses the force of the spring ⑥ and pushes the piston ⑦ downward.
  This causes the sealing action of the seal ⑩ to be interrupted and the accumulated condensate in the bowl ① drains out through the drain cock ⑪.
  Turning the drain cock ⑪ manually counterclockwise lowers the piston ⑦, and causes the seal created by the seal ⑩ to be interrupted, thus allowing the condensate to drain out.

### Compact auto drain N.C. type: AD17-A, AD27-A

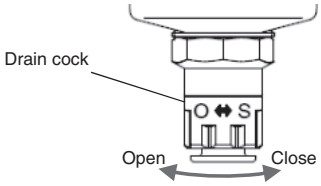



- **When pressure inside the bowl is released:**
  Even when pressure inside the bowl ① is released, the weight of the float ② causes the valve ④, which is connected to the lever ③, to seal the valve seat ⑤. As a result, the inside of the bowl ① is shut off from the outside air.
  Therefore, even if there is an accumulation of condensate in the bowl ①, it will not drain out.
- **When pressure is applied inside the bowl:**
  Even when pressure is applied inside the bowl ①, the weight of the float ② and the differential pressure that is applied to the valve ④ cause the valve ④ to seal the valve seat ⑤, and the outside air is shut off from the inside of the bowl ①.
- **When there is an accumulation of condensate in the bowl:**
  The float ② rises due to its own buoyancy and the seal at the valve seat ⑤ is interrupted.
  The condensate inside the bowl ① drains out through the knob ⑥.
  Turning the knob ⑥ manually counterclockwise lowers it and causes the sealing action of the valve seat ⑤ to be interrupted, which allows the condensate to drain out.

## Operating State and Proper Use of Float Type Auto Drain

| Auto drain | When pressure is not applied (After exhausting residual pressure) | When pressure is applied | | Minimum operating pressure (Outlet pressure) |
|---|---|---|---|---|
| | | Before drain accumulates | When drain accumulates | |
| N.O.<br>Normally open | Drain discharged (Open)<br>  | Drain not discharged (Close)<br>  | Drain discharged (Open)<br>  | **0.1 MPa or more**<br>AF30-A to AF60-A |
| N.C.<br>Normally closed | Drain not discharged (Close)<br>  | | | **0.1 MPa or more**<br>AF10-A to AF20-A<br>**0.15 MPa or more**<br>AF30-A to AF60-A |

◆ For both N.O. and N.C., the drain can be discharged manually by turning the drain cock to the “O” position.
(Except for medium air pressure, AFF75B, AM□850, and free standing type)

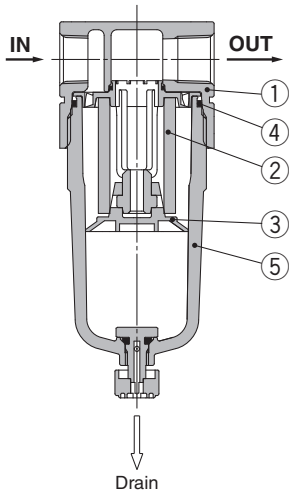



| Proper Use | | | Recommended auto drain |
|---|---|---|---|
| Compressor | When pressure is not applied (After exhausting residual pressure) | Cold climates | |
| 0.75 kW or more | **Drain not accumulated**<br>Do not want to accumulate drain generated at the inlet side when pressure is not applied. | **Want to prevent troubles caused by freezing.** | N.O.Note)<br>Normally open |
| Less than 0.75 kW | **Drain accumulated** | — | N.C.<br>Normally closed |

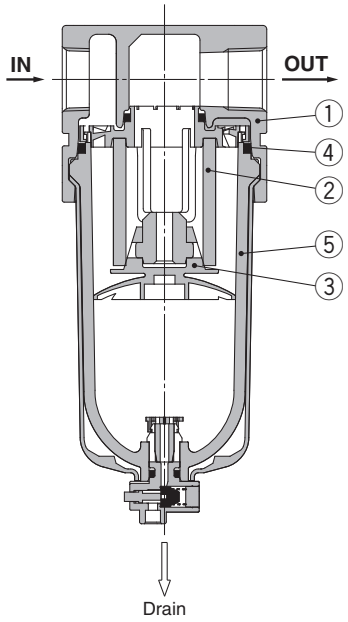
Note) For N.O. (Normally open) type, the drain discharge passage is open when pressure is not applied. For this reason, the drain exhaust port is not closed completely in a compressor with a small supply amount (less than 0.75 kW) and the air will ceaselessly blow out.

## Construction

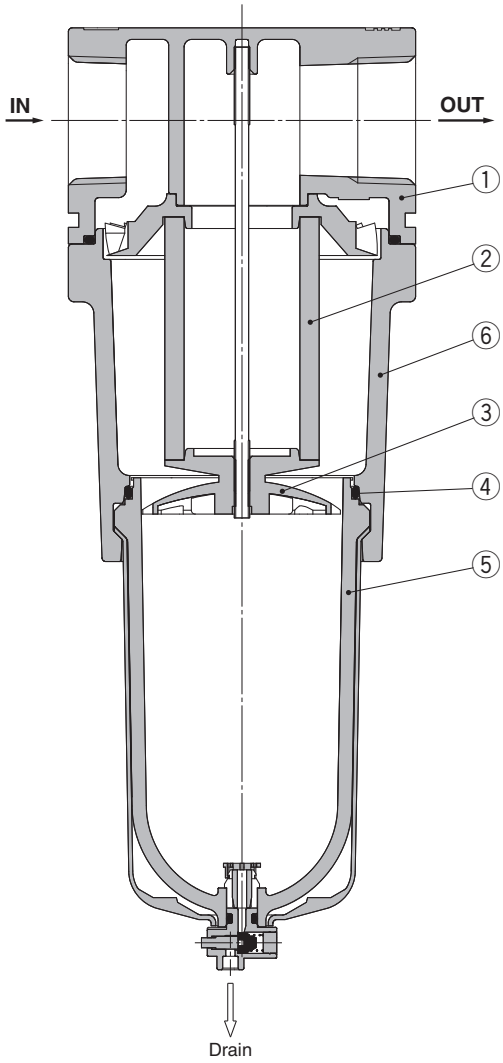
**AF10-A/AF20-A**




**AF30-A to AF40-06-A**




**AF50-A/AF60-A**




### Component Parts

| No. | Description | Material | Model | Colour |
|---|---|---|---|---|
| 1 | **Body** | Zinc die-cast | AF10-A | White |
| | | Aluminium die-cast | AF20-A to AF60-A | |
| 6 | **Housing** | Aluminium die-cast | AF50-A/AF60-A | White |

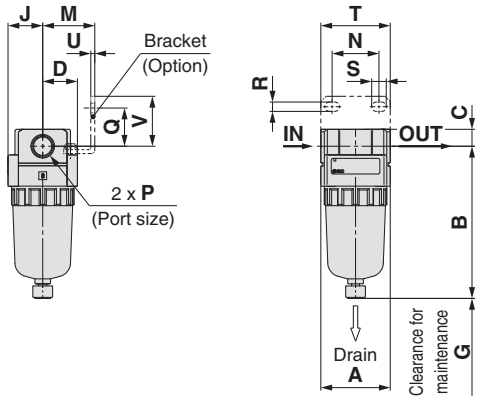
### Replacement Parts

| No. | Description | Material | Part no. | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | **AF10-A** | **AF20-A** | **AF30-A** | **AF40-A** | **AF40-06-A** | **AF50-A** | **AF60-A** |
| 2 | **Filter element** | Non-woven fabric | AF10P-060S | AF20P-060S | AF30P-060S | AF40P-060S | | AF50P-060S | AF60P-060S |
| 3 | **Baffle** | PBT | AF10P-040S *2 | AF22P-040S | AF32P-040S | AF42P-040S | | AF50P-040S | AF60P-040S |
| 4 | **Bowl seal** | NBR | C1SFP-260S | C2SFP-260S | C32FP-260S | C42FP-260S | | | |
| 5 | **Bowl assembly** *1 | Polycarbonate | C1SF-A | C2SF-A | C3SF-A | C4SF-A | | | |

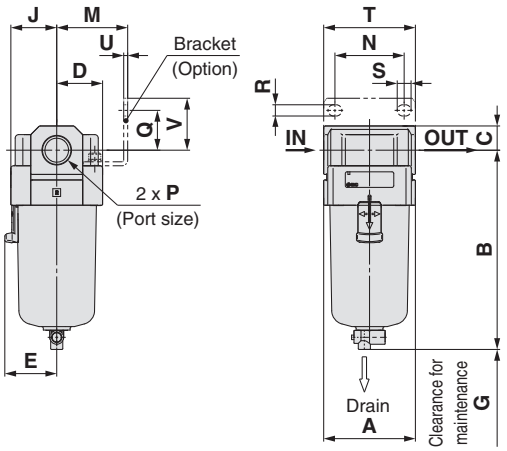
*1 Bowl seal is included for the AF20-A to AF60-A. Please contact SMC regarding the supply of bowl assembly with psi and °F unit specifications.
*2 The baffle material for the AF10-A (AF10P-040S) only is polyacetal.

## Dimensions

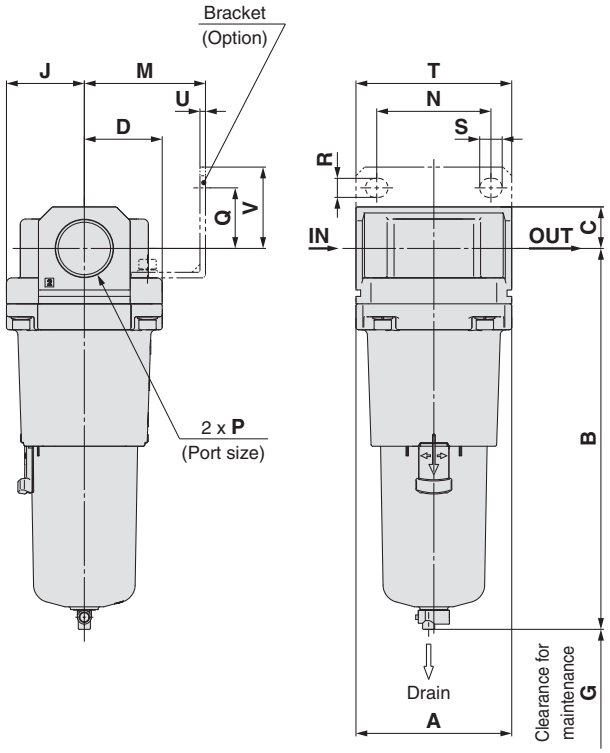
### AF10-A/AF20-A

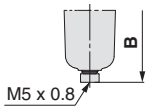
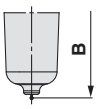
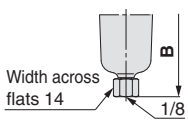
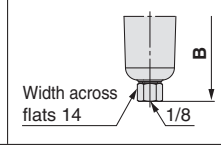
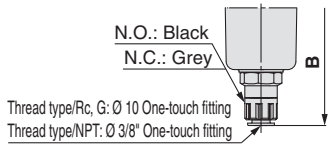


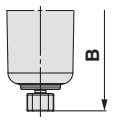
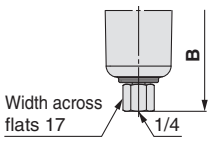
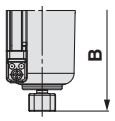
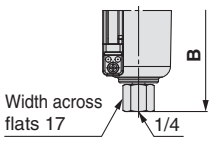
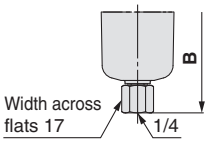
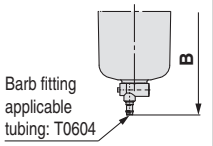

### AF30-A to AF40-06-A




### AF50-A/AF60-A




| Applicable model | AF10-A/AF20-A | | AF20-A | | AF30-A to AF60-A |
|---|---|---|---|---|---|
| Optional/Semi-standard specifications | With auto drain (N.C.) | Metal bowl | With drain guide | Metal bowl with drain guide | With auto drain (N.O./N.C.) |
| Dimensions |   |   |   |   |   |

| Applicable model | AF30-A to AF60-A | | | | | |
|---|---|---|---|---|---|---|
| Optional/Semi-standard specifications | Metal bowl | Metal bowl with drain guide | Metal bowl with level gauge | Metal bowl with level gauge, with drain guide | With drain guide | Drain cock with barb fitting |
| Dimensions |   |   |   |   |   |   |

| Model | Standard specifications | | | | | | | | Optional specifications | | | | | | | | | Semi-standard specifications | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | Bracket mount | | | | | | | | With auto drain | With barb fitting | With drain guide | Metal bowl | Metal bowl with drain guide | Metal bowl with level gauge | Metal bowl with level gauge, with drain guide |
| | P | A | B | C | D | E | G | J | M | N | Q | R | S | T | U | V | B | B | B | B | B | B | B |
| **AF10-A** | M5 x 0.8 | 25 | 59.9 | 7 | 12.5 | — | 25 | 12.5 | — | — | — | — | — | — | — | — | 77.9 | — | — | 59.3 | — | — | — |
| **AF20-A** | 1/8, 1/4 | 40 | 87.6 | 9.8 | 20 | — | 25 | 20 | 30 | 27 | 22 | 5.4 | 8.4 | 40 | 2.3 | 28 | 104.9 | — | 91.4 | 87.4 | 93.9 | — | — |
| **AF30-A** | 1/4, 3/8 | 53 | 115.1 | 14 | 26.7 | 30 | 35 | 26.7 | 41 | 35 | 23 | 6.5 | 13 | 53 | 2.3 | 30 | 156.8 | 123.6 | 121.9 | 117.6 | 122.1 | 137.6 | 142.1 |
| **AF40-A** | 1/4, 3/8, 1/2 | 70 | 147.1 | 18 | 35.5 | 38.4 | 40 | 35.5 | 50 | 52 | 26 | 8.5 | 12.5 | 70 | 2.3 | 35 | 186.9 | 155.6 | 153.9 | 149.6 | 154.1 | 169.6 | 174.1 |
| **AF40-06-A** | 3/4 | 75 | 149.1 | 20 | 35.5 | 38.4 | 40 | 35.5 | 50 | 52 | 25 | 8.5 | 12.5 | 70 | 2.3 | 34 | 188.9 | 157.6 | 155.9 | 151.6 | 156.1 | 171.6 | 176.1 |
| **AF50-A** | 3/4, 1 | 90 | 220.1 | 24 | 45 | — | 30 | 45 | 70 | 66 | 35 | 11 | 13 | 90 | 3.2 | 47 | 259.9 | 228.6 | 226.9 | 222.6 | 227.1 | 242.6 | 247.1 |
| **AF60-A** | 1 | 95 | 234.1 | 24 | 47.5 | — | 30 | 47.5 | 70 | 66 | 35 | 11 | 13 | 90 | 3.2 | 47 | 273.9 | 242.6 | 240.9 | 236.6 | 241.1 | 256.6 | 261.1 |

# *AF10-A to AF60-A* Air Filter
# Made to Order

Please contact SMC for detailed dimensions, specifications and lead times.

Made to Order

## ① Long Bowl

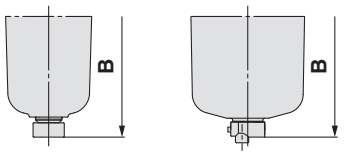
Drain capacity is greater than that of standard models.

### Applicable Model/Drain Capacity

| 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 |
| **Drain capacity [cm³]** | 9 | 19 | 43 | 88 | | | |
| **B dimension [mm]** ∗1 | 81.6 | 108.6 | 137.1 | 167.2 | 169.2 | 240.2 | 254.2 |

∗1 For polycarbonate bowls. Please contact SMC for other bowl materials.

**AF20-A** **AF30 to 40-06-A**




**AF 30 - □ 03 □ - □ - A - X64**

❶ ❷ ❸ ❹ ❺ ● Long bowl

• Semi-standard: Select one each for **a** to **d**.
• Option/Semi-standard symbol: When more than one specification is required, indicate in alphanumeric order.
Example) AF30-03B-2R-A-X64

| | | Symbol | Description | ❶ Body size 10 | 20 | 30 | 40 | 50 | 60 |
|---|---|---|---|---|---|---|---|---|---|
| ❷ | Pipe thread type | — | Metric thread (M5) | ● | — | — | — | — | — |
| | | | Rc | — | ● | ● | ● | ● | ● |
| | | **N**∗1 | NPT | — | ● | ● | ● | ● | ● |
| | | **F**∗2 | G | — | ● | ● | ● | ● | ● |
| | | + | | | | | | | |
| ❸ | Port size | **M5** | M5 | ● | — | — | — | — | — |
| | | **01** | 1/8 | — | ● | — | — | — | — |
| | | **02** | 1/4 | — | ● | ● | ● | — | — |
| | | **03** | 3/8 | — | — | ● | ● | — | — |
| | | **04** | 1/2 | — | — | — | ● | — | — |
| | | **06** | 3/4 | — | — | — | ● | ● | — |
| | | **10** | 1 | — | — | — | — | ● | ● |
| | | + | | | | | | | |
| ❹ | Option (Mounting) | — | Without mounting option | ● | ● | ● | ● | ● | ● |
| | | **B**∗3 | With bracket | — | ● | ● | ● | ● | ● |
| | | + | | | | | | | |
| ❺ Semi-standard | **a** Bowl ∗4 | — | Polycarbonate bowl | ● | ● | ● | ● | ● | ● |
| | | **2** | Metal bowl | ● | ● | ● | ● | ● | ● |
| | | **6** | Nylon bowl | ● | ● | ● | ● | ● | ● |
| | | **C** | With bowl guard | — | ● | —∗5 | —∗5 | —∗5 | —∗5 |
| | | **6C** | With bowl guard (Nylon bowl) | — | ● | —∗6 | —∗6 | —∗6 | —∗6 |
| | | + | | | | | | | |
| | **b** Drain port | — | With drain cock | ● | ● | ● | ● | ● | ● |
| | | **J**∗7 | Drain guide 1/8 | — | ● | — | — | — | — |
| | | | Drain guide 1/4 | — | — | ● | ● | ● | ● |
| | | **W**∗8 | Drain cock with barb fitting (for Ø 6 x Ø 4 nylon tube) | — | — | ● | ● | ● | ● |
| | | + | | | | | | | |
| | **c** Flow direction | — | Flow direction: Left to right | ● | ● | ● | ● | ● | ● |
| | | **R** | Flow direction: Right to left | ● | ● | ● | ● | ● | ● |
| | | + | | | | | | | |
| | **d** Pressure unit | — | Name plate and caution plate for bowl in SI units: MPa | ● | ● | ● | ● | ● | ● |
| | | **Z**∗9 | Name plate and caution plate for bowl in imperial units: psi, °F | ○∗10 | ○∗10 | ○∗10 | ○∗10 | ○∗10 | ○∗10 |

∗1 Drain guide is NPT 1/8 (applicable to the AF20-A) and NPT 1/4 (applicable to the AF30-A to AF60-A).
The auto drain port comes with Ø 3/8" One-touch fitting (applicable to the AF30-A to AF60-A).
∗2 Drain guide is G 1/8 (applicable to the AF20-A) and G 1/4 (applicable to the AF30-A to AF60-A).
∗3 Option B is not assembled and supplied loose at the time of shipment.
Assembly of a bracket and 2 mounting screws.
∗4 Refer to chemical data on page 46 for chemical resistance of the bowl.
∗5 A bowl guard is provided as standard equipment (polycarbonate).
∗6 A bowl guard is provided as standard equipment (nylon).
∗7 Without a valve function
∗8 The combination of metal bowl: 2 is not available.
∗9 For pipe thread type: NPT.
∗10 ○: For pipe thread type: NPT only

# *AF20-A to AF60-A* Air Filter
# Made to Order

Please contact SMC for detailed dimensions, specifications and lead times.

Made to Order

## ② With Element Service Indicator

Clogging status of elements can be checked visually.

### Applicable Model

| Model | AF20-A | AF30-A | AF40-A | AF40-06-A | AF50-A | AF60-A |
|---|---|---|---|---|---|---|
| **Port size** | 1/8, 1/4 | 1/4, 3/8 | 1/4, 3/8, 1/2 | 3/4 | 3/4, 1 | 1 |

**AF 30 - □ 03 □ - □ -A-X2141**

❶ ❷ ❸ ❹ ❺

**With element service indicator**

- Option/Semi-standard: Select one each for **a** to **f**.
- Option/Semi-standard symbol: When more than one specification is required, indicate in alphanumeric order.

Example) AF30-03BD-2R-A-X2141

A special body type is required to mount the element service indicator. It cannot be mounted on a standard body.

| | | | Symbol | Description | ❶ Body size 20 | 30 | 40 | 50 | 60 |
|---|---|---|---|---|---|---|---|---|---|
| ❷ | Pipe thread type | | — | Rc | ● | ● | ● | ● | ● |
| | | | N*1 | NPT | ● | ● | ● | ● | ● |
| | | | F*2 | G | ● | ● | ● | ● | ● |
| | | | + | | | | | | |
| ❸ | Port size | | 01 | 1/8 | ● | — | — | — | — |
| | | | 02 | 1/4 | ● | ● | ● | — | — |
| | | | 03 | 3/8 | — | ● | ● | — | — |
| | | | 04 | 1/2 | — | — | ● | — | — |
| | | | 06 | 3/4 | — | — | ● | ● | — |
| | | | 10 | 1 | — | — | — | ● | ● |
| | | | + | | | | | | |
| ❹ | Option | a Mounting | — | Without mounting option | ● | ● | ● | ● | ● |
| | | | B*3 | With bracket | ● | ● | ● | ● | ● |
| | | | + | | | | | | |
| | | b Float type auto drain | — | Without auto drain | ● | ● | ● | ● | ● |
| | | | C*4 | N.C. (Normally closed) Drain port is closed when pressure is not applied. | ● | ● | ● | ● | ● |
| | | | D*5 | N.O. (Normally open) Drain port is open when pressure is not applied. | — | ● | ● | ● | ● |
| | | | + | | | | | | |
| ❺ | Semi-standard | c Bowl*6 | — | Polycarbonate bowl | ● | ● | ● | ● | ● |
| | | | 2 | Metal bowl | ● | ● | ● | ● | ● |
| | | | 6 | Nylon bowl | ● | ● | ● | ● | ● |
| | | | 8 | Metal bowl with level gauge | — | ● | ● | ● | ● |
| | | | + | | | | | | |
| | | d Drain port*7 | — | With drain cock | — | ● | ● | ● | ● |
| | | | J*8 | Drain guide 1/8 | ● | — | — | — | — |
| | | | | Drain guide 1/4 | — | ● | ● | ● | ● |
| | | | W*9 | Drain cock with barb fitting (for Ø 6 x Ø 4 nylon tube) | — | ● | ● | ● | ● |
| | | | + | | | | | | |
| | | e Flow direction | — | Flow direction: Left to right | ● | ● | ● | ● | ● |
| | | | R | Flow direction: Right to left | ● | ● | ● | ● | ● |
| | | | + | | | | | | |
| | | f Pressure unit | — | Name plate and caution plate for bowl in SI units: MPa | ● | ● | ● | ● | ● |
| | | | Z*10 | Name plate and caution plate for bowl in imperial units: psi, °F | ○*11 | ○*11 | ○*11 | ○*11 | ○*11 |

∗1 Drain guide is NPT 1/8 (applicable to the AF20-A) and NPT 1/4 (applicable to the AF30-A to AF60-A).
The auto drain port comes with Ø 3/8" One-touch fitting (applicable to the AF30-A to AF60-A).
∗2 Drain guide is G 1/8 (applicable to the AF20-A) and G 1/4 (applicable to the AF30-A to AF60-A).
∗3 Option B is not assembled and supplied loose at the time of shipment. Assembly of a bracket and 2 mounting screws.
∗4 When pressure is not applied, condensate which does not start the auto drain mechanism will be left in the bowl.
Releasing the residual condensate before ending operations for the day is recommended.
∗5 If the compressor is small (0.75 kW, discharge flow is less than 100 l/min [ANR]), air leakage from the drain cock may occur during start of operations. N.C. type is recommended.
∗6 Refer to chemical data on page 46 for chemical resistance of the bowl.
∗7 The combination of float type auto drain: C and D is not available.
∗8 Without a valve function
∗9 The combination of metal bowl: 2 and 8 is not available.
∗10 For pipe thread type: NPT.
∗11 ○: For pipe thread type: NPT only

# *AF20-A to AF60-A* Air Filter
# Made to Order

Please contact SMC for detailed dimensions, specifications and lead times.

Made to Order

## ③ Special Temperature Environment

Special materials are used in the manufacturing of seals and resin parts to allow them to withstand various temperature conditions in cold or tropical (hot) climates.

### Specifications

| Made-to-order part no. | | -X430 | -X440 |
|---|---|---|---|
| **Environment** | | Low temperature | High temperature |
| **Ambient temperature [°C]** | | -30 to 60 | -5 to 80 |
| **Fluid temperature [°C]** | | -5 to 60 (with no freezing) | |
| **Material** | **Rubber parts** | Special NBR | FKM |
| | **Main parts** | Metal (Aluminium die-cast, etc.) | |

### Applicable Model

| Model | AF30-A | AF40-A | AF40-06-A | AF50-A | AF60-A |
|---|---|---|---|---|---|
| **Port size** | 1/4, 3/8 | 1/4, 3/8, 1/2 | 3/4 | 3/4, 1 | 1 |

**AF 30 - ☐ 03 B - 2 ☐ - A - X430**
(1) (2) (3) (4) (5) (6)

For high/low temperature

| | |
|---|---|
| **X430** | Low temperature |
| **X440** | High temperature |

- Semi-standard: Select one each for **a** to **c**.
- Semi-standard symbol: When more than one specification is required, indicate in alphabetic order.

Example) AF30-03B-2R-A-X430

| | | Symbol | Description | ❶ Body size 30 | 40 | 50 | 60 |
|---|---|---|---|---|---|---|---|
| ❷ | Pipe thread type | — | Rc | ● | ● | ● | ● |
| | | N∗1 | NPT | ● | ● | ● | ● |
| | | F∗2 | G | ● | ● | ● | ● |
| ❸ | Port size | 02 | 1/4 | ● | ● | — | — |
| | | 03 | 3/8 | ● | ● | — | — |
| | | 04 | 1/2 | — | ● | — | — |
| | | 06 | 3/4 | — | ● | ● | — |
| | | 10 | 1 | — | — | ● | ● |
| ❹ | Option (Mounting) | — | Without mounting option | ● | ● | ● | ● |
| | | B∗3 | With bracket | ● | ● | ● | ● |
| ❺ | Bowl∗4 | 2 | Metal bowl | ● | ● | ● | ● |
| ❻ | Semi-standard a Drain port | — | With drain cock | ● | ● | ● | ● |
| | | J∗5 | Drain guide 1/4 | ● | ● | ● | ● |
| | b Flow direction | — | Flow direction: Left to right | ● | ● | ● | ● |
| | | R | Flow direction: Right to left | ● | ● | ● | ● |
| | c Pressure unit | — | Name plate and caution plate for bowl in SI units: MPa | ● | ● | ● | ● |
| | | Z∗6 | Name plate and caution plate for bowl in imperial units: psi, °F | ○∗7 | ○∗7 | ○∗7 | ○∗7 |

∗1 Drain guide is NPT 1/4.
∗2 Drain guide is G 1/4.
∗3 A bracket is not assembled and supplied loose at the time of shipment. Including 2 mounting screws
∗4 Only metal bowl 2 is available.
∗5 Without a valve function
∗6 For pipe thread type: NPT.
∗7 ○: For pipe thread type: NPT only

## ④ High Pressure

Strong materials are used in the manufacturing of air filters intended for high pressure operation.

### Specifications

| Made-to-order part no. | -X425 |
|---|---|
| **Proof pressure [MPa]** | 3.0 |
| **Maximum operating pressure [MPa]** | 2.0 |
| **Ambient and fluid temperature [°C]** | -5 to 60 (with no freezing) |

### Applicable Model

| Model | AF20-A | AF30-A | AF40-A | AF40-06-A | AF50-A | AF60-A |
|---|---|---|---|---|---|---|
| **Port size** | 1/8, 1/4 | 1/4, 3/8 | 1/4, 3/8, 1/2 | 3/4 | 3/4, 1 | 1 |

**AF 30 - ☐ 03 B - 2 ☐ - A - X425**
(1) (2) (3) (4) (5) (6)

For high pressure

- Semi-standard: Select one each for **a** to **c**.
- Semi-standard symbol: When more than one specification is required, indicate in alphabetic order.

Example) AF30-03B-2R-A-X425

| | | Symbol | Description | ❶ Body size 20 | 30 | 40 | 50 | 60 |
|---|---|---|---|---|---|---|---|---|
| ❷ | Pipe thread type | — | Rc | ● | ● | ● | ● | ● |
| | | N∗1 | NPT | ● | ● | ● | ● | ● |
| | | F∗2 | G | ● | ● | ● | ● | ● |
| ❸ | Port size | 01 | 1/8 | ● | — | — | — | — |
| | | 02 | 1/4 | ● | ● | ● | — | — |
| | | 03 | 3/8 | — | ● | ● | — | — |
| | | 04 | 1/2 | — | — | ● | — | — |
| | | 06 | 3/4 | — | — | ● | ● | — |
| | | 10 | 1 | — | — | — | ● | ● |
| ❹ | Option (Mounting) | — | Without mounting option | ● | ● | ● | ● | ● |
| | | B∗3 | With bracket | ● | ● | ● | ● | ● |
| ❺ | Bowl∗4 | 2 | Metal bowl | ● | ● | ● | ● | ● |
| | | 8 | Metal bowl with level gauge | — | ● | ● | ● | ● |
| ❻ | Semi-standard a Drain port | — | With drain cock | ● | ● | ● | ● | ● |
| | | J∗5 | Drain guide 1/8 | ● | — | — | — | — |
| | | | Drain guide 1/4 | — | ● | ● | ● | ● |
| | b Flow direction | — | Flow direction: Left to right | ● | ● | ● | ● | ● |
| | | R | Flow direction: Right to left | ● | ● | ● | ● | ● |
| | c Pressure unit | — | Name plate and caution plate for bowl in SI units: MPa | ● | ● | ● | ● | ● |
| | | Z∗6 | Name plate and caution plate for bowl in imperial units: psi, °F | ○∗7 | ○∗7 | ○∗7 | ○∗7 | ○∗7 |

∗1 Drain guide is NPT 1/8 (applicable to the AF20-A) and NPT 1/4 (applicable to the AF30-A to AF60-A).
∗2 Drain guide is G 1/8 (applicable to the AF20-A) and G 1/4 (applicable to the AF30-A to AF60-A).
∗3 A bracket is not assembled and supplied loose at the time of shipment. Including 2 mounting screws
∗4 Only metal bowl 2 and 8 are available.
∗5 Without a valve function
∗6 For pipe thread type: NPT.
∗7 ○: For pipe thread type: NPT only