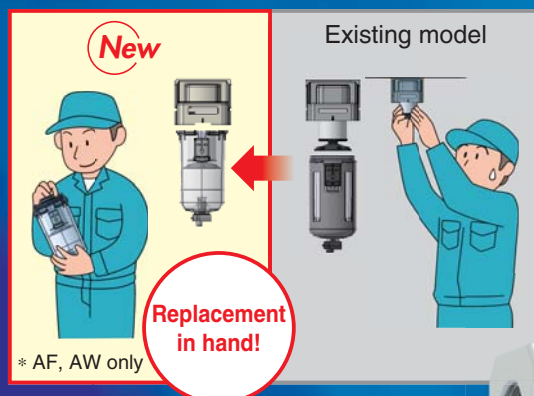


# Modular F.R.L. Units

## Easy replacement of the element

The element and the bowl are in one piece.  
Replacement can be done in hand.



## Reduced required maintenance space

\* For AF40-A

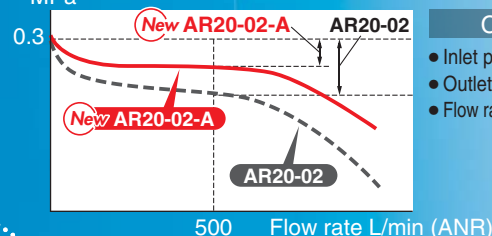
**Max. 46% reduction**



## Energy saving regulator

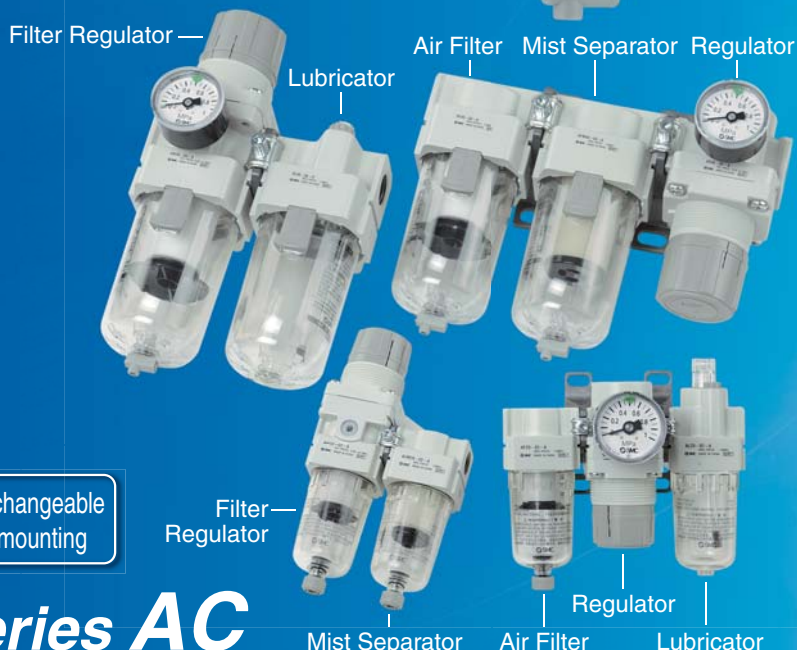
**Pressure drop: Max. 50% improvement**

Outlet pressure  
MPa



### Conditions

- Inlet pressure: 0.5 MPa
- Outlet pressure: 0.3 MPa
- Flow rate: 500 L/min (ANR)



## Better visibility & safer

**Double layer design**

**The bowl is covered with a transparent bowl guard!**

- The inside is visible from 360°
- The bowl is completely protected from the environment. Safety improved.



\* Body size: 30 or more

Interchangeable  
for mounting

**Series AC**

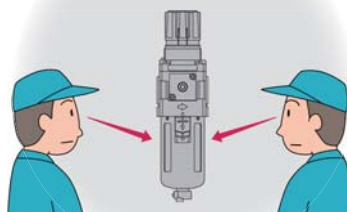
# Series AC

## Transparent bowl guard

### ● Better visibility: 360°



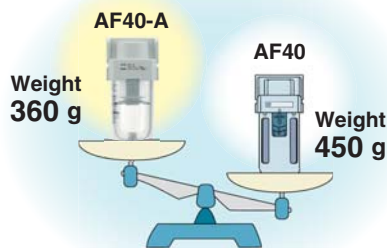
Existing model: AW□0



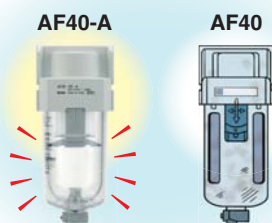
- Condensate can be monitored from anywhere.

### ● Light weight: Max. 90 g Reduction

\* Except AW



### ● Metal related corrosion does not occur.



Resin body does not rust.

Applicable model



Air Filter  
AF



Mist Separator  
AFM



Micro Mist  
Separator  
AFD



Filter  
Regulator  
AW



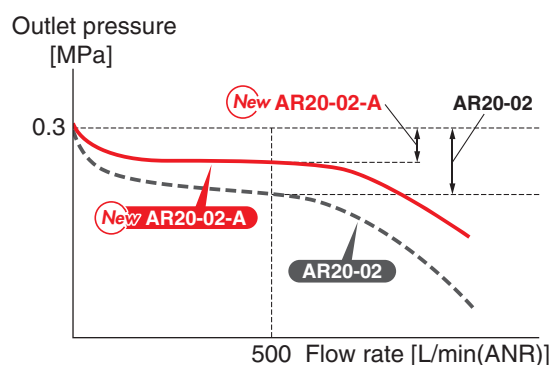
Lubricator  
AL

\* Body size: 30 or more

## Regulator: AR Filter Regulator: AW



### ● Pressure drop: Max. 50% improvement



Conditions

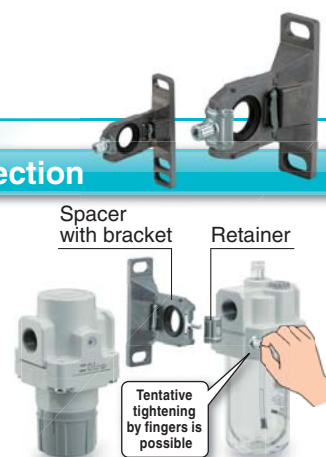
- ◆ Inlet pressure: 0.5 MPa ◆ Outlet pressure: 0.3 MPa
- ◆ Flow rate: 500 L/min (ANR)

## New Spacer

### ● Modular connection

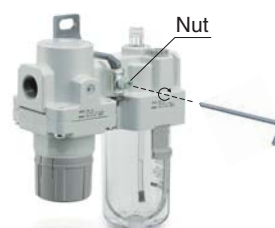
#### Step 1

- Mount the product by lining up the mating surface of the spacer with the new bracket.
- Insert the retainer into the spacer bolt and tighten the nut. (Temporary)



#### Step 2

- Tighten the nut with the hexagon wrench.



#### Interchangeable with existing products.

- New spacer can be connected to existing AF, AR, AL, AW series.
- Existing spacer cannot be used for new AR□-A, AF□-A, AL□-A, AW□-A series.

## Series Configuration

| Product                                                     | Model      | Port size |     |     |     |     | INDEX |
|-------------------------------------------------------------|------------|-----------|-----|-----|-----|-----|-------|
|                                                             |            | 1/8       | 1/4 | 3/8 | 1/2 | 3/4 |       |
| Air Filter+Regulator+Lubricator<br><b>AF AR AL</b><br>      | AC20-A     | ●         | ●   |     |     |     | P.1   |
|                                                             | AC25-A     |           | ●   | ●   |     |     |       |
|                                                             | AC30-A     |           | ●   | ●   |     |     |       |
|                                                             | AC40-A     |           | ●   | ●   | ●   |     |       |
|                                                             | AC40-06-A  |           |     |     |     | ●   |       |
| Filter Regulator+Lubricator<br><b>AW AL</b><br>             | AC20A-A    | ●         | ●   |     |     |     | P.7   |
|                                                             | AC30A-A    |           | ●   | ●   |     |     |       |
|                                                             | AC40A-A    |           | ●   | ●   | ●   |     |       |
|                                                             | AC40A-06-A |           |     |     |     | ●   |       |
| Air Filter + Regulator<br><b>AF AR</b><br>                  | AC20B-A    | ●         | ●   |     |     |     | P.11  |
|                                                             | AC25B-A    |           | ●   | ●   |     |     |       |
|                                                             | AC30B-A    |           | ●   | ●   |     |     |       |
|                                                             | AC40B-A    |           | ●   | ●   | ●   |     |       |
|                                                             | AC40B-06-A |           |     |     |     | ●   |       |
| Air Filter+Mist Separator+Regulator<br><b>AF AFM AR</b><br> | AC20C-A    | ●         | ●   |     |     |     | P.15  |
|                                                             | AC25C-A    |           | ●   | ●   |     |     |       |
|                                                             | AC30C-A    |           | ●   | ●   |     |     |       |
|                                                             | AC40C-A    |           | ●   | ●   | ●   |     |       |
|                                                             | AC40C-06-A |           |     |     |     | ●   |       |
| Filter Regulator+Mist Separator<br><b>AW AFM</b><br>        | AC20D-A    | ●         | ●   |     |     |     | P.19  |
|                                                             | AC30D-A    |           | ●   | ●   |     |     |       |
|                                                             | AC40D-A    |           | ●   | ●   | ●   |     |       |
|                                                             | AC40D-06-A |           |     |     |     | ●   |       |

Air Combination

## Series Configuration

| Product              | Model                                                                                                                                                                          | Port size  |     |     |     |     | INDEX |
|----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|-----|-----|-----|-----|-------|
|                      |                                                                                                                                                                                | 1/8        | 1/4 | 3/8 | 1/2 | 3/4 |       |
| Air Filter           | AF<br>       | AF20-A     | ●   | ●   |     |     | P.28  |
|                      |                                                                                                                                                                                | AF30-A     |     | ●   | ●   |     |       |
|                      |                                                                                                                                                                                | AF40-A     |     | ●   | ●   | ●   |       |
|                      |                                                                                                                                                                                | AF40-06-A  |     |     |     | ●   |       |
|                      |                                                                                                                                                                                |            |     |     |     |     |       |
| Mist Separator       | AFM<br>    | AFM20-A    | ●   | ●   |     |     | P.28  |
|                      |                                                                                                                                                                                | AFM30-A    |     | ●   | ●   |     |       |
|                      |                                                                                                                                                                                | AFM40-A    |     | ●   | ●   | ●   |       |
|                      |                                                                                                                                                                                | AFM40-06-A |     |     |     | ●   |       |
|                      |                                                                                                                                                                                |            |     |     |     |     |       |
| Micro Mist Separator | AFD<br>  | AFD20-A    | ●   | ●   |     |     | P.28  |
|                      |                                                                                                                                                                                | AFD30-A    |     | ●   | ●   |     |       |
|                      |                                                                                                                                                                                | AFD40-A    |     | ●   | ●   | ●   |       |
|                      |                                                                                                                                                                                | AFD40-06-A |     |     |     | ●   |       |
|                      |                                                                                                                                                                                |            |     |     |     |     |       |
| Regulator            | AR<br>   | AR20-A     | ●   | ●   |     |     | P.44  |
|                      |                                                                                                                                                                                | AR25-A     |     | ●   | ●   |     |       |
|                      |                                                                                                                                                                                | AR30-A     |     | ●   | ●   |     |       |
|                      |                                                                                                                                                                                | AR40-A     |     | ●   | ●   | ●   |       |
|                      |                                                                                                                                                                                | AR40-06-A  |     |     |     | ●   |       |
|                      |                                                                                                                                                                                |            |     |     |     |     |       |

**Series Configuration**

| Product                                                                                                       | Model            | Port size |     |     |     |     | INDEX       |
|---------------------------------------------------------------------------------------------------------------|------------------|-----------|-----|-----|-----|-----|-------------|
|                                                                                                               |                  | 1/8       | 1/4 | 3/8 | 1/2 | 3/4 |             |
| <b>Lubricator</b><br>        | <b>AL</b>        |           |     |     |     |     | <b>P.52</b> |
|                                                                                                               | <b>AL20-A</b>    | ●         | ●   |     |     |     |             |
|                                                                                                               | <b>AL30-A</b>    |           | ●   | ●   |     |     |             |
|                                                                                                               | <b>AL40-A</b>    |           | ●   | ●   | ●   |     |             |
| <b>Filter Regulator</b><br> | <b>AW</b>        |           |     |     |     |     | <b>P.58</b> |
|                                                                                                               | <b>AW20-A</b>    | ●         | ●   |     |     |     |             |
|                                                                                                               | <b>AW30-A</b>    |           | ●   | ●   |     |     |             |
|                                                                                                               | <b>AW40-A</b>    |           | ●   | ●   | ●   |     |             |
|                                                                                                               | <b>AW40-06-A</b> |           |     |     |     | ●   |             |

**Simple Specials System**

A system designed to respond quickly and easily to your special ordering needs.

**Simple  
Specials  
System**

**Short lead times**

This system enables us to respond to your special needs, such as additional machining, accessory assembly, or modular unit, and deliver such special products as quickly as standard products.

**Repeat orders**

Once we receive a Simple Special part number from your previous order, we will process the order, manufacture the product, and deliver it to you.

## Attachment List

### Check valve

Page 22

■ A check valve with intermediate branch port can be easily installed to prevent a back-flow of lubricant when branching the air flow and releasing the air on the outlet side of the regulator.



Applicable series

- Air Filter + Regulator + Lubricator (AC□0-A)
- Filter Regulator + Lubricator (AC□0A-A)
- \*Port size: Except 06

### Pressure switch

Page 23

■ A compact integrated pressure switch can be easily installed and facilitates the pressure detection of the line.



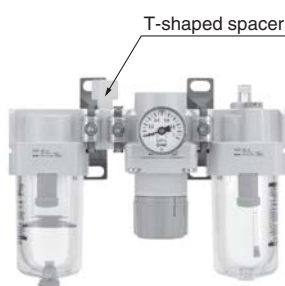
Applicable series

- Air Filter + Regulator + Lubricator (AC□0-A)
- Filter Regulator + Lubricator (AC□0A-A)
- Air Filter + Regulator (AC□0B-A)
- Air Filter + Mist Separator + Regulator (AC□0C-A)
- Filter Regulator + Mist Separator (AC□0D-A)

### T-shaped spacer

Page 23

■ Using a T-shaped spacer facilitates the branching of air flow.



Applicable series

- Air Filter + Regulator + Lubricator (AC□0-A)
- Air Filter + Regulator (AC□0B-A)
- Air Filter + Mist Separator + Regulator (AC□0C-A)

### 3-port valve for residual pressure release

Page 24

■ With the use of a 3-port valve for residual pressure release, pressure left in the line can be easily exhausted.



Applicable series

- Air Filter + Regulator + Lubricator (AC□0-A)
- Filter Regulator + Lubricator (AC□0A-A)
- Air Filter + Regulator (AC□0B-A)
- Air Filter + Mist Separator + Regulator (AC□0C-A)
- Filter Regulator + Mist Separator (AC□0D-A)

### Cross spacer

Page 24

■ Piping are possible in all 4 directions.



\*Needs to be ordered by single unit.

### Piping adapter

Page 25

■ A piping adapter allows installation/removal of the component without removing the piping and thus makes maintenance easier.



\*Needs to be ordered by single unit.

## Attachment List

### Pressure switch with piping adapter Page 25



\*Needs to be ordered separately.

### Spacer Page 26



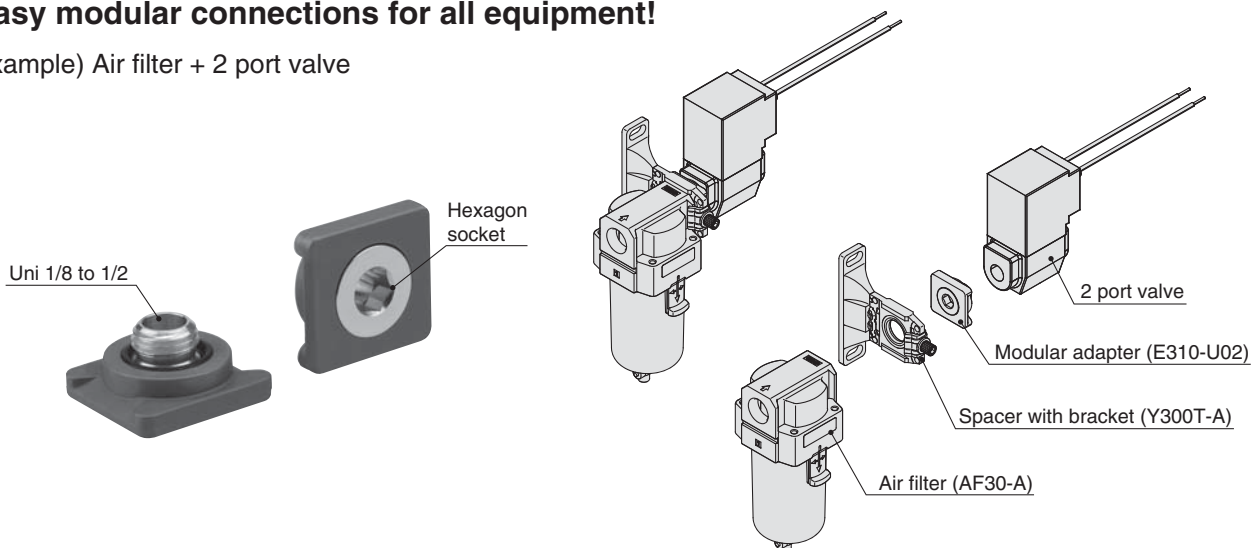
\*Needs to be ordered separately.

## Related Products

### Modular adapter

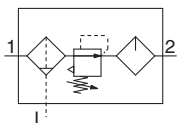
#### Easy modular connections for all equipment!

Example) Air filter + 2 port valve



# AC20-A to AC40-A

JIS Symbol



## How to Order

AC **30** - **03** **DG** - - -A

① ② ③ ④ ⑤ ⑥

- Option/Semi-standard: Select one each for **a** to **m**.
- Option/Attachment/Semi-standard symbol: When more than one specification is required, indicate in alphanumeric order.  
Example) AC30-F03DM-KSTV-13NR-A

|   |                                            | Symbol                                | Description                         | ①                                                |                                                                        |    |    |   |                          |
|---|--------------------------------------------|---------------------------------------|-------------------------------------|--------------------------------------------------|------------------------------------------------------------------------|----|----|---|--------------------------|
|   |                                            |                                       |                                     | Body size                                        |                                                                        |    |    |   |                          |
|   |                                            |                                       |                                     | 20                                               | 25                                                                     | 30 | 40 |   |                          |
| ② | Thread type                                | —                                     | Rc                                  | ●                                                | ●                                                                      | ●  | ●  |   |                          |
|   |                                            | N                                     | NPT                                 | ●                                                | ●                                                                      | ●  | ●  |   |                          |
|   |                                            | F                                     | G                                   | ●                                                | ●                                                                      | ●  | ●  |   |                          |
|   |                                            | +                                     |                                     |                                                  |                                                                        |    |    |   |                          |
| ③ | Port size                                  | 01                                    | 1/8                                 | ●                                                | —                                                                      | —  | —  |   |                          |
|   |                                            | 02                                    | 1/4                                 | ●                                                | ●                                                                      | ●  | ●  |   |                          |
|   |                                            | 03                                    | 3/8                                 | —                                                | ●                                                                      | ●  | ●  |   |                          |
|   |                                            | 04                                    | 1/2                                 | —                                                | —                                                                      | —  | ●  |   |                          |
|   |                                            | 06                                    | 3/4                                 | —                                                | —                                                                      | —  | ●  |   |                          |
|   |                                            | +                                     |                                     |                                                  |                                                                        |    |    |   |                          |
| ④ | Option                                     | a                                     | Float type auto drain               | —                                                | Without auto drain                                                     | ●  | ●  | ● | ●                        |
|   |                                            |                                       |                                     | C <small>Note 2)</small>                         | N.C. (Normal close) Drain port is closed when pressure is not applied. | ●  | ●  | ● | ●                        |
|   |                                            |                                       |                                     | D <small>Note 3)</small>                         | N.O. (Normal open) Drain port is open when pressure is not applied.    | —  | ●  | ● | ●                        |
|   |                                            | +                                     |                                     |                                                  |                                                                        |    |    |   |                          |
|   | b                                          | Pressure gauge <small>Note 4)</small> | —                                   | Without pressure gauge                           | ●                                                                      | ●  | ●  | ● |                          |
|   |                                            |                                       | G                                   | Round type pressure gauge (with limit indicator) | ●                                                                      | ●  | ●  | ● |                          |
|   |                                            |                                       | M                                   | Round type pressure gauge (with colour zone)     | ●                                                                      | ●  | ●  | ● |                          |
|   |                                            | +                                     |                                     |                                                  |                                                                        |    |    |   |                          |
| ⑤ | Attachment                                 | c                                     | Check valve                         | —                                                | Without attachment                                                     | ●  | ●  | ● | ●                        |
|   |                                            |                                       |                                     | K                                                | Mounting position: AF+AR+K+AL                                          | ●  | ●  | ● | ● <small>Note 5)</small> |
|   |                                            |                                       |                                     | +                                                |                                                                        |    |    |   |                          |
|   |                                            | d                                     | Pressure switch                     | —                                                | Without attachment                                                     | ●  | ●  | ● | ●                        |
|   |                                            |                                       |                                     | S <small>Note 6)</small>                         | Mounting position: AF+AR+S+AL                                          | ●  | ●  | ● | ●                        |
|   |                                            |                                       |                                     | +                                                |                                                                        |    |    |   |                          |
|   |                                            | e                                     | T-interface                         | —                                                | Without attachment                                                     | ●  | ●  | ● | ●                        |
|   |                                            |                                       |                                     | T <small>Note 6)</small>                         | Mounting position: AF+T+AR+AL                                          | ●  | ●  | ● | ●                        |
|   |                                            |                                       |                                     | +                                                |                                                                        |    |    |   |                          |
| f | 3-port valve for residual pressure release | —                                     | Without attachment                  | ●                                                | ●                                                                      | ●  | ●  |   |                          |
|   |                                            | V                                     | Mounting position: AF+AR+AL+V       | ●                                                | ●                                                                      | ●  | ●  |   |                          |
|   |                                            | +                                     |                                     |                                                  |                                                                        |    |    |   |                          |
| ⑥ | Semi-standard                              | g                                     | Set pressure <small>Note 7)</small> | —                                                | 0.05 to 0.7 MPa setting                                                | ●  | ●  | ● | ●                        |
|   |                                            |                                       |                                     | 1                                                | 0.02 to 0.2 MPa setting                                                | ●  | ●  | ● | ●                        |
|   |                                            |                                       |                                     | +                                                |                                                                        |    |    |   |                          |
|   |                                            | h                                     | Bowl                                | —                                                | Polycarbonate bowl                                                     | ●  | ●  | ● | ●                        |
| C | With bowl guard                            |                                       |                                     | ●                                                | —                                                                      | —  | —  |   |                          |

# Air Combination *Series AC20-A to AC40-A*



AC20-A

AC40-A

|                    | Symbol | Description           | ①                     |                       |                       |                       |
|--------------------|--------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
|                    |        |                       | Body size             |                       |                       |                       |
|                    |        |                       | 20                    | 25                    | 30                    | 40                    |
| ⑥<br>Semi-standard | i      | —                     | ●                     | ●                     | ●                     | ●                     |
|                    |        | J <sup>Note 8)</sup>  | ●                     | —                     | —                     | —                     |
|                    |        | —                     | —                     | ●                     | ●                     | ●                     |
|                    |        | W                     | —                     | ●                     | ●                     | ●                     |
|                    | +      |                       |                       |                       |                       |                       |
|                    | j      | —                     | ●                     | ●                     | ●                     | ●                     |
|                    |        | 3 <sup>Note 9)</sup>  | ●                     | ●                     | ●                     | ●                     |
|                    | +      |                       |                       |                       |                       |                       |
|                    | k      | —                     | ●                     | ●                     | ●                     | ●                     |
|                    |        | N                     | ●                     | ●                     | ●                     | ●                     |
|                    | +      |                       |                       |                       |                       |                       |
|                    | l      | —                     | ●                     | ●                     | ●                     | ●                     |
|                    |        | R                     | ●                     | ●                     | ●                     | ●                     |
|                    | +      |                       |                       |                       |                       |                       |
|                    | m      | —                     | ●                     | ●                     | ●                     | ●                     |
|                    |        | Z <sup>Note 10)</sup> | ○ <sup>Note 11)</sup> | ○ <sup>Note 11)</sup> | ○ <sup>Note 11)</sup> | ○ <sup>Note 11)</sup> |

Note 1) Option G, M are not assembled and supplied loose at the time of shipment.

Note 2) 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.

Note 3) 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.

Note 4) When the pressure gauge is attached, a 1.0 MPa pressure gauge will be fitted for standard (0.7 MPa) type. 0.4 MPa pressure gauge for 0.2 MPa type.

Note 5) Not available with piping port size: 06.

Note 6) The bracket position varies depending on the T-shaped spacer or pressure switch mounting.

Note 7) Pressure can be set higher than the specification pressure in some cases, but use pressure within the specification range.

Note 8) Without a valve function.

Note 9) Filter drain port: When choosing with W, the drain cock of a lubricator will be with barb fittings.

Note 10) For thread type: NPT.  
MPa and psi are shown together on the pressure unit.

Round pressure gauge (with colour zone): Cannot be used with M. Available by request for special.

Note 11) ○: For thread type: NPT only.

## Standard Specifications

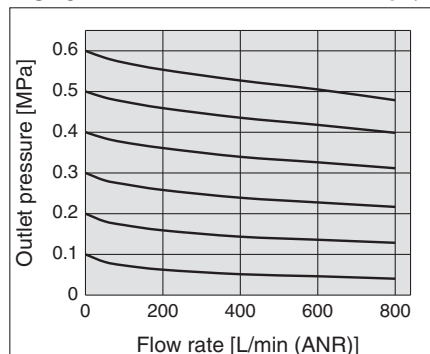
| Model                         |            | AC20-A                         | AC25-A                   | AC30-A   | AC40-A        | AC40-06-A |
|-------------------------------|------------|--------------------------------|--------------------------|----------|---------------|-----------|
| Component                     | Air filter | AF20-A                         | AF30-A                   | AF30-A   | AF40-A        | AF40-06-A |
|                               | Regulator  | AR20-A                         | AR25-A                   | AR30-A   | AR40-A        | AR40-06-A |
|                               | Lubricator | AL20-A                         | AL30-A                   | AL30-A   | AL40-A        | AL40-06-A |
| Port size                     |            | 1/8, 1/4                       | 1/4, 3/8                 | 1/4, 3/8 | 1/4, 3/8, 1/2 | 3/4       |
| Pressure gauge port size      |            | 1/8                            |                          |          |               |           |
| Fluid                         |            | Air                            |                          |          |               |           |
| Ambient and fluid temperature |            | – 5 to 60°C (with no freezing) |                          |          |               |           |
| Proof pressure                |            | 1.5 MPa                        |                          |          |               |           |
| Max. operating pressure       |            | 1.0 MPa                        |                          |          |               |           |
| Set pressure range            |            | 0.05 to 0.7 MPa                |                          |          |               |           |
| Nominal filtration rating     |            | 5 µm                           |                          |          |               |           |
| Recommended lubricant         |            | Class 1 turbine oil (ISO VG32) |                          |          |               |           |
| Bowl material                 |            | Polycarbonate                  |                          |          |               |           |
| Bowl guard                    |            | Semi-standard (Steel)          | Standard (Polycarbonate) |          |               |           |
| Regulator construction        |            | Relieving type                 |                          |          |               |           |
| Weight [kg]                   |            | 0.39                           | 0.67                     | 0.82     | 1.26          | 1.43      |

# Series AC20-A to AC40-A

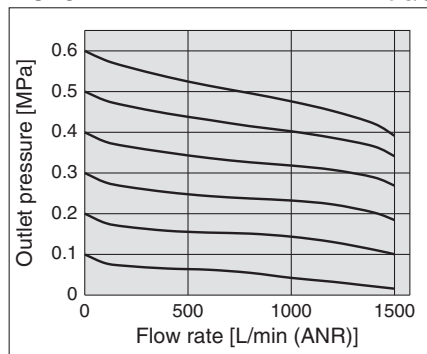
## Flow Characteristics (Representative values)

Condition: Inlet pressure 0.7 MPa

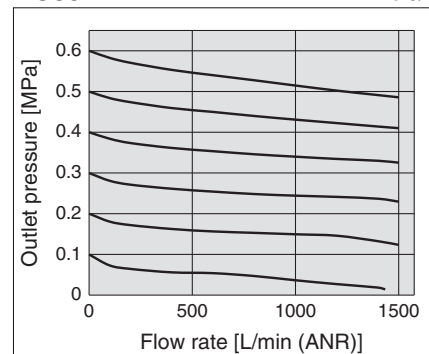
**AC20-A** Rc 1/4



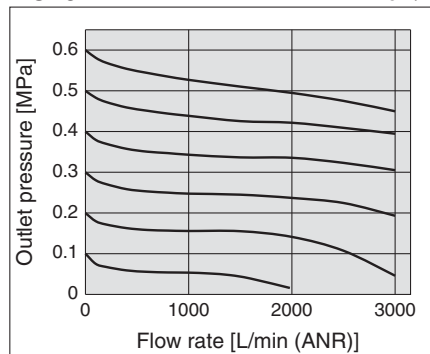
**AC25-A** Rc 3/8



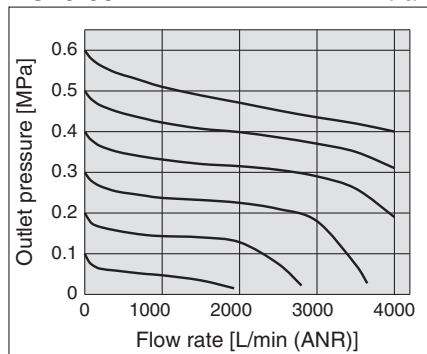
**AC30-A** Rc 3/8



**AC40-A** Rc 1/2



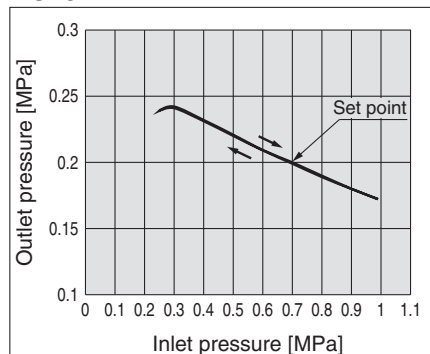
**AC40-06-A** Rc 3/4



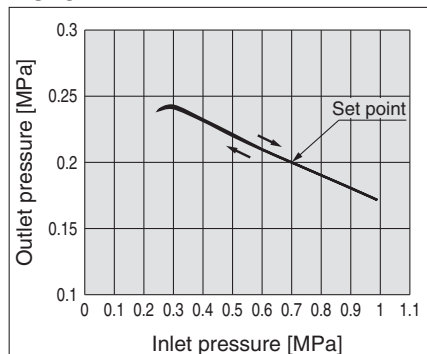
## Pressure Characteristics (Representative values)

Conditions: Inlet pressure 0.7 MPa, Outlet pressure 0.2 MPa, Flow rate 20 L/min (ANR)

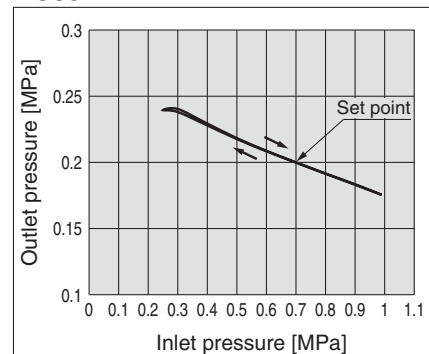
**AC20-A**



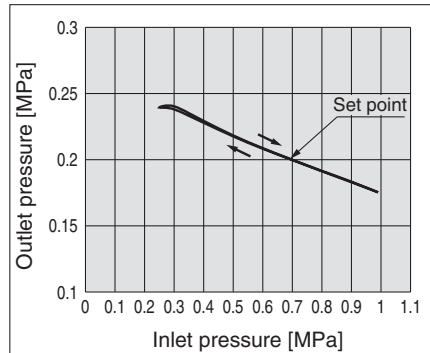
**AC25-A**



**AC30-A**



**AC40-A/AC40-06-A**





## Specific Product Precautions

Be sure to read before handling. Refer to back cover for Safety Instructions, "Handling Precautions for SMC Products" (M-E03-3) and the Operation Manual for F.R.L. Precautions.

### Piping

#### ⚠ Warning

1. When mounting a check valve, make sure the arrow (IN side) points in the correct direction of air flow.

### Air Supply

#### ⚠ Caution

1. Use an air filter with 5 µm or less filtration rating on the inlet side of the valve to avoid any damage to the seat caused by dust when mounting a 3-port valve for residual pressure release on the inlet side.

### Mounting and Adjustment

#### ⚠ Caution

1. When the bowl is installed on the air filter, filter regulator, lubricator, mist separator, or micro mist separator, 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.



Thread type/Rc, G:  $\phi 10$  One-touch fitting  
Thread type/NPT:  $\phi 3/8$ " One-touch fitting

### Selection

#### ⚠ Caution

1. When releasing air at the intermediate position using a T-shaped spacer on the inlet side of the lubricator, lubricant may back flow. Therefore, releasing air that does not contain traces of lubricant is not possible.  
To release air that does not contain traces of lubricant, use a check valve (Series AKM) on the inlet side of the lubricator to prevent a backflow of the lubricant.
2. If a residual pressure-release 3-port valve is mounted on the inlet side of the lubricator, causing a backflow of air, it can result in a backflow of oil or damage to internal parts. Please, locate it on the outlet side of the lubricator.
3. An F.R.L. unit shipped from the plant has its model number labeled. However, components that are combined together during the distribution process do not have a label on them.

AC

AF+AR+AL

AW+AL

AF+AR

AF+AFM+AR

AW+AFM

Attachment

AF

AFM / AFD

AR

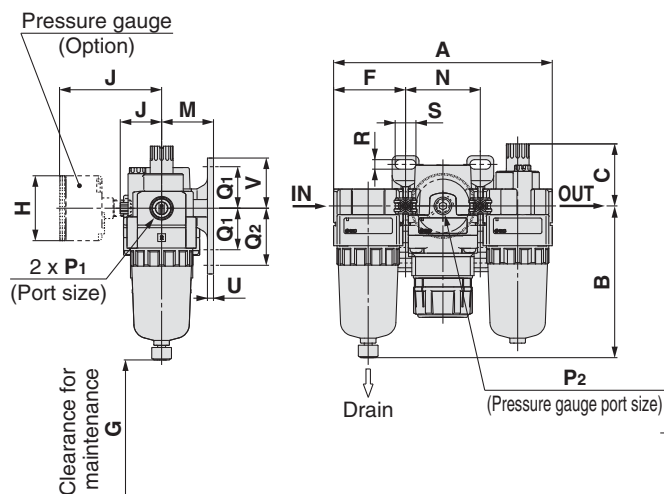
AL

AW

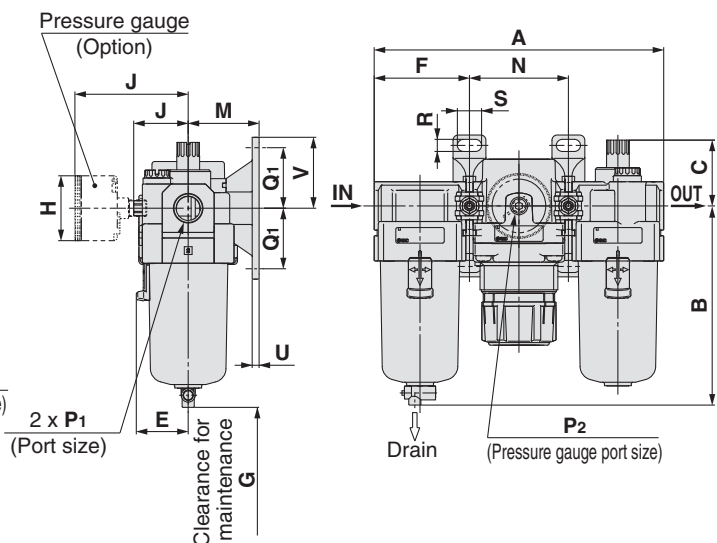
# Series AC20-A to AC40-A

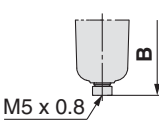
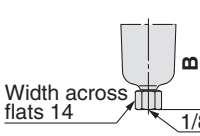
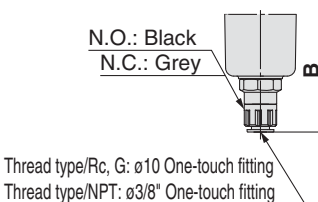
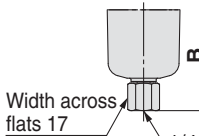
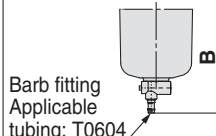
## Dimensions

### AC20-A



### AC25-A to AC40-A



| Applicable model                      | AC20-A                                                                              |                                                                                     | AC25-A to AC40-A                                                                                               |                                                                                       |                                                                                       |  |
|---------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|--|
| Optional/Semi-standard specifications | With auto drain (N.C.)                                                              | With drain guide                                                                    | With auto drain (N.O./N.C.)                                                                                    | With drain guide                                                                      | Drain cock with barb fitting                                                          |  |
| Dimensions                            |  |  |  |  |  |  |

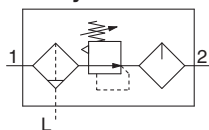
| Model     | Standard specifications |                |       |       |      |      |      |     |      |               |      |                |                |     |    |     |    |
|-----------|-------------------------|----------------|-------|-------|------|------|------|-----|------|---------------|------|----------------|----------------|-----|----|-----|----|
|           | P <sub>1</sub>          | P <sub>2</sub> | A     | B     | C    | E    | F    | G   | J    | Bracket mount |      |                |                |     |    |     |    |
|           |                         |                |       |       |      |      |      |     |      | M             | N    | Q <sub>1</sub> | Q <sub>2</sub> | R   | S  | U   | V  |
| AC20-A    | 1/8, 1/4                | 1/8            | 126.4 | 87.6  | 35.9 | —    | 41.6 | 60  | 23.4 | 30            | 43.2 | 24             | 33             | 5.5 | 12 | 3.5 | 29 |
| AC25-A    | 1/4, 3/8                | 1/8            | 167.4 | 115.1 | 38.1 | 30   | 55.1 | 80  | 30.5 | 41            | 57.2 | 35             | —              | 7   | 14 | 4   | 41 |
| AC30-A    | 1/4, 3/8                | 1/8            | 167.4 | 115.1 | 38.1 | 30   | 55.1 | 80  | 30.5 | 41            | 57.2 | 35             | —              | 7   | 14 | 4   | 41 |
| AC40-A    | 1/4, 3/8, 1/2           | 1/8            | 220.4 | 147.1 | 39.8 | 38.4 | 72.6 | 110 | 36.1 | 50            | 75.2 | 40             | —              | 9   | 18 | 5   | 48 |
| AC40-06-A | 3/4                     | 1/8            | 235.4 | 149.1 | 37.8 | 38.4 | 77.6 | 110 | 39.6 | 50            | 80.2 | 40             | —              | 9   | 18 | 5   | 48 |

| Model     | Optional specifications   |      |                                              |      |                 | Semi-standard specifications |                  |
|-----------|---------------------------|------|----------------------------------------------|------|-----------------|------------------------------|------------------|
|           | Round type pressure gauge |      | Round type pressure gauge (with colour zone) |      | With auto drain | With barb fitting            | With drain guide |
|           | H                         | J    | H                                            | J    | B               | B                            | B                |
| AC20-A    | ø37.5                     | 58.5 | ø37.5                                        | 59.5 | 104.9           | —                            | 91.4             |
| AC25-A    | ø37.5                     | 58.5 | ø37.5                                        | 59.5 | 156.8           | 123.6                        | 121.9            |
| AC30-A    | ø37.5                     | 65   | ø37.5                                        | 66   | 156.8           | 123.6                        | 121.9            |
| AC40-A    | ø42.5                     | 72   | ø42.5                                        | 72   | 186.9           | 155.6                        | 153.9            |
| AC40-06-A | ø42.5                     | 72   | ø42.5                                        | 72   | 188.9           | 157.6                        | 155.9            |

| AW | AL | AR | AFM / AFD | AF | Attachment | AW+AFM | AF+AFM+AR | AF+AR | AW+AL | AF+AR+AL | AC |
|----|----|----|-----------|----|------------|--------|-----------|-------|-------|----------|----|
|----|----|----|-----------|----|------------|--------|-----------|-------|-------|----------|----|

# AC20A-A to AC40A-A

JIS Symbol



## How to Order

AC **30** A- **03** **DG** - - -A

① ② ③ ④ ⑤ ⑥

- Option/Semi-standard: Select one each for a to l.
- Option/Attachment/Semi-standard symbol: When more than one specification is required, indicate in alphanumeric order.  
Example) AC30A-F03DM-KSV-13NR-A

|                 |                                  | Symbol                                     | Description                                           | ①                                                |                                                                        |    |   |                          |
|-----------------|----------------------------------|--------------------------------------------|-------------------------------------------------------|--------------------------------------------------|------------------------------------------------------------------------|----|---|--------------------------|
|                 |                                  |                                            |                                                       | Body size                                        |                                                                        |    |   |                          |
|                 |                                  |                                            |                                                       | 20                                               | 30                                                                     | 40 |   |                          |
| ②               | Thread type                      | —                                          | Rc                                                    | ●                                                | ●                                                                      | ●  |   |                          |
|                 |                                  | N                                          | NPT                                                   | ●                                                | ●                                                                      | ●  |   |                          |
|                 |                                  | F                                          | G                                                     | ●                                                | ●                                                                      | ●  |   |                          |
|                 |                                  | +                                          |                                                       |                                                  |                                                                        |    |   |                          |
| ③               | Port size                        | 01                                         | 1/8                                                   | ●                                                | —                                                                      | —  |   |                          |
|                 |                                  | 02                                         | 1/4                                                   | ●                                                | ●                                                                      | ●  |   |                          |
|                 |                                  | 03                                         | 3/8                                                   | —                                                | ●                                                                      | ●  |   |                          |
|                 |                                  | 04                                         | 1/2                                                   | —                                                | —                                                                      | ●  |   |                          |
|                 |                                  | 06                                         | 3/4                                                   | —                                                | —                                                                      | ●  |   |                          |
|                 |                                  | +                                          |                                                       |                                                  |                                                                        |    |   |                          |
| ④               | Option<br><small>Note 1)</small> | a                                          | Float type auto drain                                 | —                                                | Without auto drain                                                     | ●  | ● | ●                        |
|                 |                                  |                                            |                                                       | C <small>Note 2)</small>                         | N.C. (Normal close) Drain port is closed when pressure is not applied. | ●  | ● | ●                        |
|                 |                                  |                                            |                                                       | D <small>Note 3)</small>                         | N.O. (Normal open) Drain port is open when pressure is not applied.    | —  | ● | ●                        |
|                 |                                  | +                                          |                                                       |                                                  |                                                                        |    |   |                          |
|                 | b                                | Pressure gauge <small>Note 4)</small>      | —                                                     | Without pressure gauge                           | ●                                                                      | ●  | ● |                          |
|                 |                                  |                                            | G                                                     | Round type pressure gauge (with limit indicator) | ●                                                                      | ●  | ● |                          |
|                 |                                  |                                            | M                                                     | Round type pressure gauge (with colour zone)     | ●                                                                      | ●  | ● |                          |
|                 |                                  | +                                          |                                                       |                                                  |                                                                        |    |   |                          |
| ⑤               | Attachment                       | c                                          | Check valve                                           | —                                                | Without attachment                                                     | ●  | ● | ●                        |
|                 |                                  |                                            |                                                       | K                                                | Mounting position: AW+K+AL                                             | ●  | ● | ● <small>Note 5)</small> |
|                 |                                  | d                                          | Pressure switch                                       | —                                                | Without attachment                                                     | ●  | ● | ●                        |
|                 |                                  |                                            |                                                       | S <small>Note 6)</small>                         | Mounting position: AW+S+AL                                             | ●  | ● | ●                        |
|                 |                                  | +                                          |                                                       |                                                  |                                                                        |    |   |                          |
|                 | e                                | 3-port valve for residual pressure release | —                                                     | Without attachment                               | ●                                                                      | ●  | ● |                          |
|                 |                                  |                                            | V                                                     | Mounting position: AW+AL+V                       | ●                                                                      | ●  | ● |                          |
|                 |                                  | +                                          |                                                       |                                                  |                                                                        |    |   |                          |
| ⑥               | f                                | Set pressure <small>Note 7)</small>        | —                                                     | 0.05 to 0.7 MPa setting                          | ●                                                                      | ●  | ● |                          |
|                 |                                  |                                            | 1                                                     | 0.02 to 0.2 MPa setting                          | ●                                                                      | ●  | ● |                          |
|                 |                                  |                                            | +                                                     |                                                  |                                                                        |    |   |                          |
|                 | g                                | Bowl                                       | —                                                     | Polycarbonate bowl                               | ●                                                                      | ●  | ● |                          |
|                 |                                  |                                            | C                                                     | With bowl guard                                  | ●                                                                      | —  | — |                          |
|                 |                                  |                                            | +                                                     |                                                  |                                                                        |    |   |                          |
|                 | h                                | Filter regulator drain port                | —                                                     | With drain cock                                  | ●                                                                      | ●  | ● |                          |
|                 |                                  |                                            | J <small>Note 8)</small>                              | Drain guide 1/8                                  | ●                                                                      | —  | — |                          |
| Drain guide 1/4 |                                  |                                            |                                                       | —                                                | ●                                                                      | ●  |   |                          |
| W               |                                  |                                            | Drain cock with barb fitting (for ø6 x ø4 nylon tube) | —                                                | ●                                                                      | ●  |   |                          |

# Air Combination *Series AC20A-A to AC40A-A*



|   |               | Symbol | Description                       | 1           |                                                                                   |             |             |             |
|---|---------------|--------|-----------------------------------|-------------|-----------------------------------------------------------------------------------|-------------|-------------|-------------|
|   |               |        |                                   | Body size   |                                                                                   |             |             |             |
|   |               |        |                                   | 20          | 30                                                                                | 40          |             |             |
| 6 | Semi-standard | i      | Lubricator lubricant exhaust port | —           | Without drain cock                                                                | ●           | ●           | ●           |
|   |               |        |                                   | 3 (Note 9)  | Lubricator with drain cock                                                        | ●           | ●           | ●           |
|   |               |        |                                   |             | +                                                                                 |             |             |             |
|   |               | j      | Exhaust mechanism                 | —           | Relieving type                                                                    | ●           | ●           | ●           |
|   |               |        |                                   | N           | Non-relieving type                                                                | ●           | ●           | ●           |
|   |               |        |                                   |             | +                                                                                 |             |             |             |
|   |               | k      | Flow direction                    | —           | Flow direction: Left to right                                                     | ●           | ●           | ●           |
|   |               |        |                                   | R           | Flow direction: Right to left                                                     | ●           | ●           | ●           |
|   |               |        |                                   |             | +                                                                                 |             |             |             |
|   |               | l      | Pressure unit                     | —           | Name plate and pressure gauge in imperial units: MPa                              | ●           | ●           | ●           |
|   |               |        |                                   | Z (Note 10) | Name plate, caution plate for bowl, and pressure gauge in imperial units: psi, °F | ○ (Note 11) | ○ (Note 11) | ○ (Note 11) |

Note 1) Option G, M are not assembled and supplied loose at the time of shipment.

Note 2) 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.

Note 3) 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.

Note 4) When the pressure gauge is attached, a 1.0 MPa pressure gauge will be fitted for standard (0.7 MPa) type. 0.4 MPa pressure gauge for 0.2 MPa type.

Note 5) Not available with piping port size: 06.

Note 6) The bracket position varies depending on the pressure switch mounting.

Note 7) Pressure can be set higher than the specification pressure in some cases, but use pressure within the specification range.

Note 8) Without a valve function

Note 9) When selected with the filter regulator drain outlet W, the drain cock of the lubricator is barb fitting.

Note 10) For thread type: NPT. MPa and psi are shown together on the pressure unit. Round pressure gauge (with colour zone): Cannot be used with M. Available by request for special.

Note 11) ○: For thread type: NPT only

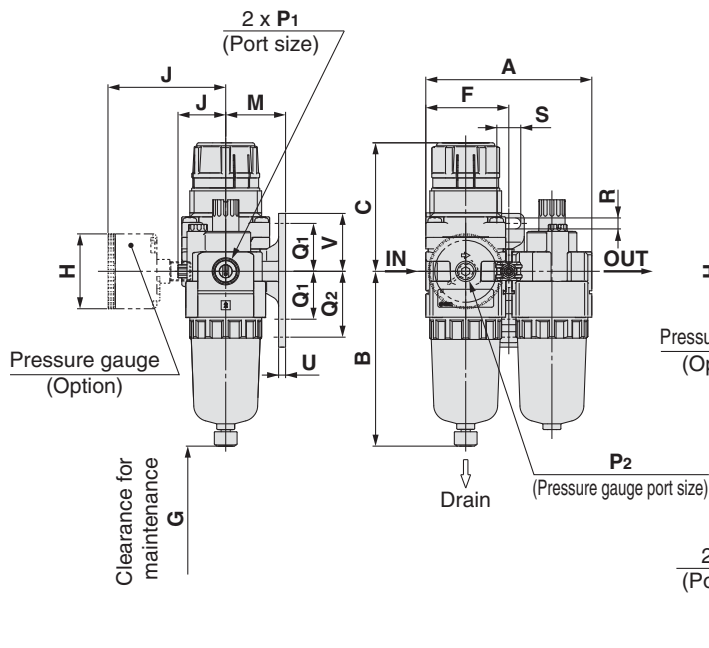
## Standard Specifications

| Model                         |                  | AC20A-A                        | AC30A-A                  | AC40A-A       | AC40A-06-A |
|-------------------------------|------------------|--------------------------------|--------------------------|---------------|------------|
| Component                     | Filter regulator | AW20-A                         | AW30-A                   | AW40-A        | AW40-06-A  |
|                               | Lubricator       | AL20-A                         | AL30-A                   | AL40-A        | AL40-06-A  |
| Port size                     |                  | 1/8, 1/4                       | 1/4, 3/8                 | 1/4, 3/8, 1/2 | 3/4        |
| Pressure gauge port size      |                  | 1/8                            |                          |               |            |
| Fluid                         |                  | Air                            |                          |               |            |
| Ambient and fluid temperature |                  | – 5 to 60°C (with no freezing) |                          |               |            |
| Proof pressure                |                  | 1.5 MPa                        |                          |               |            |
| Maximum operating pressure    |                  | 1.0 MPa                        |                          |               |            |
| Set pressure range            |                  | 0.05 to 0.7 MPa                |                          |               |            |
| Nominal filtration rating     |                  | 5 µm                           |                          |               |            |
| Recommended lubricant         |                  | Class 1 turbine oil (ISO VG32) |                          |               |            |
| Bowl material                 |                  | Polycarbonate                  |                          |               |            |
| Bowl guard                    |                  | Semi-standard (Steel)          | Standard (Polycarbonate) |               |            |
| Regulator construction        |                  | Relieving type                 |                          |               |            |
| Weight [kg]                   |                  | 0.33                           | 0.66                     | 1.22          | 1.34       |

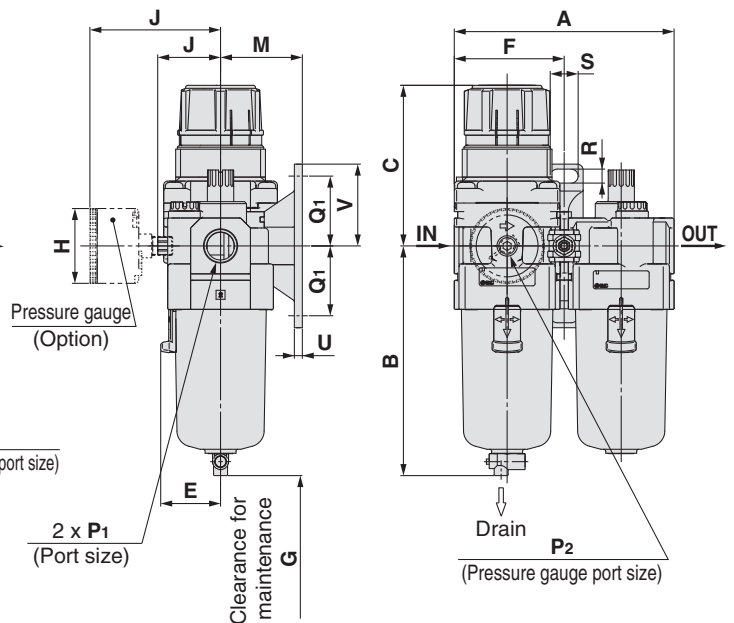
# Series AC20A-A to AC40A-A

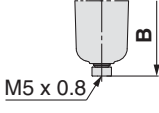
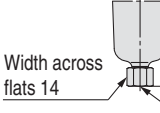
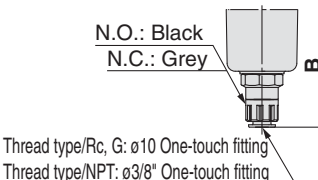
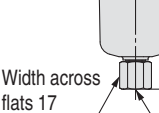
## Dimensions

### AC20A-A



### AC30A-A, AC40A-A



| Applicable model                      | AC20A-A                                                                             |                                                                                     | AC30A-A, AC40A-A                                                                                               |                                                                                       |                                                                                       |
|---------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| Optional/Semi-standard specifications | With auto drain (N.C.)                                                              | With drain guide                                                                    | With auto drain (N.O./N.C.)                                                                                    | With drain guide                                                                      | Drain cock with barb fitting                                                          |
| Dimensions                            |  |  |  |  |  |

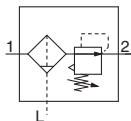
| Model      | Standard specifications |                |       |       |          |      |      |     |      |               |                |                |     |    |     |
|------------|-------------------------|----------------|-------|-------|----------|------|------|-----|------|---------------|----------------|----------------|-----|----|-----|
|            | P <sub>1</sub>          | P <sub>2</sub> | A     | B     | C (Note) | E    | F    | G   | J    | Bracket mount |                |                |     |    |     |
| AC20A-A    | 1/8, 1/4                | 1/8            | 83.2  | 87.6  | 67.4     | —    | 41.6 | 60  | 23.4 | M             | Q <sub>1</sub> | Q <sub>2</sub> | R   | S  | U   |
| AC30A-A    | 1/4, 3/8                | 1/8            | 110.2 | 115.1 | 83.5     | 30   | 55.1 | 80  | 30.5 | 30            | 24             | 33             | 5.5 | 12 | 3.5 |
| AC40A-A    | 1/4, 3/8, 1/2           | 1/8            | 145.2 | 147.1 | 100      | 38.4 | 72.6 | 110 | 36.1 | 41            | 35             | —              | 7   | 14 | 4   |
| AC40A-06-A | 3/4                     | 1/8            | 155.2 | 149.1 | 101.5    | 38.4 | 77.6 | 110 | 39.6 | 50            | 40             | —              | 9   | 18 | 5   |

| Model      | Optional specifications   |      |                                              |      |                 | Semi-standard specifications |                  |
|------------|---------------------------|------|----------------------------------------------|------|-----------------|------------------------------|------------------|
|            | Round type pressure gauge |      | Round type pressure gauge (with colour zone) |      | With auto drain | With barb fitting            | With drain guide |
|            | H                         | J    | H                                            | J    | B               | B                            | B                |
| AC20A-A    | ø37.5                     | 58.5 | ø37.5                                        | 59.5 | 104.9           | —                            | 91.4             |
| AC30A-A    | ø37.5                     | 65   | ø37.5                                        | 66   | 156.8           | 123.6                        | 121.9            |
| AC40A-A    | ø42.5                     | 72   | ø42.5                                        | 72   | 186.9           | 155.6                        | 153.9            |
| AC40A-06-A | ø42.5                     | 72   | ø42.5                                        | 72   | 188.9           | 157.6                        | 155.9            |

Note) The total length of C dimension is the length when the filter regulator knob is unlocked.

| AW | AL | AR | AFM / AFD | AF | Attachment | AW+AFM | AF+AFM+AR | AF+AR | AW+AL | AF+AR+AL | AC |
|----|----|----|-----------|----|------------|--------|-----------|-------|-------|----------|----|
|----|----|----|-----------|----|------------|--------|-----------|-------|-------|----------|----|

## JIS Symbol



## How to Order

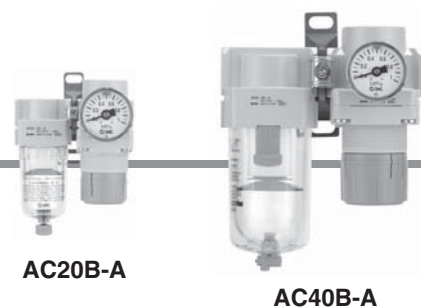
**AC** **30** **B** - **03** **DG** - - **A**

① ② ③ ④ ⑤ ⑥

- Option/Semi-standard: Select one each for **a** to **j**.
- Option/Attachment/Semi-standard symbol: When more than one specification is required, indicate in alphanumeric order.  
Example) AC30B-F03DM-SV-1NR-A

|   |                   | Symbol                                     | Description           | ①                                                     |                                                                        |    |    |   |   |
|---|-------------------|--------------------------------------------|-----------------------|-------------------------------------------------------|------------------------------------------------------------------------|----|----|---|---|
|   |                   |                                            |                       | Body size                                             |                                                                        |    |    |   |   |
|   |                   |                                            |                       | 20                                                    | 25                                                                     | 30 | 40 |   |   |
| ② | Thread type       | —                                          | Rc                    | ●                                                     | ●                                                                      | ●  | ●  |   |   |
|   |                   | N                                          | NPT                   | ●                                                     | ●                                                                      | ●  | ●  |   |   |
|   |                   | F                                          | G                     | ●                                                     | ●                                                                      | ●  | ●  |   |   |
| + |                   |                                            |                       |                                                       |                                                                        |    |    |   |   |
| ③ | Port size         | 01                                         | 1/8                   | ●                                                     | —                                                                      | —  | —  |   |   |
|   |                   | 02                                         | 1/4                   | ●                                                     | ●                                                                      | ●  | ●  |   |   |
|   |                   | 03                                         | 3/8                   | —                                                     | ●                                                                      | ●  | ●  |   |   |
|   |                   | 04                                         | 1/2                   | —                                                     | —                                                                      | —  | ●  |   |   |
|   |                   | 06                                         | 3/4                   | —                                                     | —                                                                      | —  | ●  |   |   |
| + |                   |                                            |                       |                                                       |                                                                        |    |    |   |   |
| ④ | Option<br>Note 1) | a                                          | Float type auto drain | —                                                     | Without auto drain                                                     | ●  | ●  | ● | ● |
|   |                   |                                            |                       | C Note 2)                                             | N.C. (Normal close) Drain port is closed when pressure is not applied. | ●  | ●  | ● | ● |
|   |                   |                                            |                       | D Note 3)                                             | N.O. (Normal open) Drain port is open when pressure is not applied.    | —  | ●  | ● | ● |
| + |                   |                                            |                       |                                                       |                                                                        |    |    |   |   |
|   | b                 | Pressure gauge<br>Note 4)                  | —                     | Without pressure gauge                                | ●                                                                      | ●  | ●  | ● |   |
|   |                   |                                            | G                     | Round type pressure gauge (with limit indicator)      | ●                                                                      | ●  | ●  | ● |   |
|   |                   |                                            | M                     | Round type pressure gauge (with colour zone)          | ●                                                                      | ●  | ●  | ● |   |
| + |                   |                                            |                       |                                                       |                                                                        |    |    |   |   |
| ⑤ | Attachment        | c                                          | Pressure switch       | —                                                     | Without attachment                                                     | ●  | ●  | ● | ● |
|   |                   |                                            |                       | S Note 5)                                             | Mounting position: AF+S+AR                                             | ●  | ●  | ● | ● |
|   |                   |                                            | T-shaped spacer       | T Note 5)                                             | Mounting position: AF+T+AR                                             | ●  | ●  | ● | ● |
| + |                   |                                            |                       |                                                       |                                                                        |    |    |   |   |
|   | d                 | 3-port valve for residual pressure release | —                     | Without attachment                                    | ●                                                                      | ●  | ●  | ● |   |
|   |                   |                                            | V                     | Mounting position: AF+AR+V                            | ●                                                                      | ●  | ●  | ● |   |
|   |                   |                                            | V1 Note 6)            | Mounting position: V+AF+AR                            | ●                                                                      | ●  | ●  | ● |   |
| + |                   |                                            |                       |                                                       |                                                                        |    |    |   |   |
| ⑥ | e                 | Set pressure<br>Note 7)                    | —                     | 0.05 to 0.7 MPa setting                               | ●                                                                      | ●  | ●  | ● |   |
|   |                   |                                            | 1                     | 0.02 to 0.2 MPa setting                               | ●                                                                      | ●  | ●  | ● |   |
|   | +                 |                                            |                       |                                                       |                                                                        |    |    |   |   |
|   | f                 | Bowl                                       | —                     | Polycarbonate bowl                                    | ●                                                                      | ●  | ●  | ● |   |
|   |                   |                                            | C                     | With bowl guard                                       | ●                                                                      | —  | —  | — |   |
| + |                   |                                            |                       |                                                       |                                                                        |    |    |   |   |
|   | g                 | Filter drain port                          | —                     | With drain cock                                       | ●                                                                      | ●  | ●  | ● |   |
|   |                   |                                            | J Note 8)             | Drain guide 1/8                                       | ●                                                                      | —  | —  | — |   |
|   |                   |                                            |                       | Drain guide 1/4                                       | —                                                                      | ●  | ●  | ● |   |
|   |                   |                                            | W                     | Drain cock with barb fitting (for ø6 x ø4 nylon tube) | —                                                                      | ●  | ●  | ● |   |

# Air Combination *Series AC20B-A to AC40B-A*



AC20B-A

AC40B-A

|   |   | Symbol            | Description               | ①                                                                                 |    |                            |                            |                            |                            |
|---|---|-------------------|---------------------------|-----------------------------------------------------------------------------------|----|----------------------------|----------------------------|----------------------------|----------------------------|
|   |   |                   |                           | Body size                                                                         |    |                            |                            |                            |                            |
|   |   |                   |                           | 20                                                                                | 25 | 30                         | 40                         |                            |                            |
| ⑥ | h | Exhaust mechanism | —                         | Relieving type                                                                    |    | ●                          | ●                          | ●                          | ●                          |
|   |   |                   | N                         | Non-relieving type                                                                |    | ●                          | ●                          | ●                          | ●                          |
|   |   | +                 |                           |                                                                                   |    |                            |                            |                            |                            |
|   | i | Flow direction    | —                         | Flow direction: Left to right                                                     |    | ●                          | ●                          | ●                          | ●                          |
|   |   |                   | R                         | Flow direction: Right to left                                                     |    | ●                          | ●                          | ●                          | ●                          |
|   | + |                   |                           |                                                                                   |    |                            |                            |                            |                            |
|   | j | Pressure unit     | —                         | Name plate and pressure gauge in imperial units: MPa                              |    | ●                          | ●                          | ●                          | ●                          |
|   |   |                   | Z <small>(Note 9)</small> | Name plate, caution plate for bowl, and pressure gauge in imperial units: psi, °F |    | ○ <small>(Note 10)</small> | ○ <small>(Note 10)</small> | ○ <small>(Note 10)</small> | ○ <small>(Note 10)</small> |

Note 1) Option G, M are not assembled and supplied loose at the time of shipment.

Note 2) 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.

Note 3) 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.

Note 4) When the pressure gauge is attached, a 1.0 MPa pressure gauge will be fitted for standard (0.7 MPa) type. 0.4 MPa pressure gauge for 0.2 MPa type.

Note 5) The bracket position varies depending on the T-shaped spacer or pressure switch mounting.

Note 6) Make sure that the outlet pressure is released to atmospheric pressure using a pressure gauge.

Note 7) Pressure can be set higher than the specification pressure in some cases, but use pressure within the specification range.

Note 8) Without a valve function.

Note 9) For thread type: NPT. MPa and psi are shown together on the pressure unit. Round pressure gauge (with colour zone): Cannot be used with M. Available by request for special.

Note 10) ○: For thread type: NPT only.

## Standard Specifications

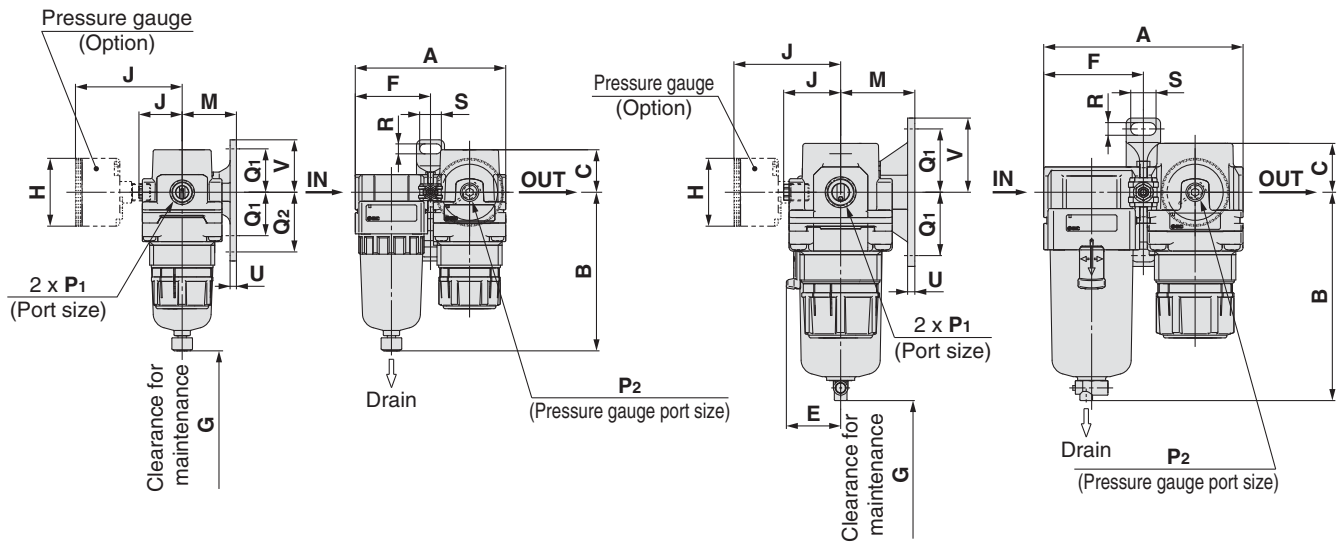
| Model                         |            | AC20B-A                        | AC25B-A                  | AC30B-A  | AC40B-A       | AC40B-06-A |
|-------------------------------|------------|--------------------------------|--------------------------|----------|---------------|------------|
| Component                     | Air filter | AF20-A                         | AF30-A                   | AF30-A   | AF40-A        | AF40-06-A  |
|                               | Regulator  | AR20-A                         | AR25-A                   | AR30-A   | AR40-A        | AR40-06-A  |
| Port size                     |            | 1/8, 1/4                       | 1/4, 3/8                 | 1/4, 3/8 | 1/4, 3/8, 1/2 | 3/4        |
| Pressure gauge port size      |            | 1/8                            |                          |          |               |            |
| Fluid                         |            | Air                            |                          |          |               |            |
| Ambient and fluid temperature |            | – 5 to 60°C (with no freezing) |                          |          |               |            |
| Proof pressure                |            | 1.5 MPa                        |                          |          |               |            |
| Maximum operating pressure    |            | 1.0 MPa                        |                          |          |               |            |
| Set pressure range            |            | 0.05 to 0.7 MPa                |                          |          |               |            |
| Nominal filtration rating     |            | 5 µm                           |                          |          |               |            |
| Bowl material                 |            | Polycarbonate                  |                          |          |               |            |
| Bowl guard                    |            | Semi-standard (Steel)          | Standard (Polycarbonate) |          |               |            |
| Regulator construction        |            | Relieving type                 |                          |          |               |            |
| Weight [kg]                   |            | 0.27                           | 0.42                     | 0.57     | 0.79          | 0.90       |

# Series AC20B-A to AC40B-A

## Dimensions

### AC20B-A

### AC25B-A to AC40B-A



| Applicable model                      | AC20B-A                |                  | AC25B-A to AC40B-A          |                  |                              |
|---------------------------------------|------------------------|------------------|-----------------------------|------------------|------------------------------|
| Optional/Semi-standard specifications | With auto drain (N.C.) | With drain guide | With auto drain (N.O./N.C.) | With drain guide | Drain cock with barb fitting |
| Dimensions                            |                        |                  |                             |                  |                              |

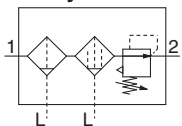
| Model      | Standard specifications |                |       |       |      |      |      |    |      |               |                |                |     |    |     |    |
|------------|-------------------------|----------------|-------|-------|------|------|------|----|------|---------------|----------------|----------------|-----|----|-----|----|
|            | P <sub>1</sub>          | P <sub>2</sub> | A     | B     | C    | E    | F    | G  | J    | Bracket mount |                |                |     |    |     |    |
|            |                         |                |       |       |      |      |      |    |      | M             | Q <sub>1</sub> | Q <sub>2</sub> | R   | S  | U   | V  |
| AC20B-A    | 1/8, 1/4                | 1/8            | 83.2  | 87.6  | 23.5 | —    | 41.6 | 25 | 23.4 | 30            | 24             | 33             | 5.5 | 12 | 3.5 | 29 |
| AC25B-A    | 1/4, 3/8                | 1/8            | 110.2 | 115.1 | 23.5 | 30   | 55.1 | 35 | 30.5 | 41            | 35             | —              | 7   | 14 | 4   | 41 |
| AC30B-A    | 1/4, 3/8                | 1/8            | 110.2 | 115.1 | 27   | 30   | 55.1 | 35 | 30.5 | 41            | 35             | —              | 7   | 14 | 4   | 41 |
| AC40B-A    | 1/4, 3/8, 1/2           | 1/8            | 145.2 | 147.1 | 33.5 | 38.4 | 72.6 | 40 | 36.1 | 50            | 40             | —              | 9   | 18 | 5   | 48 |
| AC40B-06-A | 3/4                     | 1/8            | 155.2 | 149.1 | 33.5 | 38.4 | 77.6 | 40 | 39.6 | 50            | 40             | —              | 9   | 18 | 5   | 48 |

| Model      | Optional specifications   |      |                                              |      |                 | Semi-standard specifications |                  |
|------------|---------------------------|------|----------------------------------------------|------|-----------------|------------------------------|------------------|
|            | Round type pressure gauge |      | Round type pressure gauge (with colour zone) |      | With auto drain | With barb fitting            | With drain guide |
|            | H                         | J    | H                                            | J    | B               | B                            | B                |
| AC20B-A    | ø37.5                     | 58.5 | ø37.5                                        | 59.5 | 104.9           | —                            | 91.4             |
| AC25B-A    | ø37.5                     | 58.5 | ø37.5                                        | 59.5 | 156.8           | 123.6                        | 121.9            |
| AC30B-A    | ø37.5                     | 65   | ø37.5                                        | 66   | 156.8           | 123.6                        | 121.9            |
| AC40B-A    | ø42.5                     | 72   | ø42.5                                        | 72   | 186.9           | 155.6                        | 153.9            |
| AC40B-06-A | ø42.5                     | 72   | ø42.5                                        | 72   | 188.9           | 157.6                        | 155.9            |

| AW | AL | AR | AFM / AFD | AF | Attachment | AW+AFM | AF+AFM+AR | AF+AR | AW+AL | AF+AR+AL | AC |
|----|----|----|-----------|----|------------|--------|-----------|-------|-------|----------|----|
|----|----|----|-----------|----|------------|--------|-----------|-------|-------|----------|----|

# AC20C-A to AC40C-A

JIS Symbol



## How to Order

AC **30** C- **03** **DG** - - -A

① ② ③ ④ ⑤ ⑥

- Option/Semi-standard: Select one each for a to j.
- Option/Attachment/Semi-standard symbol: When more than one specification is required, indicate in alphanumeric order.  
Example) AC30C-F03DM-SV-1NR-A

|   |                                  | Symbol                                     | Description                            | ①                                                |                                                                        |    |    |   |   |   |   |
|---|----------------------------------|--------------------------------------------|----------------------------------------|--------------------------------------------------|------------------------------------------------------------------------|----|----|---|---|---|---|
|   |                                  |                                            |                                        | Body size                                        |                                                                        |    |    |   |   |   |   |
|   |                                  |                                            |                                        | 20                                               | 25                                                                     | 30 | 40 |   |   |   |   |
| ② | Thread type                      | —                                          | Rc                                     | ●                                                | ●                                                                      | ●  | ●  |   |   |   |   |
|   |                                  | N                                          | NPT                                    | ●                                                | ●                                                                      | ●  | ●  |   |   |   |   |
|   |                                  | F                                          | G                                      | ●                                                | ●                                                                      | ●  | ●  |   |   |   |   |
|   |                                  | +                                          |                                        |                                                  |                                                                        |    |    |   |   |   |   |
| ③ | Port size                        | 01                                         | 1/8                                    | ●                                                | —                                                                      | —  | —  |   |   |   |   |
|   |                                  | 02                                         | 1/4                                    | ●                                                | ●                                                                      | ●  | ●  |   |   |   |   |
|   |                                  | 03                                         | 3/8                                    | —                                                | ●                                                                      | ●  | ●  |   |   |   |   |
|   |                                  | 04                                         | 1/2                                    | —                                                | —                                                                      | —  | ●  |   |   |   |   |
|   |                                  | 06                                         | 3/4                                    | —                                                | —                                                                      | —  | ●  |   |   |   |   |
|   |                                  | +                                          |                                        |                                                  |                                                                        |    |    |   |   |   |   |
| ④ | Option<br><small>Note 1)</small> | a                                          | Float type auto drain                  | —                                                | Without auto drain                                                     |    |    | ● | ● | ● | ● |
|   |                                  |                                            |                                        | C <small>Note 2)</small>                         | N.C. (Normal close) Drain port is closed when pressure is not applied. |    |    | ● | ● | ● | ● |
|   |                                  |                                            |                                        | D <small>Note 3)</small>                         | N.O. (Normal open) Drain port is open when pressure is not applied.    |    |    | — | ● | ● | ● |
|   |                                  | +                                          |                                        |                                                  |                                                                        |    |    |   |   |   |   |
|   | b                                | Pressure gauge<br><small>Note 4)</small>   | —                                      | Without pressure gauge                           |                                                                        |    | ●  | ● | ● | ● |   |
|   |                                  |                                            | G                                      | Round type pressure gauge (with limit indicator) |                                                                        |    | ●  | ● | ● | ● |   |
|   |                                  |                                            | M                                      | Round type pressure gauge (with colour zone)     |                                                                        |    | ●  | ● | ● | ● |   |
|   |                                  | +                                          |                                        |                                                  |                                                                        |    |    |   |   |   |   |
| ⑤ | Attachment                       | c                                          | Pressure switch                        | —                                                | Without attachment                                                     |    |    | ● | ● | ● | ● |
|   |                                  |                                            |                                        | S <small>Note 5)</small>                         | Mounting position: AF+AFM+S+AR                                         |    |    | ● | ● | ● | ● |
|   |                                  |                                            | T-shaped spacer                        | T <small>Note 5)</small>                         | Mounting position: AF+AFM+T+AR                                         |    |    | ● | ● | ● | ● |
|   |                                  | +                                          |                                        |                                                  |                                                                        |    |    |   |   |   |   |
|   | d                                | 3-port valve for residual pressure release | —                                      | Without attachment                               |                                                                        |    | ●  | ● | ● | ● |   |
|   |                                  |                                            | V                                      | Mounting position: AF+AFM+AR+V                   |                                                                        |    | ●  | ● | ● | ● |   |
|   |                                  |                                            | V1 <small>Note 6)</small>              | Mounting position: V+AF+AFM+AR                   |                                                                        |    | ●  | ● | ● | ● |   |
|   |                                  | +                                          |                                        |                                                  |                                                                        |    |    |   |   |   |   |
| ⑥ | Semi-standard                    | e                                          | Set pressure<br><small>Note 7)</small> | —                                                | 0.05 to 0.7 MPa setting                                                |    |    | ● | ● | ● | ● |
|   |                                  |                                            |                                        | 1                                                | 0.02 to 0.2 MPa setting                                                |    |    | ● | ● | ● | ● |
|   |                                  |                                            |                                        | +                                                |                                                                        |    |    |   |   |   |   |
|   |                                  | f                                          | Bowl                                   | —                                                | Polycarbonate bowl                                                     |    |    | ● | ● | ● | ● |
|   |                                  |                                            |                                        | C                                                | With bowl guard                                                        |    |    | ● | — | — | — |
|   |                                  |                                            |                                        | +                                                |                                                                        |    |    |   |   |   |   |
|   |                                  | g                                          | Filter Mist separator drain port       | —                                                | With drain cock                                                        |    |    | ● | ● | ● | ● |
|   |                                  |                                            |                                        | J <small>Note 8)</small>                         | Drain guide 1/8                                                        |    |    | ● | — | — | — |
|   |                                  |                                            |                                        |                                                  | Drain guide 1/4                                                        |    |    | — | ● | ● | ● |
|   |                                  |                                            |                                        | W                                                | Drain cock with barb fitting (for ø6 x ø4 nylon tube)                  |    |    | — | ● | ● | ● |
|   |                                  | +                                          |                                        |                                                  |                                                                        |    |    |   |   |   |   |
|   | h                                | Exhaust mechanism                          | —                                      | Relieving type                                   |                                                                        |    | ●  | ● | ● | ● |   |
|   |                                  |                                            | N                                      | Non-relieving type                               |                                                                        |    | ●  | ● | ● | ● |   |

# Air Combination *Series AC20C-A to AC40C-A*



AC20C-A

AC40C-A

|               | Symbol    | Description                                                                       | ①          |            |            |            |
|---------------|-----------|-----------------------------------------------------------------------------------|------------|------------|------------|------------|
|               |           |                                                                                   | Body size  |            |            |            |
|               |           |                                                                                   | 20         | 25         | 30         | 40         |
| ⑥             | i         | Flow direction                                                                    | —          | —          | —          | —          |
|               |           | Flow direction: Left to right                                                     | ●          | ●          | ●          | ●          |
|               | R         | Flow direction: Right to left                                                     | ●          | ●          | ●          | ●          |
|               |           | Flow direction: Right to left                                                     | ●          | ●          | ●          | ●          |
| Semi-standard | j         | Pressure unit                                                                     | —          | —          | —          | —          |
|               |           | Name plate and pressure gauge in imperial units: MPa                              | ●          | ●          | ●          | ●          |
|               | Z Note 9) | Name plate, caution plate for bowl, and pressure gauge in imperial units: psi, °F | ○ Note 10) | ○ Note 10) | ○ Note 10) | ○ Note 10) |
|               |           | Name plate, caution plate for bowl, and pressure gauge in imperial units: psi, °F | ○ Note 10) | ○ Note 10) | ○ Note 10) | ○ Note 10) |

Note 1) Option G, M are not assembled and supplied loose at the time of shipment.

Note 2) 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.

Note 3) 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.

Note 4) When the pressure gauge is attached, a 1.0 MPa pressure gauge will be fitted for standard (0.7 MPa) type. 0.4 MPa pressure gauge for 0.2 MPa type.

Note 5) The bracket position varies depending on the T-shaped spacer or pressure switch mounting.

Note 6) Make sure that the outlet pressure is released to atmospheric pressure using a pressure gauge.

Note 7) Pressure can be set higher than the specification pressure in some cases, but use pressure within the specification range.

Note 8) Without a valve function.

Note 9) For thread type: NPT. MPa and psi are shown together on the pressure unit. Round pressure gauge (with colour zone): Cannot be used with M. Available by request for special.

Note 10) ○: For thread type: NPT only.

## Standard Specifications

| Model                                           |                | AC20C-A                                                                   | AC25C-A                  | AC30C-A  | AC40C-A       | AC40C-06-A |
|-------------------------------------------------|----------------|---------------------------------------------------------------------------|--------------------------|----------|---------------|------------|
| Component                                       | Air filter     | AF20-A                                                                    | AF30-A                   | AF30-A   | AF40-A        | AF40-06-A  |
|                                                 | Mist separator | AFM20-A                                                                   | AFM30-A                  | AFM30-A  | AFM40-A       | AFM40-06-A |
|                                                 | Regulator      | AR20-A                                                                    | AR25-A                   | AR30-A   | AR40-A        | AR40-06-A  |
| Port size                                       |                | 1/8, 1/4                                                                  | 1/4, 3/8                 | 1/4, 3/8 | 1/4, 3/8, 1/2 | 3/4        |
| Pressure gauge port size                        |                | 1/8                                                                       |                          |          |               |            |
| Fluid                                           |                | Air                                                                       |                          |          |               |            |
| Ambient and fluid temperature                   |                | – 5 to 60°C (with no freezing)                                            |                          |          |               |            |
| Proof pressure                                  |                | 1.5 MPa                                                                   |                          |          |               |            |
| Maximum operating pressure                      |                | 1.0 MPa                                                                   |                          |          |               |            |
| Minimum operating pressure                      |                | 0.05 MPa                                                                  |                          |          |               |            |
| Set pressure range                              |                | 0.05 to 0.7 MPa                                                           |                          |          |               |            |
| Nominal filtration rating                       |                | AF: 5 µm, AFM: 0.3 µm (99.9% filtered particle size)                      |                          |          |               |            |
| Outlet side oil mist concentration              |                | MAX 1.0 mg/m <sup>3</sup> (ANR) (≈0.8 ppm) <small>Note 2) Note 3)</small> |                          |          |               |            |
| Rated flow [L/min (ANR)] <small>Note 1)</small> |                | 200                                                                       | 450                      | 450      | 1100          | 1100       |
| Bowl material                                   |                | Polycarbonate                                                             |                          |          |               |            |
| Bowl guard                                      |                | Semi-standard (Steel)                                                     | Standard (Polycarbonate) |          |               |            |
| Regulator construction                          |                | Relieving type                                                            |                          |          |               |            |
| Weight [kg]                                     |                | 0.38                                                                      | 0.67                     | 0.82     | 1.26          | 1.42       |

Note 1) Conditions: Mist separator inlet pressure: 0.7 MPa; The rated flow varies depending on the inlet pressure.

Keep the air flow within the rated flow to prevent an outflow of lubricant to the outlet side.

Note 2) When the compressor oil mist discharge concentration is 30 mg/m<sup>3</sup> (ANR).

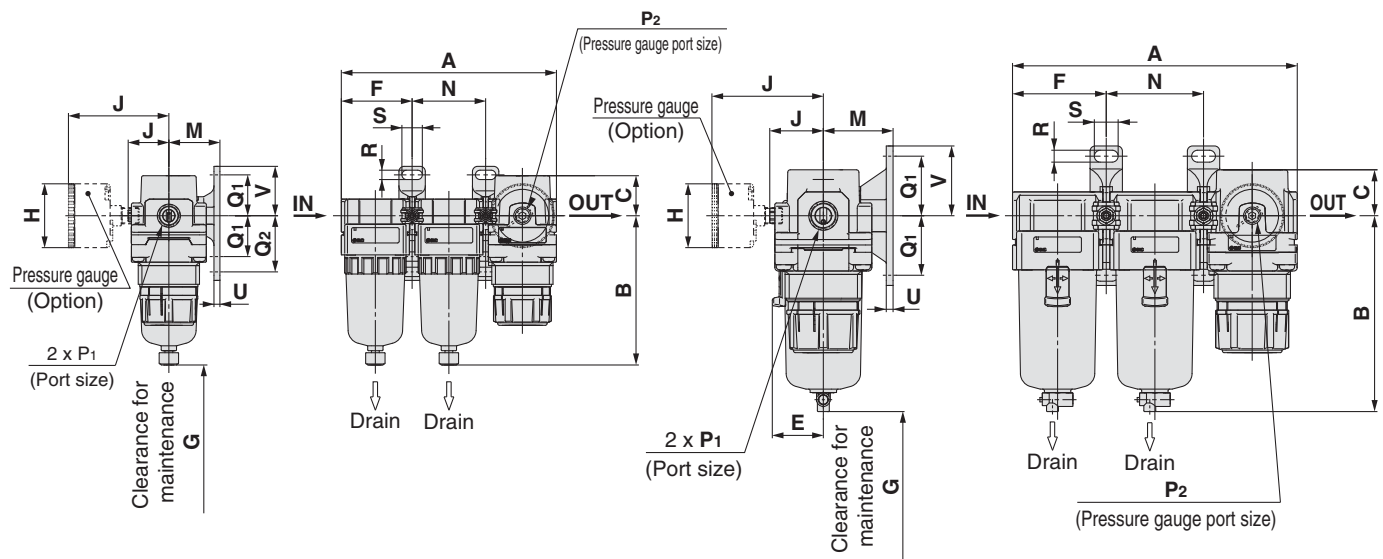
Note 3) Bowl O-ring and other O-rings are slightly lubricated.

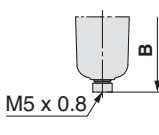
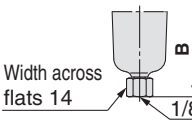
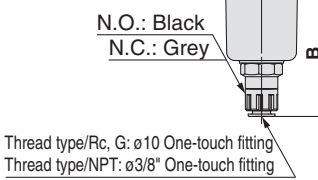
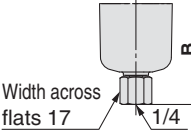
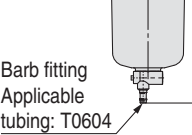
# Series AC20C-A to AC40C-A

## Dimensions

### AC20C-A

### AC25C-A to AC40C-06-A



| Applicable model                      | AC20C-A                                                                             |                                                                                     | AC25C-A to AC40C-06-A                                                                                                                                                                                     |                                                                                       |                                                                                                                                   |
|---------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|
| Optional/Semi-standard specifications | With auto drain (N.C.)                                                              | With drain guide                                                                    | With auto drain (N.O./N.C.)                                                                                                                                                                               | With drain guide                                                                      | Drain cock with barb fitting                                                                                                      |
| Dimensions                            |  |  | <br>N.O.: Black<br>N.C.: Grey<br>Thread type/Rc, G: ø10 One-touch fitting<br>Thread type/NPT: ø3/8" One-touch fitting |  | <br>Barb fitting<br>Applicable tubing: T0604 |

| Model      | Standard specifications |                |       |       |      |      |      |    |      |               |      |                |                |   |    |   |
|------------|-------------------------|----------------|-------|-------|------|------|------|----|------|---------------|------|----------------|----------------|---|----|---|
|            | P <sub>1</sub>          | P <sub>2</sub> | A     | B     | C    | E    | F    | G  | J    | Bracket mount |      |                |                |   |    |   |
| AC20C-A    | 1/8, 1/4                | 1/8            | 126.4 | 87.6  | 23.5 | —    | 41.6 | 40 | 23.4 | M             | N    | Q <sub>1</sub> | Q <sub>2</sub> | R | S  | U |
| AC25C-A    | 1/4, 3/8                | 1/8            | 167.4 | 115.1 | 23.5 | 30   | 55.1 | 50 | 30.5 | 41            | 57.2 | 35             | —              | 7 | 14 | 4 |
| AC30C-A    | 1/4, 3/8                | 1/8            | 167.4 | 115.1 | 27   | 30   | 55.1 | 50 | 30.5 | 41            | 57.2 | 35             | —              | 7 | 14 | 4 |
| AC40C-A    | 1/4, 3/8, 1/2           | 1/8            | 220.4 | 147.1 | 33.5 | 38.4 | 72.6 | 75 | 36.1 | 50            | 75.2 | 40             | —              | 9 | 18 | 5 |
| AC40C-06-A | 3/4                     | 1/8            | 235.4 | 149.1 | 33.5 | 38.4 | 77.6 | 75 | 39.6 | 50            | 80.2 | 40             | —              | 9 | 18 | 5 |

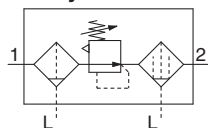
| Model      | Optional specifications   |      |                                              |      |                 | Semi-standard specifications |                  |
|------------|---------------------------|------|----------------------------------------------|------|-----------------|------------------------------|------------------|
|            | Round type pressure gauge |      | Round type pressure gauge (with colour zone) |      | With auto drain | With barb fitting            | With drain guide |
|            | H                         | J    | H                                            | J    | B               | B                            | B                |
| AC20C-A    | ø37.5                     | 58.5 | ø37.5                                        | 59.5 | 104.9           | —                            | 91.4             |
| AC25C-A    | ø37.5                     | 58.5 | ø37.5                                        | 59.5 | 156.8           | 123.6                        | 121.9            |
| AC30C-A    | ø37.5                     | 65   | ø37.5                                        | 66   | 156.8           | 123.6                        | 121.9            |
| AC40C-A    | ø42.5                     | 72   | ø42.5                                        | 72   | 186.9           | 155.6                        | 153.9            |
| AC40C-06-A | ø42.5                     | 72   | ø42.5                                        | 72   | 188.9           | 157.6                        | 155.9            |

| AW | AL | AR | AFM / AFD | AF | Attachment | AW+AFM | AF+AFM+AR | AF+AR | AW+AL | AF+AR+AL | AC |
|----|----|----|-----------|----|------------|--------|-----------|-------|-------|----------|----|
|----|----|----|-----------|----|------------|--------|-----------|-------|-------|----------|----|

## Filter Regulator + Mist Separator

**AC20D-A to AC40D-A**

JIS Symbol



## How to Order

**AC** **30** **D** - **03** **DG** - - **A**

① ② ③ ④ ⑤ ⑥

- Option/Semi-standard: Select one each for a to j.
- Option/Attachment/Semi-standard symbol: When more than one specification is required, indicate in alphanumeric order.  
Example) AC30D-F03DM-SV-1NR-A

|                                                 | Symbol                                                | Description                                      | ①<br>Body size                                                         |    |    |
|-------------------------------------------------|-------------------------------------------------------|--------------------------------------------------|------------------------------------------------------------------------|----|----|
|                                                 |                                                       |                                                  | 20                                                                     | 30 | 40 |
| ②                                               | —                                                     | Rc                                               | ●                                                                      | ●  | ●  |
|                                                 | N                                                     | NPT                                              | ●                                                                      | ●  | ●  |
|                                                 | F                                                     | G                                                | ●                                                                      | ●  | ●  |
| +                                               |                                                       |                                                  |                                                                        |    |    |
| ③                                               | 01                                                    | 1/8                                              | ●                                                                      | —  | —  |
|                                                 | 02                                                    | 1/4                                              | ●                                                                      | ●  | ●  |
|                                                 | 03                                                    | 3/8                                              | —                                                                      | ●  | ●  |
|                                                 | 04                                                    | 1/2                                              | —                                                                      | —  | ●  |
|                                                 | 06                                                    | 3/4                                              | —                                                                      | —  | ●  |
| +                                               |                                                       |                                                  |                                                                        |    |    |
| ④<br>Option                                     | a<br>Float type auto drain<br><small>Note 1)</small>  | —                                                | Without auto drain                                                     | ●  | ●  |
|                                                 |                                                       | C <small>Note 2)</small>                         | N.C. (Normal close) Drain port is closed when pressure is not applied. | ●  | ●  |
|                                                 |                                                       | D <small>Note 3)</small>                         | N.O. (Normal open) Drain port is open when pressure is not applied.    | —  | ●  |
|                                                 | +                                                     |                                                  |                                                                        |    |    |
| b<br>Pressure gauge<br><small>Note 4)</small>   | —                                                     | Without pressure gauge                           | ●                                                                      | ●  | ●  |
|                                                 | G                                                     | Round type pressure gauge (with limit indicator) | ●                                                                      | ●  | ●  |
|                                                 | M                                                     | Round type pressure gauge (with colour zone)     | ●                                                                      | ●  | ●  |
| +                                               |                                                       |                                                  |                                                                        |    |    |
| ⑤<br>Attachment                                 | c<br>Pressure switch                                  | —                                                | Without attachment                                                     | ●  | ●  |
|                                                 |                                                       | S <small>Note 5)</small>                         | Mounting position: AW+S+AFM                                            | ●  | ●  |
|                                                 | +                                                     |                                                  |                                                                        |    |    |
| d<br>3-port valve for residual pressure release | —                                                     | Without attachment                               | ●                                                                      | ●  | ●  |
|                                                 | V                                                     | Mounting position: AW+AFM+V                      | ●                                                                      | ●  | ●  |
|                                                 | V1 <small>Note 6)</small>                             | Mounting position: V+AW+AFM                      | ●                                                                      | ●  | ●  |
| +                                               |                                                       |                                                  |                                                                        |    |    |
| ⑥<br>Semi-standard                              | e<br>Set pressure<br><small>Note 7)</small>           | —                                                | 0.05 to 0.7 MPa setting                                                | ●  | ●  |
|                                                 |                                                       | 1                                                | 0.02 to 0.2 MPa setting                                                | ●  | ●  |
|                                                 | +                                                     |                                                  |                                                                        |    |    |
|                                                 | f<br>Bowl                                             | —                                                | Polycarbonate bowl                                                     | ●  | ●  |
|                                                 |                                                       | C                                                | With bowl guard                                                        | ●  | —  |
|                                                 | +                                                     |                                                  |                                                                        |    |    |
|                                                 | g<br>Filter regulator<br>Mist separator<br>drain port | —                                                | With drain cock                                                        | ●  | ●  |
|                                                 |                                                       | J <small>Note 8)</small>                         | Drain guide 1/8                                                        | ●  | —  |
|                                                 |                                                       |                                                  | Drain guide 1/4                                                        | —  | ●  |
|                                                 |                                                       | W                                                | Drain cock with barb fitting (for ø6 x ø4 nylon tube)                  | —  | ●  |
|                                                 | +                                                     |                                                  |                                                                        |    |    |
|                                                 | h<br>Exhaust mechanism                                | —                                                | Relieving type                                                         | ●  | ●  |
|                                                 |                                                       | N                                                | Non-relieving type                                                     | ●  | ●  |
|                                                 | +                                                     |                                                  |                                                                        |    |    |
|                                                 | i<br>Flow direction                                   | —                                                | Flow direction: Left to right                                          | ●  | ●  |
|                                                 |                                                       | R                                                | Flow direction: Right to left                                          | ●  | ●  |

# Air Combination *Series AC20D-A to AC40D-A*



AC20D-A

AC40D-A

|   | Symbol | Description   | ①          |            |            |
|---|--------|---------------|------------|------------|------------|
|   |        |               | Body size  |            |            |
|   |        |               | 20         | 30         | 40         |
| ⑥ | j      | Pressure unit | ●          | ●          | ●          |
|   |        | —             | ○ Note 10) | ○ Note 10) | ○ Note 10) |

Note 1) Option G, M are not assembled and supplied loose at the time of shipment.

Note 2) 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.

Note 3) 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.

Note 4) When the pressure gauge is attached, a 1.0 [MPa] pressure gauge will be fitted for standard (0.7 [MPa]) type. 0.4 [MPa] pressure gauge for 0.2 [MPa] type.

Note 5) The bracket position varies depending on the pressure switch mounting.

Note 6) Make sure that the outlet pressure is released to atmospheric pressure using a pressure gauge.

Note 7) Pressure can be set higher than the specification pressure in some cases, but use pressure within the specification range.

Note 8) Without a valve function.

Note 9) For thread type: NPT. [MPa] and psi are shown together on the pressure unit. Round pressure gauge (with colour zone): Cannot be used with M. Available by request for special.

Note 10) ○: For thread type: NPT only.

## Standard Specifications

| Model                                       |                  | AC20D-A                                                                          | AC30D-A                  | AC40D-A       | AC40D-06-A |
|---------------------------------------------|------------------|----------------------------------------------------------------------------------|--------------------------|---------------|------------|
| Component                                   | Filter regulator | AW20-A                                                                           | AW30-A                   | AW40-A        | AW40-06-A  |
|                                             | Mist separator   | AFM20-A                                                                          | AFM30-A                  | AFM40-A       | AFM40-06-A |
| Port size                                   |                  | 1/8, 1/4                                                                         | 1/4, 3/8                 | 1/4, 3/8, 1/2 | 3/4        |
| Pressure gauge port size                    |                  | 1/8                                                                              |                          |               |            |
| Fluid                                       |                  | Air                                                                              |                          |               |            |
| Ambient and fluid temperature               |                  | – 5 to 60°C (with no freezing)                                                   |                          |               |            |
| Proof pressure                              |                  | 1.5 [MPa]                                                                        |                          |               |            |
| Maximum operating pressure                  |                  | 1.0 [MPa]                                                                        |                          |               |            |
| Minimum operating pressure                  |                  | 0.05 [MPa]                                                                       |                          |               |            |
| Set pressure range                          |                  | 0.05 to 0.7 [MPa]                                                                |                          |               |            |
| Nominal filtration rating                   |                  | AW: 5 µm, AFM: 0.3 µm (99.9% filtered particle size)                             |                          |               |            |
| Rated flow [L/min (ANR)] <sup>Note 1)</sup> |                  | 150                                                                              | 330                      | 800           | 800        |
| Outlet side oil mist concentration          |                  | MAX 1.0 mg/m <sup>3</sup> (ANR) (≈0.8 ppm) <sup>Note 2)</sup> <sup>Note 3)</sup> |                          |               |            |
| Bowl material                               |                  | Polycarbonate                                                                    |                          |               |            |
| Bowl guard                                  |                  | Semi-standard (Steel)                                                            | Standard (Polycarbonate) |               |            |
| Regulator construction                      |                  | Relieving type                                                                   |                          |               |            |
| Weight [kg]                                 |                  | 0.32                                                                             | 0.65                     | 1.22          | 1.34       |

Note 1) Conditions: Mist separator inlet pressure: 0.5 [MPa]; The rated flow varies depending on the inlet pressure.

Keep the air flow within the rated flow to prevent an outflow of lubricant to the outlet side.

Note 2) When the compressor oil mist discharge concentration is 30 mg/m<sup>3</sup> (ANR).

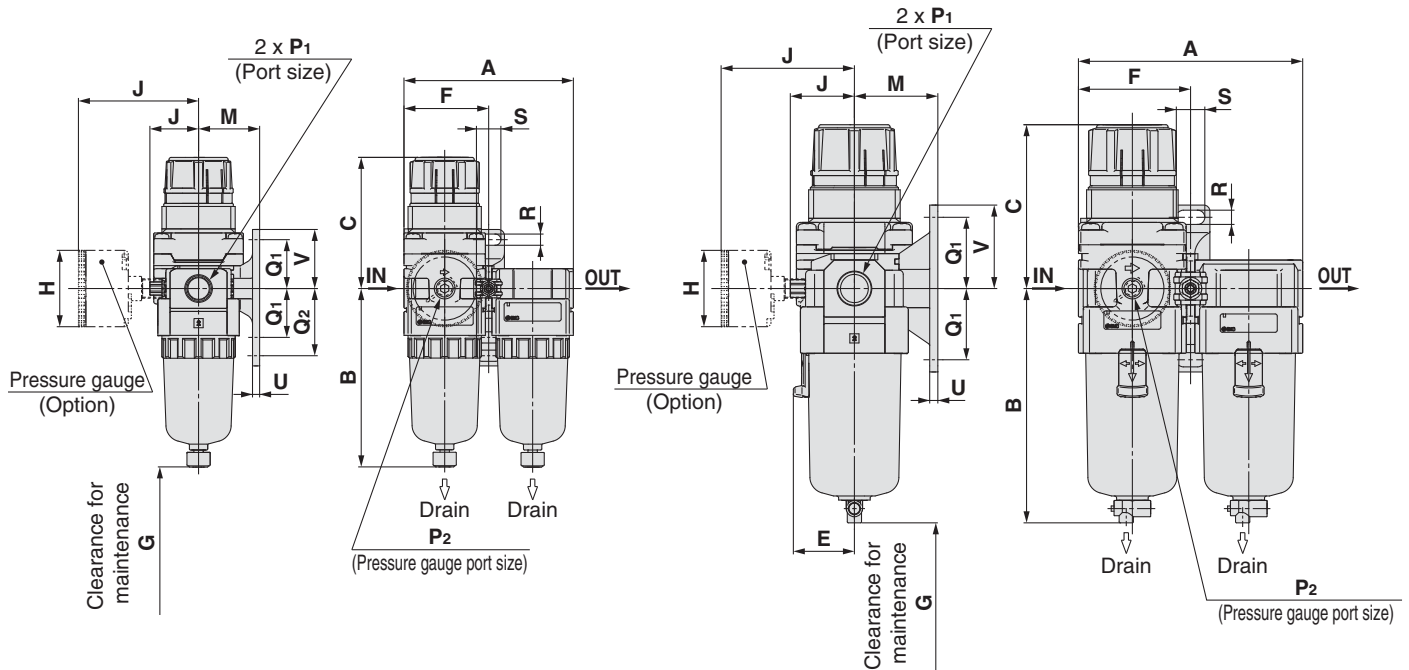
Note 3) Bowl O-ring and other O-rings are slightly lubricated.

# Series AC20D-A to AC40D-A

## Dimensions

### AC20D-A

### AC30D-A to AC40D-06-A



| Applicable model                      | AC20D-A                |                  | AC30D-A to AC40D-06-A       |                  |                              |
|---------------------------------------|------------------------|------------------|-----------------------------|------------------|------------------------------|
| Optional/Semi-standard specifications | With auto drain (N.C.) | With drain guide | With auto drain (N.O./N.C.) | With drain guide | Drain cock with barb fitting |
| Dimensions                            |                        |                  |                             |                  |                              |

| Model      | Standard specifications |                |       |       |         |      |      |    |      |               |                |                |     |    |     |    |
|------------|-------------------------|----------------|-------|-------|---------|------|------|----|------|---------------|----------------|----------------|-----|----|-----|----|
|            | P <sub>1</sub>          | P <sub>2</sub> | A     | B     | C Note) | E    | F    | G  | J    | Bracket mount |                |                |     |    |     |    |
|            |                         |                |       |       |         |      |      |    |      | M             | Q <sub>1</sub> | Q <sub>2</sub> | R   | S  | U   | V  |
| AC20D-A    | 1/8, 1/4                | 1/8            | 83.2  | 87.6  | 67.4    | —    | 41.6 | 40 | 23.4 | 30            | 24             | 33             | 5.5 | 12 | 3.5 | 29 |
| AC30D-A    | 1/4, 3/8                | 1/8            | 110.2 | 115.1 | 83.5    | 30   | 55.1 | 50 | 30.5 | 41            | 35             | —              | 7   | 14 | 4   | 41 |
| AC40D-A    | 1/4, 3/8, 1/2           | 1/8            | 145.2 | 147.1 | 100     | 38.4 | 72.6 | 75 | 36.1 | 50            | 40             | —              | 9   | 18 | 5   | 48 |
| AC40D-06-A | 3/4                     | 1/8            | 155.2 | 149.1 | 101.5   | 38.4 | 77.6 | 75 | 39.6 | 50            | 40             | —              | 9   | 18 | 5   | 48 |

| Model      | Optional specifications   |      |                                             |      |                 | Semi-standard specifications |                  |
|------------|---------------------------|------|---------------------------------------------|------|-----------------|------------------------------|------------------|
|            | Round type pressure gauge |      | Round type pressure gauge (with color zone) |      | With auto drain | With barb fitting            | With drain guide |
|            | H                         | J    | H                                           | J    | B               | B                            | B                |
| AC20D-A    | ø37.5                     | 58.5 | ø37.5                                       | 59.5 | 104.9           | —                            | 91.4             |
| AC30D-A    | ø37.5                     | 65   | ø37.5                                       | 66   | 156.8           | 123.6                        | 121.9            |
| AC40D-A    | ø42.5                     | 72   | ø42.5                                       | 72   | 186.9           | 155.6                        | 153.9            |
| AC40D-06-A | ø42.5                     | 72   | ø42.5                                       | 72   | 188.9           | 157.6                        | 155.9            |

Note) The total length of C dimension is the length when the filter regulator knob is unlocked.

# Air Combination

## Series AC

# Options/Attachments

### Options/Attachments Part No.

| Section    | Type                          | Model                   | Part no.      |                 |                 |              |                |
|------------|-------------------------------|-------------------------|---------------|-----------------|-----------------|--------------|----------------|
|            |                               |                         | For AC20-A    | For AC25-A      | For AC30-A      | For AC40-A   | For AC40-06-A  |
| Option     | Round type (with colour zone) | Standard                | For AC20A-A   | —               | For AC30A-A     | For AC40A-A  | For AC40A-06-A |
|            |                               | 0.02 to 0.2 MPa setting | For AC20B-A   | For AC25B-A     | For AC30B-A     | For AC40B-A  | For AC40B-06-A |
|            |                               | Standard                | For AC20C-A   | For AC25C-A     | For AC30C-A     | For AC40C-A  | For AC40C-06-A |
|            |                               | 0.02 to 0.2 MPa setting | For AC20D-A   | —               | For AC30D-A     | For AC40D-A  | For AC40D-06-A |
| Attachment | Round type (with colour zone) | Standard                | G36-10-□01    | G36-4-□01       | G46-10-□01      | G46-4-□01    |                |
|            |                               | 0.02 to 0.2 MPa setting | G36-10-□01-L  | G36-4-□01-L     | G46-10-□01-L    | G46-4-□01-L  |                |
|            |                               | Standard                | Y200-A        | Y300-A          | Y400-A          | Y500-A       |                |
|            |                               | 0.02 to 0.2 MPa setting | Y200T-A       | Y300T-A         | Y400T-A         | Y500T-A      |                |
|            | Round type (with colour zone) | Standard                | AKM2000-□01-A | AKM3000-(□01)-A | AKM4000-(□02)-A | —            |                |
|            |                               | 0.02 to 0.2 MPa setting | (□02)-A       | □02-A           | □03-A           |              |                |
|            |                               | Standard                | IS10M-20-A    | IS10M-30-A      | IS10M-40-A      | IS10M-50-A   |                |
|            |                               | 0.02 to 0.2 MPa setting | Y210-□01-A    | Y310-(□01)-A    | Y410-(□02)-A    | Y510-(□02)-A |                |
|            |                               | 0.02 to 0.2 MPa setting | (□02)-A       | □02-A           | □03-A           | □03-A        |                |
|            | Round type (with colour zone) | Standard                | VHS20-□01A    | VHS30-□02A      | VHS40-□02A      | VHS40-□03A   | VHS40-□06A     |
|            |                               | 0.02 to 0.2 MPa setting | □02A          | □03A            | □04A            | □04A         |                |
|            |                               | Standard                | E200-□02-A    | E300-□03-A      | E400-□03-A      | E500-□06-A   |                |
|            |                               | 0.02 to 0.2 MPa setting | □03-A         | □04             | □04-A           | □06-A        |                |
| Attachment | Round type (with colour zone) | Standard                | IS10E-20□02-A | IS10E-30□03-A   | IS10E-40□03-A   | —            |                |
|            |                               | 0.02 to 0.2 MPa setting | □03-A         | □04-A           | □06-A           |              |                |
|            |                               | Standard                | Y24-□01-A     | Y34-□01-A       | Y44-□02-A       | Y54-□03-A    |                |
|            |                               | 0.02 to 0.2 MPa setting | □02-A         | □02-A           | □03-A           | □04-A        |                |

Note 1) □ in part numbers for a round pressure gauge indicates a type of connection thread. No indication is necessary for R; however, indicate N for NPT. Please contact SMC regarding the connection thread NPT and pressure gauge supply for psi unit specifications.

Note 2) For F.R.L. units, port sizes without ( ) are standard specifications.

Note 3) Separate interfaces are required for modular unit.

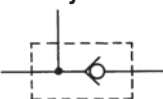
### Check Valve: (K) 1/8, 1/4, 3/8

A check valve with intermediate air release port can be easily installed to prevent a backflow of lubricant when redirecting the air flow and releasing the air on the outlet side of the regulator.

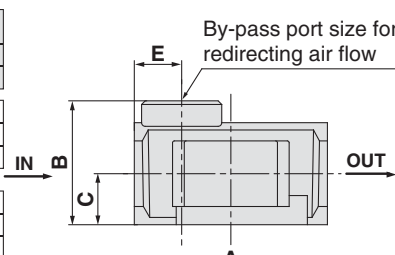
AKM **30** **00** - **01** - A

1 2 3

JIS Symbol



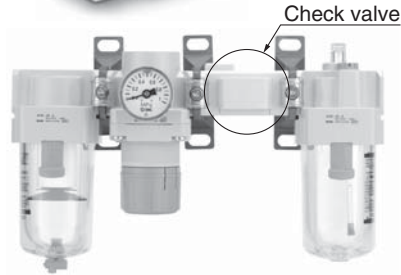
| Symbol              | Description | ① Body size |    |    |
|---------------------|-------------|-------------|----|----|
|                     |             | 20          | 30 | 40 |
| ② Thread type       | —           | Rc          | ●  | ●  |
|                     | N           | NPT         | ●  | ●  |
|                     | F           | G           | ●  | ●  |
| ③ By-pass port size | 01          | 1/8         | ●  | —  |
|                     | 02          | 1/4         | ●  | ●  |
|                     | 03          | 3/8         | —  | ●  |



#### Specifications

| Model     | Effective area [mm <sup>2</sup> ] |
|-----------|-----------------------------------|
| AKM2000-A | 28                                |
| AKM3000-A | 55                                |
| AKM4000-A | 111                               |

Be sure to use above check valves when redirecting the air flow on the inlet side of the lubricator. Threads for IN and OUT ports are not machined.



| Model     | By-pass port size | A  | B  | C  | D  | E  | Applicable model                 |
|-----------|-------------------|----|----|----|----|----|----------------------------------|
| AKM2000-A | 1/8, 1/4          | 40 | 28 | 11 | 40 | 11 | AC20-A, AC20A-A                  |
| AKM3000-A | 1/8, 1/4          | 53 | 34 | 14 | 48 | 13 | AC25-A<br>AC30-A, AC30A-A        |
| AKM4000-A | 1/4, 3/8          | 70 | 42 | 18 | 54 | 15 | AC40-A, AC40A-A <sup>Note)</sup> |

Note) A pressure switch cannot be mounted on the AC40□-06-A.

\* Refer to the attachment table above for standard by-pass port sizes applicable to the AC.

# Series AC

## Pressure Switch

A compact integrated pressure switch can be easily installed and facilitates the pressure detection of the line.

### IS10M-30- -A

① ②

- Semi-standard: Select one each for **a** to **c**.
- Semi-standard symbol: When more than one specification is required, indicate in alphanumeric order.  
Example) IS10M-30-6LP

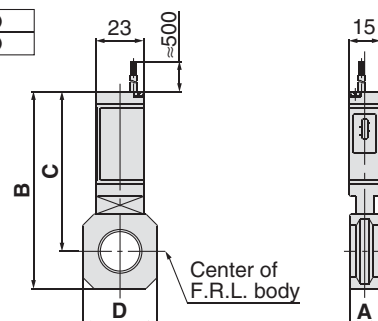
|                                           | Symbol                       | Description        | ① Body size |    |    |
|-------------------------------------------|------------------------------|--------------------|-------------|----|----|
|                                           |                              |                    | 20          | 30 | 40 |
| ② Semi-standard                           | <b>a</b> Set pressure length | —                  | ●           | ●  | ●  |
|                                           |                              | 6 Note 1)          | ●           | ●  | ●  |
|                                           | <b>b</b> Lead wire length    | +                  | ●           | ●  | ●  |
|                                           |                              | —                  | ●           | ●  | ●  |
|                                           |                              | L                  | ●           | ●  | ●  |
|                                           |                              | Z                  | ●           | ●  | ●  |
| <b>c</b> Pressure unit of the scale plate | —                            | MPa                | ●           | ●  | ●  |
|                                           | P                            | MPa/psi dual scale | ●           | ●  | ●  |

Note 1) Set pressure range of 6P (L, Z) is 0.2 to 0.6 MPa (30 to 90 psi).

### JIS Symbol



Pressure switch



## Specifications

|                               |                               |
|-------------------------------|-------------------------------|
| Fluid                         | Air                           |
| Ambient and fluid temperature | -5 to 60°C (with no freezing) |
| Proof pressure                | 1.0 MPa                       |
| Maximum operating pressure    | 0.7 MPa                       |
| Set pressure range (when OFF) | 0.1 to 0.4 MPa                |
| Hysteresis                    | 0.08 MPa or less              |

## Switch Characteristics

|                                |                                                                      |
|--------------------------------|----------------------------------------------------------------------|
| Contact point configuration    | 1a                                                                   |
| Maximum contact point capacity | 2 VA (AC), 2 W (DC)                                                  |
| Operating voltage: AC, DC      | 100V or less                                                         |
| Maximum operating current      | 12 V to 24 VAC, DC: 50 mA<br>48 VAC, DC: 40 mA<br>100 VAC, DC: 20 mA |

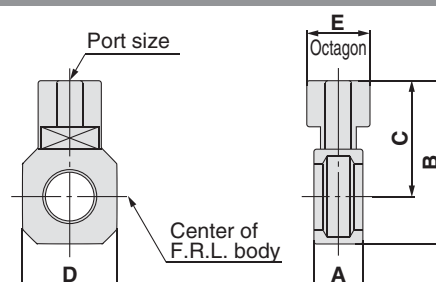
Note) For detailed specifications on the IS10 series, please refer to the section of our website IS10 series, [www.smc.eu](http://www.smc.eu)

| Model      | A    | B    | C    | D  | Applicable model |
|------------|------|------|------|----|------------------|
| IS10M-20-A | 10.6 | 74.2 | 64.4 | 28 | AC20□-A          |
| IS10M-30-A | 12.6 | 84.5 | 70.5 | 30 | AC25□-A, AC30□-A |
| IS10M-40-A | 14.6 | 93.3 | 75.3 | 36 | AC40□-A          |
| IS10M-50-A | 16.6 | 97.3 | 77.3 | 44 | AC40□-06-A       |

\* Separate spacers are required for modular unit.

## T-shaped Spacer: (T) 1/8, 1/4, 3/8

Using a T-shaped facilitates the branching of air flow.



| Model (Note) | Port size | A    | B    | C    | D  | E  | Applicable model      |
|--------------|-----------|------|------|------|----|----|-----------------------|
| Y210-□01-A   | 1/8       | 14.6 | 41.8 | 32   | 28 | 19 | AC20-A, AC20B-A       |
| Y210-□02-A   | 1/4       |      |      |      |    |    | AC20C-A               |
| Y310-□01-A   | 1/8       | 14.6 | 52.7 | 38.7 | 30 | 19 | AC25-A, AC25B-A       |
| Y310-□02-A   | 1/4       |      |      |      |    |    | AC25C-A, AC30-A       |
| Y410-□02-A   | 1/4       | 18.6 | 62   | 44   | 36 | 24 | AC30B-A, AC30C-A      |
| Y410-□03-A   | 3/8       |      |      |      |    |    | AC40-A, AC40B-A       |
| Y510-□02-A   | 1/4       | 18.6 | 66   | 46   | 44 | 24 | AC40C-A               |
| Y510-□03-A   | 3/8       |      |      |      |    |    | AC40-06-A, AC40B-06-A |
|              |           |      |      |      |    |    | AC40C-06-A            |

Note) □ in model numbers indicates a thread type. No indication is necessary for Rc; however, indicate N for NPT, and F for G.

\* Separate interfaces are required for modular unit.

\* Refer to the attachment table on page 22 for standard port sizes when using with the AC.

## Caution on Mounting

If a T-shaped spacer is used on the IN side of the lubricator, lubricant may be mixed. Use the AKM series check valve to avoid such possibility.

## Pressure Relief 3 Port Valve: (V)

With the use of a 3-port valve for residual pressure release, pressure left in the line can be easily exhausted.

**VHS** 30 -    03 **A** -   

1                  2                  3                  4

- Semi-standard: Select one each for **a** to **b**.
- Semi-standard symbol: When more than one specification is required, indicate in alphabetic order.  
Example) VHS30-03A-RZ

|                 | Symbol           | Description                       | ① Body size                   |    |    |
|-----------------|------------------|-----------------------------------|-------------------------------|----|----|
|                 |                  |                                   | 20                            | 30 | 40 |
| ② Thread type   | —                | Rc                                | ●                             | ●  | ●  |
|                 | N (Note)         | NPT                               | ●                             | ●  | ●  |
|                 | F (Note)         | G                                 | ●                             | ●  | ●  |
| ③ Port size     | +                |                                   |                               |    |    |
|                 | 01               | 1/8                               | ●                             | —  | —  |
|                 | 02               | 1/4                               | ●                             | ●  | —  |
|                 | 03               | 3/8                               | —                             | ●  | ●  |
|                 | 04               | 1/2                               | —                             | —  | ●  |
| ④ Semi-standard | +                |                                   |                               |    |    |
|                 | a Flow direction | —                                 | Flow direction: Left to right | ●  | ●  |
|                 |                  | R                                 | Flow direction: Right to left | ●  | ●  |
|                 | +                |                                   |                               |    |    |
| b Pressure unit | —                | Name plate in imperial units: MPa | ●                             | ●  | ●  |
|                 | Z (Note)         | Name plate in imperial units: psi | ●                             | ●  | ●  |

Note) For thread type: NPT only.

## Specifications

| Model    | Port size |     | Specifications            |      |      |                           |      |      |                           |   |    |
|----------|-----------|-----|---------------------------|------|------|---------------------------|------|------|---------------------------|---|----|
|          | IN, OUT   | EXH | IN → OUT                  |      |      |                           |      |      | OUT → EXH                 |   |    |
|          |           |     | C[dm <sup>3</sup> /s·bar] | b    | Cv   | C[dm <sup>3</sup> /s·bar] | b    | Cv   | C[dm <sup>3</sup> /s·bar] | b | Cv |
| VHS20    | 1/8       | 1/8 | 2.4                       | 0.43 | 0.65 | 2.5                       | 0.39 | 0.69 |                           |   |    |
|          | 1/4       |     | 3.3                       | 0.40 | 0.88 | 3.1                       | 0.51 | 0.84 |                           |   |    |
| VHS30    | 1/4       | 1/4 | 6.4                       | 0.45 | 1.7  | 6.2                       | 0.38 | 1.7  |                           |   |    |
|          | 3/8       |     | 8.3                       | 0.41 | 2.3  | 7.0                       | 0.41 | 1.9  |                           |   |    |
| VHS40    | 1/4       | 3/8 | 7.3                       | 0.49 | 2.0  | 8.5                       | 0.35 | 2.3  |                           |   |    |
|          | 3/8       |     | 10.9                      | 0.45 | 3.0  | 11.6                      | 0.40 | 3.1  |                           |   |    |
|          | 1/2       |     | 14.2                      | 0.39 | 3.8  | 13.3                      | 0.43 | 3.6  |                           |   |    |
| VHS40-06 | 3/4       | 1/2 | 18.3                      | 0.31 | 5.0  | 17.7                      | 0.37 | 4.8  |                           |   |    |

Note) Use an air filter on the IN side for operating protection.

## Cross Spacer: 1/8, 1/4, 3/8, 1/2

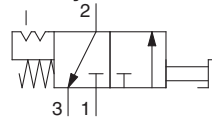
Pipings are possible in all 4 directions.  
IN/OUT ports are not machined for threads.  
Please contact SMC if threaded (machined) ports are required.



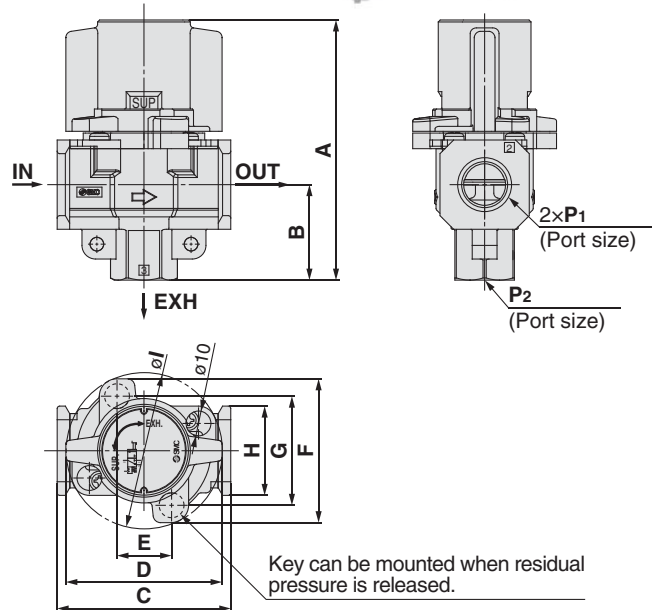
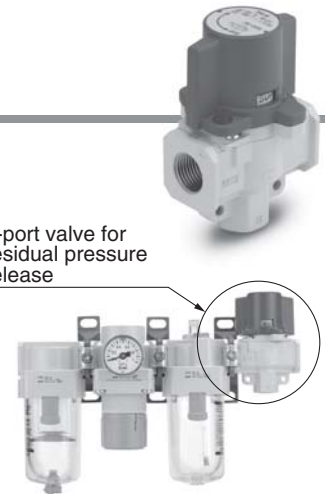
## Caution on Mounting

1. When mounting a cross interface directly on the IN side of the lubricator, be sure to use the AKM series check valve between the lubricator and cross interface.
2. Factory mounting of a cross interface on the AC model is available as a special order.

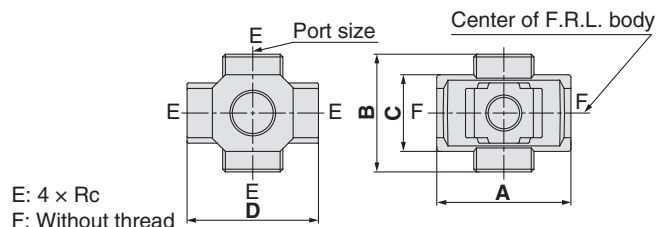
## JIS Symbol



3-port valve for residual pressure release



| Model    | Standard specifications |                |       |       |    |      |    |      |      |    |      |
|----------|-------------------------|----------------|-------|-------|----|------|----|------|------|----|------|
|          | P <sub>1</sub>          | P <sub>2</sub> | A     | B     | C  | D    | E  | F    | G    | H  | I    |
| VHS20    | 1/8, 1/4                | 1/8            | 66.4  | 22.25 | 40 | 37.5 | 14 | 46.6 | 33.6 | 28 | 37.5 |
| VHS30    | 1/4, 3/8                | 1/4            | 80.3  | 29.4  | 53 | 49   | 19 | 52   | 38   | 30 | 49   |
| VHS40    | 1/4, 3/8, 1/2           | 3/8            | 104.9 | 38.5  | 70 | 63   | 22 | 58   | 44   | 36 | 63   |
| VHS40-06 | 3/4                     | 1/2            | 110.4 | 42    | 75 | 63   | 22 | 58   | 44   | 44 | 63   |



E: 4 × Rc

F: Without thread

| Model (Note) | Port size | A  | B  | C  | D  | Applicable model |
|--------------|-----------|----|----|----|----|------------------|
| Y24-□01-A    | 1/8       | 40 | 40 | 22 | 40 | AC20□-A          |
| Y24-□02-A    | 1/4       |    |    |    |    |                  |
| Y34-□01-A    | 1/8       | 49 | 43 | 28 | 48 | AC25□-A, AC30□-A |
| Y34-□02-A    | 1/4       |    |    |    |    |                  |
| Y44-□02-A    | 1/4       | 60 | 48 | 36 | 54 | AC40□-A          |
| Y44-□03-A    | 3/8       |    |    |    |    |                  |
| Y54-□03-A    | 3/8       | 72 | 62 | 40 | 62 | AC40□-06-A       |
| Y54-□04-A    | 1/2       |    |    |    |    |                  |

Note) □ in model numbers indicates a thread type. No indication is necessary for Rc; however, indicate N for NPT, and F for G.

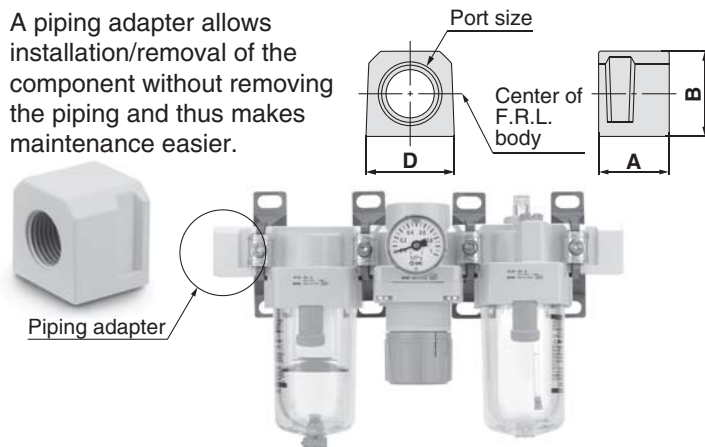
\* If threaded IN/OUT ports are required, they are available as a special order. Please contact SMC.

\* Two hexagon socket head plugs are included in the package.

# Series AC

## Piping Adapter: 1/8, 1/4, 3/8, 1/2, 3/4

A piping adapter allows installation/removal of the component without removing the piping and thus makes maintenance easier.



| Model Note) | Portsize | A    | B    | D  | Applicable model |
|-------------|----------|------|------|----|------------------|
| E200-□01-A  | 1/8      | 29.8 | 23.5 | 28 | AC20□-A          |
| E200-□02-A  | 1/4      |      |      |    |                  |
| E200-□03-A  | 3/8      |      |      |    |                  |
| E300-□02-A  | 1/4      | 31.8 | 30   | 30 | AC25□-A, AC30□-A |
| E300-□03-A  | 3/8      |      |      |    |                  |
| E300-□04-A  | 1/2      |      |      |    |                  |
| E400-□02-A  | 1/4      | 31.8 | 36   | 36 | AC40□-A          |
| E400-□03-A  | 3/8      |      |      |    |                  |
| E400-□04-A  | 1/2      |      |      |    |                  |
| E400-□06-A  | 3/4      |      |      |    |                  |
| E500-□06-A  | 3/4      | 31.8 | 40   | 44 | AC40□-06-A       |

Note) □ in model numbers indicates a thread type. No indication is necessary for Rc; however, indicate N for NPT, and F for G.

\* Separate interfaces are required for modular unit.

\* Factory mounting of a piping adapter on the AC models is available as a special order.

## Pressure Switch with Piping Adapter

**IS10E-□30□03-□-A**

① ② ③ ④

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

Example) IS10E-30N03-6PRZ

|                 | Symbol                             | Description | ① Body size |    |    |
|-----------------|------------------------------------|-------------|-------------|----|----|
|                 |                                    |             | 20          | 30 | 40 |
| ② Thread type   | —                                  | Rc          | ●           | ●  | ●  |
|                 | N Note)                            | NPT         | ●           | ●  | ●  |
|                 | F Note)                            | G           | ●           | ●  | ●  |
| ③ Port size     | +                                  |             |             |    |    |
|                 | 01                                 | 1/8         | ●           | —  | —  |
|                 | 02                                 | 1/4         | ●           | ●  | ●  |
|                 | 03                                 | 3/8         | ●           | ●  | ●  |
|                 | 04                                 | 1/2         | —           | ●  | ●  |
|                 | 06                                 | 3/4         | —           | —  | ●  |
| ④ Semi-standard | a Set pressure range               | —           | ●           | ●  | ●  |
|                 |                                    | 6 Note 1)   | ●           | ●  | ●  |
|                 |                                    | +           |             |    |    |
|                 | b Lead wire length                 | —           | ●           | ●  | ●  |
|                 |                                    | L           | ●           | ●  | ●  |
|                 |                                    | Z           | ●           | ●  | ●  |
|                 |                                    | +           |             |    |    |
|                 | c Pressure unit of the scale plate | —           | ●           | ●  | ●  |
|                 |                                    | P Note 2)   | ●           | ●  | ●  |
|                 |                                    | +           |             |    |    |
|                 | d Mounting position                | —           | ●           | ●  | ●  |
|                 |                                    | R           | ●           | ●  | ●  |
|                 |                                    | Left        | ●           | ●  | ●  |

Note 1) Set pressure range of 6P (L, Z) is 0.2 to 0.6 MPa (30 to 90 psi).

Note 2) For thread type: NPT only.

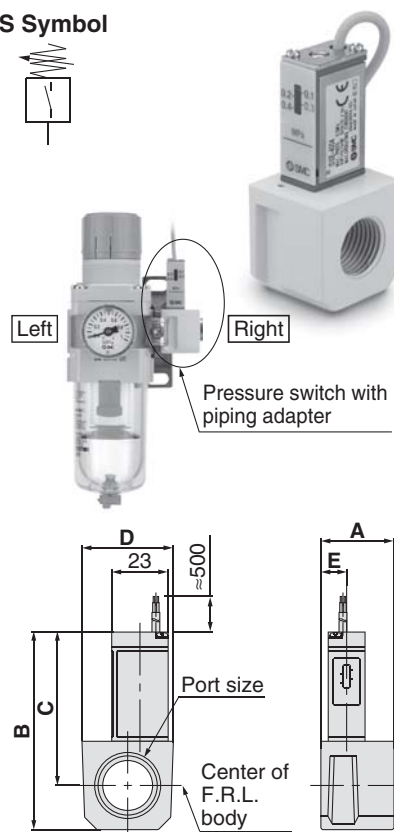
### Specifications

|                               |                               |
|-------------------------------|-------------------------------|
| Fluid                         | Air                           |
| Ambient and fluid temperature | -5 to 60°C (with no freezing) |
| Proof pressure                | 1.0 MPa                       |
| Maximum operating pressure    | 0.7 MPa                       |
| Set pressure range (when OFF) | 0.1 to 0.4 MPa                |
| Hysteresis                    | 0.08 MPa or less              |

### Switch Characteristics

|                                |                                                                         |
|--------------------------------|-------------------------------------------------------------------------|
| Contact point configuration    | 1a                                                                      |
| Maximum contact point capacity | 2 VA(AC), 2 W(DC)                                                       |
| Operating voltage: AC, DC      | 100 V or less                                                           |
| Maximum operating current      | 12 V to 24 V AC, DC: 50 mA<br>48 V AC, DC: 40 mA<br>100 V AC, DC: 20 mA |

### JIS Symbol



| Model Note 1) | Port size | A    | B    | C    | D  | E    | Applicable model   |
|---------------|-----------|------|------|------|----|------|--------------------|
| IS10E-20□01-A | 1/8       | 29.8 | 66.3 | 55.3 | 28 | 16   | AC20□-A            |
| IS10E-20□02-A | 1/4       |      |      |      |    |      |                    |
| IS10E-20□03-A | 3/8       |      |      |      |    |      |                    |
| IS10E-30□02-A | 1/4       | 31.8 | 72.8 | 58.8 | 30 | 13   | AC25□-A, AC30□-A   |
| IS10E-30□03-A | 3/8       |      |      |      |    |      |                    |
| IS10E-30□04-A | 1/2       |      |      |      |    |      |                    |
| IS10E-40□02-A | 1/4       | 31.8 | 78.8 | 60.8 | 37 | 12.5 | Note 2)<br>AC40□-A |
| IS10E-40□03-A | 3/8       |      |      |      |    |      |                    |
| IS10E-40□04-A | 1/2       |      |      |      |    |      |                    |
| IS10E-40□06-A | 3/4       |      |      |      |    |      |                    |

Note 1) □ in the model numbers indicates a thread type. No indication is necessary for Rc; however, indicate N for NPT, and F for G.

Note 2) Cannot be mounted on the AC40□-06-A.

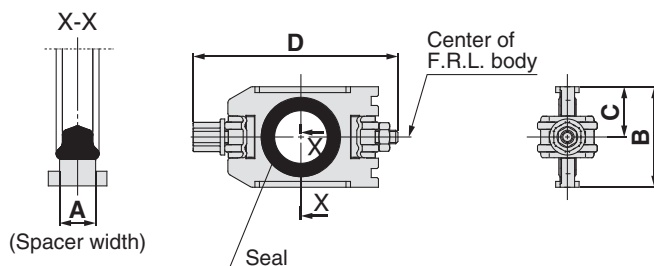
\* Separate interfaces are required for modular unit.

\* The pressure switch on the AC40□-06-A can be mounted by screwing IS10-01 into the piping adapter E500-□06-A-X501 (with top-face thread Rc 1/8). Products with a premounted switch are available as a special order. Please contact SMC regarding their availability.

# Series AC

## Accessories (Spacers/Brackets)

### Spacer

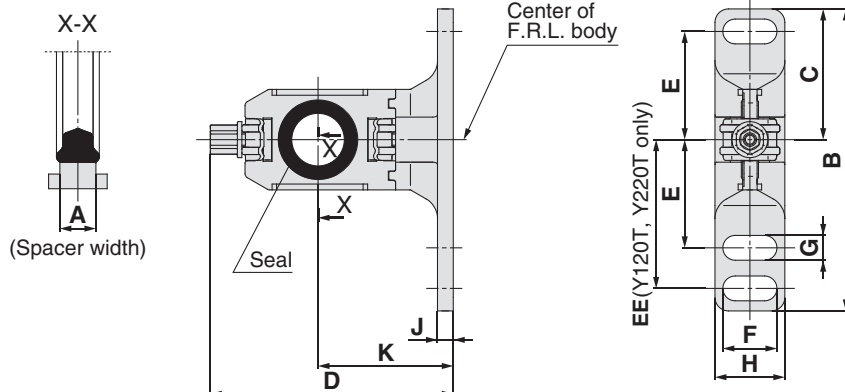


| Model  | A   | B    | C    | D    | Applicable model |
|--------|-----|------|------|------|------------------|
| Y200-A | 3.2 | 22.4 | 11.2 | 44.9 | AC20□-A          |
| Y300-A | 4.2 | 34.2 | 17.1 | 57.9 | AC25□-A, AC30□-A |
| Y400-A | 5.2 | 42.2 | 21.1 | 68.5 | AC40□-A          |
| Y500-A | 5.2 | 46.2 | 23.1 | 75.6 | AC40□-06-A       |

### Replacement Parts

| Description | Material | Part no.   |            |            |            |
|-------------|----------|------------|------------|------------|------------|
|             |          | Y200-A     | Y300-A     | Y400-A     | Y500-A     |
| Seal        | HNBR     | Y220P-050S | Y320P-050S | Y420P-050S | Y520P-050S |

### Spacer with Bracket

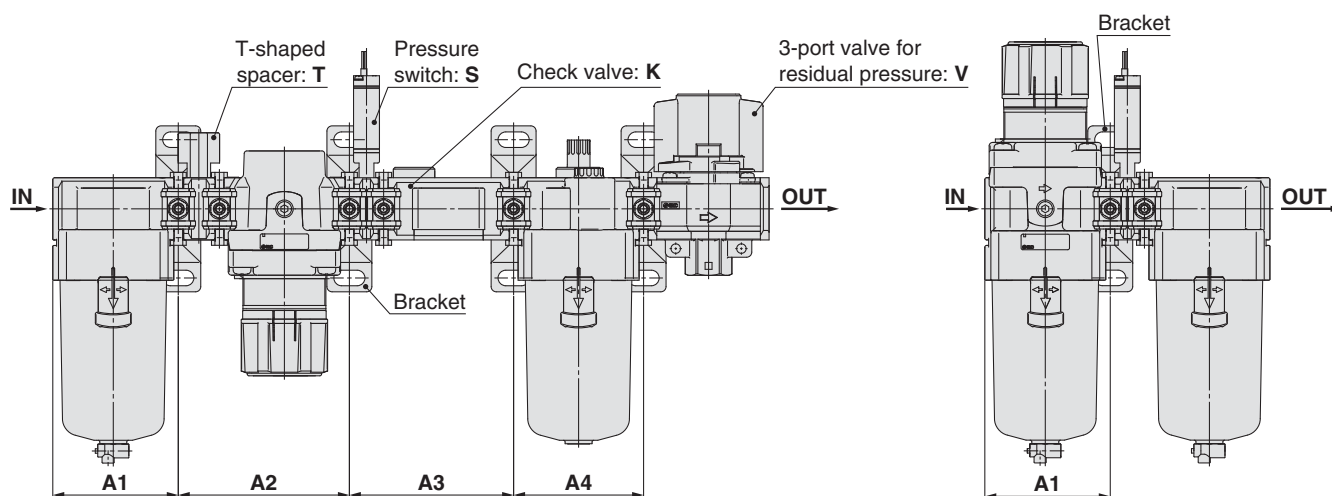


| Model   | A   | B  | C  | D    | E  | EE | F  | G   | H    | J   | K  | Applicable model |
|---------|-----|----|----|------|----|----|----|-----|------|-----|----|------------------|
| Y200T-A | 3.2 | 67 | 29 | 53.4 | 24 | 33 | 12 | 5.5 | 15.5 | 3.5 | 30 | AC20□-A          |
| Y300T-A | 4.2 | 82 | 41 | 71.5 | 35 | —  | 14 | 7   | 19   | 4   | 41 | AC25□-A, AC30□-A |
| Y400T-A | 5.2 | 96 | 48 | 86.1 | 40 | —  | 18 | 9   | 26   | 5   | 50 | AC40□-A          |
| Y500T-A | 5.2 | 96 | 48 | 89.6 | 40 | —  | 18 | 9   | 26   | 5   | 50 | AC40□-06-A       |

### Replacement Parts

| Description | Material | Part no.   |            |            |            |
|-------------|----------|------------|------------|------------|------------|
|             |          | Y200T-A    | Y300T-A    | Y400T-A    | Y500T-A    |
| Seal        | HNBR     | Y220P-050S | Y320P-050S | Y420P-050S | Y520P-050S |

## Mounting Position for Spacer with Bracket



| Attachment |  | K    |      |      | S    |      |      | T   |      |      | V    |      |      | KS |      |    | KT   |      |      | KV   |      |      |    | KST |  |  |
|------------|--|------|------|------|------|------|------|-----|------|------|------|------|------|----|------|----|------|------|------|------|------|------|----|-----|--|--|
| Model      |  | A1   | A2   | A3   | A1   | A2   | A3   | A1  | A2   | A3   | A1   | A2   | A3   | A1 | A2   | A3 | A1   | A2   | A3   | A4   | A1   | A2   | A3 |     |  |  |
| AC20-A     |  | 41.6 | 43.2 | 43.2 | 41.6 | 43.2 | 41.6 | 61  | 41.6 | 43.2 | 43.2 | 41.6 | 43.2 | 57 | 41.6 | 61 | 43.2 | 41.6 | 43.2 | 43.2 | 43.2 | 41.6 | 61 | 57  |  |  |
| AC25-A     |  | 55.1 | 57.2 | 57.2 | 55.1 | 57.2 | 55.1 | 76  | 55.1 | 57.2 | 57.2 | 55.1 | 57.2 | 74 | 55.1 | 76 | 57.2 | 55.1 | 57.2 | 57.2 | 57.2 | 55.1 | 76 | 74  |  |  |
| AC30-A     |  | 55.1 | 57.2 | 57.2 | 55.1 | 57.2 | 55.1 | 76  | 55.1 | 57.2 | 57.2 | 55.1 | 57.2 | 74 | 55.1 | 76 | 57.2 | 55.1 | 57.2 | 57.2 | 57.2 | 55.1 | 76 | 74  |  |  |
| AC40-A     |  | 72.6 | 75.2 | 75.2 | 72.6 | 75.2 | 72.6 | 99  | 72.6 | 75.2 | 75.2 | 72.6 | 75.2 | 95 | 72.6 | 99 | 75.2 | 72.6 | 75.2 | 75.2 | 75.2 | 72.6 | 99 | 95  |  |  |
| AC40-06-A  |  | —    | —    | —    | 77.6 | 80.2 | 77.6 | 104 | 77.6 | 80.2 | 80.2 | —    | —    | —  | —    | —  | —    | —    | —    | —    | —    | —    | —  |     |  |  |

| Attachment<br>Model | KSV  |      |    |      | KTV  |    |      |      | KSTV |    |    |      | ST   |     | SV   |      |     | STV  |     |     | TV   |     |      |
|---------------------|------|------|----|------|------|----|------|------|------|----|----|------|------|-----|------|------|-----|------|-----|-----|------|-----|------|
|                     | A1   | A2   | A3 | A4   | A1   | A2 | A3   | A4   | A1   | A2 | A3 | A4   | A1   | A2  | A1   | A2   | A3  | A1   | A2  | A3  | A1   | A2  | A3   |
| AC20-A              | 41.6 | 43.2 | 57 | 43.2 | 41.6 | 61 | 43.2 | 43.2 | 41.6 | 61 | 57 | 43.2 | 41.6 | 61  | 41.6 | 43.2 | 57  | 41.6 | 61  | 57  | 41.6 | 61  | 43.2 |
| AC25-A              | 55.1 | 57.2 | 74 | 57.2 | 55.1 | 76 | 57.2 | 57.2 | 55.1 | 76 | 74 | 57.2 | 55.1 | 76  | 55.1 | 57.2 | 74  | 55.1 | 76  | 74  | 55.1 | 76  | 57.2 |
| AC30-A              | 55.1 | 57.2 | 74 | 57.2 | 55.1 | 76 | 57.2 | 57.2 | 55.1 | 76 | 74 | 57.2 | 55.1 | 76  | 55.1 | 57.2 | 74  | 55.1 | 76  | 74  | 55.1 | 76  | 57.2 |
| AC40-A              | 72.6 | 75.2 | 95 | 75.2 | 72.6 | 99 | 75.2 | 75.2 | 72.6 | 99 | 95 | 75.2 | 72.6 | 99  | 72.6 | 75.2 | 95  | 72.6 | 99  | 95  | 72.6 | 99  | 75.2 |
| AC40-06-A           | —    | —    | —  | —    | —    | —  | —    | —    | —    | —  | —  | —    | 77.6 | 104 | 77.6 | 80.2 | 102 | 77.6 | 104 | 102 | 77.6 | 104 | 80.2 |

| Attachment<br>Model | K    |      | S    |      | V    |      | KS |      | KV   |      |      | KSV |      | SV   |     |
|---------------------|------|------|------|------|------|------|----|------|------|------|------|-----|------|------|-----|
|                     | A1   | A2   | A1   | A2   | A1   | A2   | A1 | A2   | A1   | A2   | A3   | A1  | A2   | A1   | A2  |
| AC20A-A             | 41.6 | 43.2 | 41.6 | 41.6 | 43.2 | 41.6 | 57 | 41.6 | 43.2 | 43.2 | 41.6 | 57  | 43.2 | 41.6 | 57  |
| AC30A-A             | 55.1 | 57.2 | 55.1 | 55.1 | 57.2 | 55.1 | 74 | 55.1 | 57.2 | 57.2 | 55.1 | 74  | 57.2 | 55.1 | 74  |
| AC40A-A             | 72.6 | 75.2 | 72.6 | 72.6 | 75.2 | 72.6 | 95 | 72.6 | 75.2 | 75.2 | 72.6 | 95  | 75.2 | 72.6 | 95  |
| AC40A-06-A          | —    | —    | 77.6 | 77.6 | 80.2 | —    | —  | —    | —    | —    | —    | —   | —    | 77.6 | 102 |

| Attachment<br>Model | S    |      | T    |      | V    |      | V1   |     | SV   |      | SV1  |     | TV   |      | TV1 |    |
|---------------------|------|------|------|------|------|------|------|-----|------|------|------|-----|------|------|-----|----|
|                     | A1   | A1   | A1   | A2   | A1   | A2   | A1   | A2  | A1   | A2   | A1   | A2  | A1   | A2   | A1  | A2 |
| AC20B-A             | 41.6 | 41.6 | 41.6 | 43.2 | 41.6 | 43.2 | 41.6 | 57  | 41.6 | 43.2 | 41.6 | 61  | 41.6 | 43.2 |     |    |
| AC25B-A             | 55.1 | 55.1 | 55.1 | 57.2 | 55.1 | 57.2 | 55.1 | 74  | 55.1 | 57.2 | 55.1 | 76  | 55.1 | 57.2 |     |    |
| AC30B-A             | 55.1 | 55.1 | 55.1 | 57.2 | 55.1 | 57.2 | 55.1 | 74  | 55.1 | 57.2 | 55.1 | 76  | 55.1 | 57.2 |     |    |
| AC40B-A             | 72.6 | 72.6 | 72.6 | 75.2 | 72.6 | 75.2 | 72.6 | 95  | 72.6 | 75.2 | 72.6 | 99  | 72.6 | 75.2 |     |    |
| AC40B-06-A          | 77.6 | 77.6 | 77.6 | 80.2 | 77.6 | 80.2 | 77.6 | 102 | 77.6 | 80.2 | 77.6 | 104 | 77.6 | 80.2 |     |    |

| Attachment<br>Model | S    |      | T    |      | V    |      | V1   |      | SV   |      | SV1  |      | TV  |      | TV1  |      |
|---------------------|------|------|------|------|------|------|------|------|------|------|------|------|-----|------|------|------|
|                     | A1   | A2   | A1   | A2   | A1   | A2   | A1   | A2   | A1   | A2   | A1   | A2   | A1  | A2   | A1   | A2   |
| AC20C-A             | 41.6 | 43.2 | 41.6 | 43.2 | 41.6 | 43.2 | 43.2 | 41.6 | 43.2 | 43.2 | 41.6 | 43.2 | 57  | 41.6 | 43.2 | 43.2 |
| AC25C-A             | 55.1 | 57.2 | 55.1 | 57.2 | 55.1 | 57.2 | 57.2 | 55.1 | 57.2 | 57.2 | 55.1 | 57.2 | 74  | 55.1 | 57.2 | 57.2 |
| AC30C-A             | 55.1 | 57.2 | 55.1 | 57.2 | 55.1 | 57.2 | 57.2 | 55.1 | 57.2 | 57.2 | 55.1 | 57.2 | 74  | 55.1 | 57.2 | 57.2 |
| AC40C-A             | 72.6 | 75.2 | 72.6 | 75.2 | 72.6 | 75.2 | 75.2 | 72.6 | 75.2 | 75.2 | 72.6 | 75.2 | 95  | 72.6 | 75.2 | 75.2 |
| AC40C-06-A          | 77.6 | 80.2 | 77.6 | 80.2 | 77.6 | 80.2 | 80.2 | 77.6 | 80.2 | 80.2 | 77.6 | 80.2 | 102 | 77.6 | 80.2 | 80.2 |

| Attachment | S    |      | V    |      | V1   |      | SV  |      | SV1  |  |
|------------|------|------|------|------|------|------|-----|------|------|--|
| Model      | A1   | A1   | A2   | A1   | A2   | A1   | A2  | A1   | A2   |  |
| AC20D-A    | 41.6 | 41.6 | 43.2 | 41.6 | 43.2 | 41.6 | 57  | 41.6 | 43.2 |  |
| AC30D-A    | 55.1 | 55.1 | 57.2 | 55.1 | 57.2 | 55.1 | 74  | 55.1 | 57.2 |  |
| AC40D-A    | 72.6 | 72.6 | 75.2 | 72.6 | 75.2 | 72.6 | 95  | 72.6 | 75.2 |  |
| AC40D-06-A | 77.6 | 77.6 | 80.2 | 77.6 | 80.2 | 77.6 | 102 | 77.6 | 80.2 |  |

A1: Dimensions from the end of the IN side to the center of the mounting hole for the first bracket.

A2: Mounting hole pitch between the first and the second brackets.

A3: Mounting hole pitch between the second and the third brackets.

A4: Mounting hole pitch between the third and the fourth brackets.

# Modular Type Air Filters

## Series *AF/AFM/AFD*

| <b>Air Filter<br/>Series AF</b><br><br><br><b>P.29 to 35</b>              | Model      | Port size     | Filtration<br>μm | Options                              |
|------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|---------------|------------------|--------------------------------------|
|                                                                                                                                                            | AF20-A     | 1/8, 1/4      | 5                | Bracket<br><br>Float type auto drain |
|                                                                                                                                                            | AF30-A     | 1/4, 3/8      |                  |                                      |
|                                                                                                                                                            | AF40-A     | 1/4, 3/8, 1/2 |                  |                                      |
|                                                                                                                                                            | AF40-06-A  | 3/4           |                  |                                      |
| <b>Mist Separator<br/>Series AFM</b><br><br><br><b>P.37 to 42</b>        | AFM20-A    | 1/8, 1/4      | 0.3              | Bracket<br><br>Float type auto drain |
|                                                                                                                                                            | AFM30-A    | 1/4, 3/8      |                  |                                      |
|                                                                                                                                                            | AFM40-A    | 1/4, 3/8, 1/2 |                  |                                      |
|                                                                                                                                                            | AFM40-06-A | 3/4           |                  |                                      |
| <b>Micro Mist Separator<br/>Series AFD</b><br><br><br><b>P.37 to 42</b> | AFD20-A    | 1/8, 1/4      | 0.01             | Bracket<br><br>Float type auto drain |
|                                                                                                                                                            | AFD30-A    | 1/4, 3/8      |                  |                                      |
|                                                                                                                                                            | AFD40-A    | 1/4, 3/8, 1/2 |                  |                                      |
|                                                                                                                                                            | AFD40-06-A | 3/4           |                  |                                      |

AC

AF+AR+AL

AW+AL

AF+AR

AF+AFM+AR

AW+AFM

Attachment

AF

AFM / AFD

AR

AL

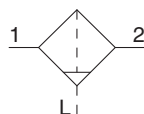
AW

# Air Filter

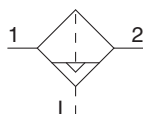
# AF20-A to AF40-A

## JIS Symbol

Air Filter



Air Filter with Auto Drain



AF20-A



AF40-A

## How to Order

**AF** **30** - **03** **BD** - **A**

① ② ③ ④ ⑤

- 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-CR-A

|                          |               | Symbol                   | Description                                                            | ①                         |                                                       |                           |                          |                          |
|--------------------------|---------------|--------------------------|------------------------------------------------------------------------|---------------------------|-------------------------------------------------------|---------------------------|--------------------------|--------------------------|
|                          |               |                          |                                                                        | Body size                 |                                                       |                           |                          |                          |
|                          |               |                          |                                                                        | 20                        | 30                                                    | 40                        |                          |                          |
| ②                        | Thread type   | —                        | Rc                                                                     | ●                         | ●                                                     | ●                         |                          |                          |
|                          |               | N <small>Note 1)</small> | NPT                                                                    | ●                         | ●                                                     | ●                         |                          |                          |
|                          |               | F <small>Note 2)</small> | G                                                                      | ●                         | ●                                                     | ●                         |                          |                          |
| +                        |               |                          |                                                                        |                           |                                                       |                           |                          |                          |
| ③                        | Port size     | 01                       | 1/8                                                                    | ●                         | —                                                     | —                         |                          |                          |
|                          |               | 02                       | 1/4                                                                    | ●                         | ●                                                     | ●                         |                          |                          |
|                          |               | 03                       | 3/8                                                                    | —                         | ●                                                     | ●                         |                          |                          |
|                          |               | 04                       | 1/2                                                                    | —                         | —                                                     | ●                         |                          |                          |
|                          |               | 06                       | 3/4                                                                    | —                         | —                                                     | ●                         |                          |                          |
| +                        |               |                          |                                                                        |                           |                                                       |                           |                          |                          |
| ④                        | Option        | a                        | Mounting                                                               | —                         | Without mounting option                               | ●                         | ●                        | ●                        |
|                          |               |                          |                                                                        | B <small>Note 3)</small>  | With bracket                                          | ●                         | ●                        | ●                        |
|                          | +             |                          |                                                                        |                           |                                                       |                           |                          |                          |
|                          | b             | Float type auto drain    | —                                                                      | Without auto drain        | ●                                                     | ●                         | ●                        |                          |
| C <small>Note 4)</small> |               |                          | N.C. (Normal close) Drain port is closed when pressure is not applied. | ●                         | ●                                                     | ●                         |                          |                          |
| D <small>Note 5)</small> |               |                          | N.O. (Normal open) Drain port is open when pressure is not applied.    | —                         | ●                                                     | ●                         |                          |                          |
| +                        |               |                          |                                                                        |                           |                                                       |                           |                          |                          |
| ⑤                        | Semi-standard | c                        | Bowl <small>Note 6)</small>                                            | —                         | Polycarbonate bowl                                    | ●                         | ●                        | ●                        |
|                          |               |                          |                                                                        | C                         | With bowl guard                                       | ●                         | — <small>Note 7)</small> | — <small>Note 7)</small> |
|                          |               | +                        |                                                                        |                           |                                                       |                           |                          |                          |
|                          |               | d                        | Drain port                                                             | —                         | With drain cock                                       | ●                         | ●                        | ●                        |
|                          |               |                          |                                                                        | J <small>Note 8)</small>  | Drain guide1/8                                        | ●                         | —                        | —                        |
|                          |               |                          |                                                                        |                           | Drain guide1/4                                        | —                         | ●                        | ●                        |
|                          |               |                          |                                                                        | W                         | Drain cock with barb fitting (for ø6 x ø4 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 imperial units: MPa           | ●                         | ●                                                     | ●                         |                          |                          |
|                          |               | Z <small>Note 9)</small> | Name plate and caution plate for bowl in imperial units: psi, °F       | ○ <small>Note 10)</small> | ○ <small>Note 10)</small>                             | ○ <small>Note 10)</small> |                          |                          |

Note 1) Drain guide is NPT1/8 (applicable to the AF20-A) and NPT1/4 (applicable to the AF30-A to AF40-A).

The auto drain port comes with ø3/8" One-touch fitting (applicable to the AF30-A to AF40-A).

Note 2) Drain guide is G1/8 (applicable to the AF20-A) and G1/4 (applicable to the AF30-A to AF40-A).

Note 3) A bracket is not assembled and supplied loose at the time of shipment. Including 2 mounting screws.

Note 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.

Note 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.

Note 6) Refer to Chemical data on page 32 for chemical resistance of the bowl.

Note 7) Standard material (polycarbonate)

Note 8) Without a valve function.

Note 9) For thread type: NPT.

Note 10) ○: For thread type: NPT only

## Standard Specifications

| Model                         | AF20-A                        | AF30-A                   | AF40-A        | AF40-06-A |
|-------------------------------|-------------------------------|--------------------------|---------------|-----------|
| Port size                     | 1/8, 1/4                      | 1/4, 3/8                 | 1/4, 3/8, 1/2 | 3/4       |
| 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]          | 8                             | 25                       | 45            |           |
| Bowl material                 | Polycarbonate                 |                          |               |           |
| Bowl guard                    | Semi-standard (Steel)         | Standard (Polycarbonate) |               |           |
| Weight [kg]                   | 0.08                          | 0.18                     | 0.36          | 0.41      |

## Options/Part No.

| Optional specifications                          |      | Model       |             |             |             |
|--------------------------------------------------|------|-------------|-------------|-------------|-------------|
|                                                  |      | AF20-A      | AF30-A      | AF40-A      | AF40-06-A   |
| Bracket assembly <sup>Note 1)</sup>              |      | AF22P-050AS | AF32P-050AS | AF42P-050AS | AF42P-070AS |
| Float type auto drain <sup>Note 2) Note 3)</sup> | N.C. | AD27-A      | AD37-A      | AD47-A      |             |
|                                                  | N.O. | —           | AD38-A      | AD48-A      |             |

## Semi-standard/Bowl Assembly Part No.

| Semi-standard specifications |                                          |      |                             |                   |                 | Model     |          |          |           |
|------------------------------|------------------------------------------|------|-----------------------------|-------------------|-----------------|-----------|----------|----------|-----------|
| Bowl material                | Note 2) Note 3)<br>Float type auto drain |      | Note 3)<br>With drain guide | With barb fitting | With bowl guard | AF20-A    | AF30-A   | AF40-A   | AF40-06-A |
|                              | N.C.                                     | N.O. |                             |                   |                 |           |          |          |           |
| Polycarbonate bowl           | —                                        | —    | —                           | —                 | ●               | C2SF-C-A  | —        | —        | —         |
|                              | ●                                        | —    | —                           | —                 | ●               | AD27-C-A  | —        | —        | —         |
|                              | —                                        | —    | ●                           | —                 | —               | C2SF-J-A  | C3SF-J-A | C4SF-J-A | —         |
|                              | —                                        | —    | —                           | ●                 | —               | —         | C3SF-W-A | C4SF-W-A | —         |
|                              | —                                        | —    | ●                           | —                 | ●               | C2SF-CJ-A | —        | —        | —         |

Note 1) Assembly of a bracket and 2 mounting screws.

Note 2) Minimum operating pressure: N.O. type—0.1 MPa; N.C. type—0.1 MPa (AD27-A) and 0.15 MPa (AD37-A/47-A).

Please consult with SMC separately for psi and °F unit display specifications.

Note 3) Please consult with SMC for details on drain piping to fit NPT or G port sizes.

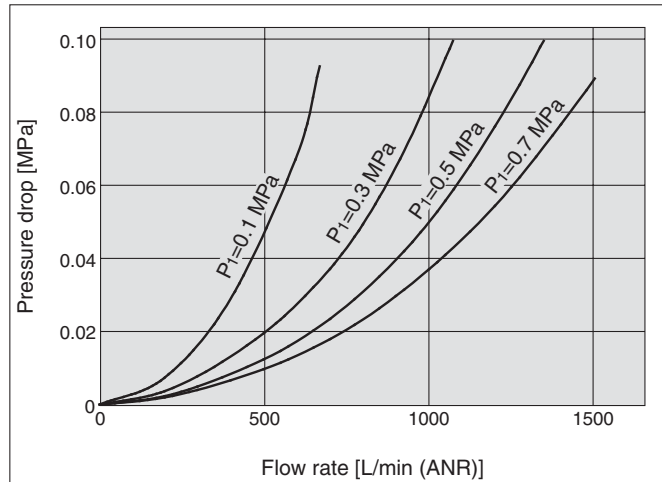
Note) Bowl assembly for the AF20-A to AF40-A models comes with a bowl O-ring.

# Series AF20-A to AF40-A

## Flow Characteristics (Representative values)

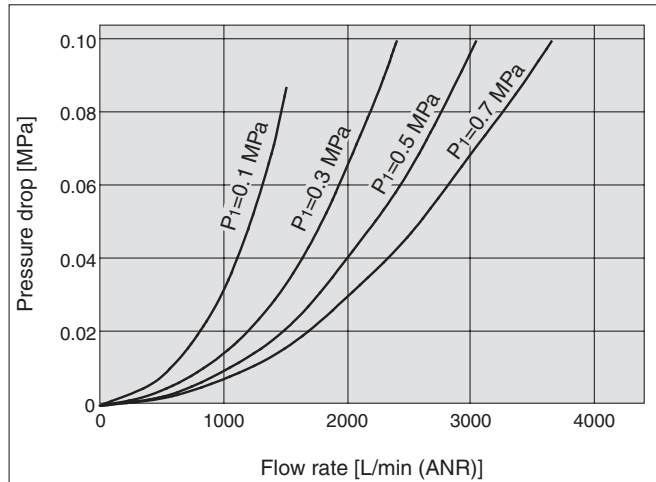
**AF20-A**

Rc1/4



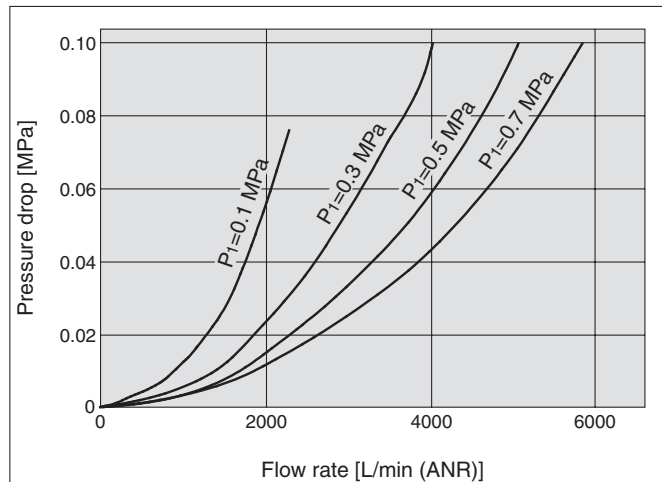
**AF30-A**

Rc3/8



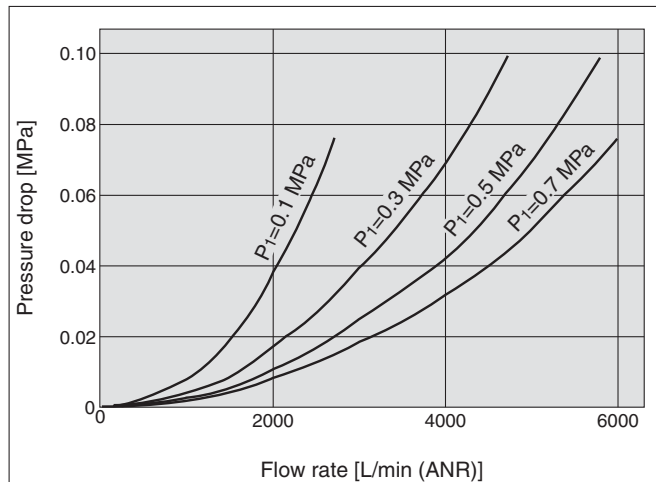
**AF40-A**

Rc1/2



**AF40-06-A**

Rc3/4



## ⚠ Specific Product Precautions

Be sure to read before handling. Refer to back cover for Safety Instructions, "Handling Precautions for SMC Products" (M-E03-3) and the Operation Manual for F.R.L. Precautions.

### Design / Selection

#### ⚠ Warning

- The standard bowl for the air filter, filter regulator, and lubricator, as well as the sight dome for the lubricator and bowl guard 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 |
| 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>Sulfate of potash<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 dimethyl<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              | ×             |
| Other             | Thread-lock fluid<br>Seawater<br>Leak tester                                                                      | —                                                                     | ×             |

△ : Some effects may occur    × : Effects will occur

### Maintenance

#### ⚠ Warning

- 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 and Adjustment

#### ⚠ Caution

- When the bowl is installed on the air filter, 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.



AC

AF+AR+AL

AW+AL

AF+AR

AF+AFM+AR

AW+AFM

Attachment

AF

AFM / AFD

AR

AL

AW

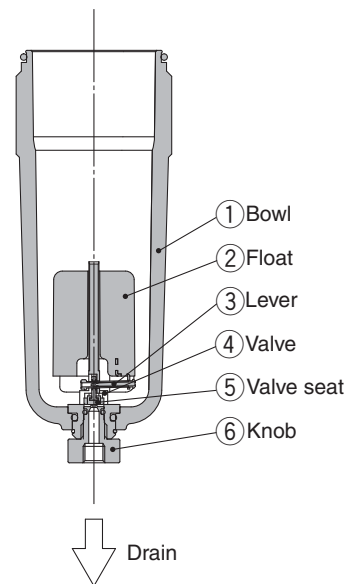
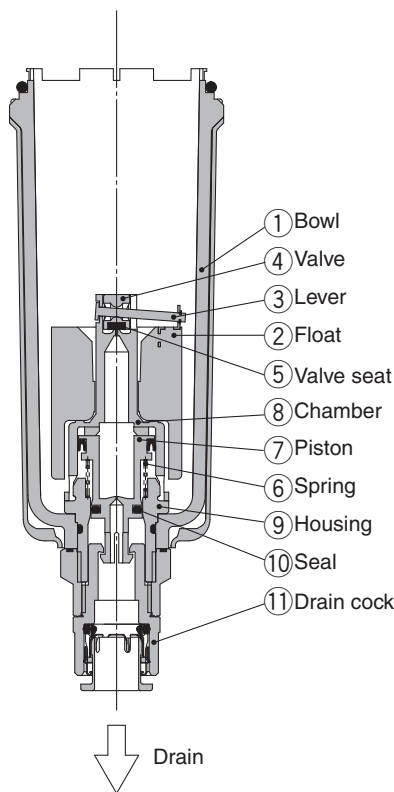
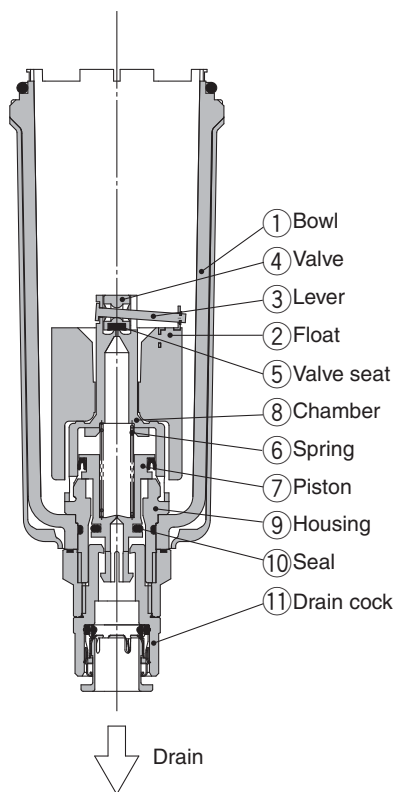
## Series AF20-A to AF40-A

## Working Principle: Float Type Auto Drain

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

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

**Compact auto drain N.C. type:**  
**AD27-A**



- When pressure inside the bowl is released:

When pressure is released from the bowl ①, piston ⑦ is lowered by spring ⑥. The sealing action of seal ⑩ is interrupted, and the outside air flows inside the bowl ① through housing hole ⑨ and 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 exceeds 0.1 MPa, the force of piston ⑦ surpasses the force of 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, float ② will be pulled down by its own weight, causing valve ④, which is connected to lever ③, to seal valve seat ⑤.

- When there is an accumulation of condensate in the bowl:

Float ② rises due to its own buoyancy and pushes open the seal created by the valve seat ⑤.

This allows the pressure inside the bowl ① to enter the chamber ⑧. The result is that the combined pressure inside chamber ⑧ and the force of the spring ⑥ lowers the piston ⑦.

This causes the sealing action of seal ⑩ to be interrupted, and the accumulated condensate in the bowl ① drains out through the drain cock ⑪. Turning drain cock ⑪ manually counterclockwise lowers piston ⑦, which pushes open the seal created by seal ⑩, thus allowing the condensate to drain out.

- When pressure inside the bowl is released:

Even when pressure inside the bowl ① is released, spring ⑥ keeps 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 spring ⑥ and the pressure inside the bowl ① keeps 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 float ② will be pulled down by its own weight, causing valve ④, which is connected to lever ③, to seal valve seat ⑤.

- When there is an accumulation of condensate in the bowl:

Float ② rises due to its own buoyancy and pushes open the seal created by the valve seat ⑤. Pressure passes from the bowl ① to chamber ⑧.

The result is that the pressure inside chamber ⑧ surpasses the force of the spring ⑥ and pushes piston ⑦ downwards.

This causes the sealing action of seal ⑩ to be interrupted and the accumulated condensate in the bowl ① drains out through the drain cock ⑪. Turning drain cock ⑪ manually counterclockwise lowers piston ⑦, which pushes open the seal created by seal ⑩, thus allowing the condensate to drain out.

- When pressure inside the bowl is released:

Even when pressure inside the bowl ① is released, the weight of the float ② causes valve ④, which is connected to lever ③, to seal 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 valve ④ cause valve ④ to seal valve seat ⑤, and the outside air is shut off from the inside of the bowl ①.

- When the drain is accumulated in the bowl:

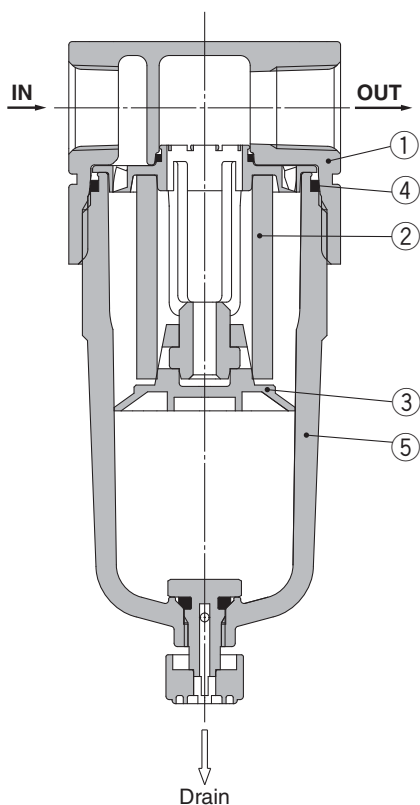
Float ② rises due to its own buoyancy and the seal at valve seat ⑤ is interrupted.

The condensate inside the bowl ① drains out through the knob ⑥.

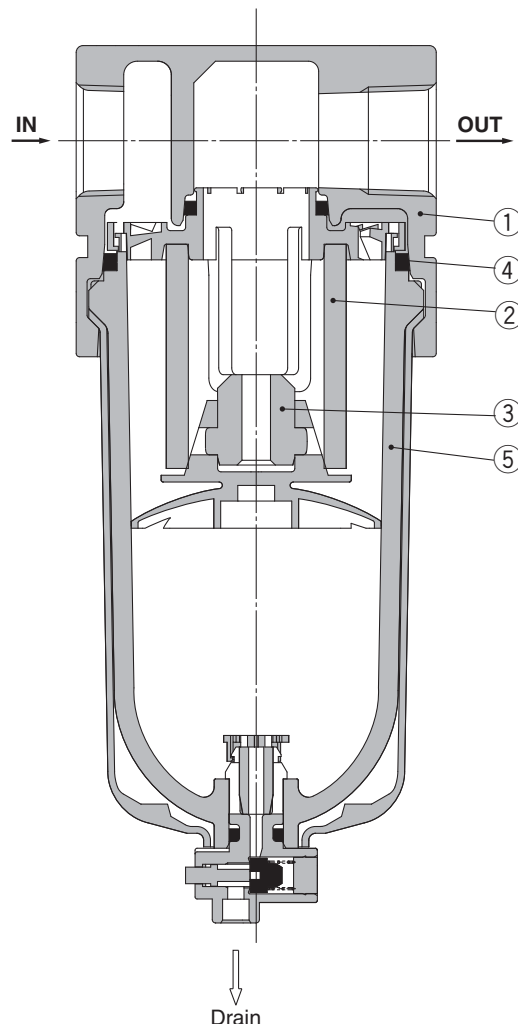
Turning knob ⑥ manually counterclockwise lowers it and causes the sealing action of valve seat ⑤ to be interrupted, which allows the condensate to drain out.

## Construction

### AF20-A



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



### Component Parts

| No. | Description | Material           | Colour |
|-----|-------------|--------------------|--------|
| 1   | Body        | Aluminium die-cast | White  |

### Replacement Parts

| No. | Description                        | Material         | Part no.   |            |            |           |
|-----|------------------------------------|------------------|------------|------------|------------|-----------|
|     |                                    |                  | AF20-A     | AF30-A     | AF40-A     | AF40-06-A |
| 2   | Filter element                     | Non-woven fabric | AF20P-060S | AF30P-060S | AF40P-060S |           |
| 3   | Baffle                             | PBT              | AF22P-040S | AF32P-040S | AF42P-040S |           |
| 4   | Bowl O-ring                        | NBR              | C2SFP-260S | C32FP-260S | C42FP-260S |           |
| 5   | Bowl assembly <small>Note)</small> | Polycarbonate    | C2SF-A     | C3SF-A     | C4SF-A     |           |

Note) Bowl O-ring is included. Please contact SMC regarding the bowl assembly supply for psi and °F unit specifications.

AC

AF+AR+AL

AW+AL

AF+AR

AF+AFM+AR

AW+AFM

Attachment

AF

AFM / AFD

AR

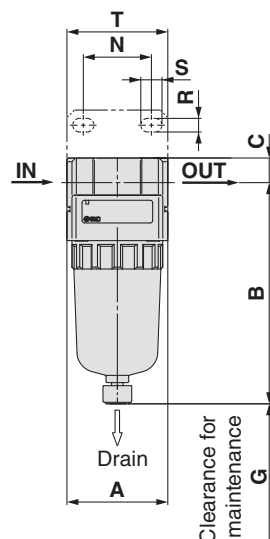
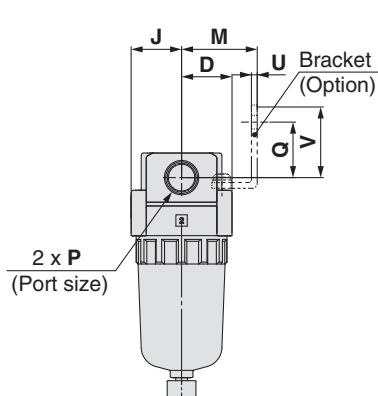
AL

AW

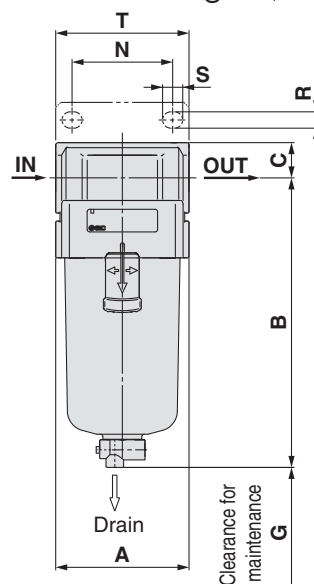
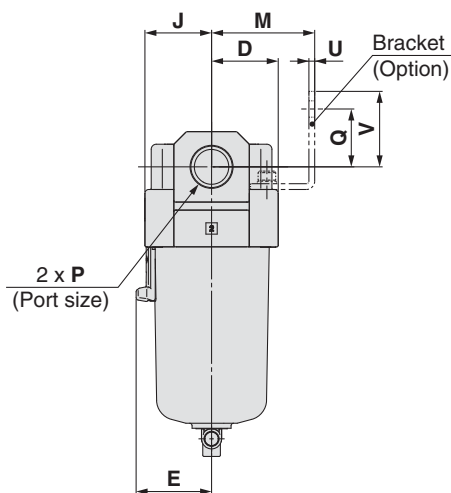
# Series AF20-A to AF40-A

## Dimensions

### AF20-A



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



| Applicable model                      | AF20-A                                |                                  | AF30-A to AF40-06-A                                                                                                   |                                  |                                              |
|---------------------------------------|---------------------------------------|----------------------------------|-----------------------------------------------------------------------------------------------------------------------|----------------------------------|----------------------------------------------|
| Optional/Semi-standard specifications | With auto drain (N.C.)                | With drain guide                 | With auto drain (N.O./N.C.)                                                                                           | With drain guide                 | Drain cock with barb fitting                 |
| Dimensions                            | <br>M5 x 0.8<br>Width across flats 14 | <br>Width across flats 14<br>1/8 | <br>N.O.: Black<br>N.C.: Grey<br>Thread type/Rc, G: ø10 One-touch fitting<br>Thread type/NPT: ø3/8" One-touch fitting | <br>Width across flats 17<br>1/4 | <br>Barb fitting<br>Applicable tubing: T0604 |

| Model     | Standard specifications |    |       |     |      |      |    |      | Optional specifications |    |    |     |      |    |     |    |                 |
|-----------|-------------------------|----|-------|-----|------|------|----|------|-------------------------|----|----|-----|------|----|-----|----|-----------------|
|           |                         |    |       |     |      |      |    |      | Bracket mount           |    |    |     |      |    |     |    | With auto drain |
|           | P                       | A  | B     | C   | D    | E    | G  | J    | M                       | N  | Q  | R   | S    | T  | U   | V  | B               |
| 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           |
| AF30-A    | 1/4, 3/8                | 53 | 115.1 | 14  | 26.7 | 30   | 35 | 26.7 | 41                      | 40 | 23 | 6.5 | 8    | 53 | 2.3 | 30 | 156.8           |
| AF40-A    | 1/4, 3/8, 1/2           | 70 | 147.1 | 18  | 35.5 | 38.4 | 40 | 35.5 | 50                      | 54 | 26 | 8.5 | 10.5 | 70 | 2.3 | 35 | 186.9           |
| AF40-06-A | 3/4                     | 75 | 149.1 | 20  | 35.5 | 38.4 | 40 | 35.5 | 50                      | 54 | 25 | 8.5 | 10.5 | 70 | 2.3 | 34 | 188.9           |

| Model     | Semi-standard specifications |                  |
|-----------|------------------------------|------------------|
|           | With barb fitting            | With drain guide |
|           | B                            | B                |
| AF20-A    | —                            | 91.4             |
| AF30-A    | 123.6                        | 121.9            |
| AF40-A    | 155.6                        | 153.9            |
| AF40-06-A | 157.6                        | 155.9            |

|    |    |    |           |    |            |        |           |       |       |          |    |
|----|----|----|-----------|----|------------|--------|-----------|-------|-------|----------|----|
| AW | AL | AR | AFM / AFD | AF | Attachment | AW+AFM | AF+AFM+AR | AF+AR | AW+AL | AF+AR+AL | AC |
|----|----|----|-----------|----|------------|--------|-----------|-------|-------|----------|----|

# Mist Separator

## AFM20-A to AFM40-A

### Micro Mist Separator

## AFD20-A to AFD40-A

- Series AFM Nominal filtration rating: 0.3 μm
- Series AFD Nominal filtration rating: 0.01 μm

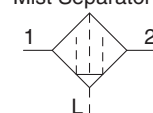
### How to Order

AFM **30** - **03** **BD** - **A**

AFD **30** - **03** **BD** - **A**

① ② ③ ④ ⑤

#### JIS Symbol

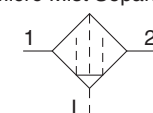


AFM20-A



AFM40-A

#### Micro Mist Separator



AFD20-A



AFD40-A

- 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) AFM30-03BD-CR-A

|   |               | Symbol                   | Description                                                      | 1                         |                                                                        |                           |                          |                          |
|---|---------------|--------------------------|------------------------------------------------------------------|---------------------------|------------------------------------------------------------------------|---------------------------|--------------------------|--------------------------|
|   |               |                          |                                                                  | Body size                 |                                                                        |                           |                          |                          |
|   |               |                          |                                                                  | 20                        | 30                                                                     | 40                        |                          |                          |
| 2 | Thread type   | —                        | Rc                                                               | ●                         | ●                                                                      | ●                         |                          |                          |
|   |               | N <small>Note 1)</small> | NPT                                                              | ●                         | ●                                                                      | ●                         |                          |                          |
|   |               | F <small>Note 2)</small> | G                                                                | ●                         | ●                                                                      | ●                         |                          |                          |
| + |               |                          |                                                                  |                           |                                                                        |                           |                          |                          |
| 3 | Port size     | 01                       | 1/8                                                              | ●                         | —                                                                      | —                         |                          |                          |
|   |               | 02                       | 1/4                                                              | ●                         | ●                                                                      | ●                         |                          |                          |
|   |               | 03                       | 3/8                                                              | —                         | ●                                                                      | ●                         |                          |                          |
|   |               | 04                       | 1/2                                                              | —                         | —                                                                      | ●                         |                          |                          |
|   |               | 06                       | 3/4                                                              | —                         | —                                                                      | ●                         |                          |                          |
| + |               |                          |                                                                  |                           |                                                                        |                           |                          |                          |
| 4 | Option        | a                        | Mounting                                                         | —                         | Without mounting option                                                | ●                         | ●                        | ●                        |
|   |               |                          |                                                                  | B <small>Note 3)</small>  | With bracket                                                           | ●                         | ●                        | ●                        |
| + |               |                          |                                                                  |                           |                                                                        |                           |                          |                          |
|   |               | b                        | Float type auto drain                                            | —                         | Without auto drain                                                     | ●                         | ●                        | ●                        |
|   |               |                          |                                                                  | C <small>Note 4)</small>  | N.C. (Normal close) Drain port is closed when pressure is not applied. | ●                         | ●                        | ●                        |
|   |               |                          |                                                                  | D <small>Note 5)</small>  | N.O. (Normal open) Drain port is open when pressure is not applied.    | —                         | ●                        | ●                        |
| + |               |                          |                                                                  |                           |                                                                        |                           |                          |                          |
| 5 | Semi-standard | c                        | Bowl <small>Note 6)</small>                                      | —                         | Polycarbonate bowl                                                     | ●                         | ●                        | ●                        |
|   |               |                          |                                                                  | C                         | With bowl guard                                                        | ●                         | — <small>Note 7)</small> | — <small>Note 7)</small> |
|   |               | +                        |                                                                  |                           |                                                                        |                           |                          |                          |
|   |               | d                        | Drain port                                                       | —                         | With drain cock                                                        | ●                         | ●                        | ●                        |
|   |               |                          |                                                                  | J <small>Note 8)</small>  | Drain guide 1/8                                                        | ●                         | —                        | —                        |
|   |               |                          |                                                                  |                           | Drain guide 1/4                                                        | —                         | ●                        | ●                        |
|   |               | W                        | Drain cock with barb fitting (for ø6 x ø4 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 imperial units: MPa     | ●                         | ●                                                                      | ●                         |                          |                          |
|   |               | Z <small>Note 9)</small> | Name plate and caution plate for bowl in imperial units: psi, °F | ○ <small>Note 10)</small> | ○ <small>Note 10)</small>                                              | ○ <small>Note 10)</small> |                          |                          |

Note 1) Drain guide is NPT1/8 (applicable to the AFM20-A, AFD20-A) and NPT1/4 (applicable to the AFM30-A/40-A, AFD30-A/40-A).

The auto drain port comes with ø3/8" One-touch fitting (applicable to the AFM30-A/40-A, AFD30-A/40-A).

Note 2) Drain guide is G1/8 (applicable to the AFM20-A, AFD20-A) and G1/4 (applicable to the AFM30-A/40-A, AFD30-A/40-A).

Note 3) A bracket is not assembled and supplied loose at the time of shipment. Including 2 mounting screws

Note 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.

Note 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.

Note 6) Refer to Chemical data on page 40 for chemical resistance of the bowl.

Note 7) Standard material (polycarbonate)

Note 8) Without a valve function.

Note 9) For thread type: NPT.

Note 10) ○: For thread type: NPT only

# Mist Separator *Series AFM20-A to AFM40-A*

## Micro Mist Separator *Series AFD20-A to AFD40-A*

### Standard Specifications

| Model                                       |                       | AFM20-A<br>AFD20-A                                                                                                                      | AFM30-A<br>AFD30-A       | AFM40-A<br>AFD40-A | AFM40-06-A<br>AFD40-06-A |
|---------------------------------------------|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------|--------------------------|--------------------|--------------------------|
| Port size                                   |                       | 1/8, 1/4                                                                                                                                | 1/4, 3/8                 | 1/4, 3/8, 1/2      | 3/4                      |
| Fluid                                       |                       | Air                                                                                                                                     |                          |                    |                          |
| Ambient and fluid temperature               |                       | – 5 to 60°C (with no freezing)                                                                                                          |                          |                    |                          |
| Proof pressure                              |                       | 1.5 MPa                                                                                                                                 |                          |                    |                          |
| Maximum operating pressure                  |                       | 1.0 MPa                                                                                                                                 |                          |                    |                          |
| Minimum operating pressure                  |                       | 0.05 MPa                                                                                                                                |                          |                    |                          |
| Nominal filtration rating                   | AFM20-A to AFM40-06-A | 0.3 μm (99.9% filtered particle size)                                                                                                   |                          |                    |                          |
|                                             | AFD20-A to AFD40-06-A | 0.01 μm (99.9% filtered particle size)                                                                                                  |                          |                    |                          |
| Outlet side oil mist concentration          | AFM20-A to AFM40-06-A | MAX 1.0 mg/m <sup>3</sup> (ANR) (≈0.8 ppm) <sup>Note 2) Note 3)</sup>                                                                   |                          |                    |                          |
|                                             | AFD20-A to AFD40-06-A | MAX 0.1 mg/m <sup>3</sup> (ANR) (Before saturated with oil 0.01 mg/m <sup>3</sup> (ANR) or less ≈ 0.008 ppm) <sup>Note 2) Note 3)</sup> |                          |                    |                          |
| Rated flow [L/min (ANR)] <sup>Note 1)</sup> | AFM20-A to AFM40-06-A | 200                                                                                                                                     | 450                      | 1100               |                          |
|                                             | AFD20-A to AFD40-06-A | 120                                                                                                                                     | 240                      | 600                |                          |
| Drain capacity [cm <sup>3</sup> ]           |                       | 8                                                                                                                                       | 25                       | 45                 |                          |
| Bowl material                               |                       | Polycarbonate                                                                                                                           |                          |                    |                          |
| Bowl guard                                  |                       | Semi-standard (Steel)                                                                                                                   | Standard (Polycarbonate) |                    |                          |
| Weight [kg]                                 |                       | 0.09                                                                                                                                    | 0.19                     | 0.38               | 0.43                     |

Note 1) Conditions: Inlet pressure: 0.7 MPa; The rated flow varies depending on the inlet pressure. Keep the air flow within the rated flow to prevent an outflow of lubricant to the outlet side.

Note 2) When the compressor oil mist discharge concentration is 30 mg/m<sup>3</sup> (ANR).

Note 3) Bowl O-ring and other O-rings are slightly lubricated.

### Options/Part No.

| Optional specifications                          |       | Model              |                    |                    |                          |
|--------------------------------------------------|-------|--------------------|--------------------|--------------------|--------------------------|
|                                                  |       | AFM20-A<br>AFD20-A | AFM30-A<br>AFD30-A | AFM40-A<br>AFD40-A | AFM40-06-A<br>AFD40-06-A |
| Bracket assembly <sup>Note 1)</sup>              |       | AF22P-050AS        | AF32P-050AS        | AF42P-050AS        | AF42P-070AS              |
| Float type auto drain <sup>Note 2) Note 3)</sup> | N. C. | AD27-A             | AD37-A             | AD47-A             |                          |
|                                                  | N. O. | —                  | AD38-A             | AD48-A             |                          |

### Semi-standard/Bowl Assembly Part No.

| Semi-standard specifications |                                          |       |                             |                   |                 | Model              |                    |                    |                          |
|------------------------------|------------------------------------------|-------|-----------------------------|-------------------|-----------------|--------------------|--------------------|--------------------|--------------------------|
| Bowl material                | Note 2) Note 3)<br>Float type auto drain |       | Note 3)<br>With drain guide | With barb fitting | With bowl guard | AFM20-A<br>AFD20-A | AFM30-A<br>AFD30-A | AFM40-A<br>AFD40-A | AFM40-06-A<br>AFD40-06-A |
|                              | N. C.                                    | N. O. |                             |                   |                 |                    |                    |                    |                          |
| Polycarbonate                | —                                        | —     | —                           | —                 | ●               | C2SF-C-A           | —                  | —                  | —                        |
|                              | ●                                        | —     | —                           | —                 | ●               | AD27-C-A           | —                  | —                  | —                        |
|                              | —                                        | —     | ●                           | —                 | —               | C2SF-J-A           | C3SF-J-A           | C4SF-J-A           | —                        |
|                              | —                                        | —     | —                           | ●                 | —               | —                  | C3SF-W-A           | C4SF-W-A           | —                        |
|                              | —                                        | —     | ●                           | —                 | ●               | C2SF-CJ-A          | —                  | —                  | —                        |

Note 1) Assembly of a bracket and 2 mounting screws.

Note 2) Minimum operating pressure: N.O. type—0.1 MPa; N.C. type—0.1 MPa (AD27-A) and 0.15 MPa (AD37-A/47-A). Please consult with SMC separately for psi and °F unit display specifications.

Note 3) Please consult with SMC for details on drain piping to fit NPT or G port sizes.

Note 4) The bowl assembly includes the bowl O-ring.

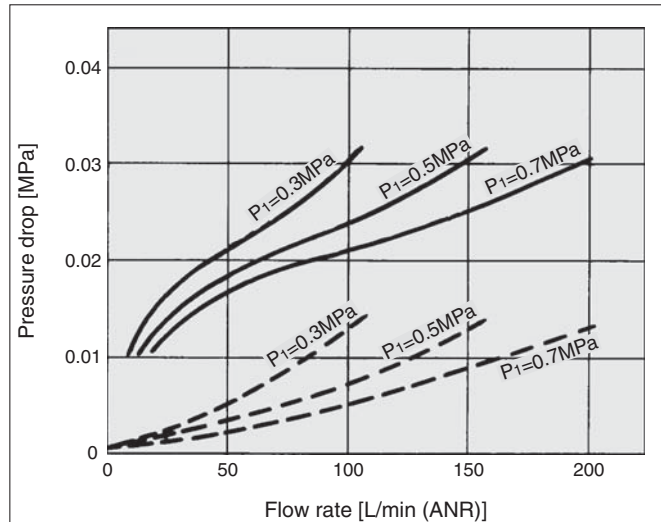
# Series AFM20-A to AFM40-A

## Series AFD20-A to AFD40-A

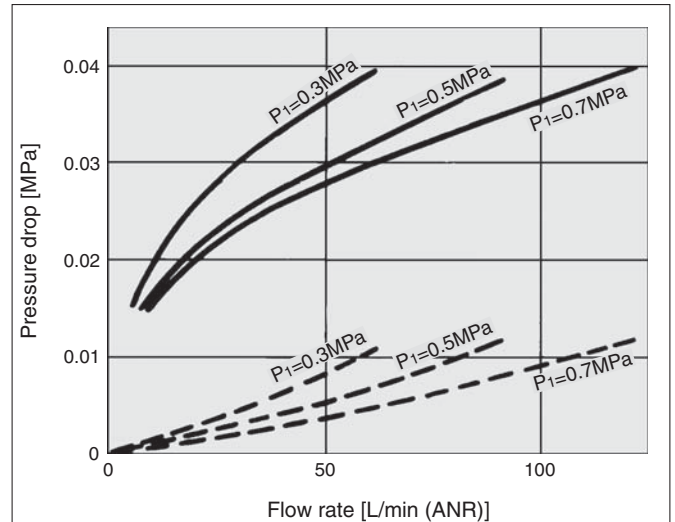
### Flow Characteristics (Representative values)

— When saturated with oil  
 - - - Initial state

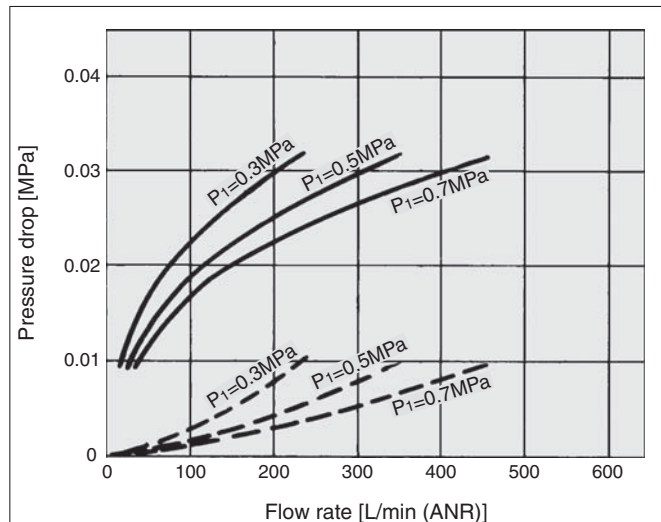
**AFM20-A**



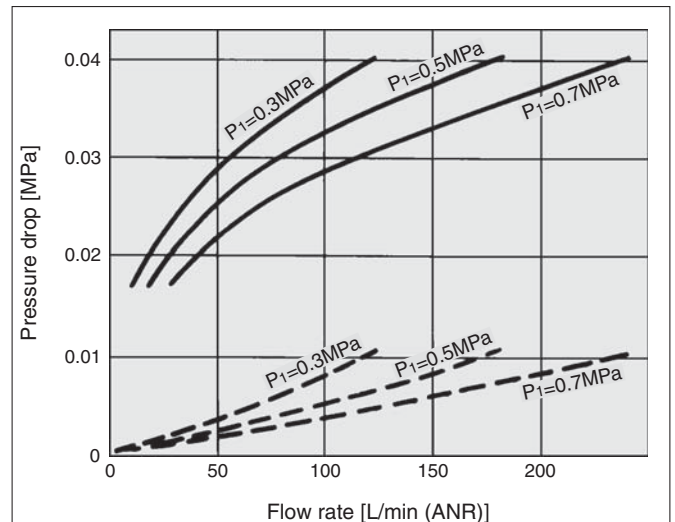
**AFD20-A**



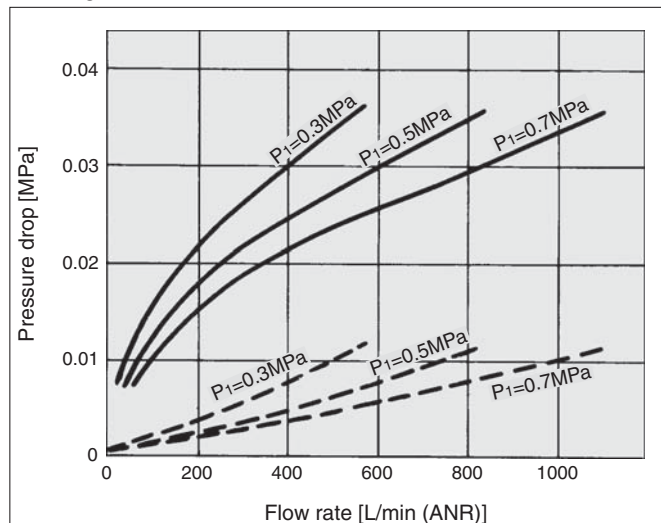
**AFM30-A**



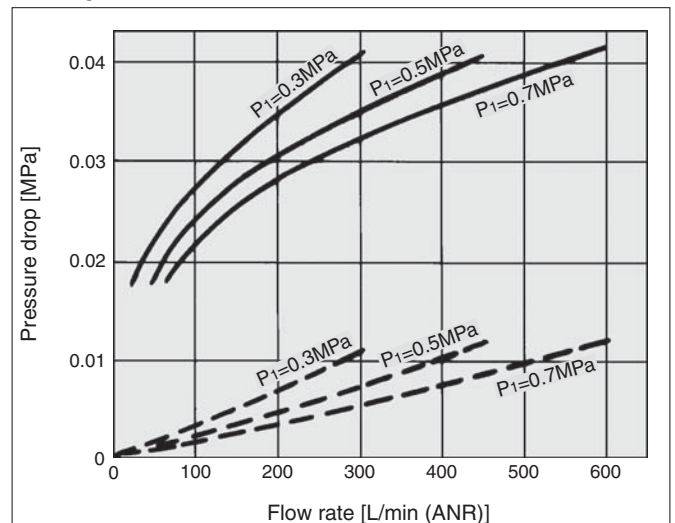
**AFD30-A**



**AFM40-A**



**AFD40-A**



# Mist Separator *Series AFM20-A to AFM40-A*

## Micro Mist Separator *Series AFD20-A to AFD40-A*

### ⚠ Specific Product Precautions

Be sure to read before handling. Refer to back cover for Safety Instructions, "Handling Precautions for SMC Products" (M-E03-3) and the Operation Manual for F.R.L. Precautions.

#### Design / Selection

#### ⚠ Warning

1. The standard bowl for the air filter, filter regulator, and lubricator, as well as the sight dome for the lubricator and bowl guard 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<br>Polycarbonate |
|-------------------|-------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------|---------------------------|
| Acid              | Hydrochloric acid<br>Sulfuric acid, Phosphoric acid<br>Chromic acid                                               | Acid washing liquid<br>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<br>cutting oil | ×                         |
| Inorganic salts   | Sodium sulfide<br>Sulfate of potash<br>Sulfate of soda                                                            | —                                                                        | ×                         |
| Chlorine solvents | Carbon tetrachloride<br>Chloroform<br>Ethylene chloride<br>Methylene chloride                                     | Cleansing liquid<br>for metals<br>Printing ink 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 dimethyl<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                 | ×                         |
| Other             | Thread-lock fluid<br>Seawater<br>Leak tester                                                                      | —                                                                        | ×                         |

△: Some effects may occur    ×: Effects will occur

#### Air Supply

#### ⚠ Caution

1. Install an air filter (Series AF) as a pre-filter on the inlet side of the mist separator to prevent premature clogging.
2. Install a mist separator (Series AFM) as a pre-filter on the inlet side of the micro mist separator to prevent premature clogging.
3. Do not install on the inlet side of the dryer as this can cause premature clogging of the element.

#### 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 and Adjustment

#### ⚠ Caution

1. When the bowl is installed on the mist separator, or micro mist separator, 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.



#### Design

#### ⚠ Caution

1. Design the system so that the mist separator is installed in a pulsation-free location. The difference between internal and external pressure inside the element should be kept within 0.1 MPa, as exceeding this value could cause damage.

#### Selection

#### ⚠ Caution

1. Do not allow air flow that exceeds the rated flow. If the air flow is allowed outside the range of the rated flow even momentarily, drainage and lubricant may splash at the outlet side or cause damage to the component.
2. Do not use in a low pressure application (such as a blower). F.R.L. unit has its own minimum operating pressure depending on the equipment and is designed specifically to function with compressed air. If used below the minimum operating pressure, a loss of performance and malfunction can occur. Please contact SMC if an application under such conditions cannot be avoided.

AC

AF+AR+AL

AW+AL

AF+AR

AF+AFM+AR

AW+AFM

Attachment

AF

AFM / AFD

AR

AL

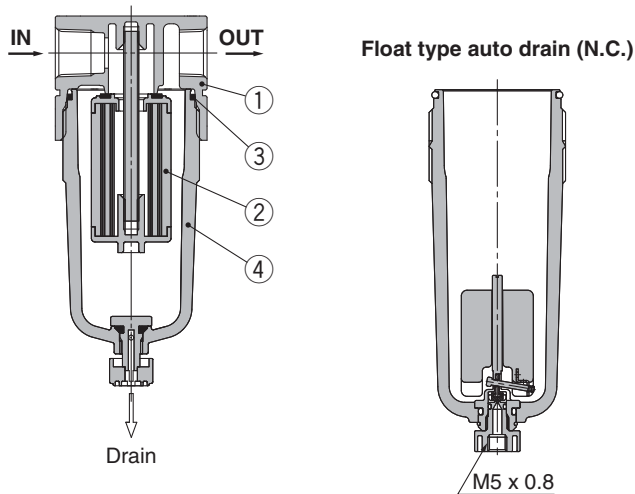
AW

# Series AFM20-A to AFM40-A

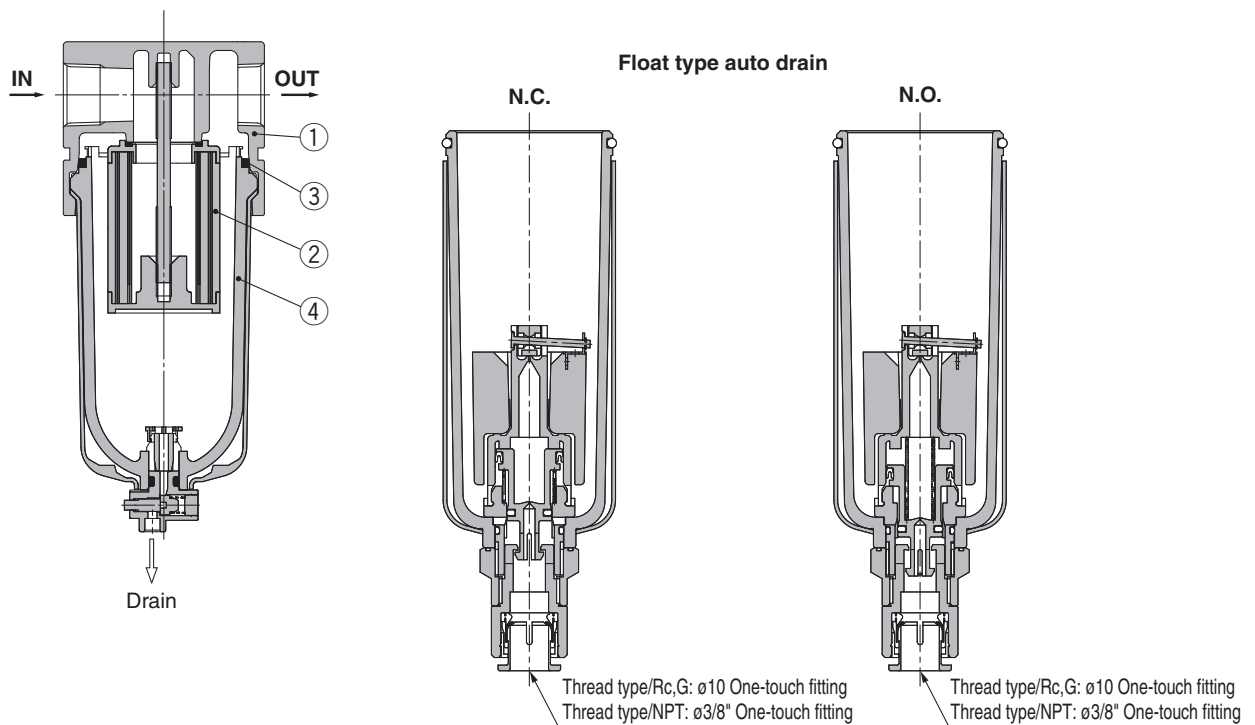
## Series AFD20-A to AFD40-A

### Construction

#### AFM20-A AFD20-A



#### AFM30-A to AFM40-06-A AFD30-A to AFD40-06-A



### Component Parts

| No. | Description | Material          | Model                                          | Colour |
|-----|-------------|-------------------|------------------------------------------------|--------|
| 1   | Body        | Aluminum die-cast | AFM20-A to AFM40-06-A<br>AFD20-A to AFD40-06-A | White  |

### Replacement Parts

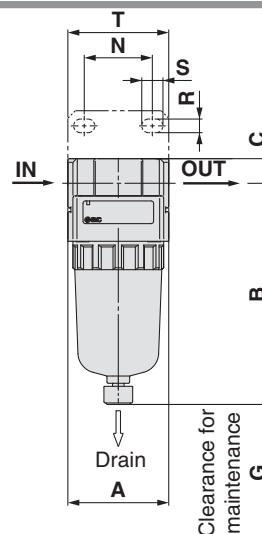
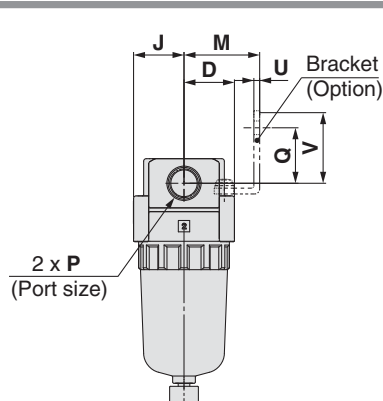
| No. | Description                    |               | Material | Part no.           |                    |                    |                          |
|-----|--------------------------------|---------------|----------|--------------------|--------------------|--------------------|--------------------------|
|     |                                |               |          | AFM20-A<br>AFD20-A | AFM30-A<br>AFD30-A | AFM40-A<br>AFD40-A | AFM40-06-A<br>AFD40-06-A |
| 2   | Element assembly               | AFM20 to 40   | —        | AFM20P-060AS       | AFM30P-060AS       | AFM40P-060AS       |                          |
|     |                                | AFD20 to 40   | —        | AFD20P-060AS       | AFD30P-060AS       | AFD40P-060AS       |                          |
| 3   | Bowl seal                      | NBR           |          | C2SFP-260S         | C32FP-260S         | C42FP-260S         |                          |
| 4   | Bowl assembly <sup>Note)</sup> | Polycarbonate |          | C2SF-A             | C3SF-A             | C4SF-A             |                          |

Note) Bowl seal is included. Please contact SMC regarding the bowl assembly supply for psi and °F unit specifications.

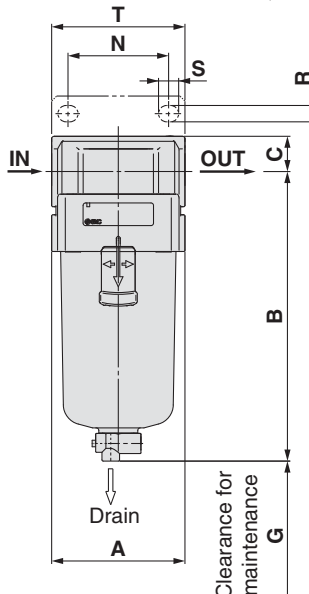
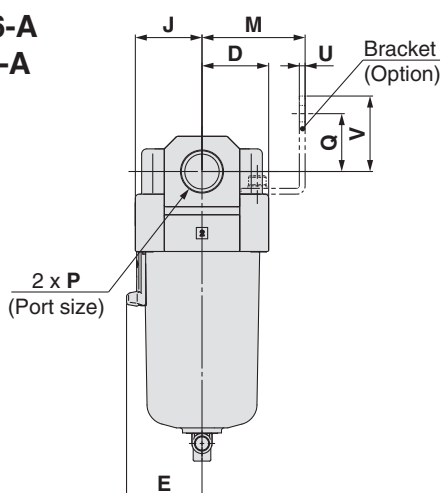
Mist Separator **Series AFM20-A to AFM40-A**  
Micro Mist Separator **Series AFD20-A to AFD40-A**

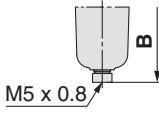
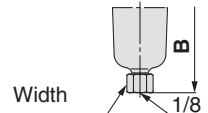
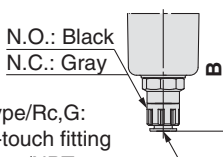
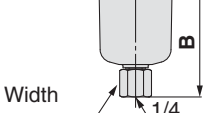
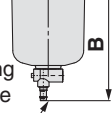
## Dimensions

### AFM20-A AFD20-A



### AFM30-A to AFM40-06-A AFD30-A to AFD40-06-A



| Applicable model<br>Optional/Semi-standard<br>specifications | AFM20-A/AFD20-A                                                                     |                                                                                     | AFM30-A to AFM40-06-A/AFD30-A to AFD40-06-A                                                                                                                                                                    |                                                                                       |                                                                                       |  |  |  |
|--------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|--|--|--|
|                                                              | With auto drain (N.C.)                                                              | With drain guide                                                                    | With auto drain (N.O./N.C.)                                                                                                                                                                                    | With drain guide                                                                      | Drain cock with barb fitting                                                          |  |  |  |
| Dimensions                                                   |  |  | <br>N.O.: Black<br>N.C.: Gray<br>Thread type/Rc,G:<br>ø10 One-touch fitting<br>Thread type/NPT:<br>ø3/8" One-touch fitting |  |  |  |  |  |

| Model                 | Standard specifications |    |       |     |      |      |    |      | Optional specifications |    |    |     |      |    |     |    |       |
|-----------------------|-------------------------|----|-------|-----|------|------|----|------|-------------------------|----|----|-----|------|----|-----|----|-------|
|                       | P                       | A  | B     | C   | D    | E    | G  | J    | M                       | N  | Q  | R   | S    | T  | U   | V  | B     |
| AFM20-A/AFD20-A       | 1/8, 1/4                | 40 | 87.6  | 9.8 | 20   | —    | 40 | 20   | 30                      | 27 | 22 | 5.4 | 8.4  | 40 | 2.3 | 28 | 104.9 |
| AFM30-A/AFD30-A       | 1/4, 3/8                | 53 | 115.1 | 14  | 26.7 | 30   | 50 | 26.7 | 41                      | 40 | 23 | 6.5 | 8    | 53 | 2.3 | 30 | 156.8 |
| AFM40-A/AFD40-A       | 1/4, 3/8, 1/2           | 70 | 147.1 | 18  | 35.5 | 38.4 | 75 | 35.5 | 50                      | 54 | 26 | 8.5 | 10.5 | 70 | 2.3 | 35 | 186.9 |
| AFM40-06-A/AFD40-06-A | 3/4                     | 75 | 149.1 | 20  | 35.5 | 38.4 | 75 | 35.5 | 50                      | 54 | 25 | 8.5 | 10.5 | 70 | 2.3 | 34 | 188.9 |

| Model                 | Semi-standard specifications |                  |
|-----------------------|------------------------------|------------------|
|                       | With barb fitting            | With drain guide |
| AFM20-A/AFD20-A       | —                            | 91.4             |
| AFM30-A/AFD30-A       | 123.6                        | 121.9            |
| AFM40-A/AFD40-A       | 155.6                        | 153.9            |
| AFM40-06-A/AFD40-06-A | 157.6                        | 155.9            |



# Modular Type Regulators

## Series AR

| Regulator<br>Series AR                                                                               |  | Model     | Port size     | Options                                                                         |
|------------------------------------------------------------------------------------------------------|--|-----------|---------------|---------------------------------------------------------------------------------|
|  <p>P.45 to 50</p> |  | AR20-A    | 1/8, 1/4      | Bracket<br><br>Round type pressure gauge<br><br>With set nut (for panel mount)* |
|                                                                                                      |  | AR25-A    | 1/4, 3/8      |                                                                                 |
|                                                                                                      |  | AR30-A    |               |                                                                                 |
|                                                                                                      |  | AR40-A    | 1/4, 3/8, 1/2 |                                                                                 |
|                                                                                                      |  | AR40-06-A | 3/4           |                                                                                 |
|                                                                                                      |  |           |               | * Not interchangeable with existing AR Series.                                  |

AC

AF+AR+AL

AW+AL

AF+AR

AF+AFM+AR

AW+AFM

Attachment

AF

AFM / AFD

AR

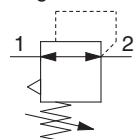
AL

AW

# Regulator

# AR20-A to AR40-A

## JIS Symbol Regulator



AR20-A

AR30-A

## How to Order

AR **30** - **03** **BG** - **-A**

① ② ③ ④ ⑤

- Option/Semi-standard: Select one each for **a** to **g**.
- Option/Semi-standard symbol: When more than one specification is required, indicate in alphanumeric order.  
Example) AR30-03BG-1N-A

|   |               | Symbol               | Description                                          | ①                    |                                                  |                      |                      |   |   |
|---|---------------|----------------------|------------------------------------------------------|----------------------|--------------------------------------------------|----------------------|----------------------|---|---|
|   |               |                      |                                                      | Body size            |                                                  |                      |                      |   |   |
|   |               |                      |                                                      | 20                   | 25                                               | 30                   | 40                   |   |   |
| ② | Thread type   | —                    | Rc                                                   | ●                    | ●                                                | ●                    | ●                    |   |   |
|   |               | N                    | NPT                                                  | ●                    | ●                                                | ●                    | ●                    |   |   |
|   |               | F                    | G                                                    | ●                    | ●                                                | ●                    | ●                    |   |   |
| + |               |                      |                                                      |                      |                                                  |                      |                      |   |   |
| ③ | Port size     | 01                   | 1/8                                                  | ●                    | —                                                | —                    | —                    |   |   |
|   |               | 02                   | 1/4                                                  | ●                    | ●                                                | ●                    | ●                    |   |   |
|   |               | 03                   | 3/8                                                  | —                    | ●                                                | ●                    | ●                    |   |   |
|   |               | 04                   | 1/2                                                  | —                    | —                                                | —                    | ●                    |   |   |
|   |               | 06                   | 3/4                                                  | —                    | —                                                | —                    | ●                    |   |   |
| + |               |                      |                                                      |                      |                                                  |                      |                      |   |   |
| ④ | Option        | a                    | Mounting                                             | —                    | Without mounting option                          | ●                    | ●                    | ● | ● |
|   |               |                      |                                                      | B <sup>Note 2)</sup> | With bracket                                     | ●                    | ●                    | ● | ● |
|   |               |                      |                                                      | H                    | With set nut (for panel fitting)                 | ●                    | ●                    | ● | ● |
| + |               |                      |                                                      |                      |                                                  |                      |                      |   |   |
|   |               | b                    | Pressure gauge <sup>Note 3)</sup>                    | —                    | Without pressure gauge                           | ●                    | ●                    | ● | ● |
|   |               |                      |                                                      | G                    | Round type pressure gauge (with limit indicator) | ●                    | ●                    | ● | ● |
|   |               |                      |                                                      | M                    | Round type pressure gauge (with color zone)      | ●                    | ●                    | ● | ● |
| + |               |                      |                                                      |                      |                                                  |                      |                      |   |   |
| ⑤ | Semi-standard | c                    | Set pressure <sup>Note 4)</sup>                      | —                    | 0.05 to 0.7 MPa setting                          | ●                    | ●                    | ● | ● |
|   |               |                      |                                                      | 1                    | 0.02 to 0.2 MPa setting                          | ●                    | ●                    | ● | ● |
|   |               | +                    |                                                      |                      |                                                  |                      |                      |   |   |
|   |               | d                    | Exhaust mechanism                                    | —                    | Relieving type                                   | ●                    | ●                    | ● | ● |
|   |               |                      |                                                      | N                    | Non-relieving type                               | ●                    | ●                    | ● | ● |
|   |               | +                    |                                                      |                      |                                                  |                      |                      |   |   |
|   |               | e                    | Flow direction                                       | —                    | Flow direction: Left to right                    | ●                    | ●                    | ● | ● |
|   |               |                      |                                                      | R                    | Flow direction: Right to left                    | ●                    | ●                    | ● | ● |
|   |               | +                    |                                                      |                      |                                                  |                      |                      |   |   |
|   |               | f                    | Knob                                                 | —                    | Downward                                         | ●                    | ●                    | ● | ● |
| Y | Upward        |                      |                                                      | ●                    | ●                                                | ●                    | ●                    |   |   |
| + |               |                      |                                                      |                      |                                                  |                      |                      |   |   |
| g | Pressure unit | —                    | Name plate and pressure gauge in imperial units: MPa | ●                    | ●                                                | ●                    | ●                    |   |   |
|   |               | Z <sup>Note 5)</sup> | Name plate and pressure gauge in imperial units: psi | ○ <sup>Note 6)</sup> | ○ <sup>Note 6)</sup>                             | ○ <sup>Note 6)</sup> | ○ <sup>Note 6)</sup> |   |   |

Note 1) Option B, G, H, M are not assembled and supplied loose at the time of shipment.

Note 2) Assembly of a bracket and set nuts.

Note 3) When the pressure gauge is attached, a 1.0 MPa pressure gauge will be fitted for standard (0.7 MPa) type. 0.4 MPa pressure gauge for 0.2 MPa type.

Note 4) Pressure can be set higher than the specification pressure in some cases, but use pressure within the specification range.

Note 5) For thread type: NPT.

Round pressure gauge (with colour zone): Cannot be used with M. Available by request for special.

Note 6) ○: For thread type: NPT only

\* Not interchangeable with existing AR Series.

\* With set nut (for panel mount)

\* Mounting pitch is different from existing AW Series.

## Standard Specifications

| Model                         | AR20-A                         | AR25-A   | AR30-A   | AR40-A        | AR40-06-A |
|-------------------------------|--------------------------------|----------|----------|---------------|-----------|
| Port size                     | 1/8, 1/4                       | 1/4, 3/8 | 1/4, 3/8 | 1/4, 3/8, 1/2 | 3/4       |
| Pressure gauge port size      | 1/8                            |          |          |               |           |
| Fluid                         | Air                            |          |          |               |           |
| Ambient and fluid temperature | - 5 to 60°C (with no freezing) |          |          |               |           |
| Proof pressure                | 1.5 MPa                        |          |          |               |           |
| Maximum operating pressure    | 1.0 MPa                        |          |          |               |           |
| Set pressure range            | 0.05 to 0.7 MPa                |          |          |               |           |
| Construction                  | Relieving type                 |          |          |               |           |
| Weight [kg]                   | 0.17                           | 0.19     | 0.34     | 0.58          | 0.60      |

## Options/Part No.

| Optional specifications             |                                                     | Model                   |              |             |              |             |
|-------------------------------------|-----------------------------------------------------|-------------------------|--------------|-------------|--------------|-------------|
|                                     |                                                     | AR20-A                  | AR25-A       | AR30-A      | AR40-A       | AR40-06-A   |
| Bracket assembly <sup>Note 1)</sup> |                                                     | AR22P-270AS             | AR27P-270AS  | AR32P-270AS | AR42P-270AS  | AR42P-270AS |
| Set nut                             |                                                     | AR22P-260S              | AR22P-260S   | AR32P-260S  | AR42P-260S   | AR42P-260S  |
| Pressure gauge                      | Round type <sup>Note 2)</sup>                       | Standard                | G36-10-□01   |             | G46-10-□01   |             |
|                                     |                                                     | 0.02 to 0.2 MPa setting | G36-4-□01    |             | G46-4-□01    |             |
|                                     | Round type <sup>Note 2)</sup><br>(with colour zone) | Standard                | G36-10-□01-L |             | G46-10-□01-L |             |
|                                     |                                                     | 0.02 to 0.2 MPa setting | G36-4-□01-L  |             | G46-4-□01-L  |             |

Note 1) Assembly of a bracket and set nuts

Note 2) □ in part numbers for a round pressure gauge indicates a type of connection thread. No indication is necessary for R; however, indicate N for NPT.  
Please contact SMC regarding the connection thread NPT and pressure gauge supply for psi unit specifications.

## ⚠ Specific Product Precautions

**Be sure to read before handling. Refer to back cover for Safety Instructions, "Handling Precautions for SMC Products" (M-E03-3) and the Operation Manual for F.R.L. Precautions.**

### Selection

#### ⚠ Warning

- Although exhaust of the residual pressure to the inlet side is possible when eliminating the inlet pressure, exhaust is not possible when the set pressure is 0.15 MPa or less. Use the regulator with backflow function.

### Maintenance

#### ⚠ Warning

- When using the regulator between a solenoid valve and an actuator, check the pressure gauge periodically. Sudden pressure fluctuations may shorten the durability of the pressure gauge. A digital pressure gauge is recommended for such situation or as deemed necessary.

### Mounting and Adjustment

#### ⚠ Warning

- Set the regulator while verifying the displayed values of the inlet and outlet pressure gauges. Turning the regulator knob excessively can cause damage to the internal parts.
- Do not use tools on the pressure regulator knob as this may cause damage. It must be operated manually.

#### ⚠ Caution

- Be sure to unlock the knob before adjusting the pressure and lock it after setting the pressure. Failure to follow this procedure can cause damage to the knob and the outlet pressure may fluctuate.
  - Pull the pressure regulator knob to unlock. (You can visually verify this with the "orange mark" that appears in the gap.)
  - Push the pressure regulator knob to lock. When the knob is not easily locked, turn it left and right a little and then push it (when the knob is locked, the "orange mark", i.e., the gap will disappear).
- Pulsation will be generated when the difference between the inlet and the outlet pressure is large. In this case, reduce the pressure difference between the inlet and the outlet. Consult SMC if the pulsation problem is not resolved.

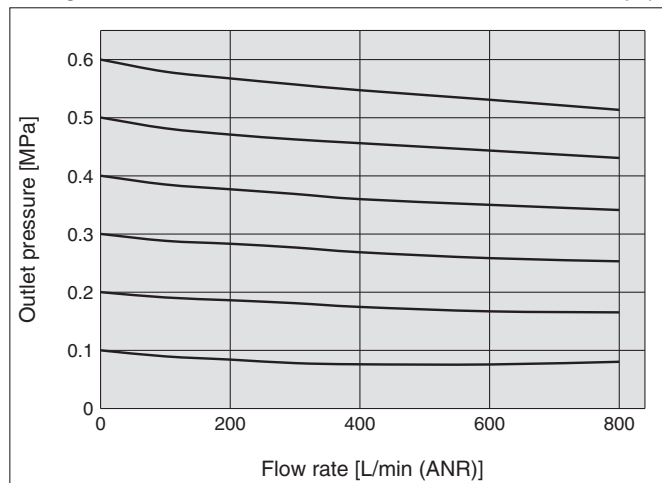
# Series AR20-A to AR40-A

## Flow Characteristics (Representative values)

Condition: Inlet pressure 0.7 [MPa]

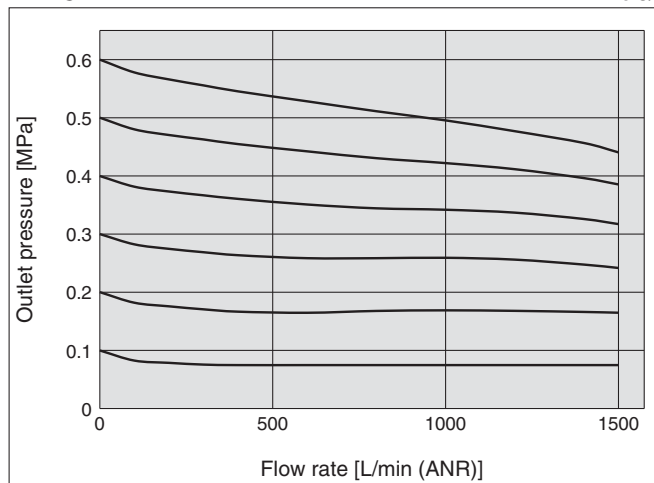
**AR20-A**

Rc 1/4



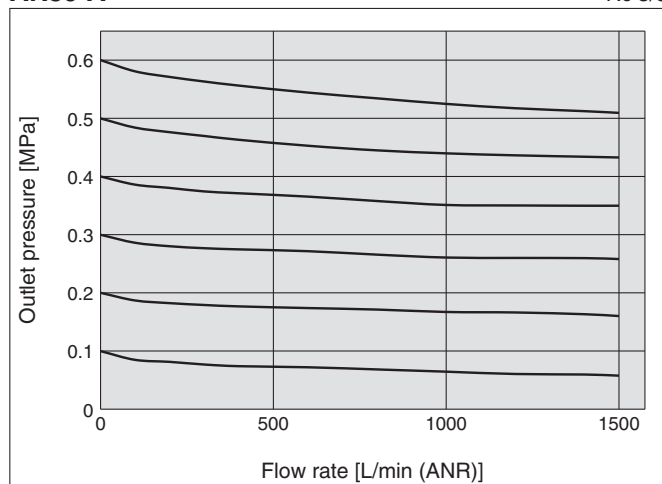
**AR25-A**

Rc 3/8



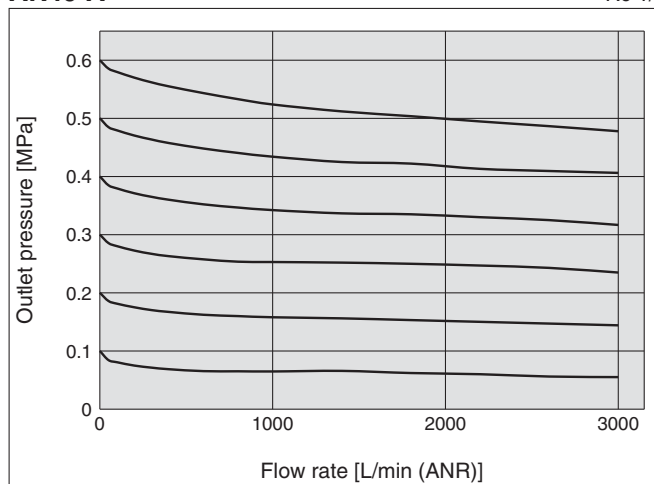
**AR30-A**

Rc 3/8



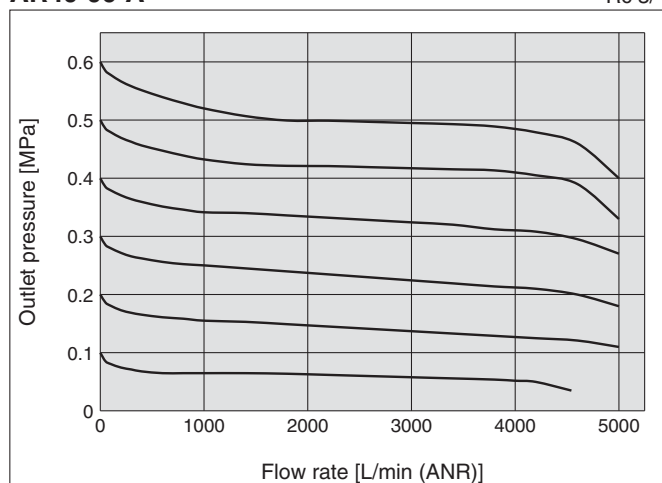
**AR40-A**

Rc 1/2



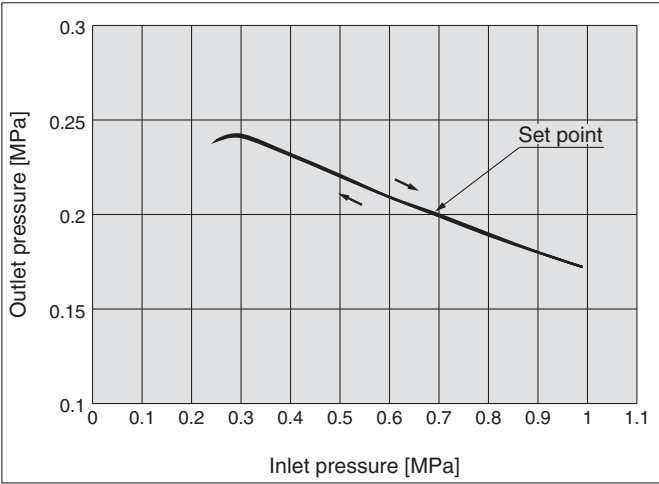
**AR40-06-A**

Rc 3/4

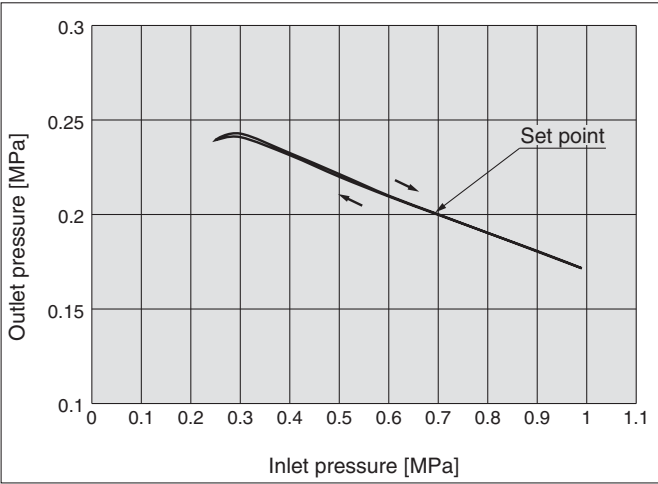


**Pressure Characteristics** (Representative values) Conditions: Inlet pressure 0.7 [MPa], Outlet pressure 0.2 [MPa], Flow rate 20 L/min (ANR)

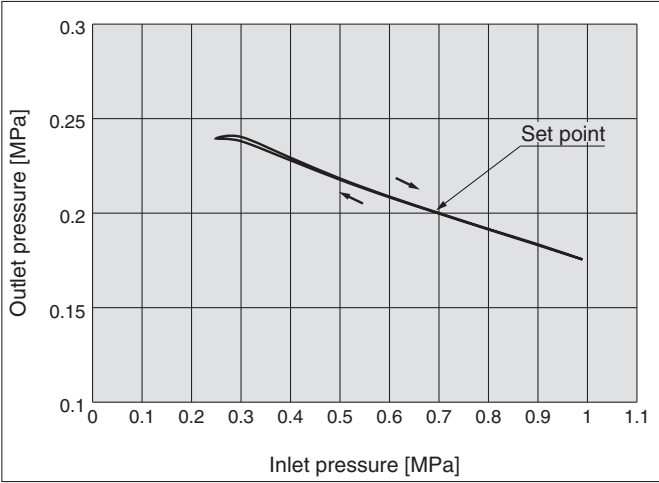
**AR20-A**



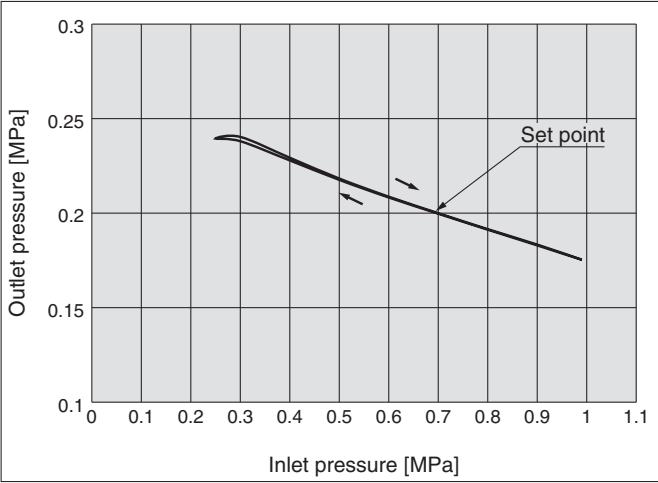
**AR25-A**



**AR30-A**



**AR40-A/AR40-06-A**



AC

AF+AR+AL

AW+AL

AF+AR

AF+AFM+AR

AW+AFM

Attachment

AF

AFM / AFD

AR

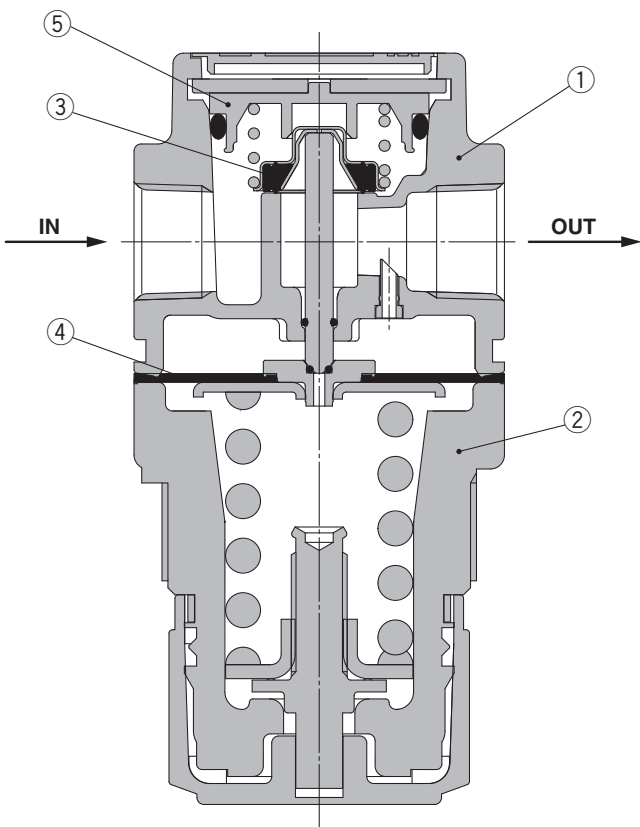
AL

AW

# Series AR20-A to AR40-A

## Construction

AR20-A to 40-06-A



## Component Parts

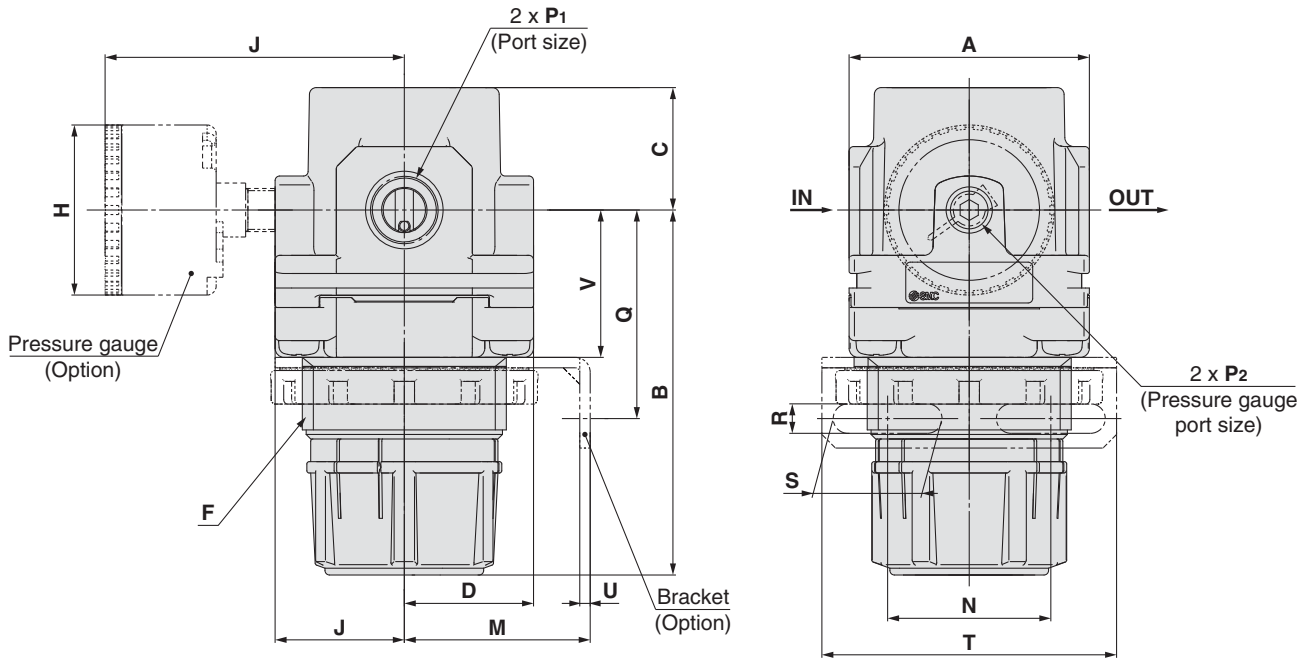
| No. | Description | Material           | Colour |
|-----|-------------|--------------------|--------|
| 1   | Body        | Aluminium die-cast | White  |
| 2   | Bonnet      | Polyacetal         | White  |

## Replacement Parts

| No. | Description          | Material              | Part no.    |        |             |             |           |
|-----|----------------------|-----------------------|-------------|--------|-------------|-------------|-----------|
|     |                      |                       | AR20-A      | AR25-A | AR30-A      | AR40-A      | AR40-06-A |
| 3   | Valve assembly       | Stainless steel, HNBR | AR22P-060AS |        | AR32P-060AS | AR42P-060AS |           |
| 4   | Diaphragm assembly   | Weatherable NBR       | AR22P-150AS |        | AR32P-150AS | AR42P-150AS |           |
| 5   | Valve guide assembly | Polyacetal            | AR22P-050AS |        | AR32P-050AS | AR42P-050AS |           |

## Dimensions

### AR20-A to AR40-06-A



#### Panel fitting dimension

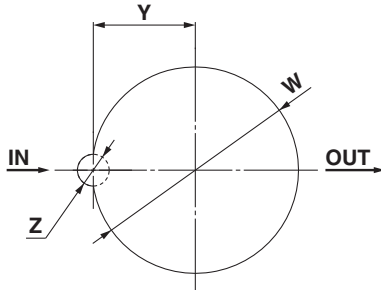


Plate thickness  
AR20-A to AR25-A : MAX.4  
AR30-A to AR40-06-A: MAX.8

| Model     | Standard specifications |                |    |                    |      |      |           |      | Optional specifications   |      |                                              |      |               |    |      |     |      |    |     |             |      |      |   |
|-----------|-------------------------|----------------|----|--------------------|------|------|-----------|------|---------------------------|------|----------------------------------------------|------|---------------|----|------|-----|------|----|-----|-------------|------|------|---|
|           |                         |                |    |                    |      |      |           |      | Round type pressure gauge |      | Round type pressure gauge (with colour zone) |      | Bracket mount |    |      |     |      |    |     | Panel mount |      |      |   |
|           | P <sub>1</sub>          | P <sub>2</sub> | A  | B <sup>Note)</sup> | C    | D    | F         | J    | H                         | J    | H                                            | J    | M             | N  | Q    | R   | S    | T  | U   | V           | W    | Y    | Z |
| AR20-A    | 1/8, 1/4                | 1/8            | 40 | 67.4               | 23.5 | 22   | M36 x 1.5 | 22   | ø37.5                     | 58.5 | ø37.5                                        | 59.5 | 30            | 34 | 43.9 | 5.4 | 15.4 | 55 | 2.3 | 27.3        | 36.5 | 17.5 | 6 |
| AR25-A    | 1/4, 3/8                | 1/8            | 53 | 70.4               | 23.5 | 22   | M36 x 1.5 | 22   | ø37.5                     | 58.5 | ø37.5                                        | 59.5 | 30            | 34 | 44.3 | 5.4 | 15.4 | 55 | 2.3 | 30.3        | 36.5 | 17.5 | 6 |
| AR30-A    | 1/4, 3/8                | 1/8            | 53 | 83.5               | 27   | 28.5 | M45 x 1.5 | 28.5 | ø37.5                     | 65   | ø37.5                                        | 66   | 41            | 36 | 46   | 6.5 | 24   | 65 | 2.3 | 32.5        | 45.5 | 22.5 | 7 |
| AR40-A    | 1/4, 3/8, 1/2           | 1/8            | 70 | 100                | 33.5 | 34.5 | M52 x 1.5 | 34.5 | ø42.5                     | 72   | ø42.5                                        | 72   | 50            | 38 | 54   | 8.5 | 26.5 | 70 | 2.3 | 38.4        | 52.5 | 26   | 7 |
| AR40-06-A | 3/4                     | 1/8            | 75 | 101.5              | 33.5 | 34.5 | M52 x 1.5 | 34.5 | ø42.5                     | 72   | ø42.5                                        | 72   | 50            | 38 | 55.5 | 8.5 | 26.5 | 70 | 2.3 | 39.9        | 52.5 | 26   | 7 |

Note) The total length of B dimension is the length when the filter regulator knob is unlocked.



# Modular Type Lubricators

## Series *AL*

| <b>Lubricator<br/>Series AL</b><br><br><br><br><b>P.53 to 57</b> | Model            | Port size     | Option  |
|---------------------------------------------------------------------------------------------------------------------------------------------------|------------------|---------------|---------|
|                                                                                                                                                   | <b>AL20-A</b>    | 1/8, 1/4      | Bracket |
|                                                                                                                                                   | <b>AL30-A</b>    | 1/4, 3/8      |         |
|                                                                                                                                                   | <b>AL40-A</b>    | 1/4, 3/8, 1/2 |         |
|                                                                                                                                                   | <b>AL40-06-A</b> | 3/4           |         |

AC

AF+AR+AL

AW+AL

AF+AR

AF+AFM+AR

AW+AFM

Attachment

AF

AFM / AFD

AR

**AL**

AW

# Lubricator

# AL20-A to AL40-A

JIS Symbol



AL20-A

AL40-A

## How to Order

AL **30** - **03** **B** - **A**

① ② ③ ④ ⑤

- Option/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) AL30-03B-R-A

|   |                   | Symbol                   | Description             | ①                        |                                                                  |                          |                          |                          |
|---|-------------------|--------------------------|-------------------------|--------------------------|------------------------------------------------------------------|--------------------------|--------------------------|--------------------------|
|   |                   |                          |                         | Body size                |                                                                  |                          |                          |                          |
|   |                   |                          |                         | 20                       | 30                                                               | 40                       |                          |                          |
| ② | Thread type       | —                        | Rc                      | ●                        | ●                                                                | ●                        |                          |                          |
|   |                   | N                        | NPT                     | ●                        | ●                                                                | ●                        |                          |                          |
|   |                   | F                        | G                       | ●                        | ●                                                                | ●                        |                          |                          |
| + |                   |                          |                         |                          |                                                                  |                          |                          |                          |
| ③ | Port size         | 01                       | 1/8                     | ●                        | —                                                                | —                        |                          |                          |
|   |                   | 02                       | 1/4                     | ●                        | ●                                                                | ●                        |                          |                          |
|   |                   | 03                       | 3/8                     | —                        | ●                                                                | ●                        |                          |                          |
|   |                   | 04                       | 1/2                     | —                        | —                                                                | ●                        |                          |                          |
|   |                   | 06                       | 3/4                     | —                        | —                                                                | ●                        |                          |                          |
| + |                   |                          |                         |                          |                                                                  |                          |                          |                          |
| ④ | Option (Mounting) | —                        | Without mounting option | ●                        | ●                                                                | ●                        |                          |                          |
|   |                   | B <small>Note 1)</small> | With bracket            | ●                        | ●                                                                | ●                        |                          |                          |
| + |                   |                          |                         |                          |                                                                  |                          |                          |                          |
| ⑤ | Semi-standard     | a                        | Bowl                    | —                        | Polycarbonate bowl                                               | ●                        | ●                        | ●                        |
|   |                   |                          |                         | C                        | With bowl guard                                                  | ●                        | — <small>Note 2)</small> | — <small>Note 2)</small> |
|   |                   | +                        |                         |                          |                                                                  |                          |                          |                          |
|   |                   | b                        | Lubricant exhaust port  | —                        | Without drain cock                                               | ●                        | ●                        | ●                        |
|   |                   |                          |                         | 3                        | With drain cock                                                  | ●                        | ●                        | ●                        |
|   |                   |                          |                         | 3W                       | Drain cock with barb fitting (for ø6 x ø4 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 imperial units: MPa     | ●                        | ●                        | ●                        |
|   |                   |                          |                         | Z <small>Note 3)</small> | Name plate and caution plate for bowl in imperial units: psi, °F | ○ <small>Note 4)</small> | ○ <small>Note 4)</small> | ○ <small>Note 4)</small> |

Note 1) Option B is not assembled and supplied loose at the time of shipment.

Note 2) Standard material (polycarbonate)

Note 3) For thread type: NPT. This product is for overseas use only according to the new Measurement Law. (The SI unit type is provided for use in Japan.)

Note 4) ○: For thread type: NPT only

## Standard Specifications

| Model                                                        | AL20-A                         | AL30-A                   | AL40-A                        | AL40-06-A |
|--------------------------------------------------------------|--------------------------------|--------------------------|-------------------------------|-----------|
| Port size                                                    | 1/8, 1/4                       | 1/4, 3/8                 | 1/4, 3/8, 1/2                 | 3/4       |
| Fluid                                                        | Air                            |                          |                               |           |
| Proof pressure                                               | 1.5 MPa                        |                          |                               |           |
| Maximum operating pressure                                   | 1.0 MPa                        |                          |                               |           |
| Ambient and fluid temperature                                | – 5 to 60°C (with no freezing) |                          |                               |           |
| Minimum dripping flow rate<br>[L/min (ANR)] <sup>Note)</sup> | 15                             | 1/4: 30<br>3/8: 40       | 1/4: 30<br>3/8: 40<br>1/2: 50 | 50        |
| Oil capacity [cm³]                                           | 25                             | 55                       | 135                           |           |
| Recommended lubricant                                        | Class 1 turbine oil (ISO VG32) |                          |                               |           |
| Bowl material                                                | Polycarbonate                  |                          |                               |           |
| Bowl guard                                                   | Semi-standard (Steel)          | Standard (Polycarbonate) |                               |           |
| Weight [kg]                                                  | 0.10                           | 0.20                     | 0.38                          | 0.43      |

Note) • The flow rate is 5 drops or greater/min under the following conditions: Inlet pressure of 0.5 MPa; Class 1 turbine oil (ISO VG32); Temperature at 20°C; Oil adjustment valve fully opened.

• Use air consumption flow rate for minimum dripping flow rate.

## Option/Part No.

| Optional specifications           | Model       |             |             |             |
|-----------------------------------|-------------|-------------|-------------|-------------|
|                                   | AL20-A      | AL30-A      | AL40-A      | AL40-06-A   |
| Bracket assembly <sup>Note)</sup> | AF22P-050AS | AF32P-050AS | AF42P-050AS | AF42P-070AS |

Note) Assembly of a bracket and 2 mounting screws.

## Semi-standard/Bowl Assembly Part No.

| Semi-standard specifications |                 |                   |                 | Model     |           |           |           |
|------------------------------|-----------------|-------------------|-----------------|-----------|-----------|-----------|-----------|
| Bowl material                | With drain cock | With barb fitting | With bowl guard | AL20-A    | AL30-A    | AL40-A    | AL40-06-A |
| Polycarbonate                | ●               | —                 | —               | C2SL-3-A  | C3SL-3-A  | C4SL-3-A  |           |
|                              | —               | —                 | ●               | C2SL-C-A  | —         | —         |           |
|                              | ●               | —                 | ●               | C2SL-3C-A | —         | —         |           |
|                              | ●               | ●                 | —               | —         | C3SL-3W-A | C4SL-3W-A |           |

Note) • The bowl assembly includes the bowl O-ring.

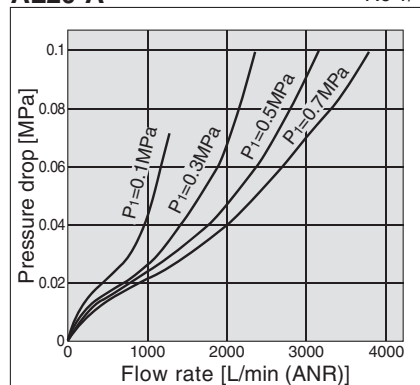
• Please consult with SMC separately for psi and °F unit display specifications.

# Series AL20-A to AL40-A

## Flow Characteristics (Representative values)

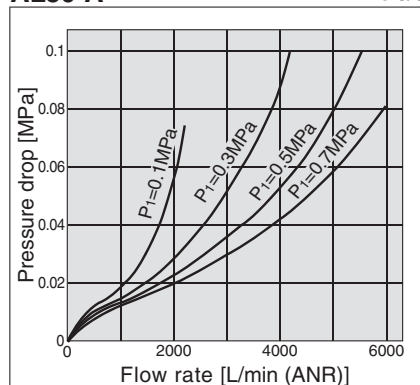
AL20-A

Rc 1/4



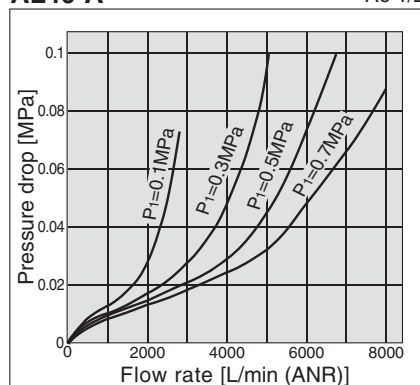
AL30-A

Rc 3/8



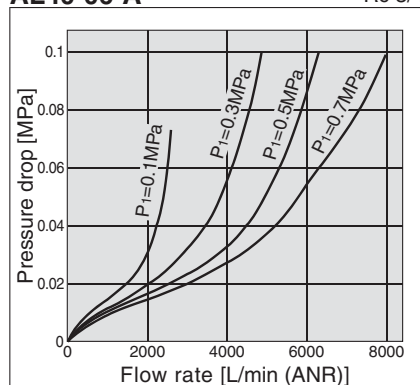
AL40-A

Rc 1/2



AL40-06-A

Rc 3/4



## ⚠ Specific Product Precautions

Be sure to read before handling. Refer to back cover for Safety Instructions, "Handling Precautions for SMC Products" (M-E03-3) and the Operation Manual for F.R.L. Precautions.

### Selection

#### ⚠ Warning

1. Do not introduce air from the outlet side as this can damage the damper.
2. The standard bowl for the air filter, filter regulator, and lubricator, as well as the sight dome for the lubricator and bowl guard 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<br>Polycarbonate |
|-------------------|-------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------|---------------------------|
| 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>Sulfate of potash<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 dimethyl<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              | ×                         |
| Other             | Thread-lock fluid<br>Seawater<br>Leak tester                                                                      | —                                                                     | ×                         |

△ : Some effects may occur × : Effects will occur

#### ⚠ Caution

1. Use a check valve (Series AKM) to prevent back flow of the lubricant when redirecting the air flow before the lubricator.

### Maintenance

#### ⚠ Warning

1. For the AL20-A type, replenish the lubricant after releasing the inlet pressure. Lubrication cannot take place under a pressurised condition.
2. Adjustment of the oil regulating valve for models from the AL20-A to AL40-A should be carried out manually. Turning it counterclockwise increases the dripping amount, and turning it clockwise reduces the dripping amount. The use of tools, etc. can result in damage to the unit. From the fully closed position, three rotations will bring it to the fully open position. Please do not rotate it any further than this. Note that the numbered scale markings are guidelines for adjusting the position, and not indicators of the dripping amount.

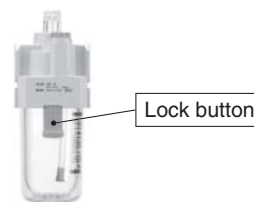
#### ⚠ Caution

1. Check the dripping amount once a day. Drip failure can cause damage to the components that need lubrication.

### Mounting and Adjustment

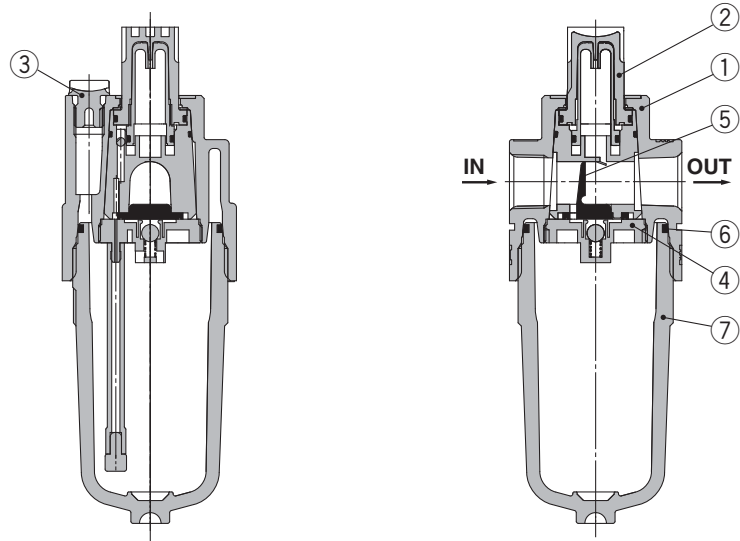
#### ⚠ Caution

1. When the bowl is installed, 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.

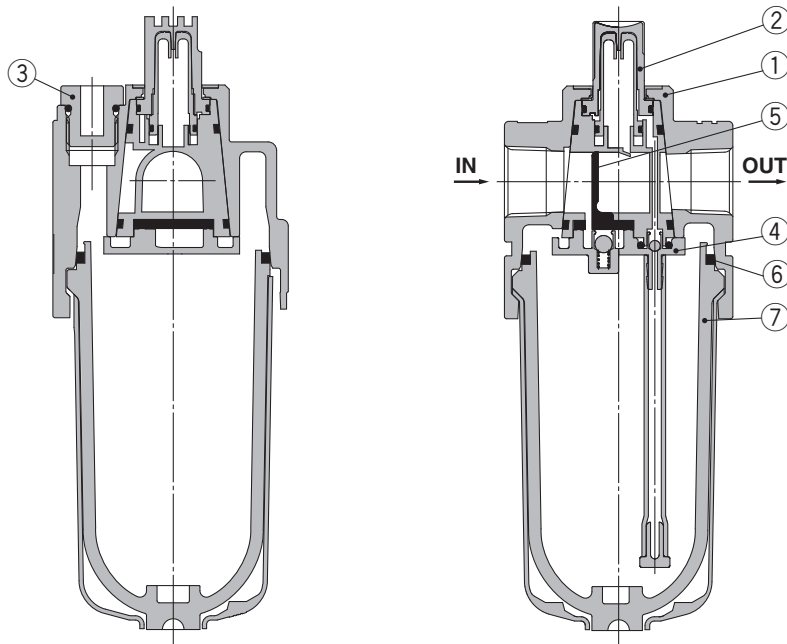


**Construction**

**AL20-A**



**AL30-A, AL40-A**



**Component Parts**

| No. | Description | Material           | Model            | Colour |
|-----|-------------|--------------------|------------------|--------|
| 1   | Body        | Aluminium die-cast | AL20-A to AL40-A | White  |

**Replacement Parts**

| No. | Description                    | Material        | Part no.    |             |             |           |
|-----|--------------------------------|-----------------|-------------|-------------|-------------|-----------|
|     |                                |                 | AL20-A      | AL30-A      | AL40-A      | AL40-06-A |
| 2   | Sight dome assembly            | Polycarbonate   | AL20P-080AS |             |             |           |
| 3   | Lubrication plug assembly      | —               | AL22P-060AS | AL32P-060AS | AL42P-060AS |           |
| 4   | Damper retainer assembly       | —               | AL20P-030AS | AL30P-030AS | AL40P-030AS |           |
| 5   | Damper (assembly)              | Synthetic resin | AL20P-040S  | AL30P-040S  | AL40P-040S  |           |
| 6   | Bowl seal                      | NBR             | C2SFP-260S  | C32FP-260S  | C42FP-260S  |           |
| 7   | Bowl assembly <sup>Note)</sup> | Polycarbonate   | C2SL-A      | C3SL-A      | C4SL-A      |           |

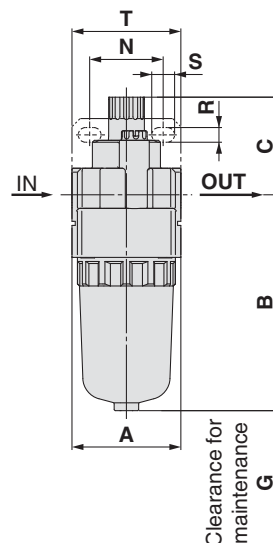
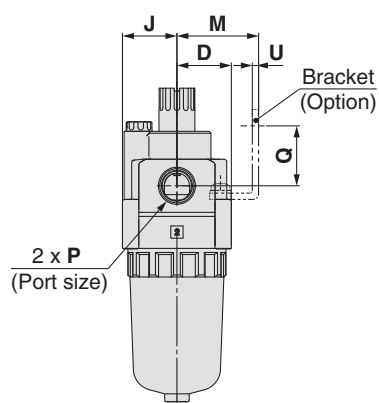
Note) Bowl seal is included. Please contact SMC regarding the bowl assembly supply for psi and °F unit specifications.

|            |
|------------|
| AC         |
| AF+AR+AL   |
| AW+AL      |
| AF+AR      |
| AF+AFM+AR  |
| AW+AFM     |
| Attachment |
| AF         |
| AFM / AFD  |
| AR         |
| AL         |
| AW         |

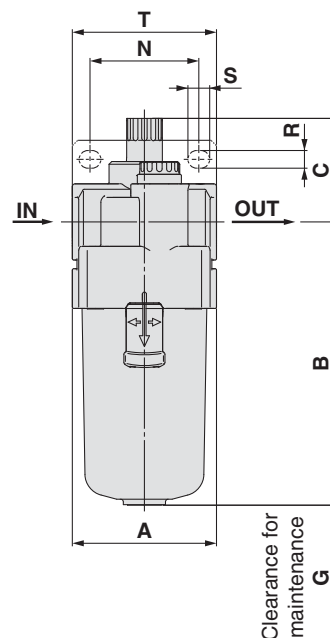
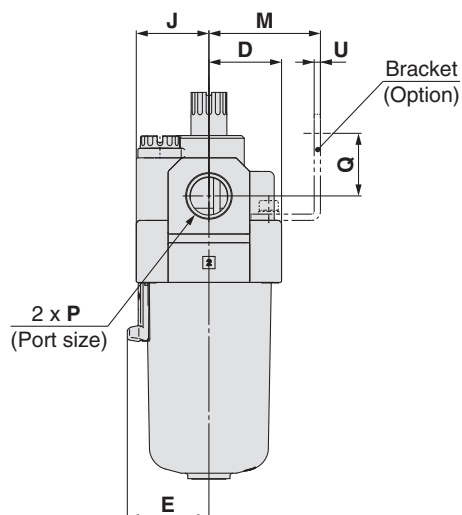
# Series AL20-A to AL40-A

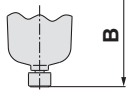
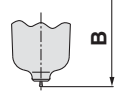
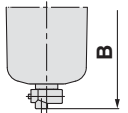
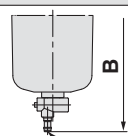
## Dimensions

### AL20-A



### AL30-A, AL40-A



| Applicable model                      | AL20-A                                                                              |                                                                                     | AL30-A to AL40-A                                                                      |                                                                                                                                      |
|---------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| Optional/Semi-standard specifications | With drain cock                                                                     | Metal bowl with drain cock                                                          | With drain cock                                                                       | Drain cock with barb fitting                                                                                                         |
| Dimensions                            |  |  |  | <br>Barb fitting<br>Applicable<br>tubing: T0604 |

| Model     | Standard specifications |    |       |      |      |      |     |      | Optional specifications |    |    |     |      |    |     |
|-----------|-------------------------|----|-------|------|------|------|-----|------|-------------------------|----|----|-----|------|----|-----|
|           | P                       | A  | B     | C    | D    | E    | G   | J    | M                       | N  | Q  | R   | S    | T  | U   |
| AL20-A    | 1/8, 1/4                | 40 | 79.3  | 35.9 | 20   | —    | 60  | 20   | 30                      | 27 | 22 | 5.4 | 8.4  | 40 | 2.3 |
| AL30-A    | 1/4, 3/8                | 53 | 104.1 | 38.1 | 26.7 | 30   | 80  | 26.7 | 41                      | 40 | 23 | 6.5 | 8    | 53 | 2.3 |
| AL40-A    | 1/4, 3/8, 1/2           | 70 | 136.1 | 39.8 | 35.5 | 38.4 | 110 | 35.5 | 50                      | 54 | 26 | 8.5 | 10.5 | 70 | 2.3 |
| AL40-06-A | 3/4                     | 75 | 138.1 | 37.8 | 35.5 | 38.4 | 110 | 35.5 | 50                      | 54 | 25 | 8.5 | 10.5 | 70 | 2.3 |

| Model     | Semi-standard specifications |                   |
|-----------|------------------------------|-------------------|
|           | With drain cock              | With barb fitting |
|           | B                            | B                 |
| AL20-A    | 87.7                         | —                 |
| AL30-A    | 115.1                        | 123.6             |
| AL40-A    | 147.1                        | 155.6             |
| AL40-06-A | 149.1                        | 157.6             |

# Modular Type Filter Regulators *Series AW*

| Filter Regulator<br>Series AW                                                                       |  | Model     | Port size     | Options                                                                                                                                                                                   |
|-----------------------------------------------------------------------------------------------------|--|-----------|---------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  <p>P.59 to 65</p> |  | AW20-A    | 1/8, 1/4      | Bracket<br><br>Float type auto drain<br><br>Round type pressure gauge<br><br>With set nut (for panel mount)*<br><br><small>* Mounting pitch is different from existing AW Series.</small> |
|                                                                                                     |  | AW30-A    | 1/4, 3/8      |                                                                                                                                                                                           |
|                                                                                                     |  | AW40-A    | 1/4, 3/8, 1/2 |                                                                                                                                                                                           |
|                                                                                                     |  | AW40-06-A | 3/4           |                                                                                                                                                                                           |
|                                                                                                     |  |           |               |                                                                                                                                                                                           |

AC

AF+AR+AL

AW+AL

AF+AR

AF+AFM+AR

AW+AFM

Attachment

AF

AFM / AFD

AR

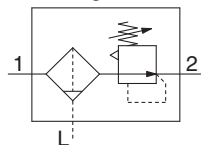
AL

AW

# Filter Regulator

# AW20-A to AW40-A

JIS Symbol  
Filter Regulator



- Integrated filter and regulator units save space and require less piping.

## How to Order

AW **30** - **03** **BG** - **A**

1
2
3
4
5

- Option/Semi-standard: Select one each for a to i.
- Option/Semi-standard symbol: When more than one specification is required, indicate in alphanumeric order.  
Example) AW30-03BG-1N-A

|   |                               | Symbol                                | Description                                 | ①                                                                      |                                |    |                           |                           |
|---|-------------------------------|---------------------------------------|---------------------------------------------|------------------------------------------------------------------------|--------------------------------|----|---------------------------|---------------------------|
|   |                               |                                       |                                             | Body size                                                              |                                |    |                           |                           |
|   |                               |                                       |                                             | 20                                                                     | 30                             | 40 |                           |                           |
| ② | Thread Type                   | —                                     | Rc                                          | ●                                                                      | ●                              | ●  |                           |                           |
|   |                               | N <small>Note 1)</small>              | NPT                                         | ●                                                                      | ●                              | ●  |                           |                           |
|   |                               | F <small>Note 2)</small>              | G                                           | ●                                                                      | ●                              | ●  |                           |                           |
|   |                               |                                       | +                                           |                                                                        |                                |    |                           |                           |
| ③ | Port size                     | 01                                    | 1/8                                         | ●                                                                      | —                              | —  |                           |                           |
|   |                               | 02                                    | 1/4                                         | ●                                                                      | ●                              | ●  |                           |                           |
|   |                               | 03                                    | 3/8                                         | —                                                                      | ●                              | ●  |                           |                           |
|   |                               | 04                                    | 1/2                                         | —                                                                      | —                              | ●  |                           |                           |
|   |                               | 06                                    | 3/4                                         | —                                                                      | —                              | ●  |                           |                           |
|   |                               |                                       | +                                           |                                                                        |                                |    |                           |                           |
| ④ | Option <small>Note 3)</small> | a                                     | Mounting                                    | —                                                                      | Without mounting option        | ●  | ●                         | ●                         |
|   |                               |                                       |                                             | B <small>Note 4)</small>                                               | With bracket                   | ●  | ●                         | ●                         |
|   |                               |                                       |                                             | H                                                                      | With set nut (for panel mount) | ●  | ●                         | ●                         |
|   |                               |                                       |                                             | +                                                                      |                                |    |                           |                           |
|   | b                             | Float type auto drain                 | —                                           | Without auto drain                                                     | ●                              | ●  | ●                         |                           |
|   |                               |                                       | C <small>Note 5)</small>                    | N.C. (Normal close) Drain port is closed when pressure is not applied. | ●                              | ●  | ●                         |                           |
|   |                               |                                       | D <small>Note 6)</small>                    | N.O. (Normal open) Drain port is open when pressure is not applied.    | —                              | ●  | ●                         |                           |
|   |                               |                                       |                                             | +                                                                      |                                |    |                           |                           |
|   | c                             | Pressure gauge <small>Note 7)</small> | —                                           | Without pressure gauge                                                 | ●                              | ●  | ●                         |                           |
|   |                               |                                       | G                                           | Round type pressure gauge (with limit indicator)                       | ●                              | ●  | ●                         |                           |
| M |                               |                                       | Round type pressure gauge (with color zone) | ●                                                                      | ●                              | ●  |                           |                           |
|   |                               |                                       | +                                           |                                                                        |                                |    |                           |                           |
| ⑤ | Semi-standard                 | d                                     | Set pressure <small>Note 8)</small>         | —                                                                      | 0.05 to 0.7 MPa setting        | ●  | ●                         | ●                         |
|   |                               |                                       |                                             | 1                                                                      | 0.02 to 0.2 MPa setting        | ●  | ●                         | ●                         |
|   |                               |                                       |                                             |                                                                        | +                              |    |                           |                           |
|   |                               | e                                     | Bowl <small>Note 9)</small>                 | —                                                                      | Polycarbonate bowl             | ●  | ●                         | ●                         |
|   |                               |                                       |                                             | C                                                                      | With bowl guard                | ●  | — <small>Note 10)</small> | — <small>Note 10)</small> |

# Filter Regulator *Series AW20-A to AW40-A*



AW20-A

AW40-A

|               | Symbol     | Description | ①          |            |            |
|---------------|------------|-------------|------------|------------|------------|
|               |            |             | Body size  |            |            |
|               |            |             | 20         | 30         | 40         |
| 5             | f          | —           | ●          | ●          | ●          |
|               |            | J Note 11)  | ●          | —          | —          |
|               |            | —           | —          | ●          | ●          |
|               |            | W           | —          | ●          | ●          |
|               | g          | +           |            |            |            |
|               |            | —           | ●          | ●          | ●          |
|               |            | N           | ●          | ●          | ●          |
|               | h          | +           |            |            |            |
|               |            | —           | ●          | ●          | ●          |
|               |            | R           | ●          | ●          | ●          |
|               | i          | +           |            |            |            |
|               |            | —           | ●          | ●          | ●          |
| Semi-standard | Z Note 12) | —           | ○ Note 13) | ○ Note 13) | ○ Note 13) |
|               |            | —           | ○ Note 13) | ○ Note 13) | ○ Note 13) |

Note 1) Drain guide is NPT 1/8 (applicable to the AW20-A) and NPT 1/4 (applicable to the AW30-A to AW40-A). The auto drain port comes with ø3/8" One-touch fitting (applicable to the AW30-A to AW40-A).

Note 2) Drain guide is G 1/8 (applicable to the AW20-A) and G 1/4 (applicable to the AW30-A to AW40-A).

Note 3) Option B, G, H, M are not assembled and supplied loose at the time of shipment.

Note 4) Assembly of a bracket and set nuts.

Note 5) 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.

Note 6) 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.

Note 7) When the pressure gauge is attached, a 1.0 MPa pressure gauge will be fitted for standard (0.7 MPa) type. 0.4 MPa pressure gauge for 0.2 MPa type.

Note 8) Pressure can be set higher than the specification pressure in some cases, but use pressure within the specification range.

Note 9) Refer to Chemical data on page 62 for chemical resistance of the bowl.

Note 10) Standard material (polycarbonate)

Note 11) Without a valve function

Note 12) For thread type: NPT.

Note 13) ○: For thread type: NPT only

## Standard Specifications

| Model                         | AW20-A                        | AW30-A                   | AW40-A        | AW40-06-A |
|-------------------------------|-------------------------------|--------------------------|---------------|-----------|
| Port size                     | 1/8, 1/4                      | 1/4, 3/8                 | 1/4, 3/8, 1/2 | 3/4       |
| Pressure gauge port size      | 1/8                           |                          |               |           |
| Fluid                         | Air                           |                          |               |           |
| Ambient and fluid temperature | -5 to 60°C (with no freezing) |                          |               |           |
| Proof pressure                | 1.5 MPa                       |                          |               |           |
| Maximum operating pressure    | 1.0 MPa                       |                          |               |           |
| Set pressure range            | 0.05 to 0.7 MPa               |                          |               |           |
| Nominal filtration rating     | 5 µm                          |                          |               |           |
| Drain capacity [cm³]          | 8                             | 25                       | 45            |           |
| Bowl material                 | Polycarbonate                 |                          |               |           |
| Bowl guard                    | Semi-standard (Steel)         | Standard (Polycarbonate) |               |           |
| Construction                  | Relieving type                |                          |               |           |
| Weight [kg]                   | 0.21                          | 0.41                     | 0.75          | 0.81      |

# Series AW20-A to AW40-A

## Options/Part No.

| Optional specifications                                     |                                                     |                         | Model        |             |              |           |
|-------------------------------------------------------------|-----------------------------------------------------|-------------------------|--------------|-------------|--------------|-----------|
|                                                             |                                                     |                         | AW20-A       | AW30-A      | AW40-A       | AW40-06-A |
| Bracket assembly <sup>Note 1)</sup>                         |                                                     |                         | AR22P-270AS  | AR32P-270AS | AR42P-270AS  |           |
| Set nut                                                     |                                                     |                         | AR22P-260S   | AR32P-260S  | AR42P-260S   |           |
| Pressure gauge                                              | Round type <sup>Note 2)</sup>                       | Standard                | G36-10-□01   |             | G46-10-□01   |           |
|                                                             |                                                     | 0.02 to 0.2 MPa setting | G36-4-□01    |             | G46-4-□01    |           |
|                                                             | Round type <sup>Note 2)</sup><br>(with colour zone) | Standard                | G36-10-□01-L |             | G46-10-□01-L |           |
|                                                             |                                                     | 0.02 to 0.2 MPa setting | G36-4-□01-L  |             | G46-4-□01-L  |           |
| Float type auto drain <sup>Note 3)</sup> <sup>Note 4)</sup> |                                                     | N.C.                    | AD27-A       | AD37-A      | AD47-A       |           |
|                                                             |                                                     | N.O.                    | —            | AD38-A      | AD48-A       |           |

## Semi-standard/Bowl Assembly Part No.

| Semi-standard specifications |                                                         |      |                                            |                   |                 | Model     |          |          |           |
|------------------------------|---------------------------------------------------------|------|--------------------------------------------|-------------------|-----------------|-----------|----------|----------|-----------|
| Bowl material                | <small>Note 3) Note 4)</small><br>Float type auto drain |      | <small>Note 4)</small><br>With drain guide | With barb fitting | With bowl guard | AW20-A    | AW30-A   | AW40-A   | AW40-06-A |
|                              | N.C.                                                    | N.O. |                                            |                   |                 |           |          |          |           |
| Polycarbonate                | —                                                       | —    | —                                          | —                 | ●               | C2SF-C-A  | —        | —        | —         |
|                              | ●                                                       | —    | —                                          | —                 | ●               | AD27-C-A  | —        | —        | —         |
|                              | —                                                       | —    | ●                                          | —                 | —               | C2SF-J-A  | C3SF-J-A | C4SF-J-A |           |
|                              | —                                                       | —    | —                                          | ●                 | —               | —         | C3SF-W-A | C4SF-W-A |           |
|                              | —                                                       | —    | ●                                          | —                 | ●               | C2SF-CJ-A | —        | —        |           |

Note 1) Assembly of a bracket and set nuts

Note 2) □ in part numbers for a round pressure gauge indicates a type of connection thread. No indication is necessary for R; however, indicate N for NPT. Please contact SMC regarding the connection thread NPT and pressure gauge supply for psi unit specifications.

Note 3) Minimum operating pressure: N.O. type—0.1 MPa; N.C. type—0.1 MPa (AD27-A) and 0.15 MPa (AD37-A/47-A).  
Please consult with SMC separately for psi and °F unit display specifications.

Note 4) Please consult SMC for details on drain piping to fit NPT or G port sizes.  
The bowl assembly includes the bowl O-ring.

## ⚠ Specific Product Precautions

Be sure to read before handling. Refer to back cover for Safety Instructions, “Handling Precautions for SMC Products” (M-E03-3) and the Operation Manual for F.R.L. Precautions.

### Design / Selection

#### ⚠ Warning

- Although exhaust of the residual pressure to the inlet side is possible when eliminating the inlet pressure, exhaust is not possible when the set pressure is 0.15 MPa or less. Use the regulator with backflow function.
- The standard bowl for the air filter, filter regulator, and lubricator, as well as the sight dome for the lubricator and bowl guard 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<br>Polycarbonate |
|-------------------|-------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------|---------------------------|
| 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>Sulfate of potash<br>Sulfate of soda                                                            | —                                                                     | ×                         |
| Chlorine solvents | Carbon tetrachloride<br>Chloroform<br>Ethylene chloride<br>Methylene chloride                                     | Cleansing liquid for metals<br>Dry cleaning<br>Printing ink 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 dimethyl<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 accelerato               | ×                         |
| Other             | Thread-lock fluid<br>Seawater<br>Leak tester                                                                      | —                                                                     | ×                         |

△ : Some effects may occur    × : Effects will occur

### Maintenance

#### ⚠ Warning

- 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 and Adjustment

#### ⚠ Warning

- Set the regulator while verifying the displayed values of the inlet and outlet pressure gauges. Turning the regulator knob excessively can cause damage to the internal parts.
- Do not use tools on the pressure regulator knob as this may cause damage. It must be operated manually.

### Mounting and Adjustment

#### ⚠ Caution

- Be sure to unlock the knob before adjusting the pressure and lock it after setting the pressure. Failure to follow this procedure can cause damage to the knob and the outlet pressure may fluctuate.
  - Pull the pressure regulator knob to unlock. (You can visually verify this with the “orange mark” that appears in the gap.)
  - Push the pressure regulator knob to lock. When the knob is not easily locked, turn it left and right a little and then push it (when the knob is locked, the “orange mark”, i.e., the gap will disappear).
- Pulsation will be generated when the difference between the inlet and the outlet pressure is large. In this case, reduce the pressure difference between the inlet and the outlet. Consult SMC if the pulsation problem is not resolved.
- When the bowl is installed, 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.



AC

AF+AR+AL

AW+AL

AF+AR

AF+AFM+AR

AW+AFM

Attachment

AF

AFM / AFD

AR

AL

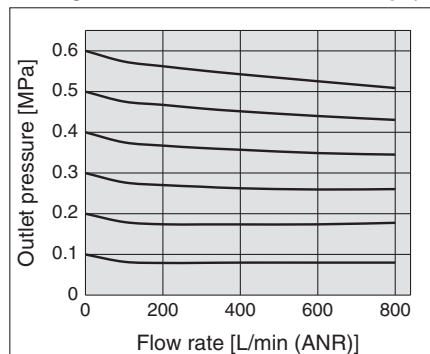
AW

# Series AW20-A to AW40-A

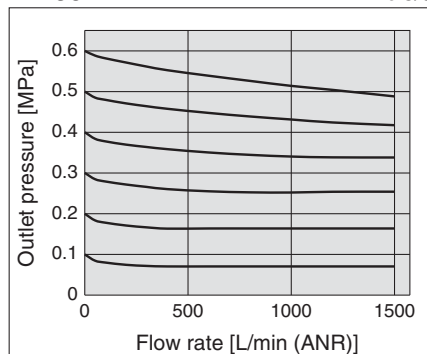
## Flow Characteristics (Representative values)

Condition: Inlet pressure 0.7 [MPa]

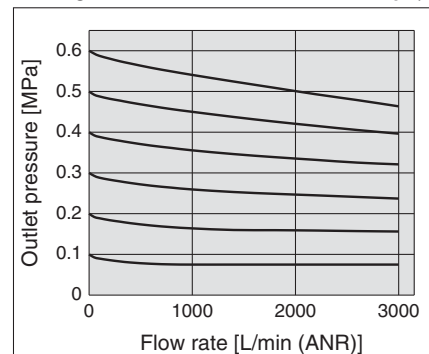
**AW20-A** Rc 1/4



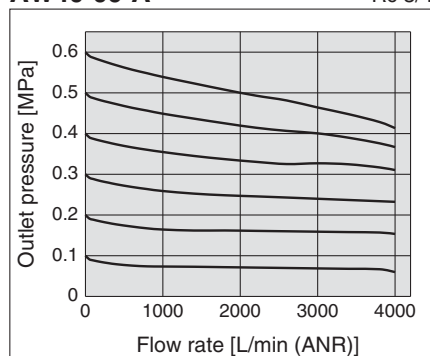
**AW30-A** Rc 3/8



**AW40-A** Rc 1/2



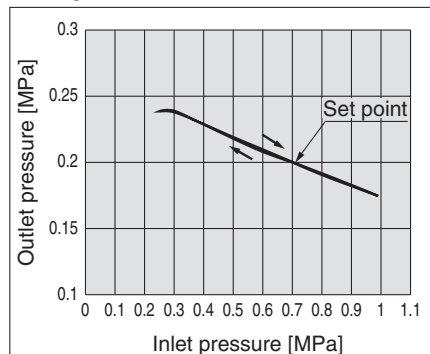
**AW40-06-A** Rc 3/4



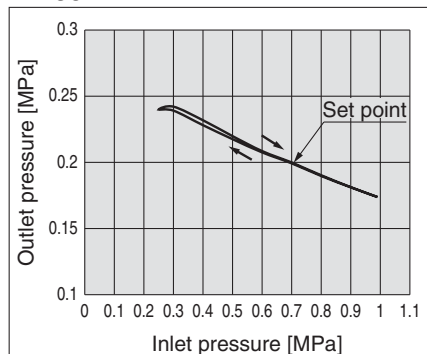
## Pressure Characteristics (Representative values)

Conditions: Inlet pressure 0.7 [MPa], Outlet pressure 0.2 [MPa], Flow rate 20 [L/min (ANR)]

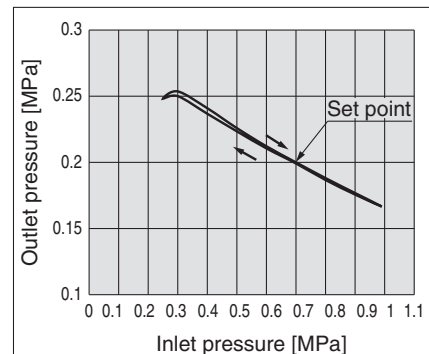
**AW20-A**



**AW30-A**

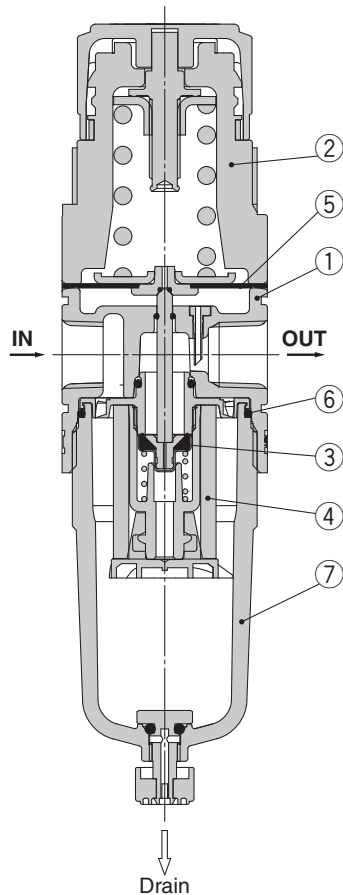


**AW40-A/AW40-06-A**

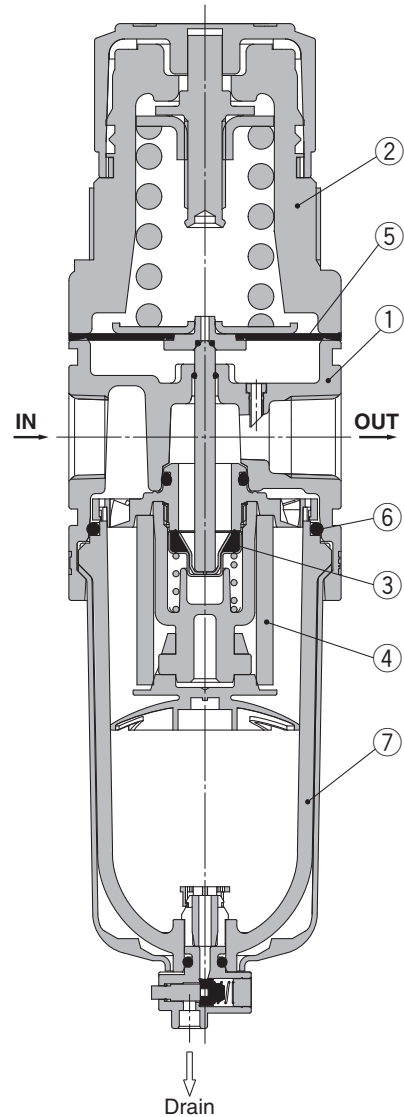


## Construction

### AW20-A



### AW30-A to AW40-06-A



### Component Parts

| No. | Description | Material           | Colour |
|-----|-------------|--------------------|--------|
| 1   | Body        | Aluminium die-cast | White  |
| 2   | Bonnet      | Polyacetal         | White  |

### Replacement Parts

| No. | Description                    | Material              | Part no.    |             |             |           |
|-----|--------------------------------|-----------------------|-------------|-------------|-------------|-----------|
|     |                                |                       | AW20-A      | AW30-A      | AW40-A      | AW40-06-A |
| 3   | Valve assembly                 | Stainless steel, HNBR | AW22P-060AS | AW32P-060AS | AW42P-060AS |           |
| 4   | Filter element                 | Non-woven fabric      | AF20P-060S  | AF30P-060S  | AF40P-060S  |           |
| 5   | Diaphragm assembly             | Weatherable NBR       | AR22P-150AS | AR32P-150AS | AR42P-150AS |           |
| 6   | Bowl seal                      | NBR                   | C2SFP-260S  | C32FP-260S  | C42FP-260S  |           |
| 7   | Bowl assembly <sup>Note)</sup> | Polycarbonate         | C2SF-A      | C3SF-A      | C4SF-A      |           |

Note) Bowl seal is included. Please contact SMC regarding the bowl assembly supply for psi and °F unit specifications.

AC

AF+AR+AL

AW+AL

AF+AR

AF+AFM+AR

AW+AFM

Attachment

AF

AFM / AFD

AR

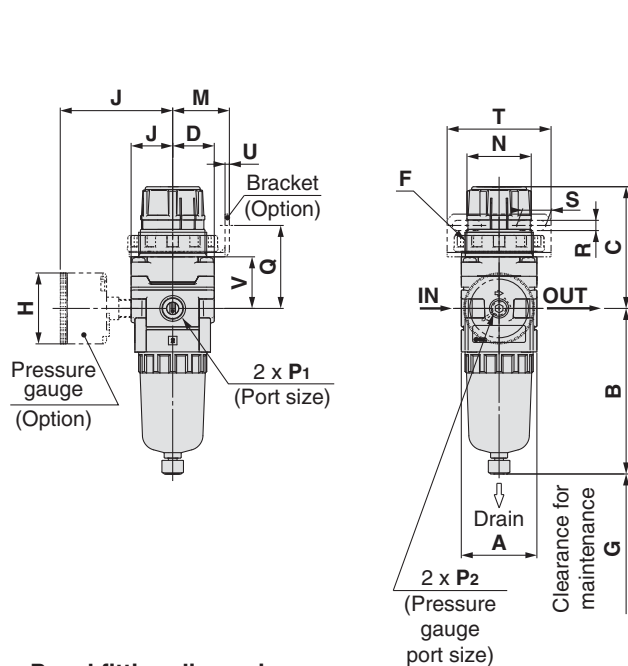
AL

AW

# Series AW20-A to AW40-A

## Dimensions

### AW20-A



Panel fitting dimension

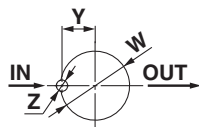
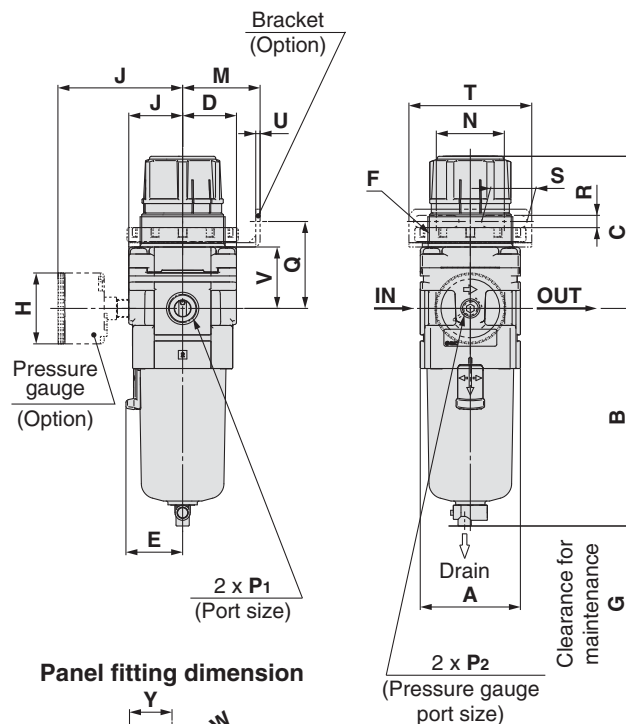


Plate thickness  
AW20-A : Max.4

### AW30-A to AW40-06-A



Panel fitting dimension

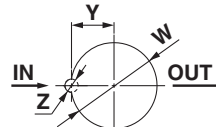
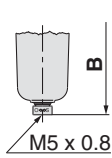
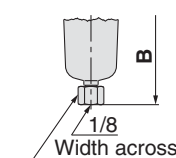
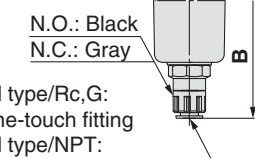
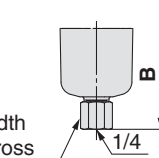
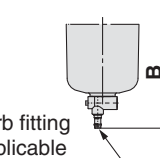


Plate thickness  
AW30-A to AW40-06-A : MAX.8

| Applicable model                      | AW20-A                                                                              |                                                                                     | AW30-A to AW40-A                                                                                               |                                                                                       |                                                                                       |
|---------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| Optional/Semi-standard specifications | With auto drain (N.C.)                                                              | With drain guide                                                                    | With auto drain (N.O./N.C.)                                                                                    | With drain guide                                                                      | Drain cock with barb fitting                                                          |
| Dimensions                            |  |  |  |  |  |

| Model     | Standard specifications |     |    |       |                    |      |      |           |    |      | Optional specifications   |      |                                              |      |
|-----------|-------------------------|-----|----|-------|--------------------|------|------|-----------|----|------|---------------------------|------|----------------------------------------------|------|
|           | P1                      | P2  | A  | B     | C <sup>Note)</sup> | D    | E    | F         | G  | J    | Round type pressure gauge |      | Round type pressure gauge (with colour zone) |      |
| AW20-A    | 1/8, 1/4                | 1/8 | 40 | 87.6  | 67.4               | 22   | —    | M36 x 1.5 | 25 | 22   | ø37.5                     | 58.5 | ø37.5                                        | 59.5 |
| AW30-A    | 1/4, 3/8                | 1/8 | 53 | 115.1 | 83.5               | 28.5 | 30   | M45 x 1.5 | 35 | 28.5 | ø37.5                     | 65   | ø37.5                                        | 66   |
| AW40-A    | 1/4, 3/8, 1/2           | 1/8 | 70 | 147.1 | 100                | 34.5 | 38.4 | M52 x 1.5 | 40 | 34.5 | ø42.5                     | 72   | ø42.5                                        | 72   |
| AW40-06-A | 3/4                     | 1/8 | 75 | 149.1 | 101.5              | 34.5 | 38.4 | M52 x 1.5 | 40 | 34.5 | ø42.5                     | 72   | ø42.5                                        | 72   |

| Model     | Optional specifications |    |      |     |      |    |             |      |      |      |   | Semi-standard specifications |                   |                  |
|-----------|-------------------------|----|------|-----|------|----|-------------|------|------|------|---|------------------------------|-------------------|------------------|
|           | Bracket mount           |    |      |     |      |    | Panel mount |      |      |      |   | With auto drain              | With barb fitting | With drain guide |
| AW20-A    | M                       | N  | Q    | R   | S    | T  | U           | V    | W    | Y    | Z | B                            | B                 | B                |
| AW30-A    | 30                      | 34 | 43.9 | 5.4 | 15.4 | 55 | 2.3         | 27.3 | 36.5 | 17.5 | 6 | 104.9                        | —                 | 91.4             |
| AW40-A    | 41                      | 36 | 46   | 6.5 | 24   | 65 | 2.3         | 32.5 | 45.5 | 22.5 | 7 | 156.8                        | 123.6             | 121.9            |
| AW40-06-A | 50                      | 38 | 54   | 8.5 | 26.5 | 70 | 2.3         | 38.4 | 52.5 | 26   | 7 | 186.9                        | 155.6             | 153.9            |
| AW40-06-A | 50                      | 38 | 55.5 | 8.5 | 26.5 | 70 | 2.3         | 39.9 | 52.5 | 26   | 7 | 188.9                        | 157.6             | 155.9            |

Note) The total length of C dimension is the length when the filter regulator knob is unlocked.

| AW | AL | AR | AFM / AFD | AF | Attachment | AW+AFM | AF+AFM+AR | AF+AR | AW+AL | AF+AR+AL | AC |
|----|----|----|-----------|----|------------|--------|-----------|-------|-------|----------|----|
|----|----|----|-----------|----|------------|--------|-----------|-------|-------|----------|----|





## 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.

-  **Caution:** **Caution** indicates a hazard with a low level of risk which, if not avoided, could result in minor or moderate injury.
-  **Warning:** **Warning** indicates a hazard with a medium level of risk which, if not avoided, could result in death or serious injury.
-  **Danger:** **Danger** indicates a hazard with a high level of risk which, if not avoided, will result in death or serious injury.

- \*1) ISO 4414: Pneumatic fluid power – General rules relating to systems.  
ISO 4413: Hydraulic fluid power – General rules relating to systems.  
IEC 60204-1: Safety of machinery – Electrical equipment of machines.  
(Part 1: General requirements)  
ISO 10218-1: Manipulating industrial robots - Safety.  
etc.

### Warning

- 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 catalogue information, with a view to giving due consideration to any possibility of equipment failure when configuring the equipment.
- 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.
- Do not service or attempt to remove product and machinery/equipment until safety is confirmed.**
  - 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.
  - 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.
  - Before machinery/equipment is restarted, take measures to prevent unexpected operation and malfunction.
- Contact SMC beforehand and take special consideration of safety measures if the product is to be used in any of the following conditions.**
  - Conditions and environments outside of the given specifications, or use outdoors or in a place exposed to direct sunlight.
  - Installation on equipment in conjunction with atomic energy, railways, air navigation, space, shipping, vehicles, military, medical treatment, combustion and recreation, or equipment in contact with food and beverages, emergency stop circuits, clutch and brake circuits in press applications, safety equipment or other applications unsuitable for the standard specifications described in the product catalogue.
  - An application which could have negative effects on people, property, or animals requiring special safety analysis.
  - Use in an interlock circuit, which requires the provision of double interlock for possible failure by using a mechanical protective function, and periodical checks to confirm proper operation.

### Caution

- The product is provided for use in manufacturing industries.**  
The product herein described is basically provided for peaceful use in manufacturing industries.  
If considering using the product in other industries, consult SMC beforehand and exchange specifications or a contract if necessary.  
If anything is unclear, contact your nearest sales branch.

## 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

- 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.
- 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.
- Prior to using SMC products, please read and understand the warranty terms and disclaimers noted in the specified catalogue 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

- The use of SMC products with production equipment for the manufacture of weapons of mass destruction (WMD) or any other weapon is strictly prohibited.
- 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.

## Safety Instructions

Be sure to read “Handling Precautions for SMC Products” (M-E03-3) before using.

### SMC Corporation (Europe)

|                |                    |                       |                         |
|----------------|--------------------|-----------------------|-------------------------|
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| Czech Republic | ☎+420 541424611    | www.smc.cz            | office@smc.cz           |
| Denmark        | ☎+45 70252900      | www.smc.dk.com        | smc@smcdk.com           |
| Estonia        | ☎+372 6510370      | www.smc-pneumatics.ee | smc@smc-pneumatics.ee   |
| Finland        | ☎+358 207513513    | www.smc.fi            | smc-fi@smc.fi           |
| France         | ☎+33 (0)164761000  | www.smc-france.fr     | promotion@smc-france.fr |
| Germany        | ☎+49 (0)61034020   | www.smc.de            | info@smc.de             |
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| Ireland        | ☎+353 (0)14039000  | www.smc-pneumatics.ie | sales@smc-pneumatics.ie |
| Italy          | ☎+39 0292711       | www.smc-italia.it     | mailbox@smc-italia.it   |
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| Norway      | ☎+47 67129020        | www.smc-norge.no         | post@smc-norge.no          |
| Poland      | ☎+48 (0)222119616    | www.smc.pl               | office@smc.pl              |
| Portugal    | ☎+351 226166570      | www.smc.eu               | postpt@smc-smces.es        |
| Romania     | ☎+40 213205111       | www.smc-romania.ro       | smcromania@smcromania.ro   |
| Russia      | ☎+7 8127185445       | www.smc-pneumatik.ru     | info@smc-pneumatik.ru      |
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