

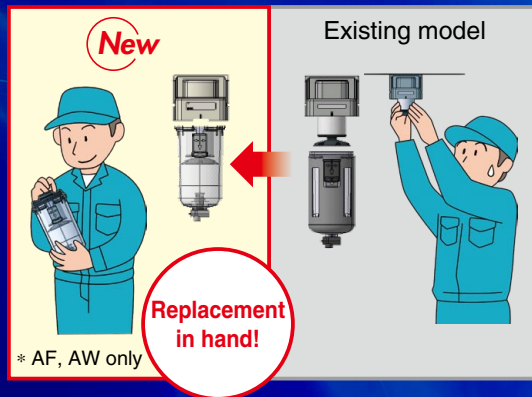
New

RoHS

# 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.



## Energy saving regulator

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



## Reduced required maintenance space

**Max. 46% reduction**

\* For AF40-A

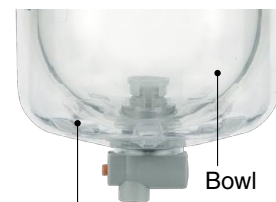


## Better visibility & safer

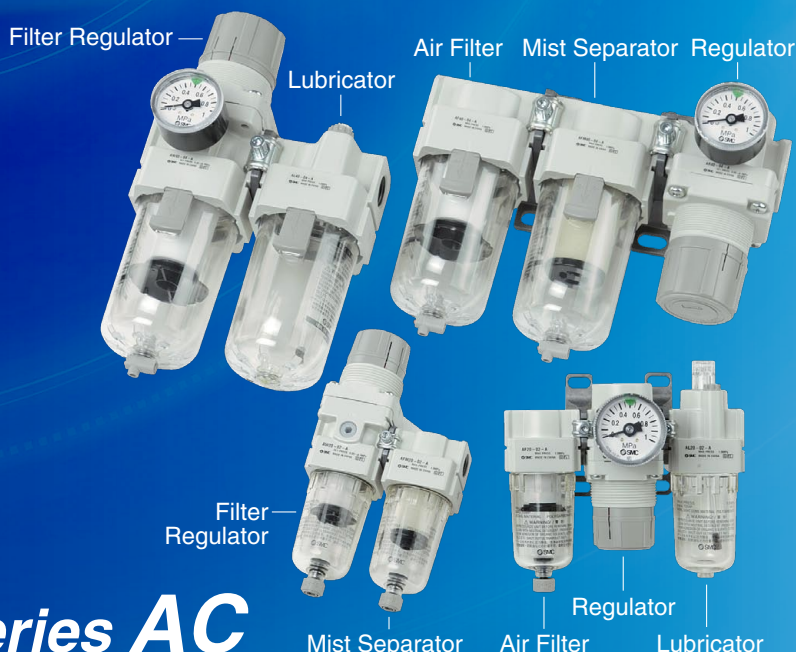
**Double layer design**

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



## Adding Bowl Variation!



# Series AC



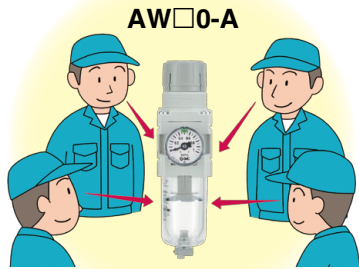
CAT.ES40-56B

# Series AC

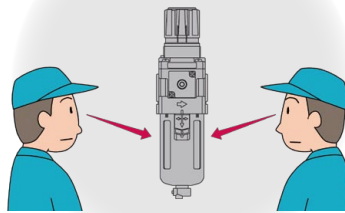
## Transparent bowl guard



- Better visibility: **360°**

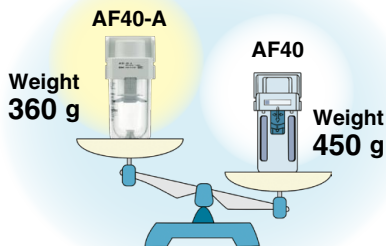


Existing model: AW□0

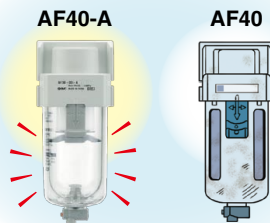


- Condensate can be monitored from anywhere.

- Light weight: **Max. 90 g reduction**  
\* Except AW



- Metal related corrosion does not occur.



Resin body does not rust.

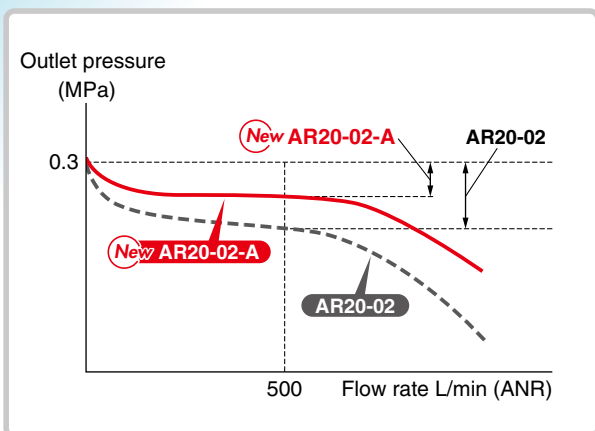
Applicable model

	Air Filter <b>AF</b>		Mist Separator <b>AFM</b>
	Micro Mist Separator <b>AFD</b>		Filter Regulator <b>AW</b>
	Lubricator <b>AL</b>	* Body size: 30 or more	

## Regulator: AR Filter Regulator: AW



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



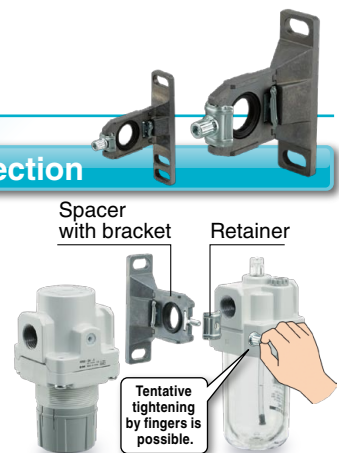
- Conditions
- ◆ Inlet pressure: 0.5 MPa ◆ Outlet pressure: 0.3 MPa
  - ◆ Flow rate: 500 L/min (ANR)

## New Spacer

- Modular connection

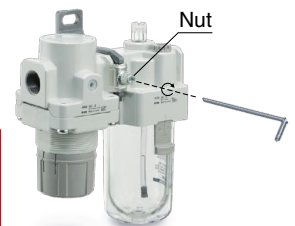
### Step ①

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



### Step ②






- Tighten the nut with the hexagon wrench.



### Interchangeable with existing model

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

## Series Configuration

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

Air Combination

AC

AF+AR+AL

AW+AL

AF+AR

AF+AFM+AR

AW+AFM

Attachment

AF





AFM / AFD

AR


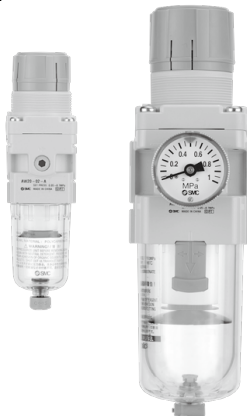
AL

AW

## Series Configuration

Product	Model	Port size					INDEX
		1/8	1/4	3/8	1/2	3/4	
<b>Air Filter</b> 	<b>AF20-A</b>	●	●				<b>P.28</b>
	<b>AF30-A</b>		●	●			
	<b>AF40-A</b>		●	●	●		
	<b>AF40-06-A</b>					●	
<b>Mist Separator</b> 	<b>AFM20-A</b>	●	●				<b>P.28</b>
	<b>AFM30-A</b>		●	●			
	<b>AFM40-A</b>		●	●	●		
	<b>AFM40-06-A</b>					●	
<b>Micro Mist Separator</b> 	<b>AFD20-A</b>	●	●				<b>P.28</b>
	<b>AFD30-A</b>		●	●			
	<b>AFD40-A</b>		●	●	●		
	<b>AFD40-06-A</b>					●	
<b>Regulator</b> 	<b>AR20-A</b>	●	●				<b>P.48</b>
	<b>AR25-A</b>		●	●			
	<b>AR30-A</b>		●	●			
	<b>AR40-A</b>		●	●	●		
	<b>AR40-06-A</b>					●	

**Series Configuration**

Product	Model	Port size					INDEX
		1/8	1/4	3/8	1/2	3/4	
<b>Lubricator</b> 	AL20-A	●	●				P.56
	AL30-A		●	●			
	AL40-A		●	●	●		
	AL40-06-A					●	
<b>Filter Regulator</b> 	AW20-A	●	●				P.62
	AW30-A		●	●			
	AW40-A		●	●	●		
	AW40-06-A					●	

AC
AF+AR+AL
AW+AL
AF+AR
AF+AFM+AR
AW+AFM
Attachment

AF
AFM / AFD
AR
AL
AW

**Simple Specials System**

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



**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.



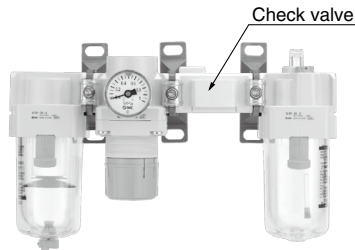
The simple specials specification sheets can be downloaded from SMC website. For details, refer to the SMC website. (<http://www.smcworld.com>)

## 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.



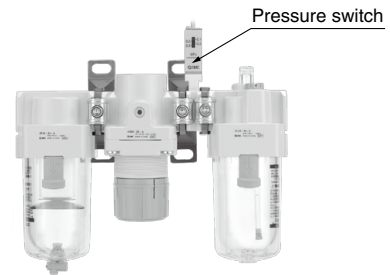
Applicable series

- 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.



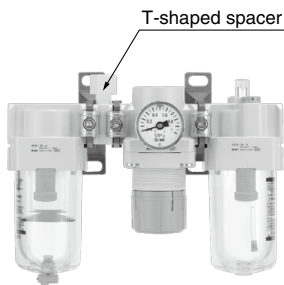
Applicable series

- 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.



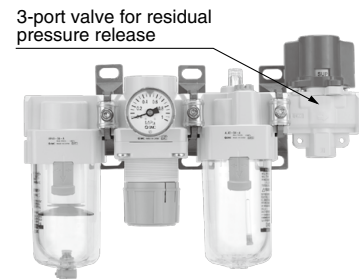
Applicable series

- 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.



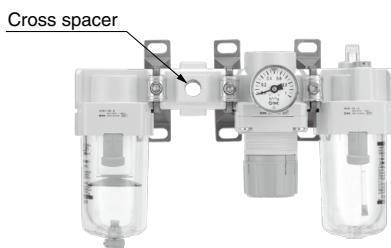
Applicable series

- 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

- Pipings are possible in all 4 directions.

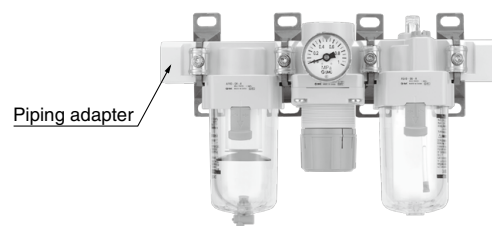


\* Needs to be ordered by single unit.

### Piping adapter

Page 25

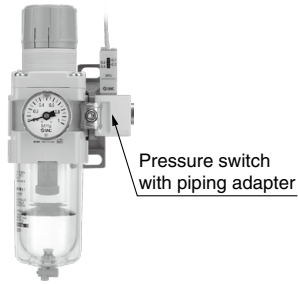
- A piping adapter allows installation/removal of the component without removing the piping and thus makes maintenance easier.



\* Needs to be ordered by single unit.

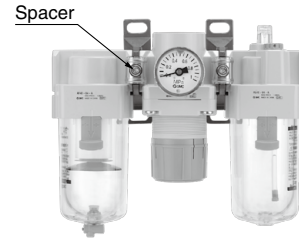
**Attachment List**

**Pressure switch with piping adapter** Page 25



\* Needs to be ordered separately.

**Accessories (Spacer/Bracket)** Page 26



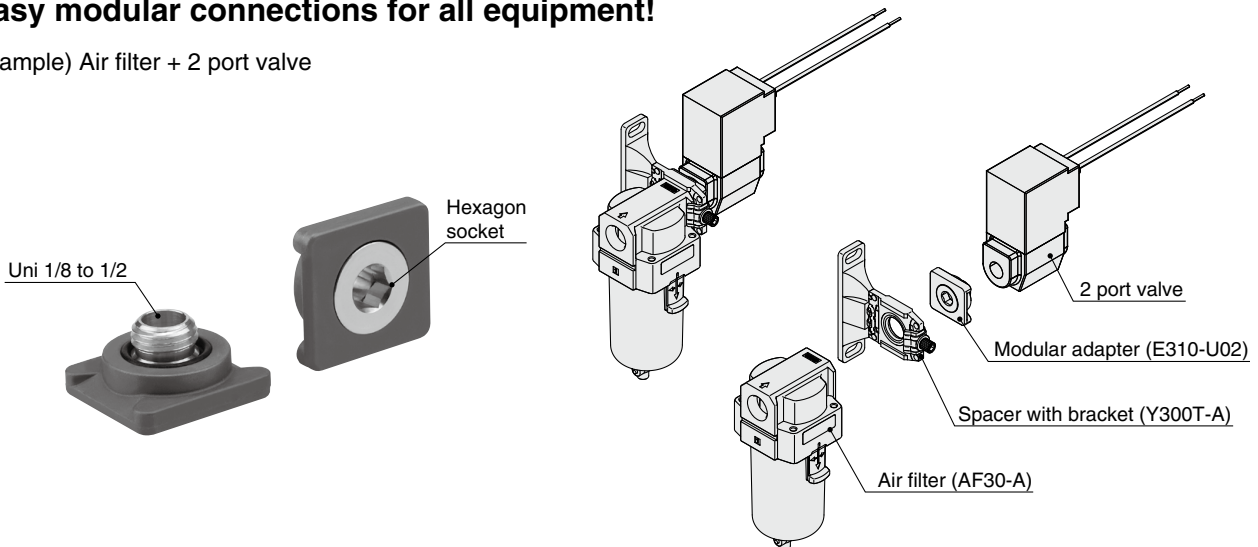
\* Needs to be ordered separately.

**Related Products**

**Modular adapter**

**Easy modular connections for all equipment!**

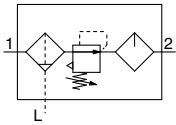
Example) Air filter + 2 port valve



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

# AC20-A to AC40-A

Symbol



## How to Order

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

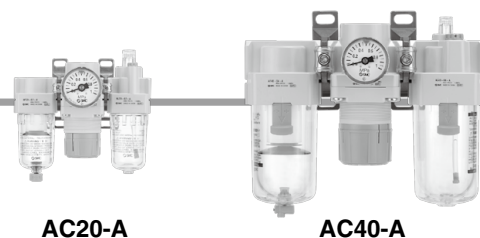
①
②
③
④
⑤
⑥

• 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	Nil	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 <small>Note 1)</small>	a	Float type auto drain	Nil	Without auto drain	●	●	●	●
			C <small>Note 2)</small>	N.C. (Normally closed) Drain port is closed when pressure is not applied.	●	●	●	●	
			D <small>Note 3)</small>	N.O. (Normally open) Drain port is open when pressure is not applied.	—	●	●	●	
	+								
	b	Pressure gauge <small>Note 4)</small>	Nil	Without pressure gauge	●	●	●	●	
			G	Round type pressure gauge (with limit indicator)	●	●	●	●	
M			Round type pressure gauge (with color zone)	●	●	●	●		
+									
⑤	Attachment	c	Check valve	Nil	Without attachment	●	●	●	●
			K	Mounting position: AF+AR+K+AL	●	●	●	● <small>Note 5)</small>	
		+							
		d	Pressure switch	Nil	Without attachment	●	●	●	●
				S <small>Note 6)</small>	Mounting position: AF+AR+S+AL	●	●	●	●
		+							
		e	T-interface	Nil	Without attachment	●	●	●	●
				T <small>Note 6)</small>	Mounting position: AF+T+AR+AL	●	●	●	●
		+							
		f	3-port valve for residual pressure release	Nil	Without attachment	●	●	●	●
V	Mounting position: AF+AR+AL+V			●	●	●	●		
+									
⑥	Semi-standard	g	Set pressure <small>Note 7)</small>	Nil	0.05 to 0.7 MPa setting	●	●	●	●
			1	0.02 to 0.2 MPa setting	●	●	●	●	
	+								
	h	Bowl	Nil	Polycarbonate bowl	●	●	●	●	
			2	Metal bowl	●	●	●	●	
			8	Metal bowl with level gauge	—	●	●	●	
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 Semi-standard	i Filter drain port	Nil	With drain cock	●	●	●	●
		J Note 8	Drain guide 1/8	●	—	—	—
			Drain guide 1/4	—	●	●	●
		W Note 12	Drain cock with barb fitting (for ø6 x ø4 nylon tube)	—	●	●	●
	+						
	j Lubricator lubricant exhaust port	Nil	Without drain cock	●	●	●	●
		3 Note 9	Lubricator with drain cock	●	●	●	●
	+						
	k Exhaust mechanism	Nil	Relieving type	●	●	●	●
		N	Non-relieving type	●	●	●	●
+							
l Flow direction	Nil	Flow direction: Left to right	●	●	●	●	
	R	Flow direction: Right to left	●	●	●	●	
+							
m Pressure unit	Nil	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 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 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) When choosing with W: Filter drain port, the drain cock of a lubricator will be with barb fittings.

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

Note 11) ○: For thread type: NPT only  
Note 12) The combination of metal bowl: 2 and 8 is not available.

## Standard Specifications

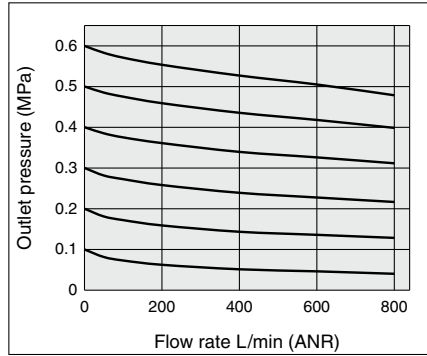
Model	AC20-A	AC25-A	AC30-A	AC40-A	AC40-06-A
Component	Air Filter	AF20-A	AF30-A	AF30-A	AF40-06-A
	Regulator	AR20-A	AR25-A	AR30-A	AR40-06-A
	Lubricator	AL20-A	AL30-A	AL30-A	AL40-06-A
Port size	1/8, 1/4	1/4, 3/8	1/4, 3/8	1/4, 3/8, 1/2	3/4
Pressure gauge port size	1/8				
Fluid	Air				
Ambient and fluid 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

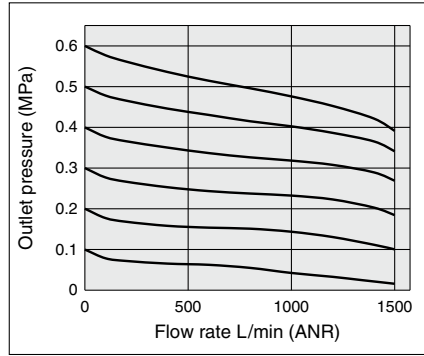
## Flow-rate Characteristics (Representative values)

Condition: Inlet pressure 0.7 MPa

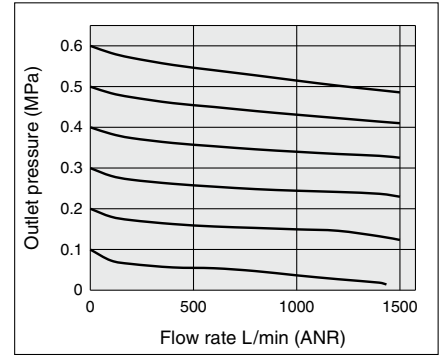
**AC20-A** Rc1/4



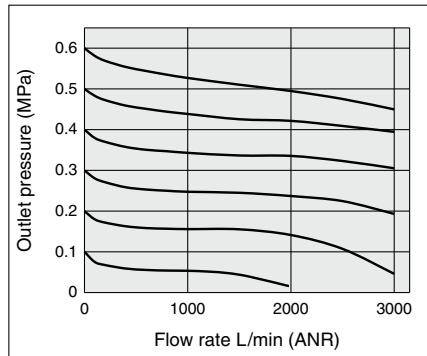
**AC25-A** Rc3/8



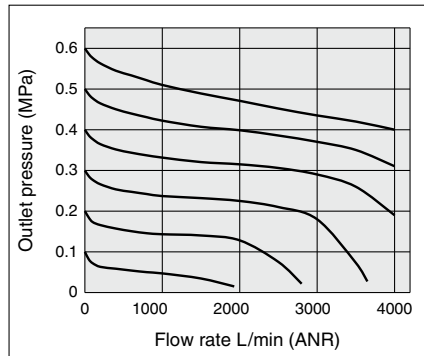
**AC30-A** Rc3/8



**AC40-A** Rc1/2



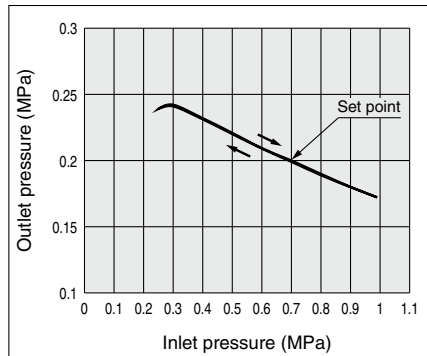
**AC40-06-A** Rc3/4



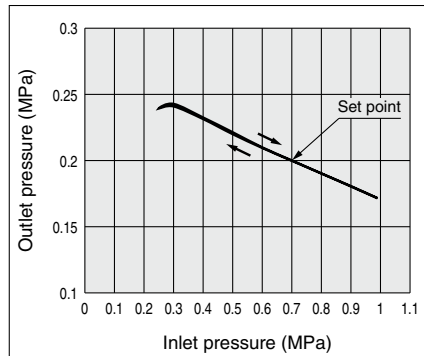
## Pressure Characteristics (Representative values)

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

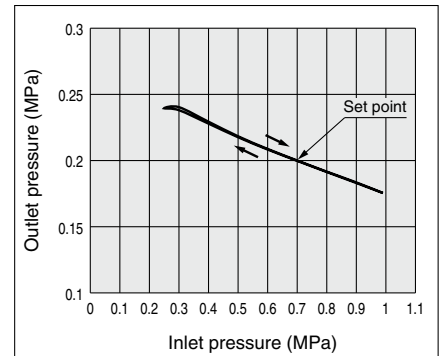
**AC20-A**



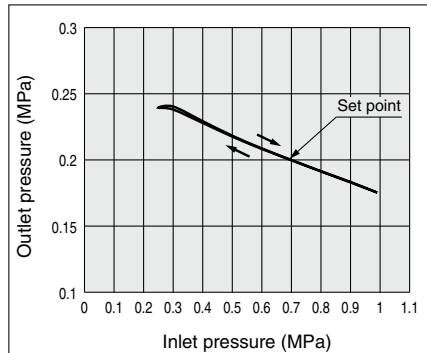
**AC25-A**



**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. Please download it via our website, <http://www.smcworld.com>

**Piping**

**⚠ Warning**

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

**Air Supply**

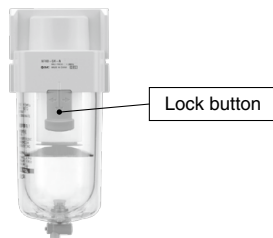
**⚠ Caution**

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/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.



**Selection**

**⚠ Caution**

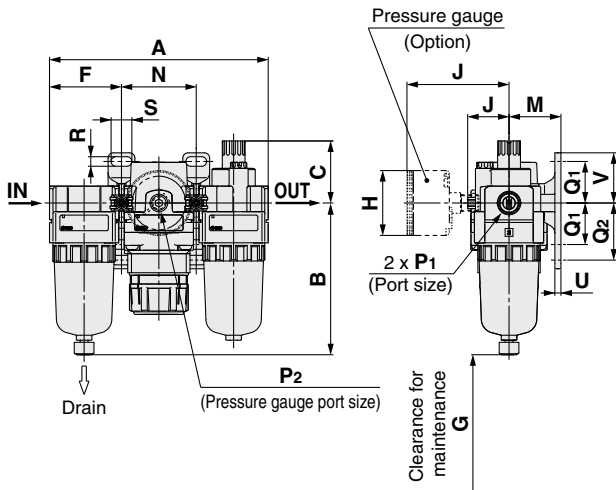
1. When releasing air at the intermediate position using a T-shaped spacer on the inlet side of the lubricator, lubricant may back flow. Therefore, releasing air that does not contain traces of lubricant is not possible.  
To release air that does not contain traces of lubricant, use a check valve (Series 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 do not use it in this fashion.
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

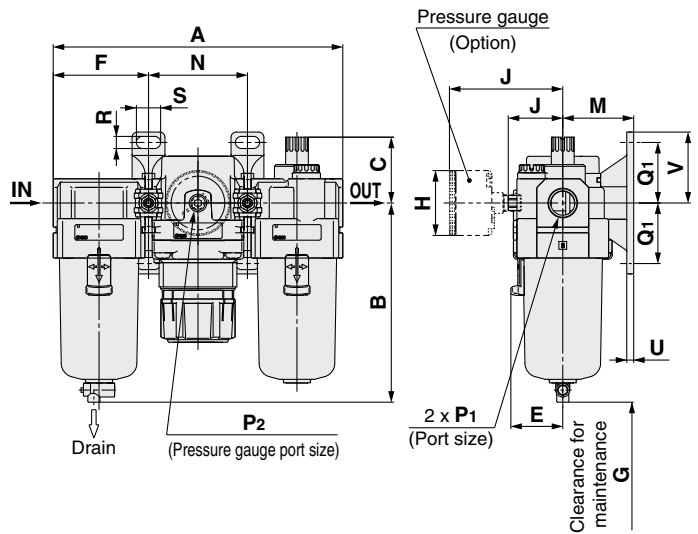
# Series AC20-A to AC40-A

## Dimensions

### AC20-A



### AC25-A to AC40-06-A



Applicable model	AC20-A				AC25-A to AC40-06-A	
Optional/Semi-standard specifications	With auto drain (N.C.)	With drain guide	Metal bowl	Metal bowl with drain guide	With auto drain (N.O./N.C.)	
Dimensions						
	Thread type/Rc, G: $\phi 10$ One-touch fitting					Thread type/NPT: $\phi 3/8$ " One-touch fitting

Applicable model	AC25-A to AC40-06-A					
Optional/Semi-standard specifications	Metal bowl	Metal bowl with drain guide	Metal bowl with level gauge	Metal bowl with level gauge, with drain guide	With drain guide	Drain cock with barb fitting
Dimensions						

Model	Standard specifications																
	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

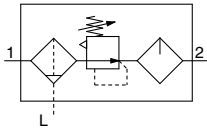
Model	Optional specifications						Semi-standard specifications					
	Round type pressure gauge		Round type pressure gauge (with color zone)		With auto drain	With barb fitting	With drain guide	Metal bowl	Metal bowl with drain guide	Metal bowl with level gauge	Metal bowl with level gauge, with drain guide	
	H	J	H	J	B	B	B	B	B	B	B	
AC20-A	$\phi 37.5$	58.5	$\phi 37.5$	59.5	104.9	—	91.4	87.4	93.9	—	—	
AC25-A	$\phi 37.5$	58.5	$\phi 37.5$	59.5	156.8	123.6	121.9	117.6	122.1	137.6	142.1	
AC30-A	$\phi 37.5$	65	$\phi 37.5$	66	156.8	123.6	121.9	117.6	122.1	137.6	142.1	
AC40-A	$\phi 42.5$	72	$\phi 42.5$	72	186.9	155.6	153.9	149.6	154.1	169.6	174.1	
AC40-06-A	$\phi 42.5$	72	$\phi 42.5$	72	188.9	157.6	155.9	151.6	156.1	171.6	176.1	

AW	AL	AR	AFM / AFD	AF	Attachment	AW+AFM	AF+AFM+AR	AF+AR	AW+AL	AF+AR+AL	AC
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# Filter Regulator + Lubricator

# AC20A-A to AC40A-A

Symbol



## How to Order

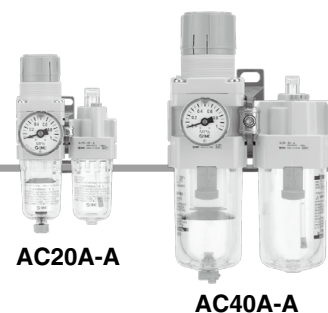
AC **30** A - **03** **DG** - - -A

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	Nil	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 Note 1)	a	Float type auto drain	Nil	Without auto drain	●	●	●
			C <sup>Note 2)</sup>	N.C. (Normally closed) Drain port is closed when pressure is not applied.	●	●	●	
			D <sup>Note 3)</sup>	N.O. (Normally open) Drain port is open when pressure is not applied.	—	●	●	
	+							
	b	Pressure gauge <sup>Note 4)</sup>	Nil	Without pressure gauge	●	●	●	
			G	Round type pressure gauge (with limit indicator)	●	●	●	
M			Round type pressure gauge (with color zone)	●	●	●		
+								
⑤	Attachment	c	Check valve	Nil	Without attachment	●	●	●
			K	Mounting position: AW+K+AL	●	●	● <sup>Note 5)</sup>	
		+						
	d	Pressure switch	Nil	Without attachment	●	●	●	
			S <sup>Note 6)</sup>	Mounting position: AW+S+AL	●	●	●	
	+							
e	3-port valve for residual pressure release	Nil	Without attachment	●	●	●		
		V	Mounting position: AW+AL+V	●	●	●		
+								
⑥	Semi-standard	f	Set pressure <sup>Note 7)</sup>	Nil	0.05 to 0.7 MPa setting	●	●	●
			1	0.02 to 0.2 MPa setting	●	●	●	
	+							
	g	Bowl	Nil	Polycarbonate bowl	●	●	●	
			2	Metal bowl	●	●	●	
			8	Metal bowl with level gauge	—	●	●	
			C	With bowl guard	●	—	—	
	+							
	h	Filter regulator drain port	Nil	With drain cock	●	●	●	
			J <sup>Note 8)</sup>	Drain guide 1/8	●	—	—	
			Drain guide 1/4	—	●	●		
W <sup>Note 12)</sup>			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 without drain cock	●	●	●
			Lubricator with drain cock	●	●	●
		j	Relieving type	●	●	●
			Non-relieving type	●	●	●
		k	Flow direction: Left to right	●	●	●
			Flow direction: Right to left	●	●	●
		l	Name plate and pressure gauge in imperial units: MPa	●	●	●
			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 choosing with W: Filter regulator drain port, the drain cock of a lubricator will be with barb fitting.

Note 10) 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.)

MPa and psi are shown together on the pressure unit. Cannot be used with M: Round pressure gauge (with color zone). Available by request for special.

Note 11) ○: For thread type: NPT only

Note 12) The combination of metal bowl: 2 and 8 is not available.

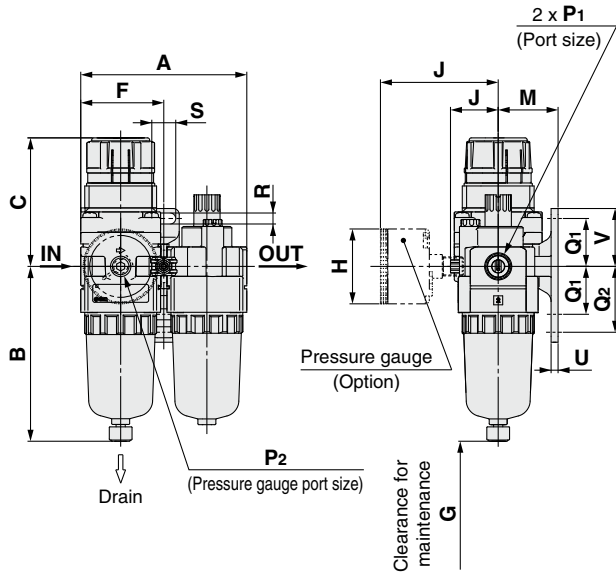
## Standard Specifications

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

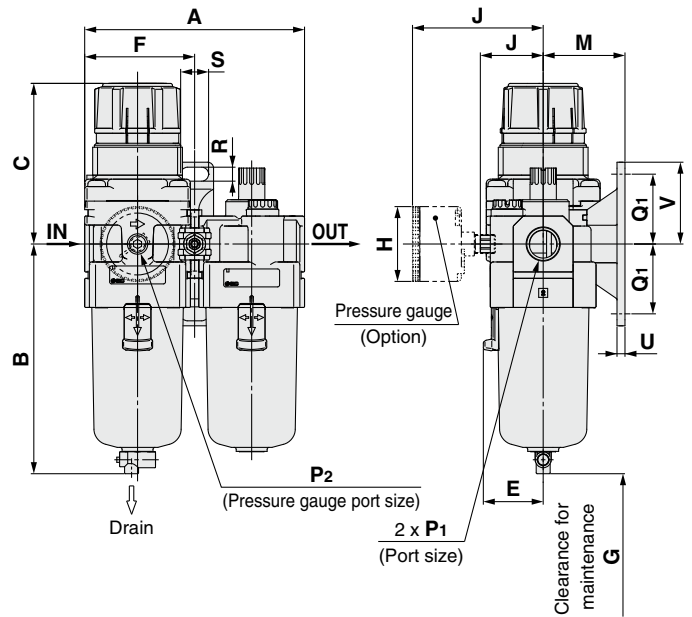
# Series AC20A-A to AC40A-A

## Dimensions

### AC20A-A



### AC30A-A to AC40A-06-A



Applicable model	AC20A-A				AC30A-A to AC40A-06-A	
Optional/Semi-standard specifications	With auto drain (N.C.)	With drain guide	Metal bowl	Metal bowl with drain guide	With auto drain (N.O./N.C.)	
Dimensions						<p>N.O.: Black N.C.: Gray</p> <p>Thread type/Rc, G: <math>\phi 10</math> One-touch fitting Thread type/NPT: <math>\phi 3/8</math>" One-touch fitting</p>

Applicable model	AC30A-A to AC40A-06-A						
Optional/Semi-standard specifications	Metal bowl	Metal bowl with drain guide	Metal bowl with level gauge	Metal bowl with level gauge, with drain guide	With drain guide	Drain cock with barb fitting	
Dimensions							<p>Barb fitting Applicable tubing: T0604</p>

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
AC20A-A	1/8, 1/4	1/8	83.2	87.6	67.4	—	41.6	60	23.4	30	24	33	5.5	12	3.5	29
AC30A-A	1/4, 3/8	1/8	110.2	115.1	83.5	30	55.1	80	30.5	41	35	—	7	14	4	41
AC40A-A	1/4, 3/8, 1/2	1/8	145.2	147.1	100	38.4	72.6	110	36.1	50	40	—	9	18	5	48
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	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	Metal bowl	Metal bowl with drain guide	Metal bowl with level gauge	Metal bowl with level gauge, with drain guide	
	H	J	H	J	B	B	B	B	B	B	B	
AC20A-A	$\phi 37.5$	58.5	$\phi 37.5$	59.5	104.9	—	91.4	87.4	93.9	—	—	
AC30A-A	$\phi 37.5$	65	$\phi 37.5$	66	156.8	123.6	121.9	117.6	122.1	137.6	142.1	
AC40A-A	$\phi 42.5$	72	$\phi 42.5$	72	186.9	155.6	153.9	149.6	154.1	169.6	174.1	
AC40A-06-A	$\phi 42.5$	72	$\phi 42.5$	72	188.9	157.6	155.9	151.6	156.1	171.6	176.1	

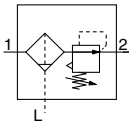
Note) The total length of C dimension is the length when the filter regulator knob is unlocked.



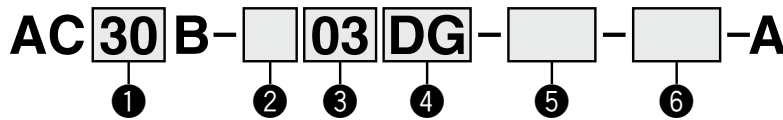
AW	AL	AR	AFM / AFD	AF	Attachment	AW+AFM	AF+AFM+AR	AF+AR	AW+AL	AF+AR+AL	AC
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# AC20B-A to AC40B-A

Symbol



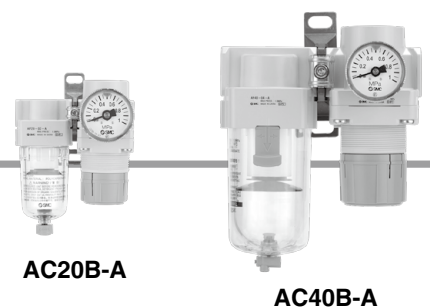
How to Order



- 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	Nil	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 <small>Note 1)</small>	a	Float type auto drain	Nil	Without auto drain	●	●	●	●
			C <small>Note 2)</small>	N.C. (Normally closed) Drain port is closed when pressure is not applied.	●	●	●	●	
			D <small>Note 3)</small>	N.O. (Normally open) Drain port is open when pressure is not applied.	—	●	●	●	
	+								
	b	Pressure gauge <small>Note 4)</small>	Nil	Without pressure gauge	●	●	●	●	
			G	Round type pressure gauge (with limit indicator)	●	●	●	●	
M			Round type pressure gauge (with color zone)	●	●	●	●		
+									
⑤	Attachment	c	Pressure switch	Nil	Without attachment	●	●	●	●
			S <small>Note 5)</small>	Mounting position: AF+S+AR	●	●	●	●	
			T <small>Note 5)</small>	Mounting position: AF+T+AR	●	●	●	●	
		+							
d	3-port valve for residual pressure release	Nil	Without attachment	●	●	●	●		
		V	Mounting position: AF+AR+V	●	●	●	●		
		V1 <small>Note 6)</small>	Mounting position: V+AF+AR	●	●	●	●		
+									
⑥	e	Set pressure <small>Note 7)</small>	Nil	0.05 to 0.7 MPa setting	●	●	●	●	
			1	0.02 to 0.2 MPa setting	●	●	●	●	
	+								
	f	Bowl	Nil	Polycarbonate bowl	●	●	●	●	
			2	Metal bowl	●	●	●	●	
			8	Metal bowl with level gauge	—	●	●	●	
			C	With bowl guard	●	—	—	—	
	+								
	g	Filter drain port	Nil	With drain cock	●	●	●	●	
			J <small>Note 8)</small>	Drain guide 1/8	●	—	—	—	
			Drain guide 1/4	—	●	●	●		
W <small>Note 11)</small>			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 Semi-standard	h	Exhaust mechanism	Nil	Relieving type	●	●	●	●
			N	Non-relieving type	●	●	●	●
				+				
	i	Flow direction	Nil	Flow direction: Left to right	●	●	●	●
			R	Flow direction: Right to left	●	●	●	●
				+				
j	Pressure unit	Nil	Name plate and pressure gauge in imperial units: MPa	●	●	●	●	
		Z <sup>Note 9)</sup>	Name plate, caution plate for bowl, and pressure gauge in imperial units: psi, °F	○ <sup>Note 10)</sup>	○ <sup>Note 10)</sup>	○ <sup>Note 10)</sup>	○ <sup>Note 10)</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) 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. For V1 specification, use the regulator with a set pressure of 0.15 MPa or more to ensure the pressure release.

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. This product is for overseas use only according to the new Measurement Law. (The SI unit type is provided for use in Japan.) MPa and psi are shown together on the pressure unit. Cannot be used with M: Round pressure gauge (with color zone). Available by request for special.

Note 10) ○: For thread type: NPT only

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

## Standard Specifications

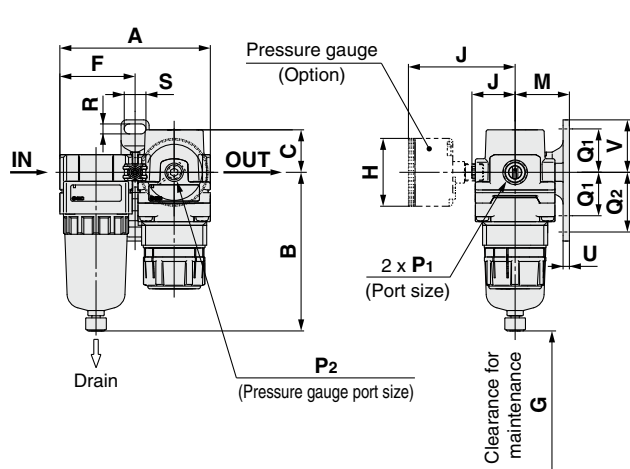
Model		AC20B-A	AC25B-A	AC30B-A	AC40B-A	AC40B-06-A
Component	Air Filter	AF20-A	AF30-A	AF30-A	AF40-A	AF40-06-A
	Regulator	AR20-A	AR25-A	AR30-A	AR40-A	AR40-06-A
Port size		1/8, 1/4	1/4, 3/8	1/4, 3/8	1/4, 3/8, 1/2	3/4
Pressure gauge port size		1/8				
Fluid		Air				
Ambient and fluid temperature		- 5 to 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

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

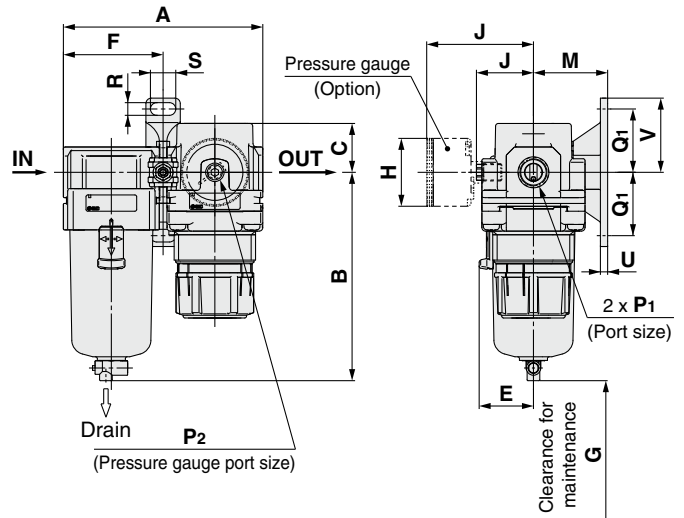
# Series AC20B-A to AC40B-A

## Dimensions

### AC20B-A



### AC25B-A to AC40B-06-A



Applicable model	AC20B-A				AC25B-A to AC40B-06-A	
Optional/Semi-standard specifications	With auto drain (N.C.)	With drain guide	Metal bowl	Metal bowl with drain guide	With auto drain (N.O./N.C.)	
Dimensions						

Applicable model	AC25B-A to AC40B-06-A					
Optional/Semi-standard specifications	Metal bowl	Metal bowl with drain guide	Metal bowl with level gauge	Metal bowl with level gauge, with drain guide	With drain guide	Drain cock with barb fitting
Dimensions						

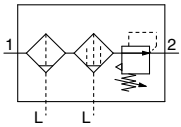
Model	Standard specifications															
	P <sub>1</sub>	P <sub>2</sub>	A	B	C	E	F	G	J	Bracket mount						
										M	Q <sub>1</sub>	Q <sub>2</sub>	R	S	U	V
AC20B-A	1/8, 1/4	1/8	83.2	87.6	23.5	—	41.6	25	23.4	30	24	33	5.5	12	3.5	29
AC25B-A	1/4, 3/8	1/8	110.2	115.1	23.5	30	55.1	35	30.5	41	35	—	7	14	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 color zone)		With auto drain	With barb fitting	With drain guide	Metal bowl	Metal bowl with drain guide	Metal bowl with level gauge	Metal bowl with level gauge, with drain guide	
	H	J	H	J	B	B	B	B	B	B	B	
AC20B-A	ø37.5	58.5	ø37.5	59.5	104.9	—	91.4	87.4	93.9	—	—	
AC25B-A	ø37.5	58.5	ø37.5	59.5	156.8	123.6	121.9	117.6	122.1	137.6	142.1	
AC30B-A	ø37.5	65	ø37.5	66	156.8	123.6	121.9	117.6	122.1	137.6	142.1	
AC40B-A	ø42.5	72	ø42.5	72	186.9	155.6	153.9	149.6	154.1	169.6	174.1	
AC40B-06-A	ø42.5	72	ø42.5	72	188.9	157.6	155.9	151.6	156.1	171.6	176.1	

AW	AL	AR	AFM / AFD	AF	Attachment	AW+AFM	AF+AFM+AR	AF+AR	AW+AL	AF+AR+AL	AC
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# AC20C-A to AC40C-A

Symbol



## How to Order

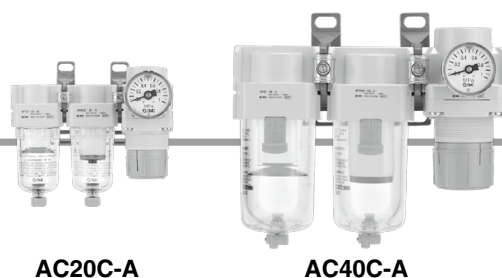
AC **30** C- **03** **DG** - - -A

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	Nil	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 <small>Note 1)</small>	a	Float type auto drain	Nil	Without auto drain	●	●	●	●
			C <small>Note 2)</small>	N.C. (Normally closed) Drain port is closed when pressure is not applied.	●	●	●	●	
			D <small>Note 3)</small>	N.O. (Normally open) Drain port is open when pressure is not applied.	—	●	●	●	
	+								
	b	Pressure gauge <small>Note 4)</small>	Nil	Without pressure gauge	●	●	●	●	
			G	Round type pressure gauge (with limit indicator)	●	●	●	●	
M			Round type pressure gauge (with color zone)	●	●	●	●		
+									
⑤	Attachment	c	Pressure switch	Nil	Without attachment	●	●	●	●
			S <small>Note 5)</small>	Mounting position: AF+AFM+S+AR	●	●	●	●	
		T <small>Note 5)</small>	Mounting position: AF+AFM+T+AR	●	●	●	●		
	+								
d	3-port valve for residual pressure release	Nil	Without attachment	●	●	●	●		
		V	Mounting position: AF+AFM+AR+V	●	●	●	●		
		V1 <small>Note 6)</small>	Mounting position: V+AF+AFM+AR	●	●	●	●		
+									
⑥	e	Set pressure <small>Note 7)</small>	Nil	0.05 to 0.7 MPa setting	●	●	●	●	
			1	0.02 to 0.2 MPa setting	●	●	●	●	
	+								
	f	Bowl	Nil	Polycarbonate bowl	●	●	●	●	
			2	Metal bowl	●	●	●	●	
			8	Metal bowl with level gauge	—	●	●	●	
			C	With bowl guard	●	—	—	—	
	+								
	g	Filter Mist separator drain port	Nil	With drain cock	●	●	●	●	
			J <small>Note 8)</small>	Drain guide 1/8	●	—	—	—	
			Drain guide 1/4	—	●	●	●		
W <small>Note 11)</small>			Drain cock with barb fitting (for ø6 x ø4 nylon tube)	—	●	●	●		
+									
h	Exhaust mechanism	Nil	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	Semi-standard	i	Nil	Flow direction: Left to right	●	●	●	●
			R	Flow direction: Right to left	●	●	●	●
+								
	j	Pressure unit	Nil	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.  
For V1 specification, use the regulator with a set pressure of 0.15 MPa or more to ensure the pressure release.

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. This product is for overseas use only according to the new Measurement Law. (The SI unit type is provided for use in Japan.)

MPa and psi are shown together on the pressure unit.  
Cannot be used with M: Round pressure gauge (with color zone). Available by request for special.

Note 10) ○: For thread type: NPT only

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

## 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).

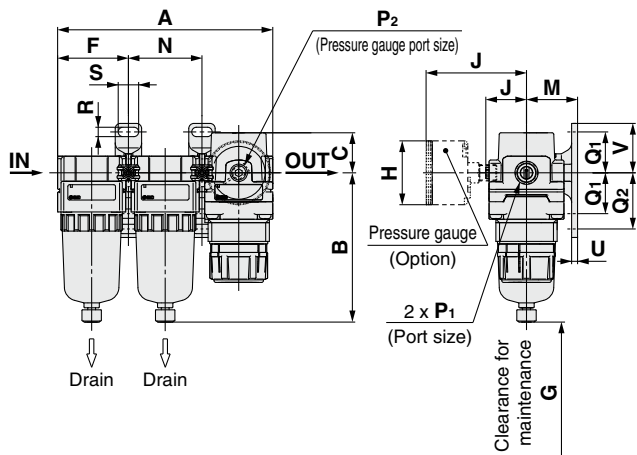
Note 3) Bowl O-ring and other O-rings are slightly lubricated.

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

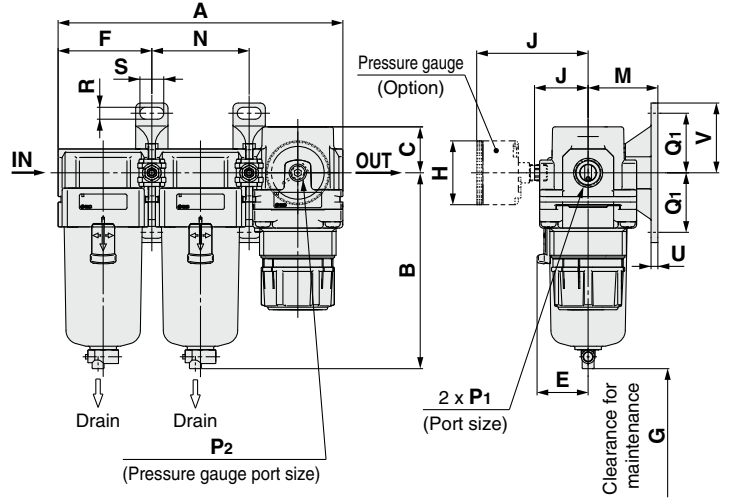
# Series AC20C-A to AC40C-A

## 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	Metal bowl	Metal bowl with drain guide	With auto drain (N.O./N.C.)	
Dimensions						<p>N.O.: Black N.C.: Gray</p> <p>Thread type/Rc, G: ø10 One-touch fitting Thread type/NPT: ø3/8" One-touch fitting</p>

Applicable model	AC25C-A to AC40C-06-A						
Optional/Semi-standard specifications	Metal bowl	Metal bowl with drain guide	Metal bowl with level gauge	Metal bowl with level gauge, with drain guide	With drain guide	Drain cock with barb fitting	
Dimensions							Barb fitting Applicable tubing: T0604

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
AC20C-A	1/8, 1/4	1/8	126.4	87.6	23.5	—	41.6	40	23.4	30	43.2	24	33	5.5	12	3.5	29
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	41
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	41
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	48
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	48

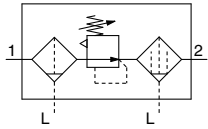
Model	Optional specifications						Semi-standard specifications					
	Round type pressure gauge		Round type pressure gauge (with color zone)		With auto drain	With barb fitting	With drain guide	Metal bowl	Metal bowl with drain guide	Metal bowl with level gauge	Metal bowl with level gauge, with drain guide	
	H	J	H	J	B	B	B	B	B	B	B	
AC20C-A	ø37.5	58.5	ø37.5	59.5	104.9	—	91.4	87.4	93.9	—	—	
AC25C-A	ø37.5	58.5	ø37.5	59.5	156.8	123.6	121.9	117.6	122.1	137.6	142.1	
AC30C-A	ø37.5	65	ø37.5	66	156.8	123.6	121.9	117.6	122.1	137.6	142.1	
AC40C-A	ø42.5	72	ø42.5	72	186.9	155.6	153.9	149.6	154.1	169.6	174.1	
AC40C-06-A	ø42.5	72	ø42.5	72	188.9	157.6	155.9	151.6	156.1	171.6	176.1	



AW	AL	AR	AFM / AFD	AF	Attachment	AW+AFM	AF+AFM+AR	AF+AR	AW+AL	AF+AR+AL	AC
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# AC20D-A to AC40D-A

Symbol



## How to Order

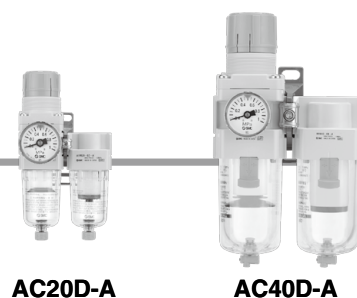
AC **30** D- **03** **DG** - - -A

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					
			Body size					
			20	30	40			
②	Thread type	Nil	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 <small>Note 1)</small>	a	Float type auto drain	Nil	Without auto drain	●	●	●
			C <small>Note 2)</small>	N.C. (Normally closed) Drain port is closed when pressure is not applied.	●	●	●	
			D <small>Note 3)</small>	N.O. (Normally open) Drain port is open when pressure is not applied.	—	●	●	
	+							
	b	Pressure gauge <small>Note 4)</small>	Nil	Without pressure gauge	●	●	●	
			G	Round type pressure gauge (with limit indicator)	●	●	●	
M			Round type pressure gauge (with color zone)	●	●	●		
+								
⑤	Attachment	c	Pressure switch	Nil	Without attachment	●	●	●
			S <small>Note 5)</small>	Mounting position: AW+S+AFM	●	●	●	
	+							
	d	3-port valve for residual pressure release	Nil	Without attachment	●	●	●	
V			Mounting position: AW+AFM+V	●	●	●		
V1 <small>Note 6)</small>			Mounting position: V+AW+AFM	●	●	●		
+								
⑥	e	Set pressure <small>Note 7)</small>	Nil	0.05 to 0.7 MPa setting	●	●	●	
			1	0.02 to 0.2 MPa setting	●	●	●	
	+							
	f	Bowl	Nil	Polycarbonate bowl	●	●	●	
			2	Metal bowl	●	●	●	
			8	Metal bowl with level gauge	—	●	●	
			C	With bowl guard	●	—	—	
	+							
	g	Filter regulator Mist separator drain port	Nil	With drain cock	●	●	●	
			J <small>Note 8)</small>	Drain guide 1/8	●	—	—	
				Drain guide 1/4	—	●	●	
			W <small>Note 11)</small>	Drain cock with barb fitting (for ø6 x ø4 nylon tube)	—	●	●	
	+							
h	Exhaust mechanism	Nil	Relieving type	●	●	●		
		N	Non-relieving type	●	●	●		
+								
i	Flow direction	Nil	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 Semi-standard	j	Pressure unit	●	●	●
		Nil Z <sup>Note 9)</sup>	○ <sup>Note 10)</sup>	○ <sup>Note 10)</sup>	○ <sup>Note 10)</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) 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. For V1 specification, use the regulator with a set pressure of 0.15 MPa or more to ensure the pressure release.

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. This product is for overseas use only according to the new Measurement Law. (The SI unit type is provided for use in Japan.) MPa and psi are shown together on the pressure unit.

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

Note 10) ○: For thread type: NPT only

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

## 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) 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.

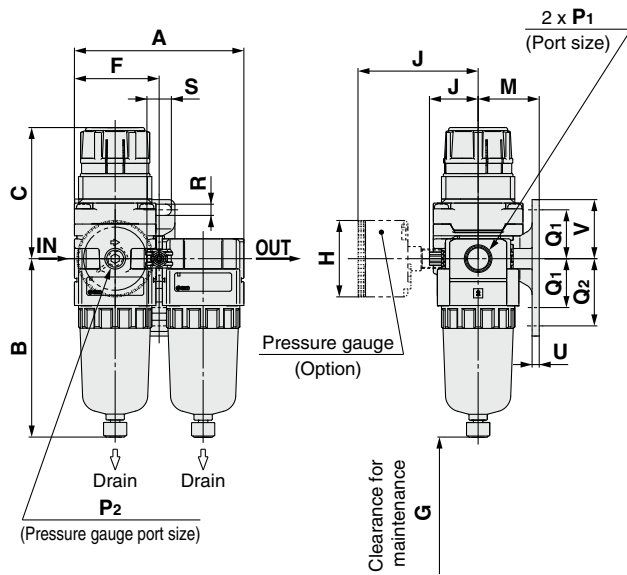
Note 2) When the compressor oil mist discharge concentration is 30 mg/m<sup>3</sup> (ANR).

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

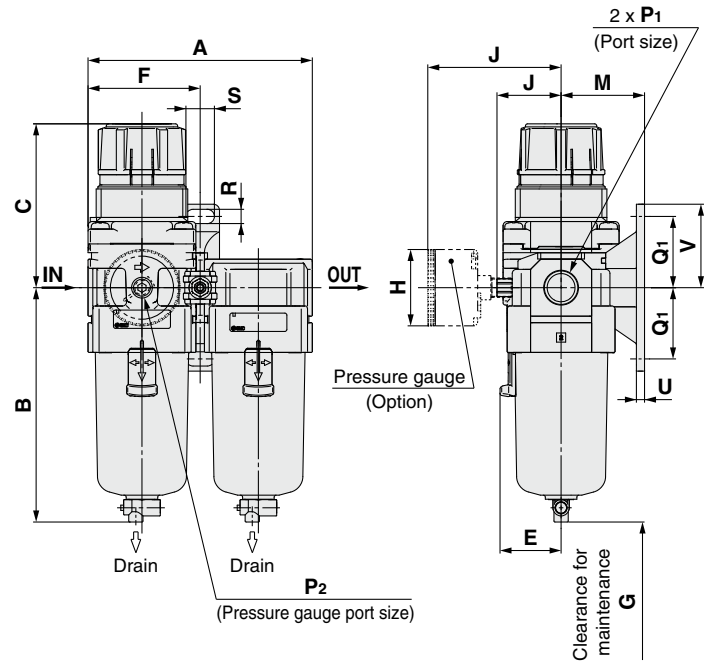
# Series AC20D-A to AC40D-A

## 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	Metal bowl	Metal bowl with drain guide	With auto drain (N.O./N.C.)	
Dimensions						<p>N.O.: Black N.C.: Gray</p> <p>Thread type/Rc, G: ø10 One-touch fitting Thread type/NPT: ø3/8" One-touch fitting</p>

Applicable model	AC30D-A to AC40D-06-A					
Optional/Semi-standard specifications	Metal bowl	Metal bowl with drain guide	Metal bowl with level gauge	Metal bowl with level gauge, with drain guide	With drain guide	Drain cock with barb fitting
Dimensions						

Model	Standard specifications															
	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	Metal bowl	Metal bowl with drain guide	Metal bowl with level gauge	Metal bowl with level gauge, with drain guide	
	H	J	H	J	B	B	B	B	B	B	B	
AC20D-A	ø37.5	58.5	ø37.5	59.5	104.9	—	91.4	87.4	93.9	—	—	
AC30D-A	ø37.5	65	ø37.5	66	156.8	123.6	121.9	117.6	122.1	137.6	142.1	
AC40D-A	ø42.5	72	ø42.5	72	186.9	155.6	153.9	149.6	154.1	169.6	174.1	
AC40D-06-A	ø42.5	72	ø42.5	72	188.9	157.6	155.9	151.6	156.1	171.6	176.1	

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	Model		Part no.				
			For AC20-A For AC20A-A	For AC25-A —	For AC30-A For AC30A-A	For AC40-A For AC40A-A	For AC40-06-A For AC40A-06-A
Type			For AC20B-A For AC20C-A	For AC25B-A For AC25C-A	For AC30B-A For AC30C-A	For AC40B-A For AC40C-A	For AC40B-06-A For AC40C-06-A
			For AC20D-A	—	For AC30D-A	For AC40D-A	For AC40D-06-A
Option	Round type Pressure gauge (Note 1)	Standard	G36-10-□01		G46-10-□01		
		0.02 to 0.2 MPa setting	G36-4-□01		G46-4-□01		
Round type (with color 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			
Attachment	Spacer		Y200-A	Y300-A	Y400-A	Y500-A	
	Spacer with bracket		Y200T-A	Y300T-A	Y400T-A	Y500T-A	
	Check valve (Note 2) (Note 3)		AKM2000-□01-A (□02)-A	AKM3000-(□01)-A □02-A	AKM4000-(□02)-A □03-A	—	
	Pressure switch (Note 3)		IS10M-20-A	IS10M-30-A	IS10M-40-A	IS10M-50-A	
	T-shaped spacer (Note 2) (Note 3)		Y210-□01-A (□02)-A	Y310-(□01)-A □02-A	Y410-(□02)-A □03-A	Y510-(□02)-A □03-A	
	3-port valve for residual pressure release (Note 3)		VHS20-□01A □02A	VHS30-□02A □03A	VHS40-□03A □04A	VHS40-□06A	
	Piping adapter (Note 3)		□01-A E200-□02-A □03-A	□02-A E300-□03-A □04-A	□02-A E400-□03-A □04-A □06-A	E500-□06-A	
	Pressure switch with piping adapter (Note 3)		□01-A IS10E-20□02-A □03-A	□02-A IS10E-30□03-A □04-A	□02-A IS10E-40□03-A □04-A □06-A	—	
	Cross spacer (Note 3)		Y24-□01-A □02-A	Y34-□01-A □02-A	Y44-□02-A □03-A	Y54-□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.

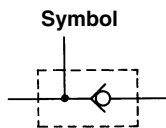
Note 3) Separate interfaces are required for modular unit.

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

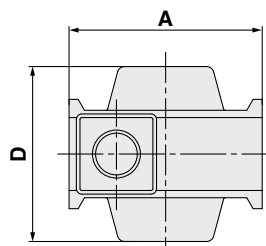
A check valve with intermediate air release port can be easily installed to prevent a backflow of lubricant when redirecting the air flow and releasing the air on the outlet side of the regulator.

AKM **30** **00** - **□** **01** - A

①      ②      ③



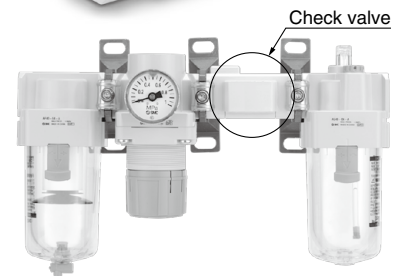
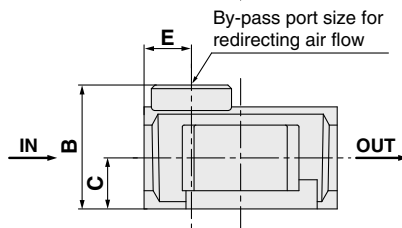
Symbol	Description	①				
		Body size				
②	Thread type	Nil	Rc			
		N	NPT	●	●	●
		F	G	●	●	●
③	By-pass port size	+				
		01	1/8	●	●	—
		02	1/4	●	●	●
		03	3/8	—	—	●



### 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 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.

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

# Series AC

## Pressure Switch: (S)

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	50	
②	a	Set pressure length	Nil	0.1 to 0.4 MPa	●	●	●	●
			6 Note 1)	0.1 to 0.6 MPa	●	●	●	●
			+					
	b	Lead wire length	Nil	0.5 m	●	●	●	●
			L	3 m	●	●	●	●
			Z	5 m	●	●	●	●
		+						
c	Pressure unit of the scale plate	Nil	MPa	●	●	●	●	
		P Note 2)	MPa/psi dual scale	●	●	●	●	

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

Note 2) This product is for overseas use only according to the new Measurement Law. (The SI unit type is provided for use in Japan.)

### 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

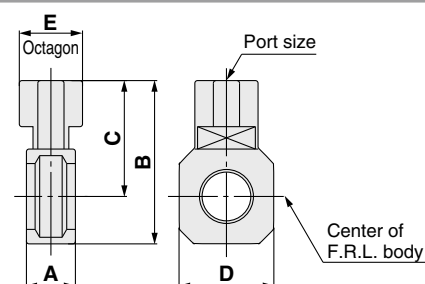
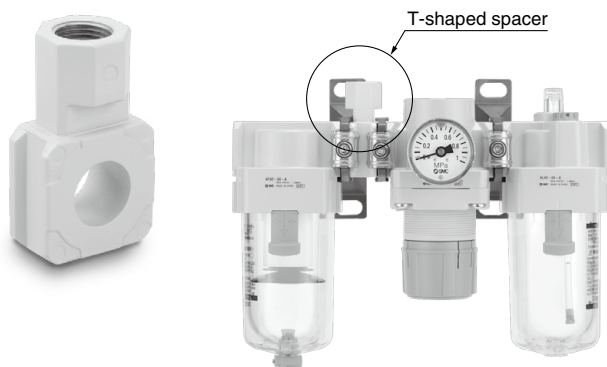
### Switch Characteristics

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 VAC, DC: 50 mA
	48 VAC, DC: 40 mA
	100 VAC, DC: 20 mA

Note) For detailed specifications on the IS10 series, please refer to the section of our website IS10 series, <http://www.smcworld.com>

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

Using a T-shaped spacer 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 AC20C-A
Y210-□02-A	1/4	14.6	52.7	38.7	30	19	AC25-A, AC25B-A AC25C-A, AC30-A AC30B-A, AC30C-A
Y310-□01-A	1/8	18.6	62	44	36	24	AC40-A, AC40B-A AC40C-A
Y310-□02-A	1/4	18.6	66	46	44	24	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	Nil	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	Nil	Flow direction: Left to right	●	●	●
		R	Flow direction: Right to left	●	●	●		
b	Pressure unit	Nil	Name plate in imperial units: MPa	●	●	●		
		Z (Note)	Name plate in imperial units: psi	●	●	●		

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

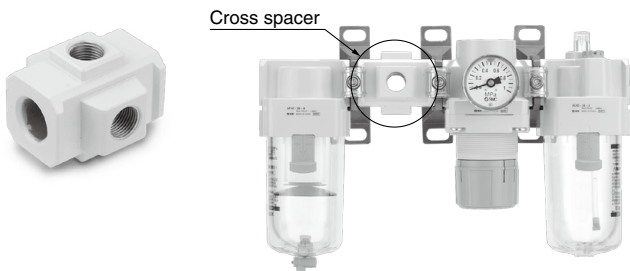
### Specifications

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		
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

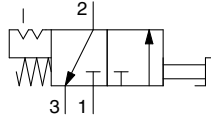
Pipings are possible in all 4 directions.  
IN/OUT ports are not machined for threads.  
Please contact SMC if threaded (machined) ports are required.



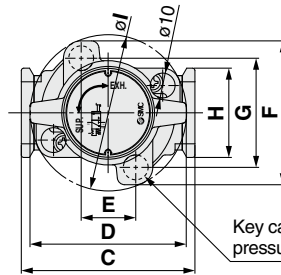
### Caution on Mounting

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.

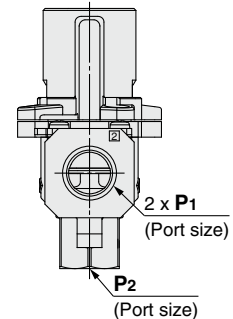
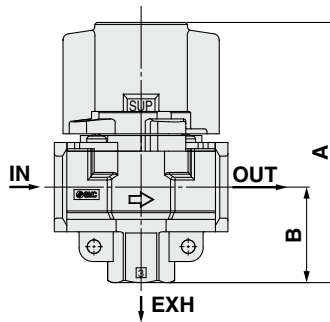
### Symbol



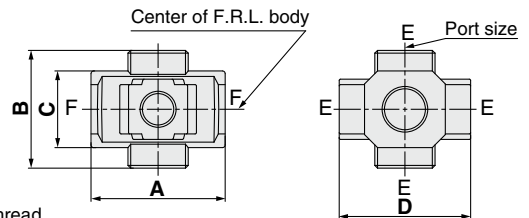
3-port valve for residual pressure release



Key can be mounted when residual pressure is released.



Model	Standard specifications										
	P1	P2	A	B	C	D	E	F	G	H	I
VHS20	1/8, 1/4	1/8	66.4	22.3	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 x 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.

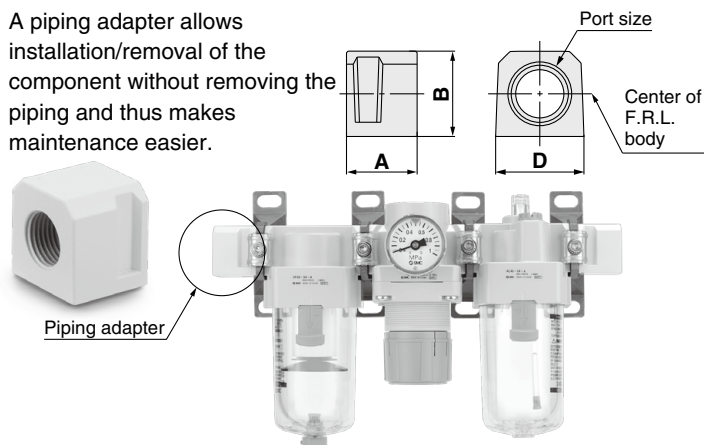
\* Two hexagon socket head plugs are included in the package.

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

# 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)	Port size	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	31.8	36	36	AC40□-A
E400-□02-A	1/4				
E400-□03-A	3/8				
E400-□04-A	1/2				
E400-□06-A	3/4	31.8	40	44	AC40□-06-A
E500-□06-A	3/4				

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

- 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	Nil	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 Set pressure range	Nil	0.1 to 0.4 MPa	●	●	●
		6 (Note 1)	0.1 to 0.6 MPa	●	●	●
	b Lead wire length	+				
		Nil	0.5 m	●	●	●
		L	3 m	●	●	●
	c Pressure unit of the scale plate	+				
		Nil	MPa	●	●	●
	d Mounting position	+				
P (Note 2)		MPa/psi dual scale	●	●	●	
	Nil	Right	●	●	●	
	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. This product is for overseas use only according to the new Measurement Law. (The SI unit type is provided for use in Japan.)

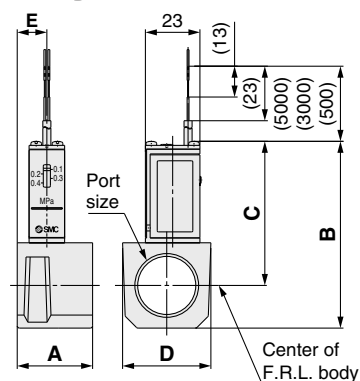
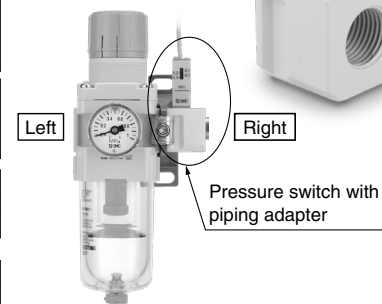
### Specifications

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 48 V AC, DC: 40 mA 100 V AC, DC: 20 mA

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	31.8	78.8	60.8	37	12.5	AC40□-A
IS10E-40□02-A	1/4						
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.

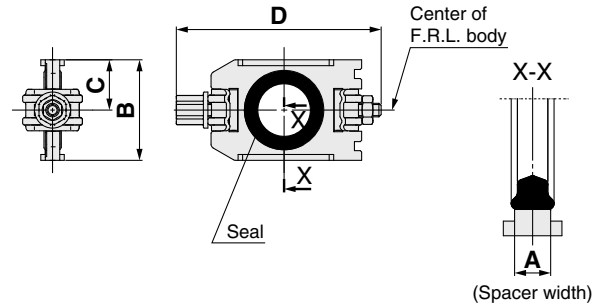
\* Separate interfaces are required for modular unit.

\* The pressure switch on the AC40□-06-A can be mounted by screwing IS10-01S into the piping adapter E500-□06-A-X501 (with top-face thread Rc1/8). Products with a pre-mounted switch are available as a special order. Please contact SMC regarding their availability.



# Series AC Accessories (Spacers/Brackets)

## Spacer

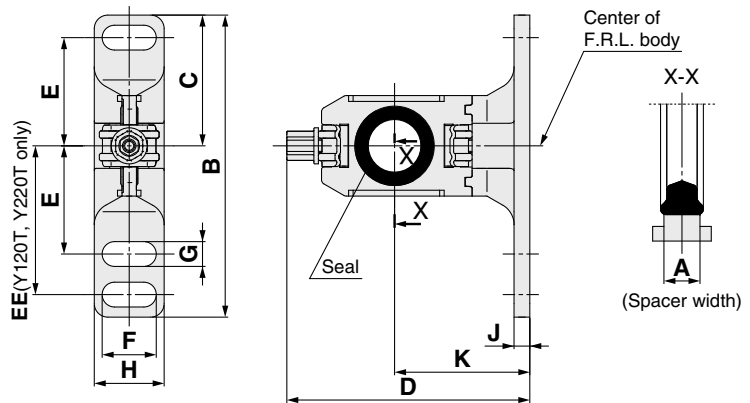
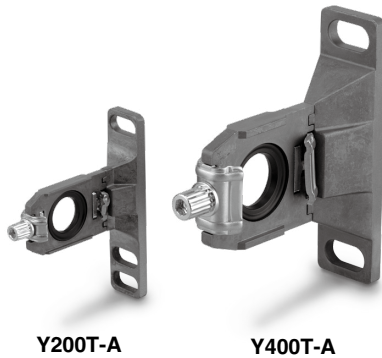


Model	A	B	C	D	Applicable model
Y200-A	3.2	22.4	11.2	44.9	AC20□-A
Y300-A	4.2	34.2	17.1	57.9	AC25□-A, AC30□-A
Y400-A	5.2	42.2	21.1	68.5	AC40□-A
Y500-A	5.2	46.2	23.1	75.6	AC40□-06-A

## 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

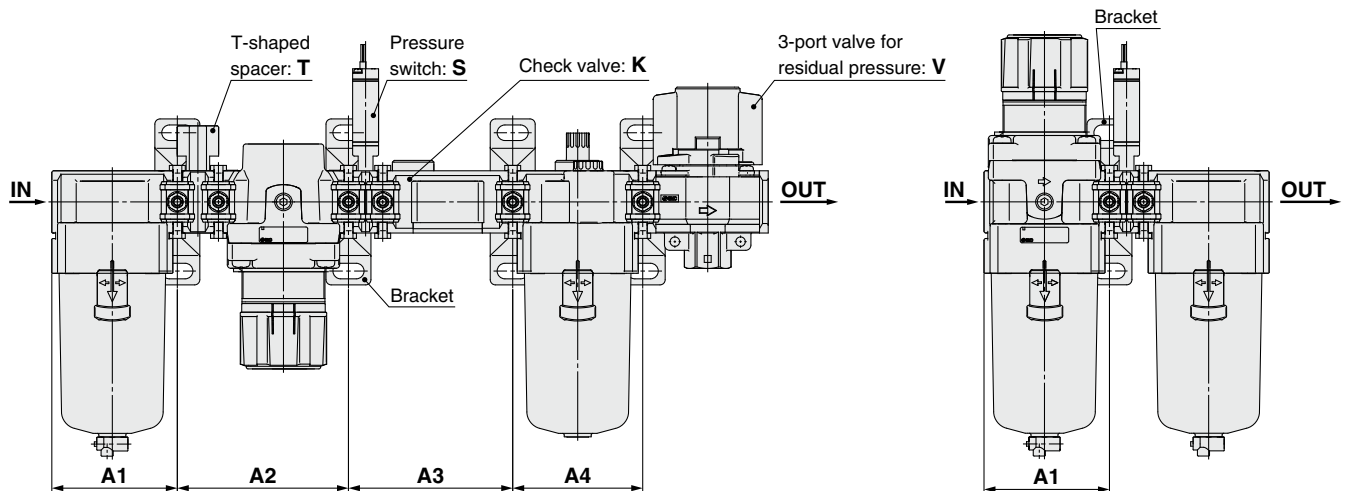
## Replacement Parts

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

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

# Series AC

## Mounting Position for Spacer with Bracket



Attachment	K			S		T		V			KS			KT			KV				KST			
	A1	A2	A3	A1	A2	A1	A2	A1	A2	A3	A1	A2	A3	A1	A2	A3	A1	A2	A3	A4	A1	A2	A3	
Model																								
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	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	
Model																								
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	K		S		V		KS		KV			KSV		SV	
	A1	A2	A1	A2	A1	A2	A1	A2	A1	A2	A3	A1	A2	A1	A2
Model															
AC20A-A	41.6	43.2	41.6	41.6	43.2	41.6	41.6	57	41.6	43.2	43.2	41.6	57	43.2	41.6
AC30A-A	55.1	57.2	55.1	55.1	57.2	55.1	55.1	74	55.1	57.2	57.2	55.1	74	57.2	55.1
AC40A-A	72.6	75.2	72.6	72.6	75.2	75.2	72.6	95	72.6	75.2	75.2	72.6	95	75.2	72.6
AC40A-06-A	—	—	77.6	77.6	80.2	80.2	—	—	—	—	—	—	—	77.6	102

Attachment	S		T		V		V1		SV		SV1		TV		TV1	
	A1	A1	A1	A2	A1	A2	A1	A2	A1	A2	A1	A2	A1	A2	A1	A2
Model																
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	S		T		V			V1			SV			SV1			TV			TV1			
	A1	A2	A1	A2	A1	A2	A3	A1	A2	A3	A1	A2	A3	A1	A2	A3	A1	A2	A3	A1	A2	A3	
Model																							
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	41.6	43.2	61	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	55.1	57.2	76	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	55.1	57.2	76	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	72.6	75.2	99	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	102	77.6	80.2	104	77.6	80.2	80.2	

Attachment	S		V		V1		SV		SV1	
	A1	A1	A2	A1	A2	A1	A2	A1	A2	
Model										
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*

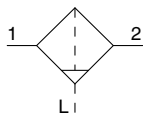
Air Filter Series AF	Model	Port size	Filtration μm	Options
 <p>P.29 to 37</p>	AF20-A	1/8, 1/4	5	Bracket  Float type auto drain
	AF30-A	1/4, 3/8		
	AF40-A	1/4, 3/8, 1/2		
	AF40-06-A	3/4		
 <p>P.39 to 46</p>	AFM20-A	1/8, 1/4	0.3	Bracket  Float type auto drain
	AFM30-A	1/4, 3/8		
	AFM40-A	1/4, 3/8, 1/2		
	AFM40-06-A	3/4		
 <p>P.39 to 46</p>	AFD20-A	1/8, 1/4	0.01	Bracket  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

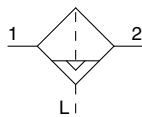
# Air Filter

# AF20-A to AF40-A

Symbol  
Air Filter



Air Filter with Auto Drain

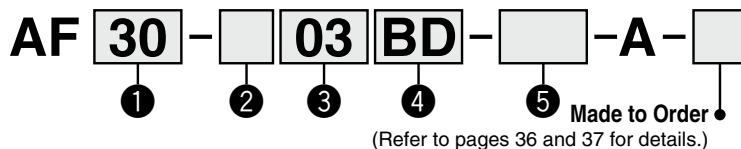


AF20-A



AF40-A

## How to Order



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

		Symbol	Description	①			
				Body size			
				20	30	40	
②	Thread type	Nil	Rc	●	●	●	
		N <sup>Note 1)</sup>	NPT	●	●	●	
		F <sup>Note 2)</sup>	G	●	●	●	
+							
③	Port size	01	1/8	●	—	—	
		02	1/4	●	●	●	
		03	3/8	—	●	●	
		04	1/2	—	—	●	
		06	3/4	—	—	●	
+							
④	a	Mounting	Nil	Without mounting option	●	●	●
			B <sup>Note 3)</sup>	With bracket	●	●	●
	+						
	b	Float type auto drain	Nil	Without auto drain	●	●	●
C <sup>Note 4)</sup>			N.C. (Normally closed) Drain port is closed when pressure is not applied.	●	●	●	
D <sup>Note 5)</sup>			N.O. (Normally open) Drain port is open when pressure is not applied.	—	●	●	
+							
⑤	c	Bowl <sup>Note 6)</sup>	Nil	Polycarbonate bowl	●	●	●
			2	Metal bowl	●	●	●
			8	Metal bowl with level gauge	—	●	●
			C	With bowl guard	●	— <sup>Note 7)</sup>	— <sup>Note 7)</sup>
	+						
	d	Drain port <sup>Note 11)</sup>	Nil	With drain cock	●	●	●
			J <sup>Note 8)</sup>	Drain guide 1/8	●	—	—
			W <sup>Note 12)</sup>	Drain cock with barb fitting (for ø6 x ø4 nylon tube)	—	●	●
	+						
	e	Flow direction	Nil	Flow direction: Left to right	●	●	●
R			Flow direction: Right to left	●	●	●	
+							
f	Pressure unit	Nil	Name plate and caution plate for bowl in imperial units: MPa	●	●	●	
		Z <sup>Note 9)</sup>	Name plate and caution plate for bowl in imperial units: psi, °F	○ <sup>Note 10)</sup>	○ <sup>Note 10)</sup>	○ <sup>Note 10)</sup>	

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

Note 8) Without a valve function

Note 9) 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 10) ○: For thread type: NPT only

Note 11) The combination of float type auto drain: C and D is not available.

Note 12) The combination of metal bowl: 2 and 8 is not available.

# Air Filter *Series AF20-A to AF40-A*

## 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 (cm <sup>3</sup> )	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	AD47-A	
	N.O.	—	AD38-A	AD48-A

## Semi-standard/Bowl Assembly Part No.

Semi-standard specifications					Model				
Bowl material	Note 2) Note 3) Float type auto drain		Note 3) 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	—	—	
Metal bowl	—	—	—	—	—	C2SF-2-A	C3SF-2-A	C4SF-2-A	
	●	—	—	—	—	AD27-2-A	AD37-2-A	AD47-2-A	
	—	●	—	—	—	—	AD38-2-A	AD48-2-A	
	—	—	●	—	—	C2SF-2J-A	C3SF-2J-A	C4SF-2J-A	
Metal bowl with level gauge	—	—	—	—	—	—	C3LF-8-A	C4LF-8-A	
	●	—	—	—	—	—	AD37-8-A	AD47-8-A	
	—	●	—	—	—	—	AD38-8-A	AD48-8-A	
	—	—	●	—	—	—	C3LF-8J-A	C4LF-8J-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.

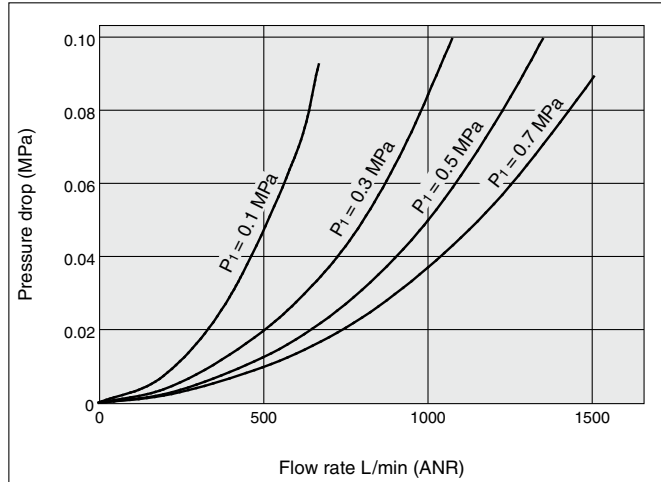
AC  
 AF+AR+AL  
 AW+AL  
 AF+AR  
 AF+AFM+AR  
 AW+AFM  
 Attachment  
 AF  
 AFM / AFD  
 AR  
 AL  
 AW

# Series AF20-A to AF40-A

## Flow-rate Characteristics (Representative values)

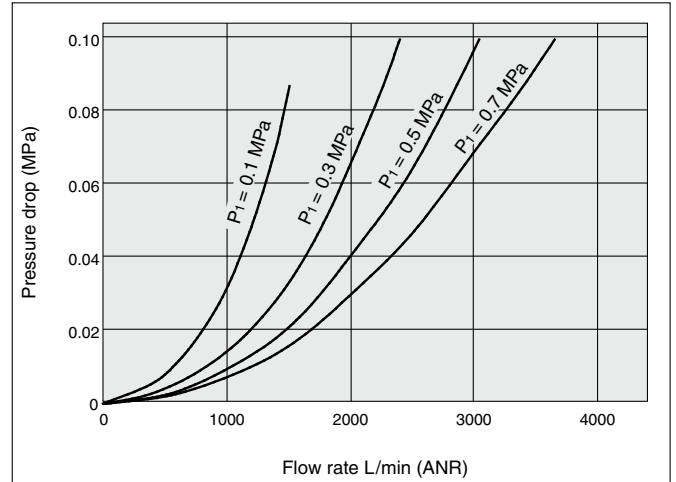
**AF20-A**

Rc1/4



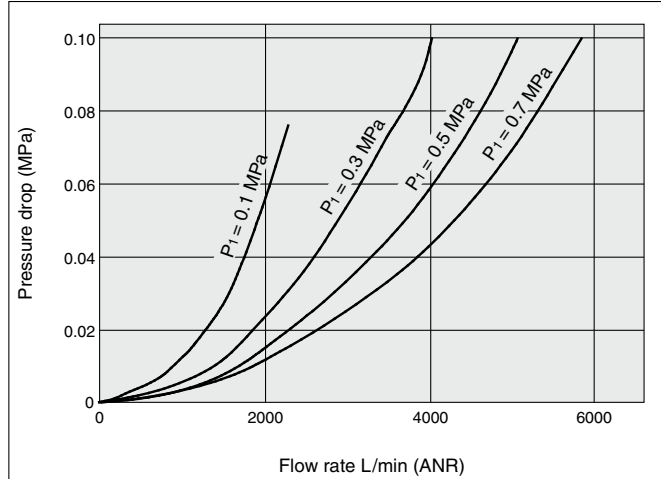
**AF30-A**

Rc3/8



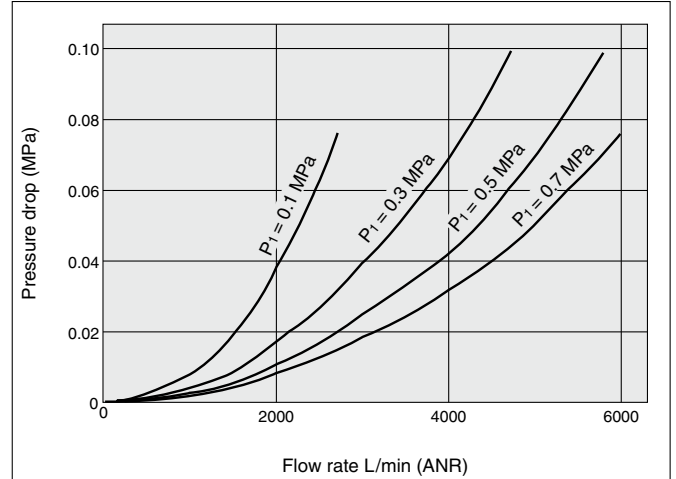
**AF40-A**

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.  
Please download it via our website, <http://www.smcworld.com>

### Design/Selection

#### ⚠ Warning

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

Effects of atmosphere of organic solvents and chemicals, and where these elements are likely to adhere to the equipment.  
Chemical data for substances causing degradation (Reference)

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

△: Some effects may occur. ×: Effects will occur.

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

### 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/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

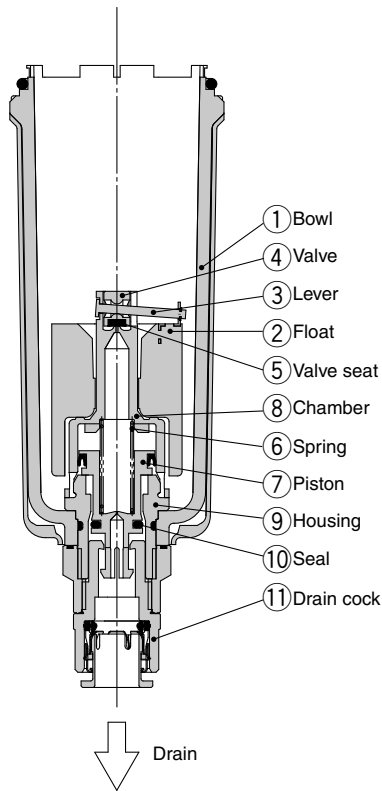
AL

AW

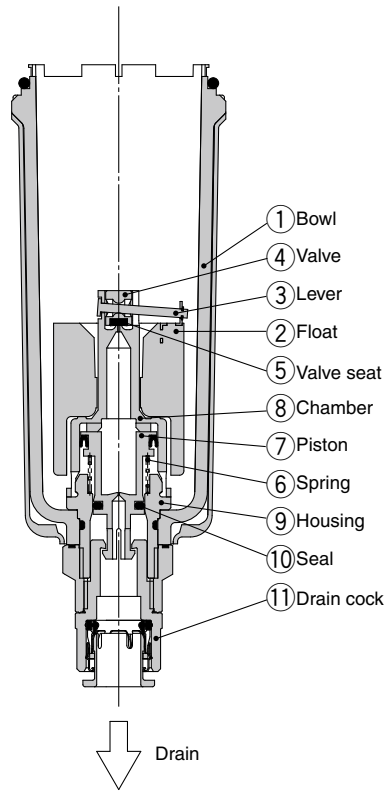
# Series AF20-A to AF40-A

## Working Principle: Float Type Auto Drain

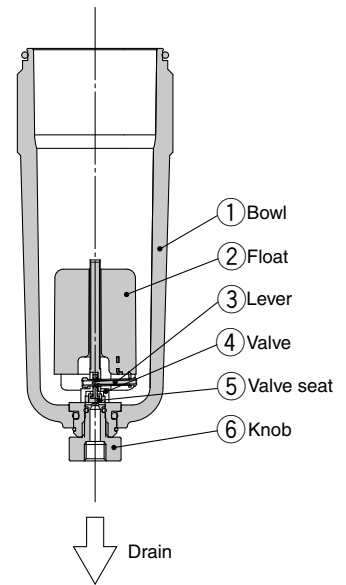
### N.O. type: AD38-A, AD48-A



### 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 downward.

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.

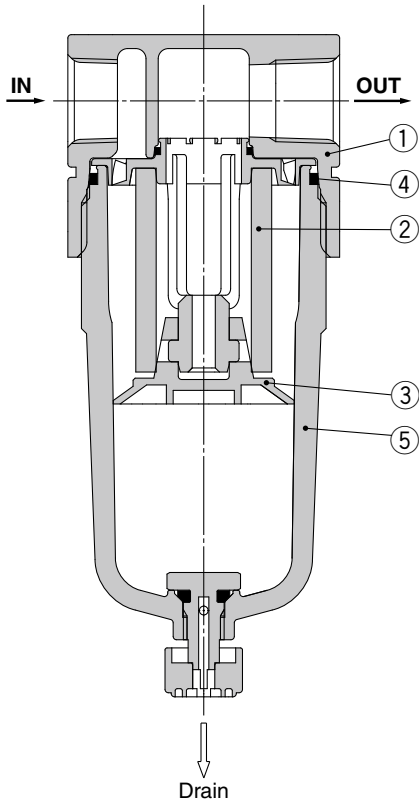
The condensate inside the bowl ① drains out through the knob ⑥.

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.

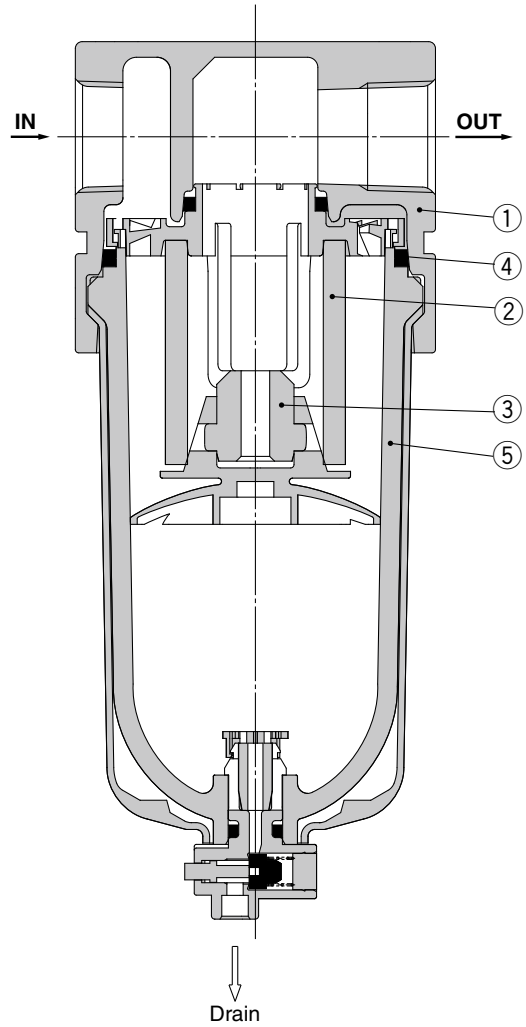


## Construction

### AF20-A



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



### Component Parts

No.	Description	Material	Color
1	<b>Body</b>	Aluminum die-cast	White

### Replacement Parts

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

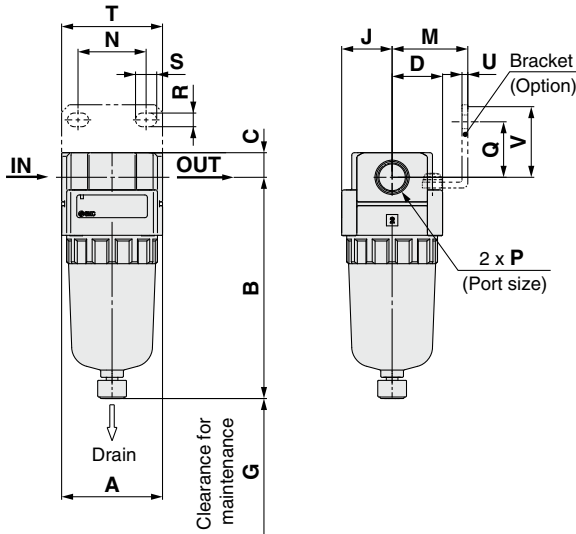
AL

AW

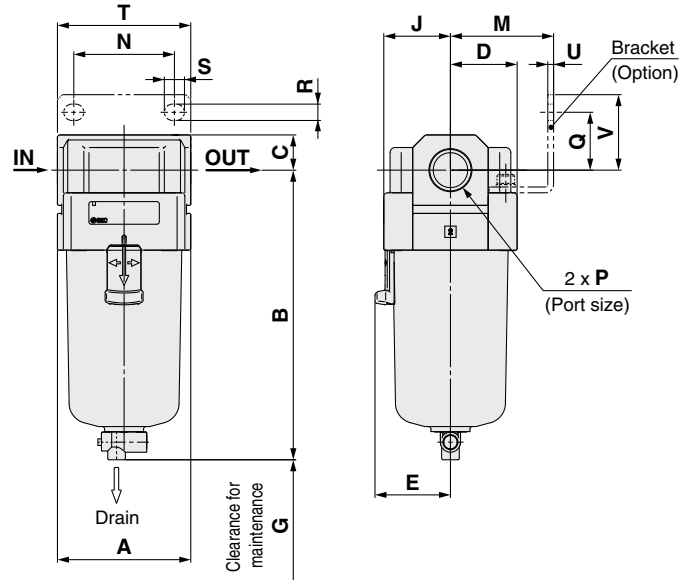
# Series AF20-A to AF40-A

## 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	Metal bowl	Metal bowl with drain guide	With auto drain (N.O./N.C.)
Dimensions	 M5 x 0.8	 Width across flats 14	 B	 Width across flats 14	 N.O.: Black N.C.: Gray Thread type/Rc, G: ø10 One-touch fitting Thread type/NPT: ø3/8" One-touch fitting

Applicable model	AF30-A to AF40-06-A					
Optional/Semi-standard specifications	Metal bowl	Metal bowl with drain guide	Metal bowl with level gauge	Metal bowl with level gauge, with drain guide	With drain guide	Drain cock with barb fitting
Dimensions	 B	 Width across flats 17	 B	 Width across flats 17	 Width across flats 17	 Barb fitting Applicable tubing: T0604

Model	Standard specifications								Optional specifications								
	P	A	B	C	D	E	G	J	M	N	Q	R	S	T	U	V	With auto drain
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	Metal bowl	Metal bowl with drain guide	Metal bowl with level gauge	Metal bowl with level gauge, with drain guide
AF20-A	—	B	B	B	B	B
AF30-A	123.6	91.4	87.4	122.1	137.6	142.1
AF40-A	155.6	153.9	149.6	154.1	169.6	174.1
AF40-06-A	157.6	155.9	151.6	156.1	171.6	176.1

# Air Filter AF20-A to AF40-A

## Made to Order

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



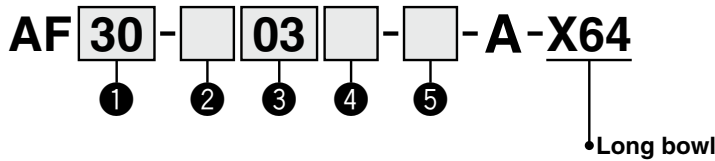
### ① Long Bowl

Drain capacity is greater than that of standard models.

#### Applicable Model/Drain Capacity

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
Drain capacity (cm <sup>3</sup> )	19	43	88	

Note) Please consult with SMC for dimensions.



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

	Symbol	Description	①			
			Body size			
			20	30	40	
②	Nil	Rc	●	●	●	
	N <sup>Note 1)</sup>	NPT	●	●	●	
	F <sup>Note 2)</sup>	G	●	●	●	
+						
③	01	1/8	●	—	—	
	02	1/4	●	●	●	
	03	3/8	—	●	●	
	04	1/2	—	—	●	
	06	3/4	—	—	●	
+						
④	Nil	Without mounting option	●	●	●	
	B <sup>Note 3)</sup>	With bracket	●	●	●	
+						
⑤	a	Nil	Polycarbonate bowl	●	●	●
		2	Metal bowl	●	●	●
		C	With bowl guard	●	—	—
	+					
	b	Nil	With drain cock	●	●	●
		J <sup>Note 5)</sup>	Drain guide 1/8	●	—	—
		W <sup>Note 6)</sup>	Drain guide 1/4	—	●	●
	+					
	c	Nil	Flow direction: Left to right	●	●	●
R		Flow direction: Right to left	●	●	●	
+						
d	Nil	Name plate and caution plate for bowl in imperial units: MPa	●	●	●	
	Z <sup>Note 7)</sup>	Name plate and caution plate for bowl in imperial units: psi, °F	○ <sup>Note 8)</sup>	○ <sup>Note 8)</sup>	○ <sup>Note 8)</sup>	

Note 1) Drain guide is NPT1/8 (applicable to the AF20-A) and NPT1/4 (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) Refer to Chemical data on page 32 for chemical resistance of the bowl.

Note 5) Without a valve function

Note 6) The combination of metal bowl: 2 is not available.

Note 7) 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 8) ○: For thread type: NPT only

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

## Made to Order



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

### ② With Element Service Indicator

Clogging status of elements can be checked visually.

#### Applicable Model

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

AF **30** - **03** - **A** - X2141

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-2R-A-X2141

• With element service indicator

A special body type is required to mount the clogging checker. It cannot be mounted on a standard body.

		Symbol	Description	① Body size			
				20	30	40	
②	Thread type	Nil	Rc	●	●	●	
		N <sup>Note 1)</sup>	NPT	●	●	●	
		F <sup>Note 2)</sup>	G	●	●	●	
		+					
③	Port size	01	1/8	●	—	—	
		02	1/4	●	●	●	
		03	3/8	—	●	●	
		04	1/2	—	—	●	
		06	3/4	—	—	●	
		+					
④	a	Mounting	Nil	Without mounting option	●	●	●
			B <sup>Note 3)</sup>	With bracket	●	●	●
			+				
	b	Float type auto drain	Nil	Without auto drain	●	●	●
C <sup>Note 4)</sup>			N.C. (Normally closed) Drain port is closed when pressure is not applied.	●	●	●	
		D <sup>Note 5)</sup>	N.O. (Normally open) Drain port is open when pressure is not applied.	—	●	●	
		+					
⑤	c	Bowl <sup>Note 6)</sup>	Nil	Polycarbonate bowl	●	●	●
			2	Metal bowl	●	●	●
			8	Metal bowl with level gauge	—	●	●
			C	With bowl guard	●	— <sup>Note 7)</sup>	— <sup>Note 7)</sup>
			+				
	d	Drain port <sup>Note 11)</sup>	Nil	With drain cock	●	●	●
			J <sup>Note 8)</sup>	Drain guide 1/8	●	—	—
			W <sup>Note 12)</sup>	Drain cock with barb fitting (for ø6 x ø4 nylon tube)	—	●	●
			+				
	e	Flow direction	Nil	Flow direction: Left to right	●	●	●
R			Flow direction: Right to left	●	●	●	
		+					
f	Pressure unit	Nil	Name plate and caution plate for bowl in imperial units: MPa	●	●	●	
		Z <sup>Note 9)</sup>	Name plate and caution plate for bowl in imperial units: psi, °F	○ <sup>Note 10)</sup>	○ <sup>Note 10)</sup>	○ <sup>Note 10)</sup>	

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

Note 8) Without a valve function

Note 9) 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 10) ○: For thread type: NPT only

Note 11) The combination of float type auto drain: C and D is not available.

Note 12) The combination of metal bowl: 2 and 8 is not available.

AW

AL

AR

AFM / AFD

AF

Attachment

AW+AFM

AF+AFM+AR

AF+AR

AW+AL

AF+AR+AL

AC

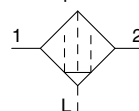
# Mist Separator

# AFM20-A to AFM40-A

## Micro Mist Separator

# AFD20-A to AFD40-A

Symbol  
Mist Separator

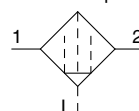


AFM20-A



AFM40-A

Symbol  
Micro Mist Separator



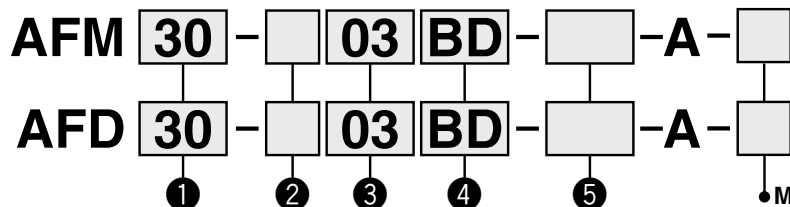
AFD20-A



AFD40-A

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

### How to Order



- 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-R-A

• Made to Order

(Refer to pages 45 and 46 for details.)

	Symbol	Description	①				
			Body size				
			20	30	40		
②	Thread type	Nil	Rc	●	●	●	
		N <sup>Note 1)</sup>	NPT	●	●	●	
		F <sup>Note 2)</sup>	G	●	●	●	
+							
③	Port size	01	1/8	●	—	—	
		02	1/4	●	●	●	
		03	3/8	—	●	●	
		04	1/2	—	—	●	
		06	3/4	—	—	●	
+							
④	a	Mounting	Nil	Without mounting option	●	●	●
			B <sup>Note 3)</sup>	With bracket	●	●	●
	+						
	b	Float type auto drain	Nil	Without auto drain	●	●	●
C <sup>Note 4)</sup>			N.C. (Normally closed) Drain port is closed when pressure is not applied.	●	●	●	
D <sup>Note 5)</sup>			N.O. (Normally open) Drain port is open when pressure is not applied.	—	●	●	
+							
⑤	c	Bowl <sup>Note 6)</sup>	Nil	Polycarbonate bowl	●	●	●
			2	Metal bowl	●	●	●
			8	Metal bowl with level gauge	—	●	●
			C	With bowl guard	●	— <sup>Note 7)</sup>	— <sup>Note 7)</sup>
	+						
	d	Drain port <sup>Note 11)</sup>	Nil	With drain cock	●	●	●
			J <sup>Note 8)</sup>	Drain guide 1/8	●	—	—
			W <sup>Note 12)</sup>	Drain guide 1/4	—	●	●
			W <sup>Note 12)</sup>	Drain cock with barb fitting (for ø6 x ø4 nylon tube)	—	●	●
	+						
e	Flow direction	Nil	Flow direction: Left to right	●	●	●	
		R	Flow direction: Right to left	●	●	●	
+							
f	Pressure unit	Nil	Name plate and caution plate for bowl in imperial units: MPa	●	●	●	
		Z <sup>Note 9)</sup>	Name plate and caution plate for bowl in imperial units: psi, °F	○ <sup>Note 10)</sup>	○ <sup>Note 10)</sup>	○ <sup>Note 10)</sup>	

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 42 for chemical resistance of the bowl.

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

Note 8) Without a valve function

Note 9) 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 10) ○: For thread type: NPT only

Note 11) The combination of float type auto drain: C and D is not available.

Note 12) The combination of metal bowl: 2 and 8 is not available.

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

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

### Standard Specifications

Model		AFM20-A AFD20-A	AFM30-A AFD30-A	AFM40-A AFD40-A	AFM40-06-A 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 AFD20-A	AFM30-A AFD30-A	AFM40-A AFD40-A	AFM40-06-A 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	<sup>Note 2) Note 3)</sup> Float type auto drain		<sup>Note 3)</sup> With drain guide	With barb fitting	With bowl guard	AFM20-A AFD20-A	AFM30-A AFD30-A	AFM40-A AFD40-A	AFM40-06-A AFD40-06-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	—	—	
Metal bowl	—	—	—	—	—	C2SF-2-A	C3SF-2-A	C4SF-2-A	
	●	—	—	—	—	AD27-2-A	AD37-2-A	AD47-2-A	
	—	●	—	—	—	—	AD38-2-A	AD48-2-A	
	—	—	●	—	—	C2SF-2J-A	C3SF-2J-A	C4SF-2J-A	
Metal bowl with level gauge	—	—	—	—	—	—	C3LF-8-A	C4LF-8-A	
	●	—	—	—	—	—	AD37-8-A	AD47-8-A	
	—	●	—	—	—	—	AD38-8-A	AD48-8-A	
	—	—	●	—	—	—	C3LF-8J-A	C4LF-8J-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.

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

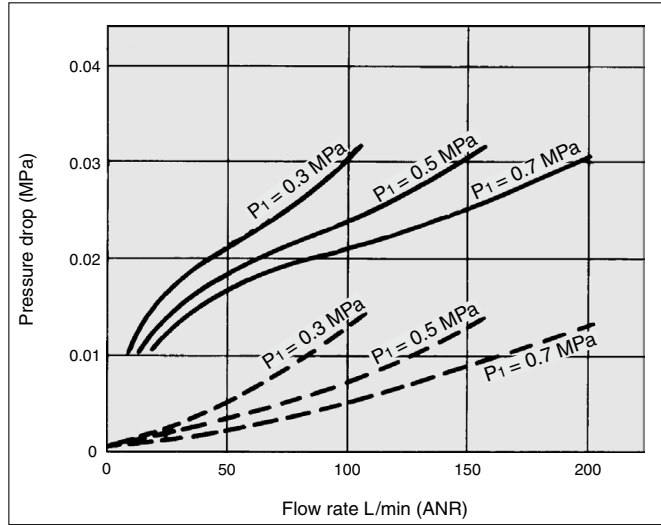
# Series AFM20-A to AFM40-A

# Series AFD20-A to AFD40-A

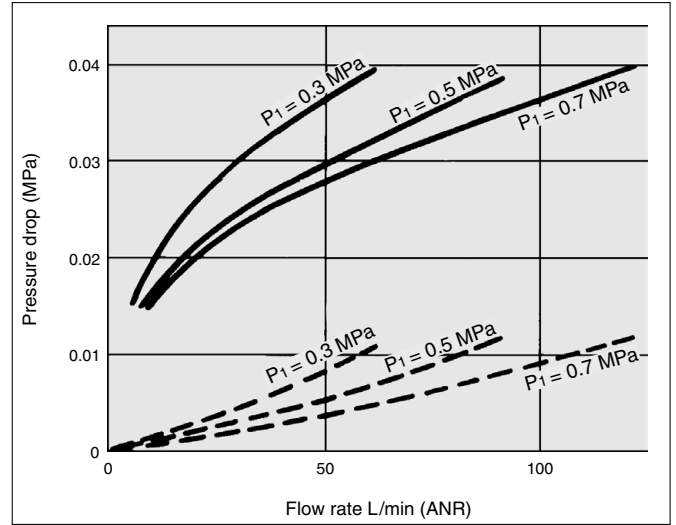
## Flow-rate Characteristics (Representative values)

— When saturated with oil  
 - - - Initial state

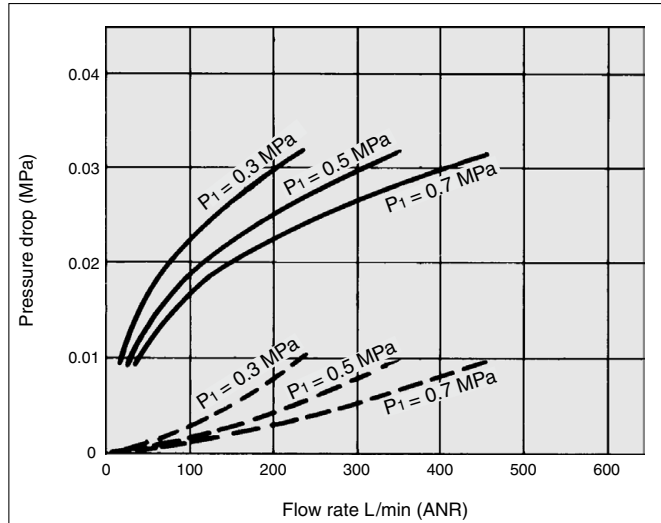
**AFM20-A**



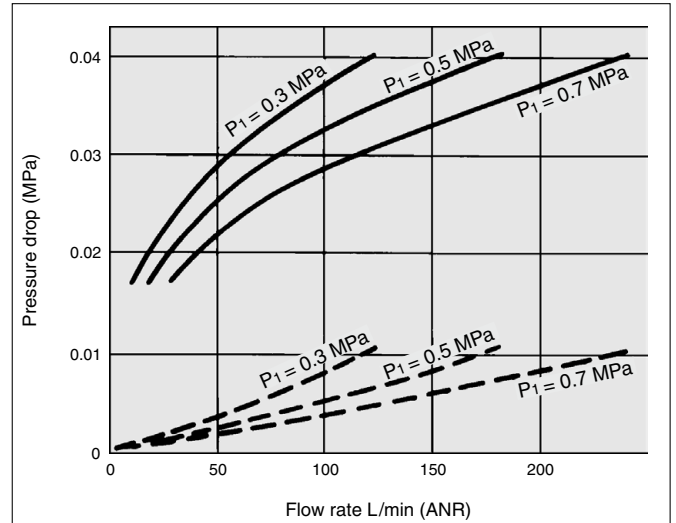
**AFD20-A**



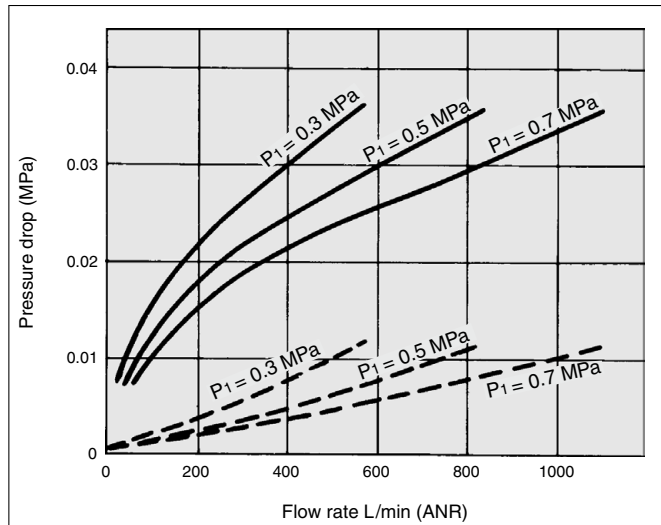
**AFM30-A**



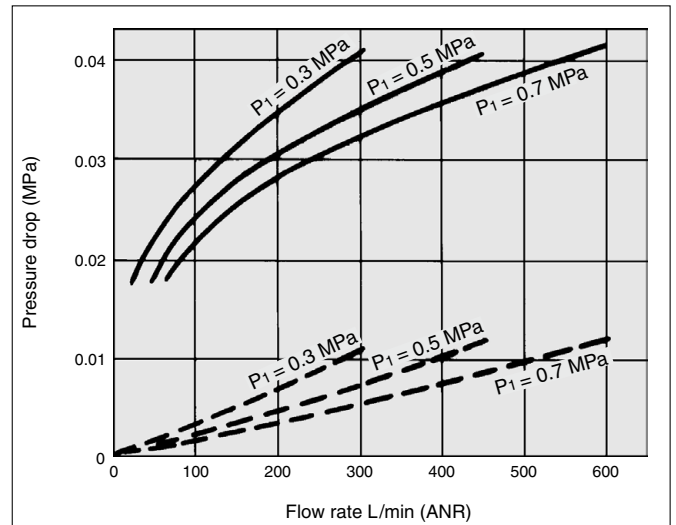
**AFD30-A**



**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.  
Please download it via our website, <http://www.smcworld.com>

#### Design/Selection

### ⚠ Warning

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

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

Chemical data for substances causing degradation (Reference)

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

△: Some effects may occur. ×: Effects will occur.

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

#### Air Supply

### ⚠ Caution

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

#### 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/Adjustment

### ⚠ Caution

- 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

- 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

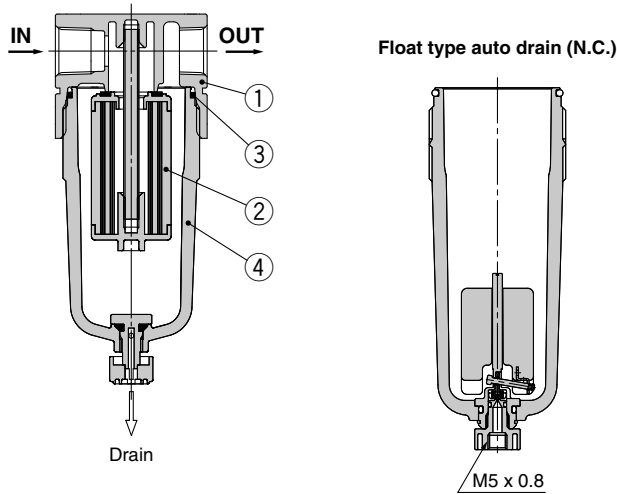
- Do not allow air flow that exceeds the rated flow. If the air flow is allowed outside the range of the rated flow even momentarily, drainage and lubricant may splash at the outlet side or cause damage to the component.
- Do not use in a low pressure application (such as a blower). F.R.L. unit has its 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.

# Series AFM20-A to AFM40-A

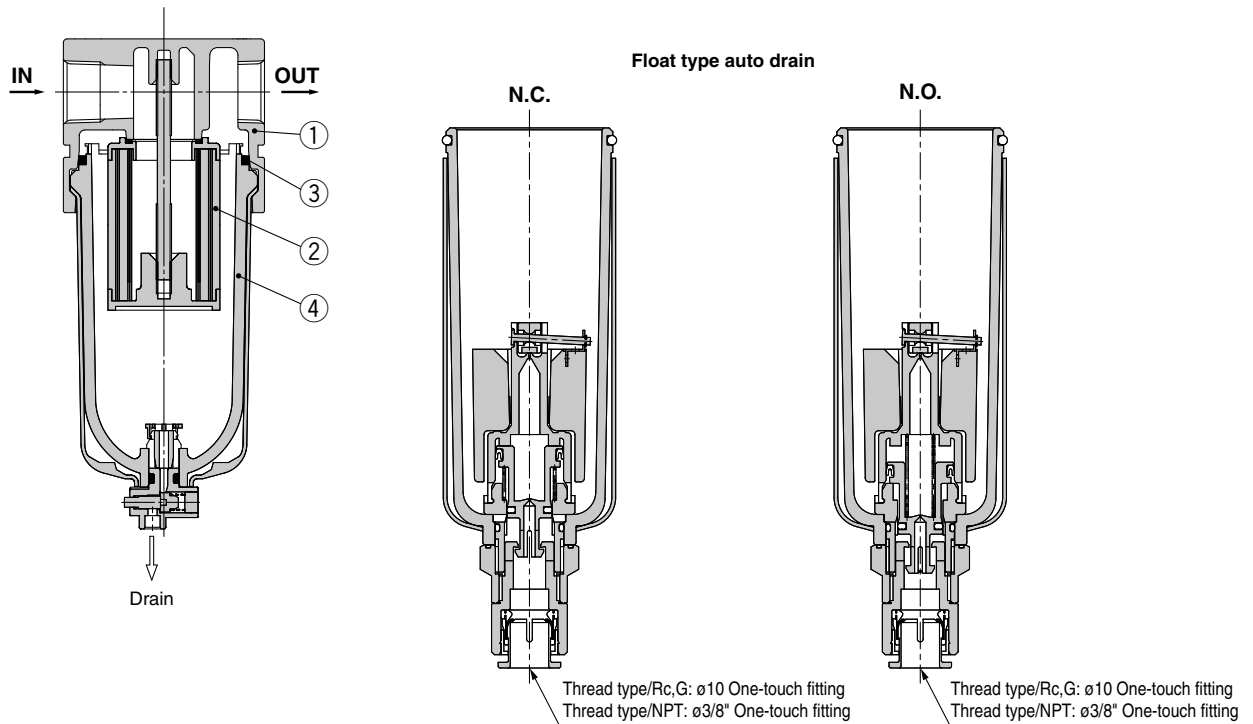
## Series AFD20-A to AFD40-A

### Construction

AFM20-A  
AFD20-A



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



### Component Parts

No.	Description	Material	Model	Color
1	Body	Aluminum die-cast	AFM20-A to AFM40-06-A AFD20-A to AFD40-06-A	White

### Replacement Parts

No.	Description		Material	Part no.			
				AFM20-A AFD20-A	AFM30-A AFD30-A	AFM40-A AFD40-A	AFM40-06-A 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	

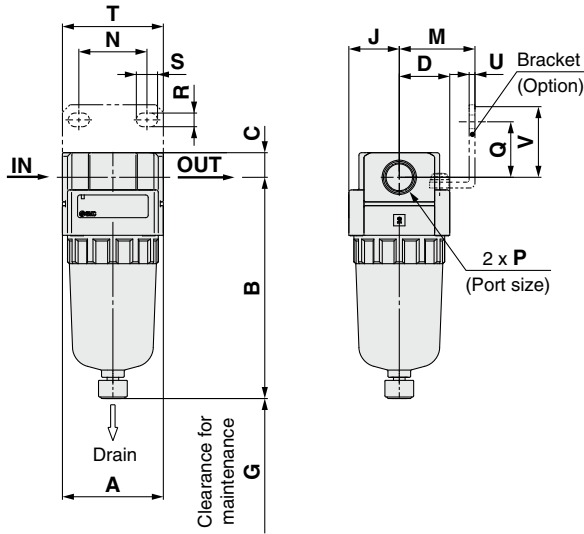
Note) Bowl seal is included. Please contact SMC regarding the bowl assembly supply for psi and °F unit specifications.

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

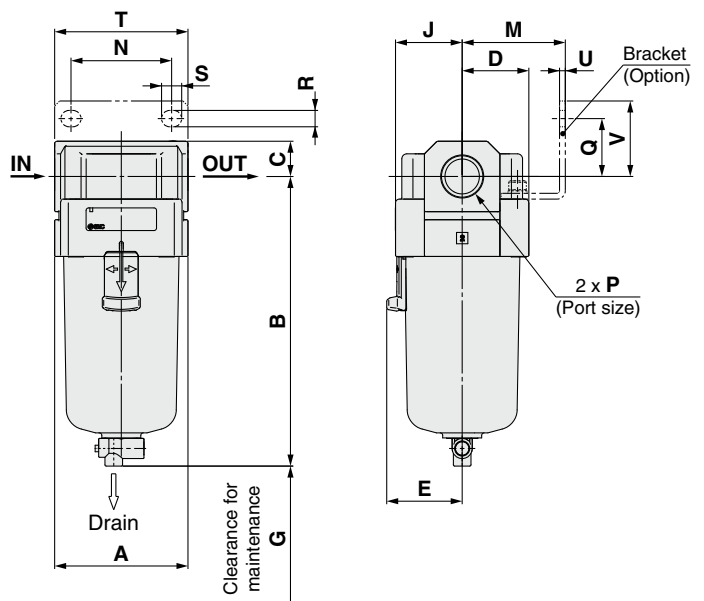
## Micro Mist Separator *Series AFD20-A to AFD40-A*

### Dimensions

#### AFM20-A AFD20-A



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



Applicable model	AFM20-A/AFD20-A				AFM30-A to AFM40-06-A/AFD30-A to AFD40-06-A
Optional/Semi-standard specifications	With auto drain (N.C.)	With drain guide	Metal bowl	Metal bowl with drain guide	With auto drain (N.O./N.C.)
Dimensions					
	M5 x 0.8	Width across flats 14		Width across flats 14	N.O.: Black N.C.: Gray Thread type/Rc,G: ø10 One-touch fitting Thread type/NPT: ø3/8" One-touch fitting

Applicable model	AFM30-A to AFM40-06-A/AFD30-A to AFD40-06-A					
Optional/Semi-standard specifications	Metal bowl	Metal bowl with drain guide	Metal bowl with level gauge	Metal bowl with level gauge, with drain guide	With drain guide	Drain cock with barb fitting
Dimensions						
		Width across flats 17		Width across flats 17	Width across flats 17	Barb fitting Applicable tubing: T0604

Model	Standard specifications																Optional specifications	
	P	A	B	C	D	E	G	J	M	N	Q	R	S	T	U	V	With auto drain	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	Metal bowl	Metal bowl with drain guide	Metal bowl with level gauge	Metal bowl with level gauge, with drain guide
AFM20-A/AFD20-A	B	B	B	B	B	B
AFM20-A/AFD20-A	—	91.4	87.4	93.9	—	—
AFM30-A/AFD30-A	123.6	121.9	117.6	122.1	137.6	142.1
AFM40-A/AFD40-A	155.6	153.9	149.6	154.1	169.6	174.1
AFM40-06-A/AFD40-06-A	157.6	155.9	151.6	156.1	171.6	176.1

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

# Mist Separator *AFM20-A to AFM40-A* Micro Mist Separator *AFD20-A to AFD40-A* Made to Order



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

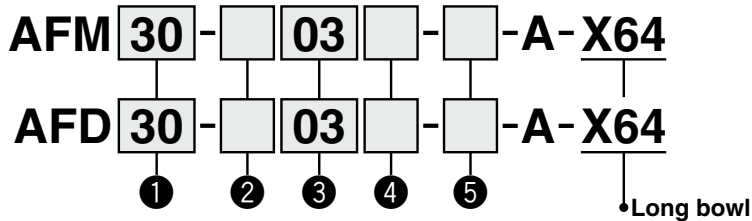
## ① Long Bowl

Drain capacity is greater than that of standard models.

### Applicable Model/Drain Capacity

Model	AFM20-A, AFD20-A	AFM30-A, AFD30-A	AFM40-A, AFD40-A	AFM40-06-A, AFD40-06-A
Port size	1/8, 1/4	1/4, 3/8	1/4, 3/8, 1/2	3/4
Drain capacity (cm <sup>3</sup> )	19	43		88

Note) Please consult with SMC for dimensions.



- 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) AFM30-03B-2R-A-X64

		Symbol	Description	① Body size			
				20	30	40	
②	Thread type	Nil	Rc	●	●	●	
		N <sup>Note 1)</sup>	NPT	●	●	●	
		F <sup>Note 2)</sup>	G	●	●	●	
+							
③	Port size	01	1/8	●	—	—	
		02	1/4	●	●	●	
		03	3/8	—	●	●	
		04	1/2	—	—	●	
		06	3/4	—	—	●	
+							
④	Option (Mounting)	Nil	Without mounting option	●	●	●	
		B <sup>Note 3)</sup>	With bracket	●	●	●	
+							
⑤	a	Bowl <sup>Note 4)</sup>	Nil	Polycarbonate bowl	●	●	●
			2	Metal bowl	●	●	●
			C	With bowl guard	●	—	—
	+						
	b	Drain port	Nil	With drain cock	●	●	●
			J <sup>Note 5)</sup>	Drain guide 1/8	●	—	—
			W <sup>Note 6)</sup>	Drain cock with barb fitting (for ø6 x ø4 nylon tube)	—	●	●
	+						
	c	Flow direction	Nil	Flow direction: Left to right	●	●	●
			R	Flow direction: Right to left	●	●	●
+							
d	Pressure unit	Nil	Name plate and caution plate for bowl in imperial units: MPa	●	●	●	
		Z <sup>Note 7)</sup>	Name plate and caution plate for bowl in imperial units: psi, °F	○ <sup>Note 8)</sup>	○ <sup>Note 8)</sup>	○ <sup>Note 8)</sup>	

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).

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) Refer to Chemical data on page 42 for chemical resistance of the bowl.

Note 5) Without a valve function

Note 6) The combination of metal bowl: 2 is not available.

Note 7) 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 8) ○: For thread type: NPT only

# Mist Separator *AFM20-A to AFM40-A* Micro Mist Separator *AFD20-A to AFD40-A* Made to Order



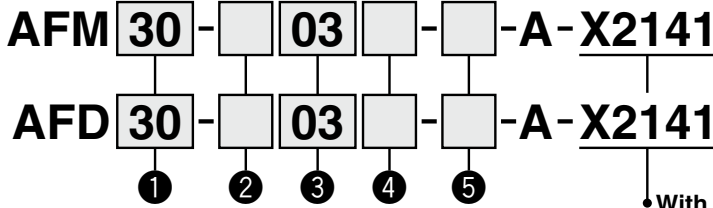
Please contact SMC for detailed dimensions, specifications, and lead times.

## ② With Element Service Indicator

Clogging status of elements can be checked visually.

### Applicable Model

Model	AFM30-A, AFD30-A	AFM40-A, AFD40-A	AFM40-06-A, AFD40-06-A
Port size	1/4, 3/8	1/4, 3/8, 1/2	3/4



- 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-R-A-X2141

A special body type is required to mount the clogging checker. It cannot be mounted on a standard body.

	Symbol	Description	① Body size			
			20	30	40	
② Thread type	Nil	Rc	●	●	●	
	N <sup>Note 1)</sup>	NPT	●	●	●	
	F <sup>Note 2)</sup>	G	●	●	●	
+						
③ Port size	01	1/8	●	—	—	
	02	1/4	●	●	●	
	03	3/8	—	●	●	
	04	1/2	—	—	●	
	06	3/4	—	—	●	
+						
④ Option	a Mounting	Nil	Without mounting option			
		B <sup>Note 3)</sup>	With bracket			
	+					
	b Float type auto drain	Nil	Without auto drain			
C <sup>Note 4)</sup>		N.C. (Normally closed) Drain port is closed when pressure is not applied.				
D <sup>Note 5)</sup>		N.O. (Normally open) Drain port is open when pressure is not applied.				
+						
⑤ Semi-standard	c Bowl <sup>Note 6)</sup>	Nil	Polycarbonate bowl			
		2	Metal bowl			
		8	Metal bowl with level gauge			
		C	With bowl guard			
	+					
d Drain port <sup>Note 11)</sup>	Nil	With drain cock				
	J <sup>Note 8)</sup>	Drain guide 1/8				
	W <sup>Note 12)</sup>	Drain guide 1/4				
	W <sup>Note 12)</sup>	Drain cock with barb fitting (for ø6 x ø4 nylon tube)				
+						
e Flow direction	Nil	Flow direction: Left to right				
	R	Flow direction: Right to left				
+						
f Pressure unit	Nil	Name plate and caution plate for bowl in imperial units: MPa				
	Z <sup>Note 9)</sup>	Name plate and caution plate for bowl in imperial units: psi, °F				

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 42 for chemical resistance of the bowl.

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

Note 8) Without a valve function

Note 9) 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 10) ○: For thread type: NPT only

Note 11) The combination of float type auto drain: C and D is not available.

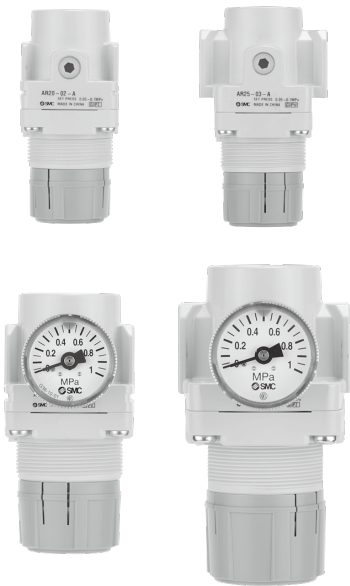
Note 12) The combination of metal bowl: 2 and 8 is not available.

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



# Modular Type Regulators

# Series AR

<b>Regulator Series AR</b>    <b>P.49 to 55</b>	Model	Port size	Options
	<b>AR20-A</b>	1/8, 1/4	Bracket  Round type pressure gauge
	<b>AR25-A</b>	1/4, 3/8	
	<b>AR30-A</b>		
	<b>AR40-A</b>	1/4, 3/8, 1/2	With set nut (for panel mount)*
	<b>AR40-06-A</b>	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

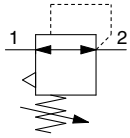
AL

AW

# Regulator

# AR20-A to AR40-A

## Symbol Regulator



## How to Order

AR **30** - **03** **BG** - **A** - **1N**

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

• Made to Order  
(Refer to page 55 for details.)

	Symbol	Description	①					
			Body size					
			20	25	30	40		
②	Thread type	Nil	Rc	●	●	●	●	
		N	NPT	●	●	●	●	
		F	G	●	●	●	●	
+								
③	Port size	01	1/8	●	—	—	—	
		02	1/4	●	●	●	●	
		03	3/8	—	●	●	●	
		04	1/2	—	—	—	●	
		06	3/4	—	—	—	●	
+								
④	a	Mounting	Nil	Without mounting option	●	●	●	●
			B <sup>Note 2)</sup>	With bracket	●	●	●	●
			H	With set nut (for panel fitting) <sup>Note 3)</sup>	●	●	●	●
	+							
	b	Pressure gauge <sup>Note 4)</sup>	Nil	Without pressure gauge	●	●	●	●
			G	Round type pressure gauge (with limit indicator)	●	●	●	●
M			Round type pressure gauge (with color zone)	●	●	●	●	
+								
⑤	c	Set pressure <sup>Note 5)</sup>	Nil	0.05 to 0.7 MPa setting	●	●	●	●
			1	0.02 to 0.2 MPa setting	●	●	●	●
	+							
	d	Exhaust mechanism	Nil	Relieving type	●	●	●	●
			N	Non-relieving type	●	●	●	●
	+							
	e	Flow direction	Nil	Flow direction: Left to right	●	●	●	●
			R	Flow direction: Right to left	●	●	●	●
	+							
	f	Knob	Nil	Downward	●	●	●	●
			Y	Upward	●	●	●	●
	+							
g	Pressure unit	Nil	Name plate and pressure gauge in imperial units: MPa	●	●	●	●	
		Z <sup>Note 6)</sup>	Name plate and pressure gauge in imperial units: psi	○ <sup>Note 7)</sup>	○ <sup>Note 7)</sup>	○ <sup>Note 7)</sup>	○ <sup>Note 7)</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) Only for the AR20-A to 40-A

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

Note 6) 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.)

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

Note 7) ○: For thread type: NPT only



## 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> (with color 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. Please download it via our website, <http://www.smcworld.com>**

### 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/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

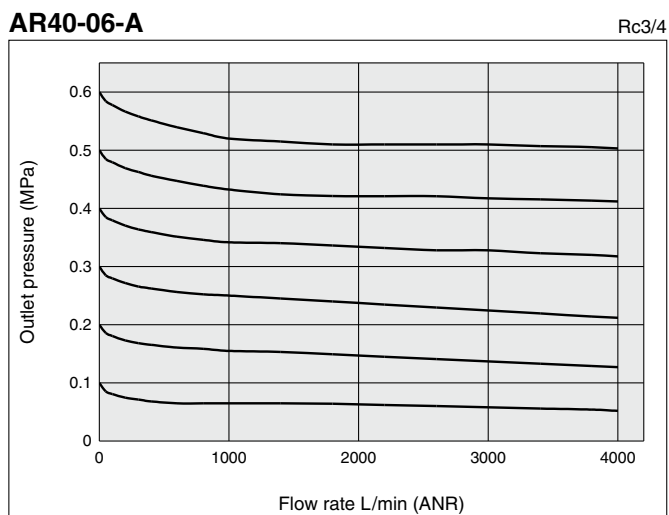
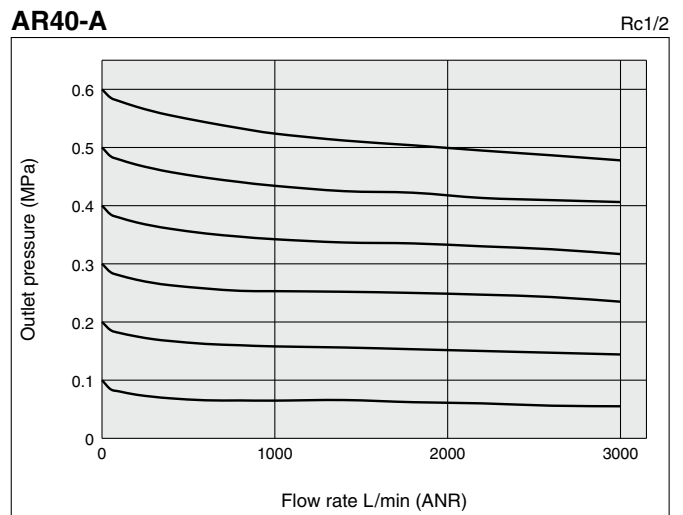
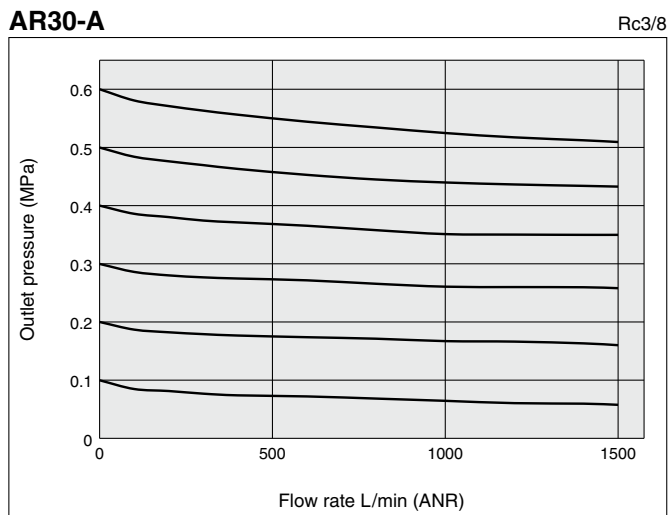
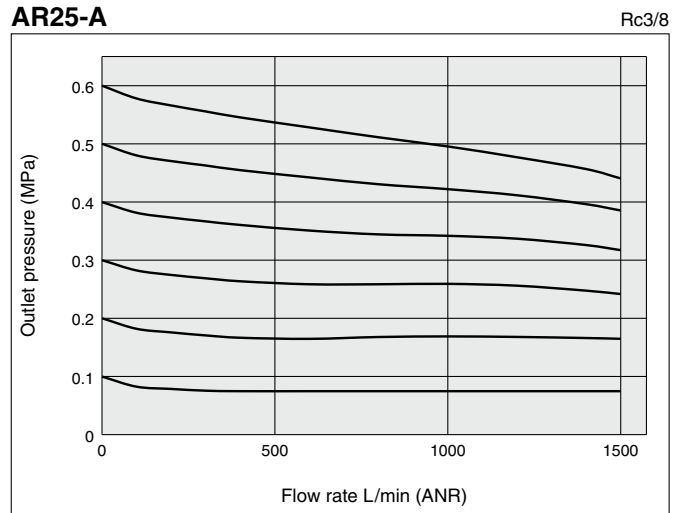
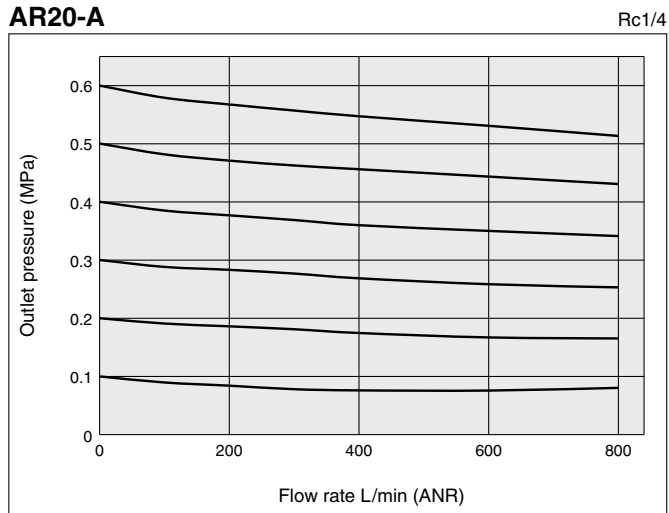
- Be sure to unlock the knob before adjusting the pressure and lock it after setting the pressure. Failure to follow this procedure can cause damage to the knob and the outlet pressure may fluctuate.
  - Pull the pressure regulator knob to unlock. (You can visually verify this with the "orange mark" 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. Please consult with SMC if the pulsation problem is not resolved.

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

## Flow-rate Characteristics (Representative values)

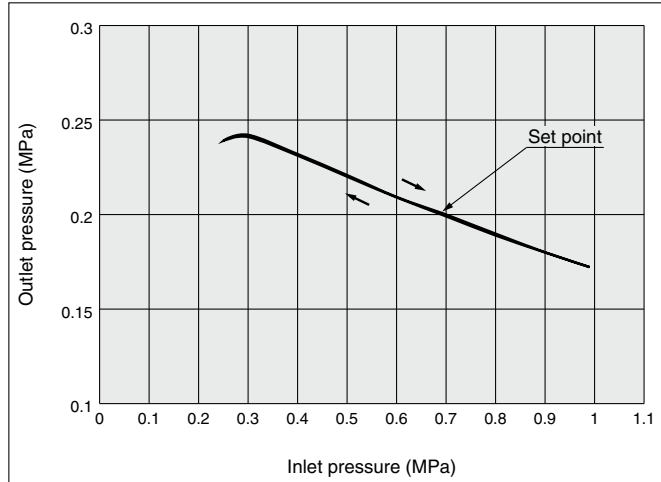
Condition: Inlet pressure 0.7 MPa



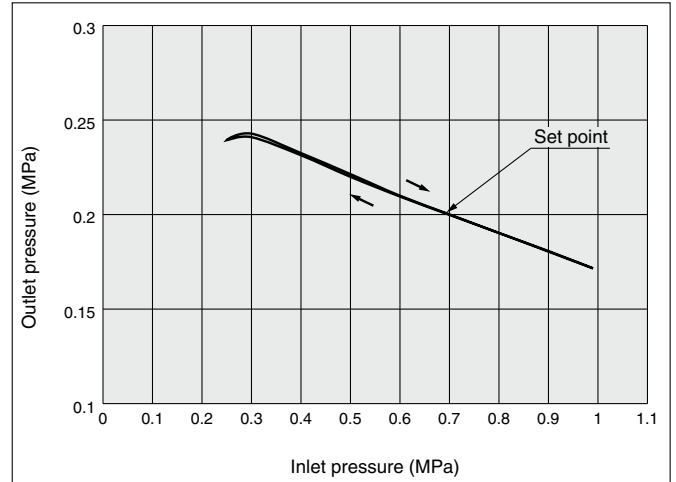
## Pressure Characteristics (Representative values)

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

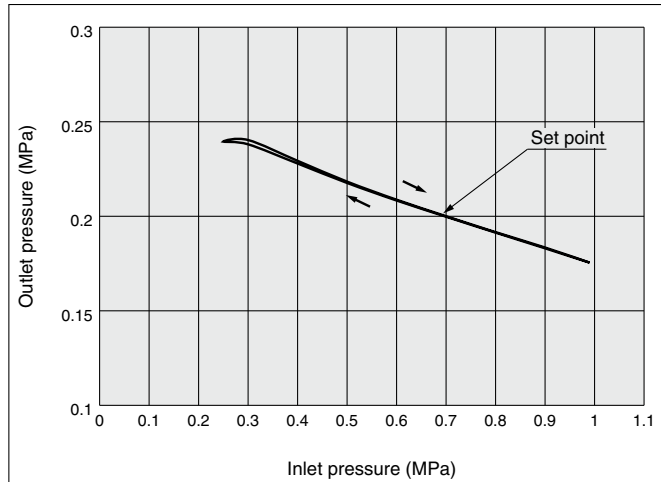
**AR20-A**



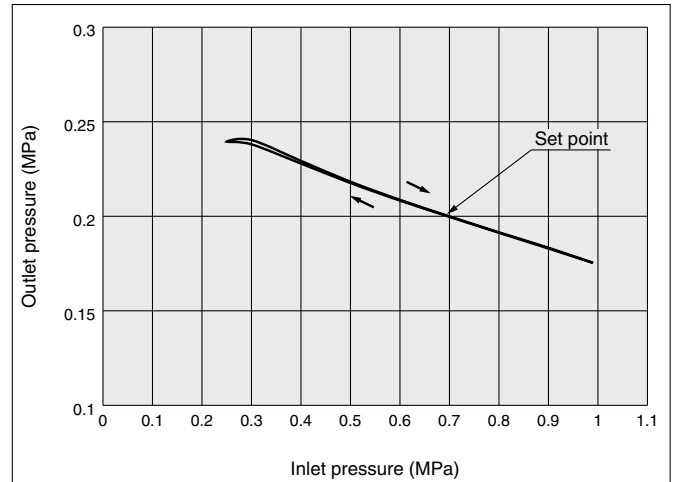
**AR25-A**



**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

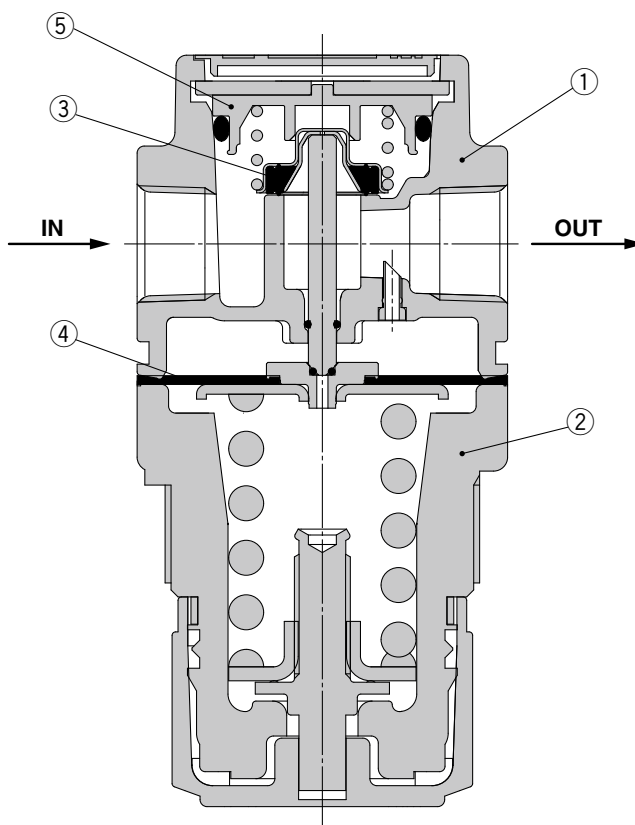
AL

AW

# Series AR20-A to AR40-A

## Construction

### AR20-A to 40-06-A



### Component Parts

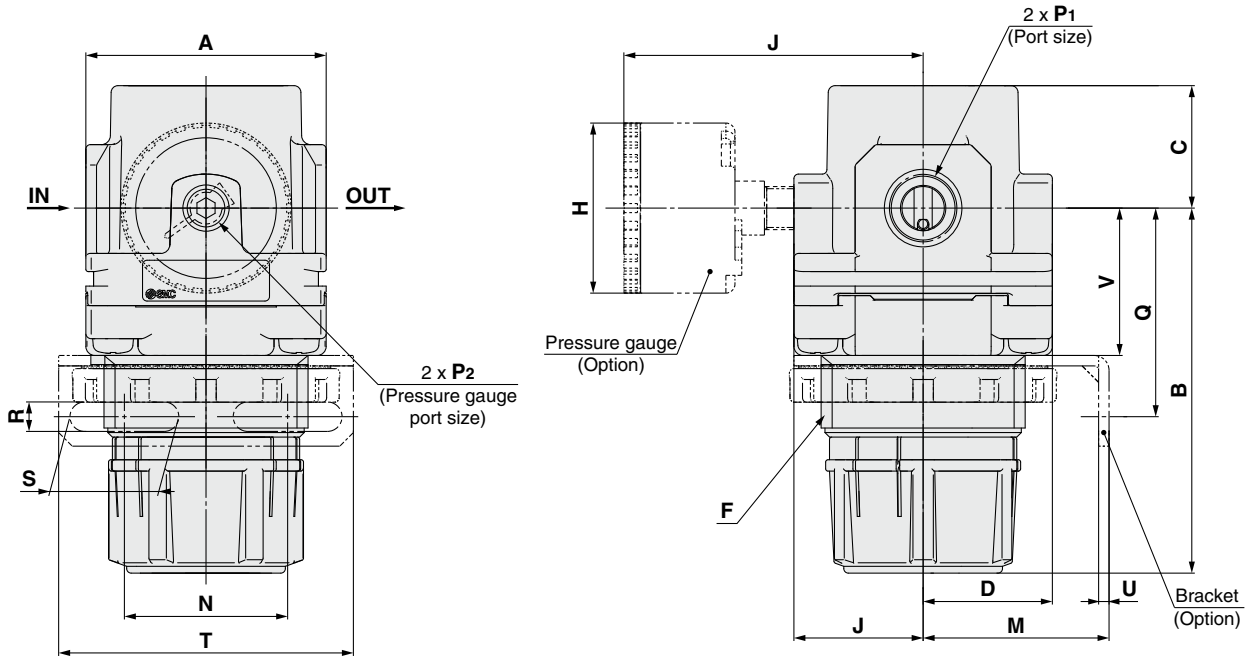
No.	Description	Material	Color
1	Body	Aluminum die-cast	White
2	Bonnet	Polyacetal	White

### Replacement Parts

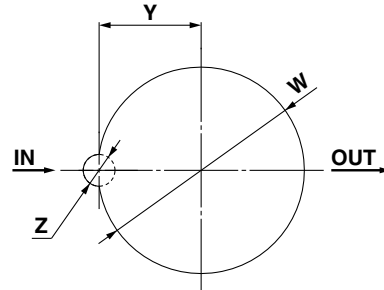
No.	Description	Material	Part no.				
			AR20-A	AR25-A	AR30-A	AR40-A	AR40-06-A
3	Valve assembly	Stainless steel, HNBR	AR22P-060AS		AR32P-060AS	AR42P-060AS	
4	Diaphragm assembly	Weatherable NBR	AR22P-150AS		AR32P-150AS	AR42P-150AS	
5	Valve guide assembly	Polyacetal	AR22P-050AS		AR32P-050AS	AR42P-050AS	

## 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												
	P <sub>1</sub>	P <sub>2</sub>	A	B <sup>Note)</sup>	C	D	F	J	Round type pressure gauge		Round type pressure gauge (with color zone)		Bracket mount						Panel mount				
									ø	H	ø	H	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.

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

## Made to Order



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

### ① 0.4 MPa Setting

The maximum set pressure is 0.4 MPa. When a pressure gauge is included, the display will show a range from 0 to 0.7 MPa.

#### Specifications

Proof pressure	1.5 MPa
Maximum operating pressure	1.0 MPa
Nominal filtration rating	0.05 to 0.4 MPa

#### Applicable Model

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

AR **30** - **03** - **A** - X**406**

① ② ③ ④ ⑤ •0.4 MPa setting

- Option/Semi-standard: Select one each for a to f.
- Option/Semi-standard symbol: When more than one specification is required, indicate in alphabetic order.  
Example) AR30-03BG-NR-A-X406

		Symbol	Description	① Body size				
				20	25	30	40	
②	Thread type	Nil	Rc	●	●	●	●	
		N	NPT	●	●	●	●	
		F	G	●	●	●	●	
		+						
③	Port size	01	1/8	●	—	—	—	
		02	1/4	●	●	●	●	
		03	3/8	—	●	●	●	
		04	1/2	—	—	—	●	
		06	3/4	—	—	—	●	
		+						
④	a	Mounting	Nil	Without mounting option	●	●	●	●
			B <sup>Note 2)</sup>	With bracket	●	●	●	●
			H	With set nut (for panel fitting) <sup>Note 3)</sup>	●	●	●	●
			+					
	b	Pressure gauge	Nil	Without pressure gauge	●	●	●	●
			G	Round type pressure gauge (with limit indicator)	●	●	●	●
M			Round type pressure gauge (with color zone)	●	●	●	●	
		+						
⑤	c	Exhaust mechanism	Nil	Relieving type	●	●	●	●
			N	Non-relieving type	●	●	●	●
			+					
	d	Flow direction	Nil	Flow direction: Left to right	●	●	●	●
			R	Flow direction: Right to left	●	●	●	●
			+					
	e	Knob	Nil	Downward	●	●	●	●
			Y	Upward	●	●	●	●
			+					
	f	Pressure unit	Nil	Name plate and caution plate for bowl in imperial units: MPa	●	●	●	●
Z <sup>Note 4)</sup>			Name plate and caution plate for bowl in imperial units: psi, °F	○ <sup>Note 5)</sup>	○ <sup>Note 5)</sup>	○ <sup>Note 5)</sup>	○ <sup>Note 5)</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) Only for the AR20-A to 40-A

Note 4) 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.)

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

Note 5) ○: For thread type: NPT only

# Modular Type Lubricators

## Series AL

<b>Lubricator Series AL</b>    <b>P.57 to 61</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

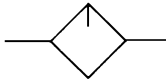
AL

AW

# Lubricator

# AL20-A to AL40-A

Symbol



## 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-3RW-A

	Symbol	Description	①				
			Body size				
			20	30	40		
②	Thread type	Nil	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)	Nil	Without mounting option	●	●	●	
		B <sup>Note 1)</sup>	With bracket	●	●	●	
+							
⑤	a	Bowl <sup>Note 5)</sup>	Nil	Polycarbonate bowl	●	●	●
			2	Metal bowl	●	●	●
			8	Metal bowl with level gauge	—	●	●
			C	With bowl guard	●	— <sup>Note 2)</sup>	— <sup>Note 2)</sup>
	+						
	b	Lubricant exhaust port	Nil	Without drain cock	●	●	●
			3	With drain cock	●	●	●
			3W	Drain cock with barb fitting (for ø6 x ø4 nylon tube)	—	●	●
	+						
	c	Flow direction	Nil	Flow direction: Left to right	●	●	●
			R	Flow direction: Right to left	●	●	●
	+						
d	Pressure unit	Nil	Name plate and caution plate for bowl in imperial units: MPa	●	●	●	
		Z <sup>Note 3)</sup>	Name plate and caution plate for bowl in imperial units: psi, °F	○ <sup>Note 4)</sup>	○ <sup>Note 4)</sup>	○ <sup>Note 4)</sup>	

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

Note 2) A bowl guard is provided as standard equipment (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

Note 5) Refer to Chemical data on page 59 for chemical resistance of the bowl.



# Lubricator *Series AL20-A to AL40-A*

## 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 [L/min (ANR)] <sup>Note)</sup>	15	1/4: 30 3/8: 40	1/4: 30 3/8: 40 1/2: 50	50
Oil capacity (cm <sup>3</sup> )	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 bowl	●	—	—	C2SL-3-A	C3SL-3-A	C4SL-3-A	
	—	—	●	C2SL-C-A	—	—	
	●	—	●	C2SL-3C-A	—	—	
	●	●	—	—	C3SL-3W-A	C4SL-3W-A	
Metal bowl	—	—	—	C2SL-2-A	C3SL-2-A	C4SL-2-A	
	●	—	—	C2SL-23-A	C3SL-23-A	C4SL-23-A	
Metal bowl with level gauge	—	—	—	—	C3LL-8-A	C4LL-8-A	
	●	—	—	—	C3LL-38-A	C4LL-38-A	

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

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

AC

AF+AR+AL

AW+AL

AF+AR

AF+AR

AF+AFM+AR

AW+AFM

Attachment

AF

AFM / AFD

AR

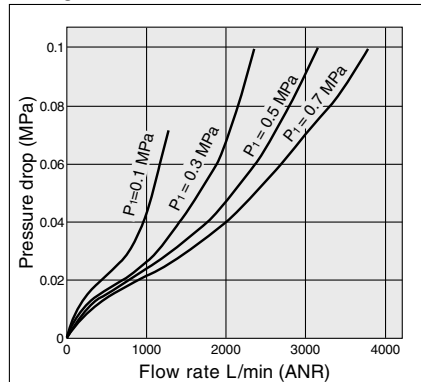
AL

AW

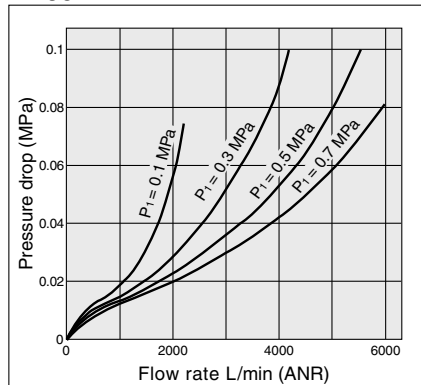
# Series AL20-A to AL40-A

## Flow-rate Characteristics (Representative values)

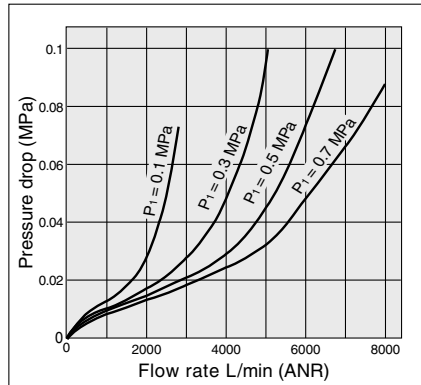
**AL20-A** Rc1/4



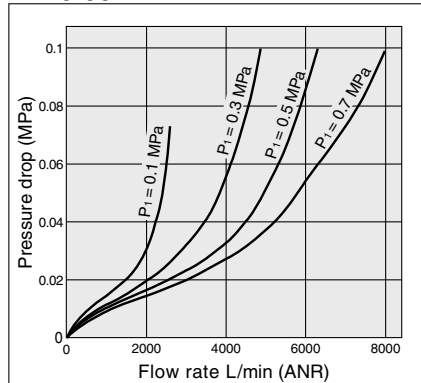
**AL30-A** Rc3/8



**AL40-A** Rc1/2



**AL40-06-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.

Please download it via our website, <http://www.smcworld.com>

### Selection

#### ⚠ Warning

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

Effects of atmosphere of organic solvents and chemicals, and where these elements are likely to adhere to the equipment. Chemical data for substances causing degradation (Reference)

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

△: Some effects may occur. ×: Effects will occur.

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

#### ⚠ Caution

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

### Maintenance

#### ⚠ Warning

- For the AL20-A type, replenish the lubricant after releasing the inlet pressure. Lubrication cannot take place under a pressurized condition.
- 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.

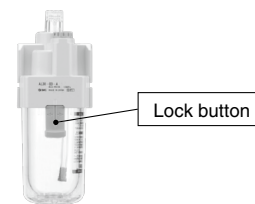
#### ⚠ Caution

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

### Mounting/Adjustment

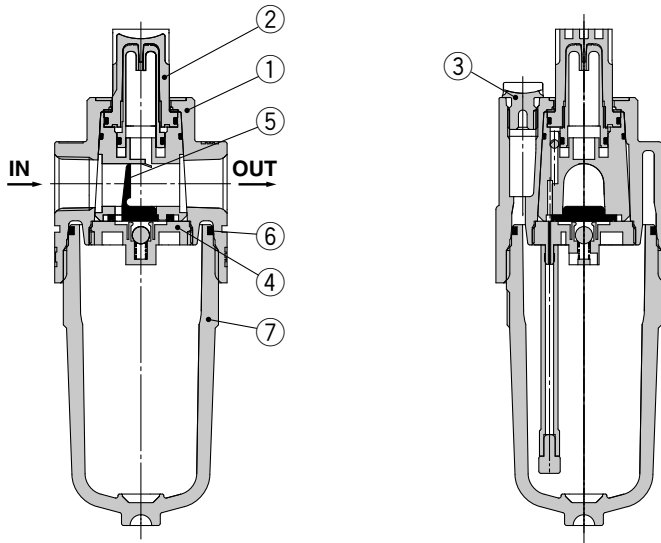
#### ⚠ Caution

- 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.

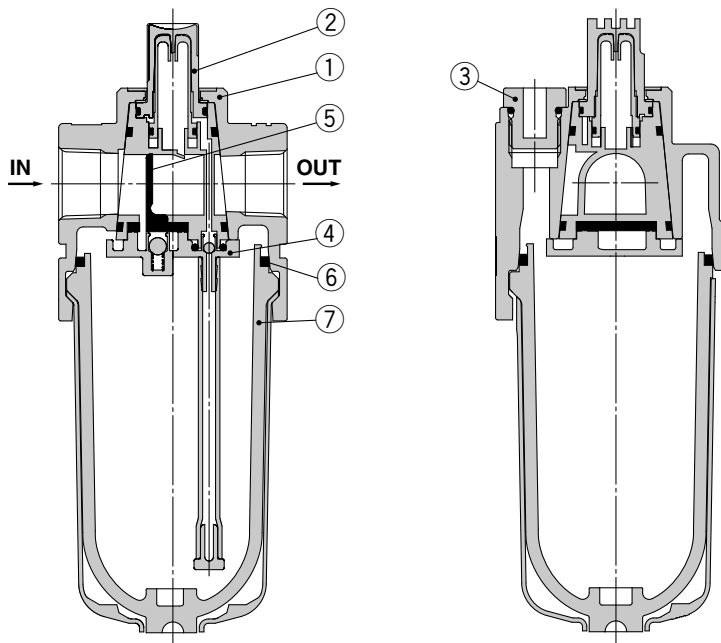


## Construction

### AL20-A



### AL30-A, AL40-A



### Component Parts

No.	Description	Material	Model	Color
1	Body	Aluminum 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	Bumper retainer assembly	—	AL20P-030AS	AL30P-030AS	AL40P-030AS	
5	Bumper (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	

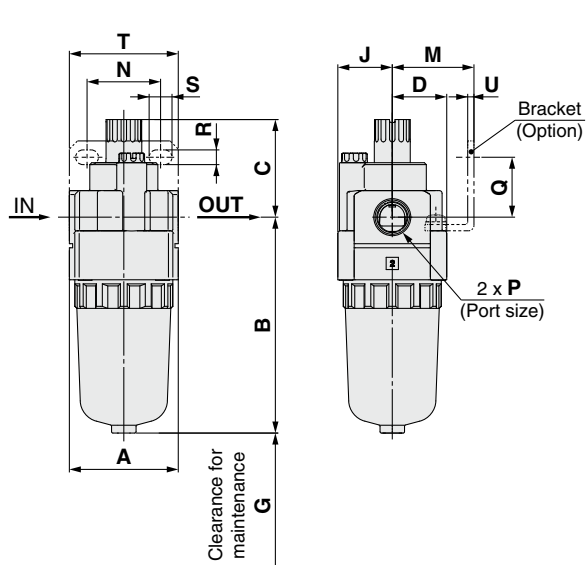
Note) Bowl seal is included. Please contact SMC regarding the bowl assembly supply for psi and °F unit specifications.

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

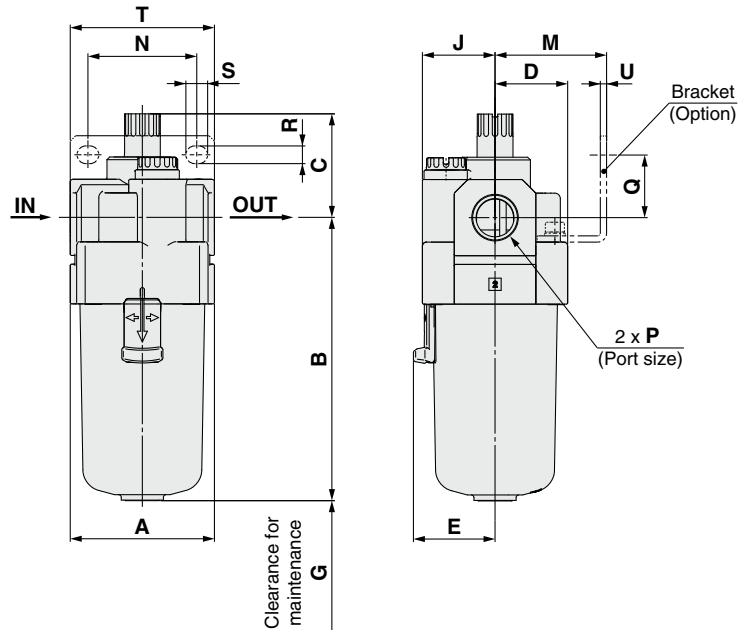
# Series AL20-A to AL40-A

## Dimensions

### AL20-A



### AL30-A to AL40-06-A




Applicable model	AL20-A			AL30-A to AL40-06-A
Optional/Semi-standard specifications	With drain cock	Metal bowl	Metal bowl with drain cock	Metal bowl
Dimensions				

Applicable model	AL30-A to AL40-06-A				
Optional/Semi-standard specifications	With drain cock	Metal bowl with level gauge	Metal bowl with drain cock	Metal bowl with level gauge, with drain cock	Drain cock with barb fitting
Dimensions					 Barb fitting Applicable tubing: T0604

Model	Standard specifications								Optional specifications						
	P	A	B	C	D	E	G	J	Bracket mount						
									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	Metal bowl	Metal bowl with drain cock	Metal bowl with level gauge	Metal bowl with level gauge, with drain cock
	B	B	B	B	B	B
AL20-A	87.7	—	84.5	87.5	—	—
AL30-A	115.1	123.6	104.1	117.6	124.1	137.6
AL40-A	147.1	155.6	136.1	149.6	156.1	169.6
AL40-06-A	149.1	157.6	138.1	151.6	158.1	171.6

# Modular Type Filter Regulators *Series AW*

<b>Filter Regulator Series AW</b>    <b>P.63 to 72</b>	Model	Port size	Options
	<b>AW20-A</b>	1/8, 1/4	Bracket Float type auto drain
	<b>AW30-A</b>	1/4, 3/8	Round type pressure gauge
	<b>AW40-A</b>	1/4, 3/8, 1/2	With set nut (for panel mount)*
	<b>AW40-06-A</b>	3/4	* Mounting pitch is different from existing AW series.

AC

AF+AR+AL

AW+AL

AF+AR

AF+AFM+AR

AW+AFM

Attachment

AF

AFM / AFD

AR

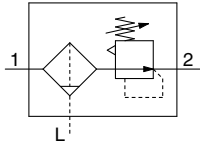
AL

AW

# Filter Regulator

# AW20-A to AW40-A

Symbol  
Filter Regulator



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

## How to Order

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

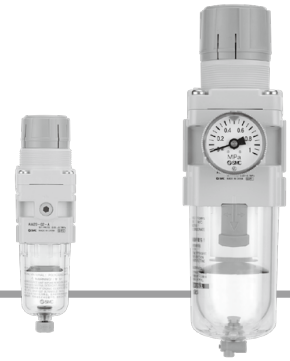
① ② ③ ④ ⑤

- 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

- Made to Order  
(Refer to page 71 for details.)

	Symbol	Description	①				
			Body size				
			20	30	40		
②	With backflow function	Nil	Rc	●	●	●	
		N <small>Note 1)</small>	NPT	●	●	●	
		F <small>Note 2)</small>	G	●	●	●	
+							
③	Thread type	01	1/8	●	—	—	
		02	1/4	●	●	●	
		03	3/8	—	●	●	
		04	1/2	—	—	●	
		06	3/4	—	—	●	
+							
④	a	Mounting	Nil	Without mounting option	●	●	●
			B <small>Note 4)</small>	With bracket	●	●	●
			H	With set nut (for panel mount)	●	●	●
	+						
	b	Float type auto drain	Nil	Without auto drain	●	●	●
			C <small>Note 5)</small>	N.C. (Normally closed) Drain port is closed when pressure is not applied.	●	●	●
			D <small>Note 6)</small>	N.O. (Normally open) Drain port is open when pressure is not applied.	—	●	●
	+						
	c	Pressure gauge <small>Note 7)</small>	Nil	Without pressure gauge	●	●	●
			G	Round type pressure gauge (with limit indicator)	●	●	●
			M	Round type pressure gauge (with color zone)	●	●	●
	+						
⑤	d	Set pressure <small>Note 8)</small>	Nil	0.05 to 0.7 MPa setting	●	●	●
			1	0.02 to 0.2 MPa setting	●	●	●
	+						
e	Bowl <small>Note 9)</small>	Nil	Polycarbonate bowl	●	●	●	
		2	Metal bowl	●	●	●	
		8	Metal bowl with level gauge	—	●	●	
		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 Semi-standard	f Drain port <small>Note 14)</small>	Nil	With drain cock	●	●	●
		J <small>Note 11)</small>	Drain guide 1/8	●	—	—
			Drain guide 1/4	—	●	●
		W <small>Note 15)</small>	Drain cock with barb fitting (for ø6 x ø4 nylon tube)	—	●	●
		+				
	g Exhaust mechanism	Nil	Relieving type	●	●	●
		N	Non-relieving type	●	●	●
		+				
	h Flow direction	Nil	Flow direction: Left to right	●	●	●
		R	Flow direction: Right to left	●	●	●
		+				
	i Pressure unit	Nil	Name plate, caution plate for bowl, and pressure gauge in imperial units: MPa	●	●	●
Z <small>Note 12)</small>		Name plate, caution plate for bowl, and pressure gauge in imperial units: psi, °F	○ <small>Note 13)</small>	○ <small>Note 13)</small>	○ <small>Note 13)</small>	

Note 1) Drain guide is NPT1/8 (applicable to the AW20-A) and NPT1/4 (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 G1/8 (applicable to the AW20-A) and G1/4 (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 66 for chemical resistance of the bowl.

Note 10) A bowl guard is provided as standard equipment (polycarbonate).

Note 11) Without a valve function

Note 12) 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.)

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

Note 13) ○: For thread type: NPT only

Note 14) The combination of float type auto drain: C and D is not available.

Note 15) The combination of metal bowl: 2 and 8 is not available.

## 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 (cm <sup>3</sup> )	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

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

# Series AW20-A to AW40-A

## Options/Part No.

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

## Semi-standard/Bowl Assembly Part No.

Semi-standard specifications						Model			
Bowl material	<sup>Note 3) Note 4)</sup> Float type auto drain		<sup>Note 4)</sup> With drain guide	With barb fitting	With bowl guard	AW20-A	AW30-A	AW40-A	AW40-06-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	—	—	
Metal bowl	—	—	—	—	—	C2SF-2-A	C3SF-2-A	C4SF-2-A	
	●	—	—	—	—	AD27-2-A	AD37-2-A	AD47-2-A	
	—	●	—	—	—	—	AD38-2-A	AD48-2-A	
	—	—	●	—	—	C2SF-2J-A	C3SF-2J-A	C4SF-2J-A	
Metal bowl with level gauge	—	—	—	—	—	—	C3LF-8-A	C4LF-8-A	
	●	—	—	—	—	—	AD37-8-A	AD47-8-A	
	—	●	—	—	—	—	AD38-8-A	AD48-8-A	
	—	—	●	—	—	—	C3LF-8J-A	C4LF-8J-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 with 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. Please download it via our website, <http://www.smcworld.com>**

### Design/Selection

#### ⚠ Warning

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

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

**Chemical data for substances causing degradation (Reference)**

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

△: Some effects may occur. ×: Effects will occur.

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

### Maintenance

#### ⚠ Warning

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

### Mounting/Adjustment

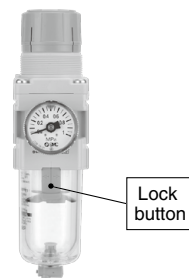
#### ⚠ Warning

1. 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.
2. Do not use tools on the pressure regulator knob as this may cause damage. It must be operated manually.

### Mounting/Adjustment

#### ⚠ Caution

1. 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).
2. 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. Please consult with SMC if the pulsation problem is not resolved.
3. 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

AF+AFM

AW+AFM

Attachment

AF

AFM / AFD

AR

AL

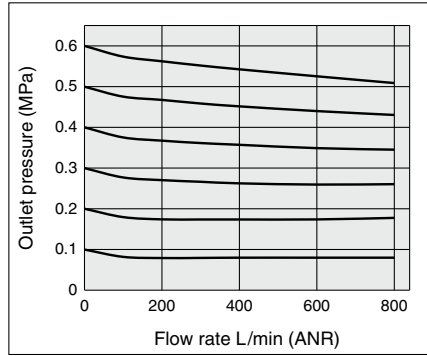
AW

# Series AW20-A to AW40-A

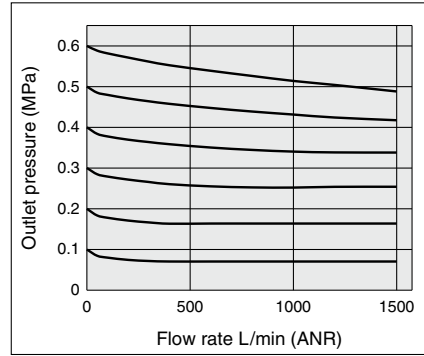
## Flow-rate Characteristics (Representative values)

Condition: Inlet pressure 0.7 MPa

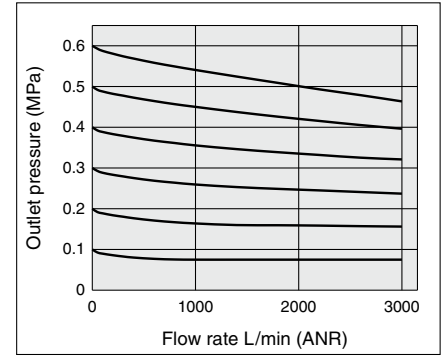
**AW20-A** Rc1/4



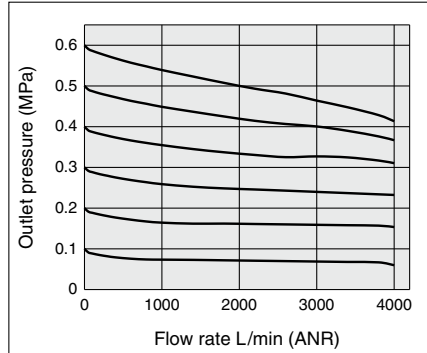
**AW30-A** Rc3/8



**AW40-A** Rc1/2



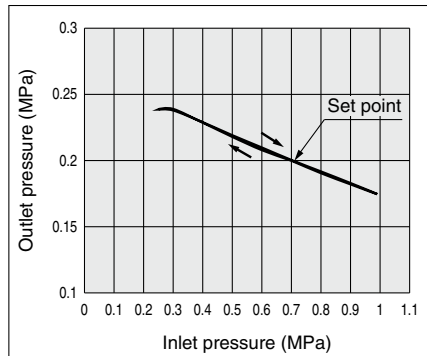
**AW40-06-A** Rc3/4



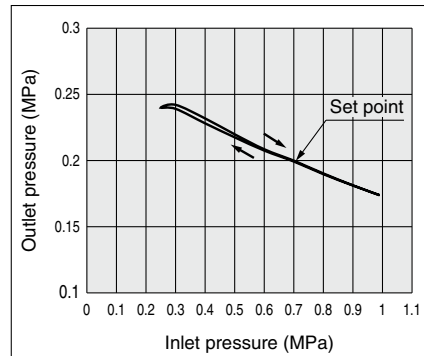
## Pressure Characteristics (Representative values)

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

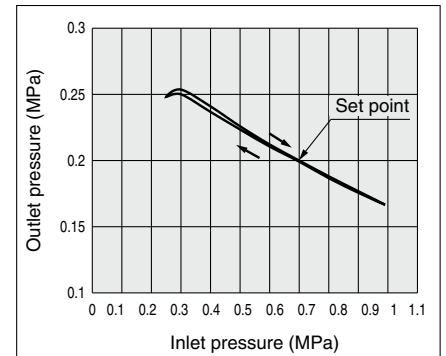
**AW20-A**



**AW30-A**



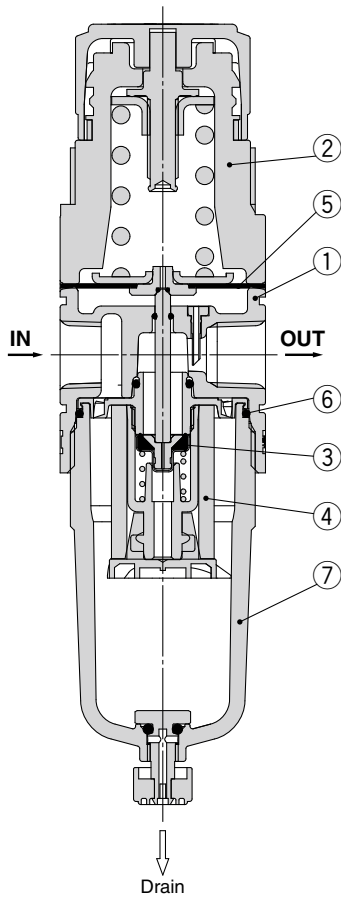
**AW40-A/AW40-06-A**



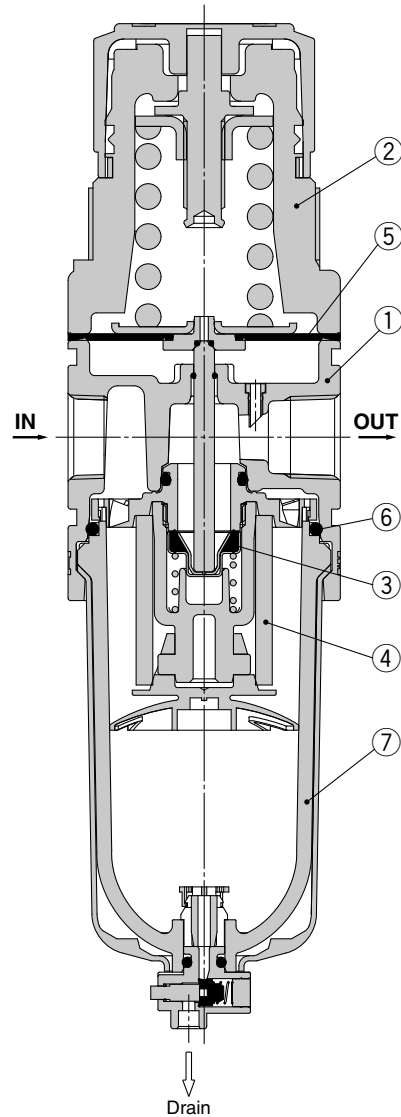
# Filter Regulator *Series AW20-A to AW40-A*

## Construction

### AW20-A



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



### Component Parts

No.	Description	Material	Color
1	Body	Aluminum 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

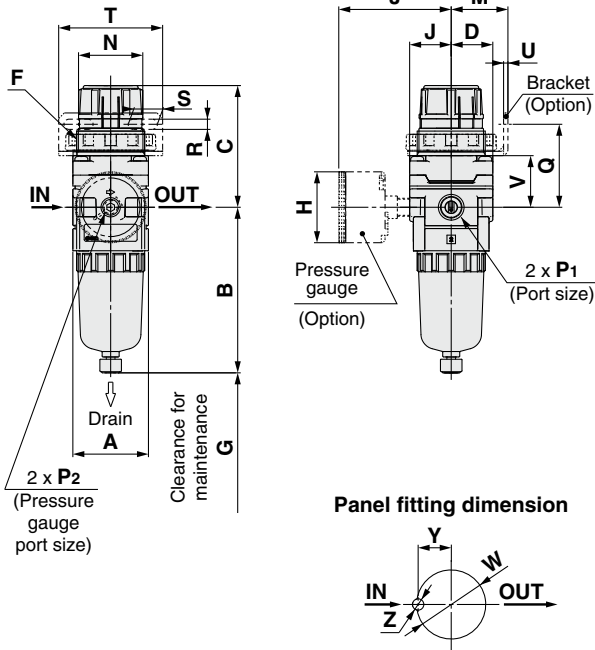


Plate thickness  
AW20-A : Max.4

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

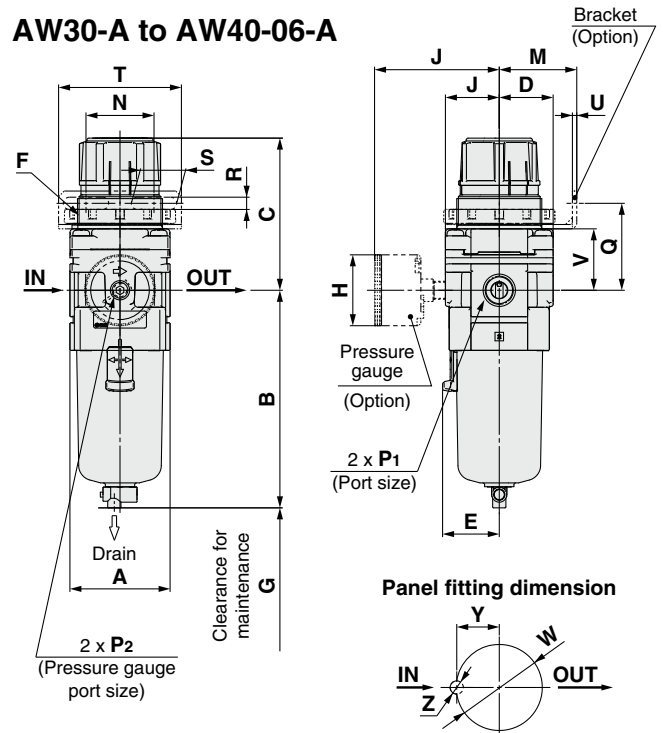


Plate thickness  
AW30-A to AW40-06-A : MAX.8

Applicable model Optional/Semi-standard specifications	AW20-A				AW30-A to AW40-06-A	
	With auto drain (N.C.)	With drain guide	Metal bowl	Metal bowl with drain guide	With auto drain (N.O./N.C.)	
Dimensions						

Applicable model Optional/Semi-standard specifications	AW30-A to AW40-06-A					
	Metal bowl	Metal bowl with drain guide	Metal bowl with level gauge	Metal bowl with level gauge, with drain guide	With drain guide	Drain cock with barb fitting
Dimensions						

Model	Standard specifications											Optional specifications			
	P1	P2	A	B	C <sup>Note)</sup>	D	E	F	G	J	H	J	H	J	
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	Metal bowl	Metal bowl with drain guide	Metal bowl with level gauge	Metal bowl with level gauge, with drain guide
	M	N	Q	R	S	T	U	V	W	Y	Z	B	B	B	B	B	B	B
AW20-A	30	34	43.9	5.4	15.4	55	2.3	27.3	36.5	17.5	6	104.9	—	91.4	B	B	B	B
AW30-A	41	36	46	6.5	24	65	2.3	32.5	45.5	22.5	7	156.8	123.6	121.9	117.6	122.1	137.6	142.1
AW40-A	50	38	54	8.5	26.5	70	2.3	38.4	52.5	26	7	186.9	155.6	153.9	149.6	154.1	169.6	174.1
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	151.6	156.1	171.6	176.1

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

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

## Made to Order



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

### ① 0.4 MPa Setting

The maximum set pressure is 0.4 MPa. When a pressure gauge is included, the display will show a range from 0 to 0.7 MPa.

### ② Long Bowl

Drain capacity is greater than that of standard models.

### Specifications

Proof pressure	1.5 MPa
Maximum operating pressure	1.0 MPa
Nominal filtration rating	0.05 to 0.4 MPa

### Applicable Model/Drain Capacity

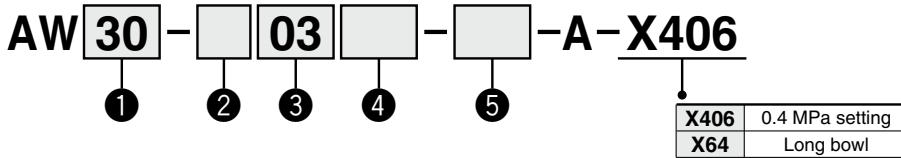
Model	AW20-A	AW30-A	AW40-A	AW40-06-A
Port size	1/8, 1/4	1/4, 3/8	1/4, 3/8, 1/2	3/4
Drain capacity (cm <sup>3</sup> )	19	43	88	

Note) Please consult with SMC for dimensions.

### Applicable Model

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

### How to Order



- 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-2N-A-X406

		0.4 MPa Setting			Long Bowl				
		① Body size			① Body size				
		20	30	40	20	30	40		
②	Thread type	Nil			●	●	●		
		N <sup>Note 1)</sup>			●	●	●		
		F <sup>Note 2)</sup>			●	●	●		
③	Port size	01	—	—	●	—	—		
		02	●	●	●	●	●		
		03	—	●	●	—	●	●	
		04	—	—	●	—	—	●	
		06	—	—	●	—	—	●	
④	a	Mounting	Nil	●	●	●	●	●	
			B <sup>Note 4)</sup>	●	●	●	●	●	●
			H	●	●	●	●	●	●
	b	Float type auto drain	Nil	●	●	●	—	—	—
			C <sup>Note 5)</sup>	●	●	●	—	—	—
			D <sup>Note 6)</sup>	—	●	●	—	—	—
	c	Pressure gauge	Nil	●	●	●	●	●	●
			G	●	●	●	● <sup>Note 7)</sup>	● <sup>Note 7)</sup>	● <sup>Note 7)</sup>
			M	●	●	●	● <sup>Note 7)</sup>	● <sup>Note 7)</sup>	● <sup>Note 7)</sup>

Note 1) Drain guide is NPT1/8 (applicable to the AW20-A) and NPT1/4 (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 G1/8 (applicable to the AW20-A) and G1/4 (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.

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

			0.4 MPa Setting			Long Bowl			
			①			①			
			Body size			Body size			
			20	30	40	20	30	40	
5 Semi-standard	d	Set pressure <sup>Note 8)</sup>	Nil	0.05 to 0.7 MPa setting		●	●	●	
			1	0.02 to 0.2 MPa setting		●	●	●	
				+					
	e	Bowl <sup>Note 9)</sup>	Nil	Polycarbonate bowl		●	●	●	
			2	Metal bowl		●	●	●	
			8	Metal bowl with level gauge		—	●	●	
			C	With bowl guard		●	—	—	
				+					
	f	Drain port <sup>Note 10)</sup>	Nil	With drain cock		●	●	●	
			J <sup>Note 11)</sup>	Drain guide 1/8		●	—	—	
				Drain guide 1/4		—	●	●	
			W <sup>Note 12)</sup>	Drain cock with barb fitting (for ø6 x ø4 nylon tube)		—	●	●	
				+					
	g	Exhaust mechanism	Nil	Relieving type		●	●	●	
			N	Non-relieving type		●	●	●	
			+						
h	Flow direction	Nil	Flow direction: Left to right		●	●	●		
		R	Flow direction: Right to left		●	●	●		
			+						
i	Pressure unit	Nil	Name plate and caution plate for bowl in imperial units: MPa		●	●	●		
		Z <sup>Note 13)</sup>	Name plate and caution plate for bowl in imperial units: psi, °F		○ <sup>Note 14)</sup>	○ <sup>Note 14)</sup>	○ <sup>Note 14)</sup>		

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 66 for chemical resistance of the bowl.

Note 10) The combination of float type auto drain: C and D is not available.

Note 11) Without a valve function

Note 12) The combination of metal bowl: 2 and 8 is not available.

Note 13) 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.)




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

Note 14) ○: For thread type: NPT only

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

## 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

- 1. The compatibility of the product is the responsibility of the person who designs the equipment or decides its specifications.**  
Since the product specified here is used under various operating conditions, its compatibility with specific equipment must be decided by the person who designs the equipment or decides its specifications based on necessary analysis and test results. The expected performance and safety assurance of the equipment will be the responsibility of the person who has determined its compatibility with the product. This person should also continuously review all specifications of the product referring to its latest catalog information, with a view to giving due consideration to any possibility of equipment failure when configuring the equipment.
- 2. Only personnel with appropriate training should operate machinery and equipment.**  
The product specified here may become unsafe if handled incorrectly. The assembly, operation and maintenance of machines or equipment including our products must be performed by an operator who is appropriately trained and experienced.
- 3. Do not service or attempt to remove product and machinery/equipment until safety is confirmed.**
  1. The inspection and maintenance of machinery/equipment should only be performed after measures to prevent falling or runaway of the driven objects have been confirmed.
  2. When the product is to be removed, confirm that the safety measures as mentioned above are implemented and the power from any appropriate source is cut, and read and understand the specific product precautions of all relevant products carefully.
  3. Before machinery/equipment is restarted, take measures to prevent unexpected operation and malfunction.
- 4. Contact SMC beforehand and take special consideration of safety measures if the product is to be used in any of the following conditions.**
  1. Conditions and environments outside of the given specifications, or use outdoors or in a place exposed to direct sunlight.
  2. 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 catalog.
  3. An application which could have negative effects on people, property, or animals requiring special safety analysis.
  4. 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

- 1. 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


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

### Compliance Requirements

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

### Revision history

- |                  |   |    |
|------------------|---|----|
| <b>Edition B</b> | * Addition of Metal bowl, Metal bowl with level gauge<br>* Addition of Made to Order (Long bowl, With element service indicator)<br>* Number of pages from 76 to 80 | RU |
|------------------|---|----|

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

## SMC Corporation

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Specifications are subject to change without prior notice and any obligation on the part of the manufacturer.

D-G

1st printing QV printing RU 8600SZ Printed in Japan.