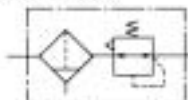


# Filter Regulator AW10 to 40

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

Direct operated, relieving type

JIS symbol



Page 61



AW20



AW40

## How to Order

**AW 30 F 03 BE 1N**

Filter regulator

Body size

10 20 30 40

Thread type

Nil	Metric thread (M5)
	Rc
N Note 1)	NPT
F Note 2)	G



Note 1) Drain guide is NPT1/4 (applicable to AW30 and 40), and the exhaust port for auto drain comes with ø3/8" One-touch fitting (applicable to AW30 and AW40).

Note 2) Drain guide is G1/4 (applicable to AW30 and AW40).

Port size

Symbol	Port size	10	20	30	40
M5	M5	●	—	—	—
01	1/8	—	●	—	—
02	1/4	—	●	●	●
03	3/8	—	—	●	●
04	1/2	—	—	—	●
06	3/4	—	—	—	●

### Optional specifications

Symbol	Description	Applicable model
1 Note 5)	0.02 to 0.2MPa setting	AW10 to 40
2	Metal bowl	AW10 to 40
6	Nylon bowl	AW10 to 40
8	Metal bowl with level gauge	AW30, 40
C	With bowl guard	AW20
J Note 6)	Drain guide 1/4	AW30, 40
N	Non-relieving	AW10 to 40
R	Flow direction: Right to left	AW10 to 40
W	Drain cock with barb fitting: ø6 x ø4 nylon tubing	AW30, 40
Z Note 7)	Name plate, caution plate for bowl, and pressure gauge in imperial units (PSI, °F)	AW10 to 40



\* When more than one specification is required, indicate in alphanumeric order.  
Note 5) The only difference from the standard specifications is the adjusting spring for the regulator. It does not restrict the setting of 0.2MPa or more.

Note 6) Without a valve function.

Note 7) For M5 and NPT thread types.

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

### Accessories Note 3)

Symbol	Description	Applicable model
Nil	—	—
B	With bracket	AW10 to 40
C	Float type auto drain (N.C.) Note 4)	AW10 to 40
D	Float type auto drain (N.O.) Note 4)	AW30, 40
E	With square embedded type pressure gauge (with limit indicator)	AW20 to 40
G	With round pressure gauge (without limit indicator)	AW10
	With round pressure gauge (with limit indicator)	AW20 to 40
H	With set nut (for panel mount)	AW10 to 40



Note 3) Optional parts are not assembled and are supplied loose at the time of shipment (except for options C, D and E).

Note 4) Applicable tube O.D for auto drain connection should be ø3/8" in case NPT thread port is chosen.

## Accessory/Optional specification combinations

⊙: Combination available

○: Varies depending on the model

■: Combination not available

△: Available only with NPT thread

Accessory/Optional specifications		Combination	Symbol	Accessory						Optional specification									Applicable filter regulator		
				B	C	D	E	G	H	1	2	6	8	C	J	N	R	W	Z	AW10	AW20
Accessories	With bracket (with set nut)	B		○	○	○	○		○	○	○	○	○	○	○	○	△	○	○	○	
	Float type auto drain (N.C.)	C	○			○	○	○	○	○	○	○		○	○		△	○	○	○	
	Float type auto drain (N.O.)	D	○			○	○		○	○	○	○		○	○		△			○	
	Square embedded type pressure gauge	E	○	○	○			○	○	○	○	○	○	○	○	○	△		○	○	
	Round pressure gauge	G	○	○	○			○	○	○	○	○	○	○	○	○	△	○	○	○	
	With set nut (for panel mount)	H		○	○	○	○		○	○	○	○	○	○	○	○	△	○	○	○	
Optional specifications	0.02 to 0.2MPa setting	-1	○	○	○	○	○	○		○	○	○	○	○	○	○	△	○	○	○	
	Metal bowl	-2	○	○	○	○	○	○					○	○	○		△		○	○	
	Nylon bowl	-6	○	○	○	○	○	○				○	○	○	○	○	△	○	○	○	
	Metal bowl with level gauge	-8	○	○	○	○	○	○					○	○	○		△			○	
	With bowl guard	-C	○	○		○	○	○	○		○			○	○		△		○		
	Drain guide 1/4	-J	○			○	○	○	○	○	○	○		○	○		△			○	
	Non-relieving type	-N	○	○	○	○	○	○	○	○	○	○	○		○		△	○	○	○	
	Flow direction: Right to left	-R	○	○	○	○	○	○	○	○	○	○	○	○		○	△	○	○	○	
	Drain cock with barb fitting: ø6 x ø4 nylon tubing	-W	○		○	○	○	○	○		○			○	○		△			○	
Name plate, caution plate for bowl, and pressure gauge in imperial units (PSI, °F)		-Z	△	△	△	△	△	△	△	△	△	△	△	△	△	△		△	△	△	

# AW10 to 40

## Standard specifications

Model	AW10	AW20	AW30	AW40	AW40-06
Port sizes	M5 x 0.8	1/8, 1/4	1/4, 3/8	1/4, 3/8, 1/2	3/4
Fluid	Air				
Proof pressure	1.5MPa				
Maximum operating pressure	1.0MPa				
Set pressure range	0.05 to 0.7MPa	0.05 to 0.85MPa			
Pressure gauge port size <small>Note 1)</small>	Rc 1/16 <small>Note 2)</small>	Rc, NPT, G 1/8	Rc, NPT, G 1/8	Rc, NPT, G 1/4	Rc, NPT, G 1/4
Relief pressure	Set pressure + 0.05MPa <small>Note 3)</small> [at relief flow rate of 0.1L/min (ANR)]				
Ambient and fluid temperature	-5 to 60°C (with no freezing)				
Nominal filtration rating	5μm				
Drain capacity (cm³)	2.5	8	25	45	45
Bowl material	Polycarbonate				
Bowl guard	—	Option	Standard		
Construction	Relieving type				
Weight (kg)	0.09	0.32	0.40	0.72	0.75

Note 1) Pressure gauge connection threads are not required for regulators with a square embedded type pressure gauge (AW20 to AW40).

Note 2) Use a bushing (part no: 131368) when connecting R 1/8 pressure gauge to R 1/16 gauge port.

Note 3) Not applicable to AW10.

## Accessory part no.

Accessory		Applicable model		AW10		AW20		AW30		AW40		AW40-06	
Bracket assembly <small>Note 1)</small>				AR10P-270AS		AW20P-270AS		AR30P-270AS		AR40P-270AS		AR40P-270AS	
Set nut				AR10P-260S		AR20P-260S		AR30P-260S		AR40P-260S		AR40P-260S	
Pressure gauge <small>Note 2)</small>	1.0MPa	Round	G27-10-R1		G36-10-□01		G36-10-□01		G46-10-□02		G46-10-□02		
		Square embedded type <small>Note 4)</small>	—		GC3-10AS		GC3-10AS		GC3-10AS		GC3-10AS		
	0.2MPa	Round	G27-10-R1 <small>Note 3)</small>		G36-2-□01		G36-2-□01		G46-2-□02		G46-2-□02		
		Square embedded type <small>Note 4)</small>	—		GC3-2AS		GC3-2AS		GC3-2AS		GC3-2AS		
Float type auto drain <small>Note 5)</small>		N.O.	—		—		AD38	AD38N <small>Note 6)</small>	AD48	AD48N <small>Note 6)</small>	AD48	AD48N <small>Note 6)</small>	
		N.C.	AD17		AD27		AD37	AD37N <small>Note 6)</small>	AD47	AD47N <small>Note 6)</small>	AD47	AD47N <small>Note 6)</small>	



Note 1) Assembly includes 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.

Contact SMC regarding the connection thread NPT and supply of the pressure gauge for PSI unit specifications.

Note 3) For 1MPa.

Note 4) Includes one O-ring and 2 mounting screws.

Note 5) Minimum operating pressure: N.O. type—0.1MPa; N.C. type—0.1MPa (AD17/27) and 0.15MPa (AD37/47). Contact SMC regarding the specifications for PSI unit and °F.

Note 6) When "N" is specified in the end of part number of auto drain, applicable tube O.D should be ø3/8".

## ⚠ Specific Product Precautions

Be sure to read before handling. Refer to pages 75 through 78 for safety instructions and F.R.L. unit precautions.

### Selection

#### ⚠ Warning

- Residual pressure release (outlet pressure release) is not completed by releasing inlet pressure. To release residual pressure, use a filter regulator with a back flow mechanism.

### Maintenance

#### ⚠ Warning

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

### Mounting & Adjustment

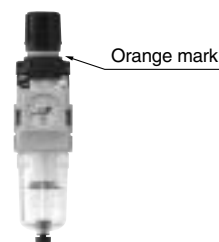
#### ⚠ Warning

- Set the regulator while checking the displayed values of the inlet and outlet pressure gauges. Turning the knob excessively can cause damage to the internal parts.
- The pressure gauge indicated with regulators for 0.02 to 0.2MPa setting is for 0.2MPa use only. Exceeding 0.2MPa of pressure can damage the gauge.
- 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.

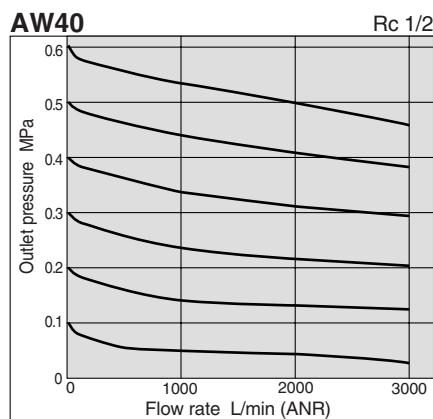
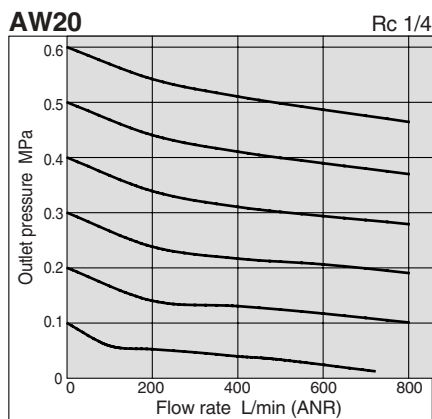
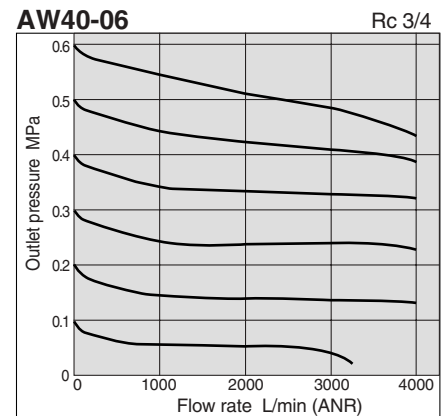
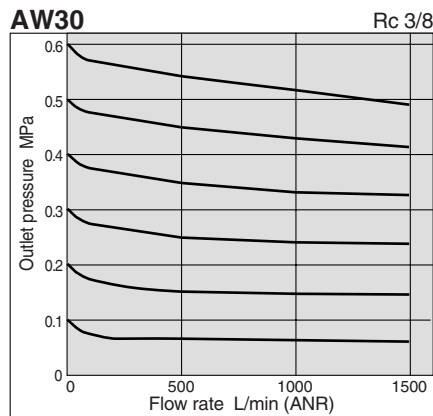
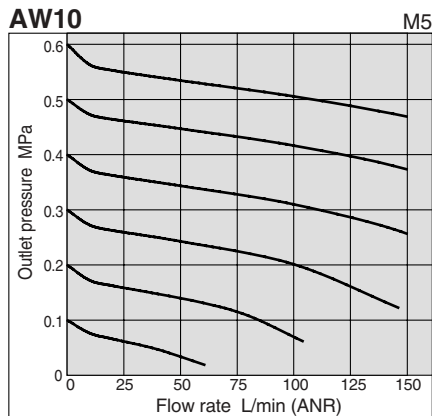
- Pull the pressure regulator knob to unlock. (You can visually verify this with the "orange mark" that appears in the gap.)
- Push the pressure regulator knob to lock. When the knob is not easily locked, turn it left and right a little and then push it (when the knob is locked, the "orange mark" will disappear).



- A knob cover is available to prevent careless operation of the knob. Refer to Features 1 for details.

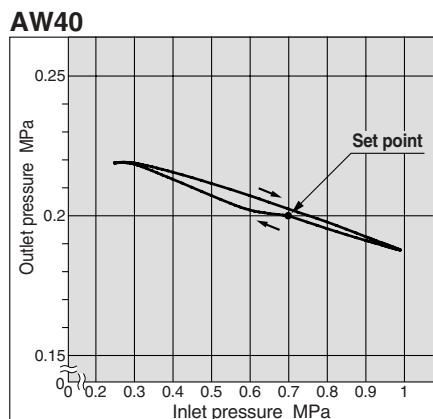
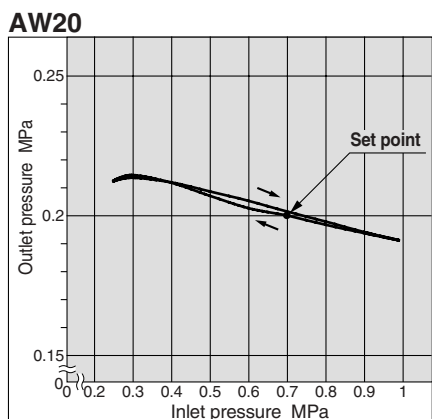
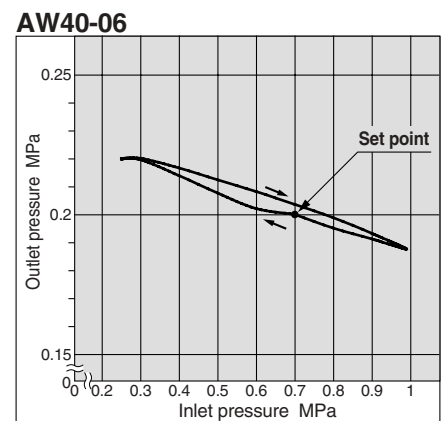
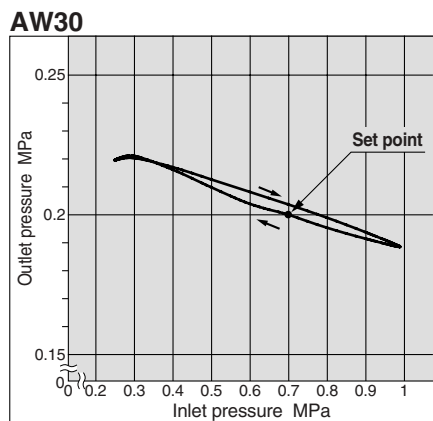
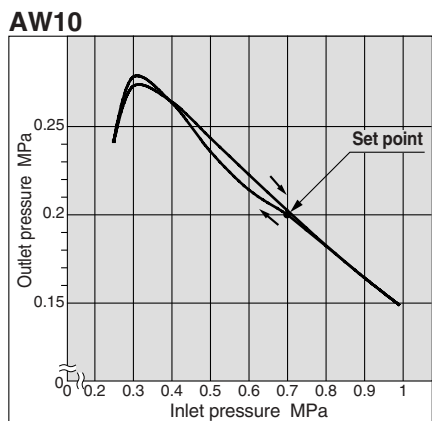
## Flow Characteristics (Representative values)

Condition: Inlet pressure 0.7MPa



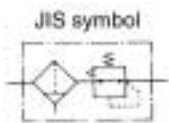
## Pressure Characteristics (Representative value)

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



# AW10 to 40

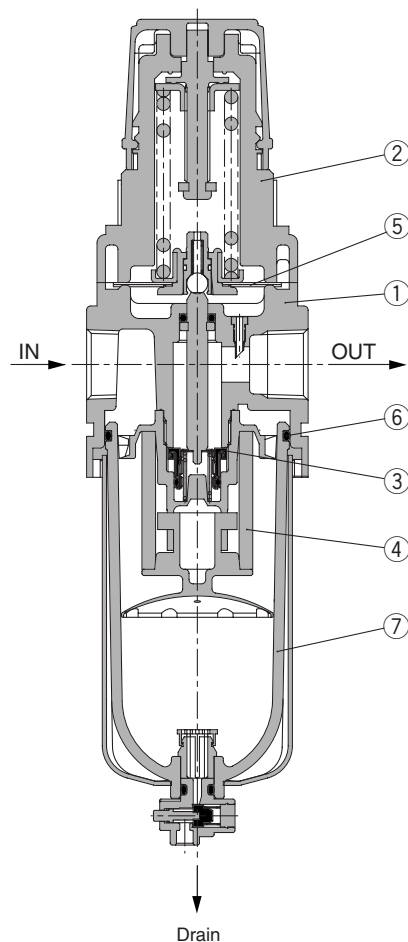
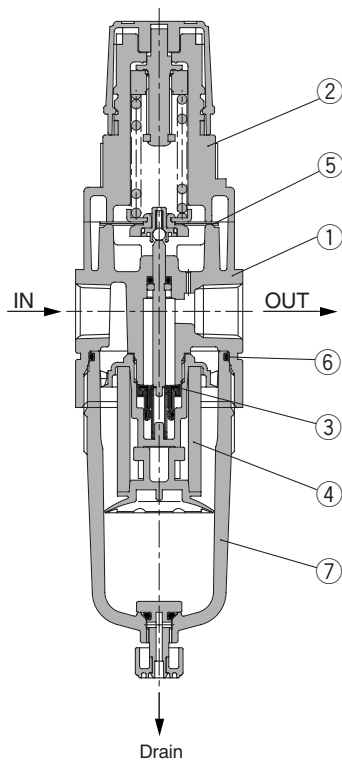
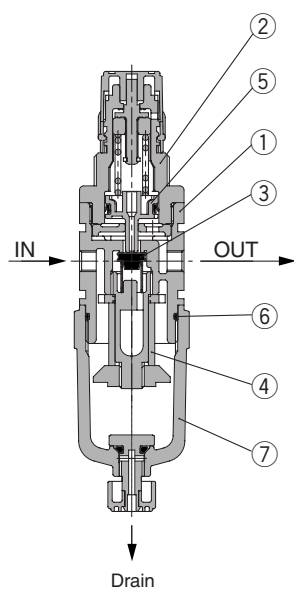
## Construction



AW10

AW20

AW30, 40



### Parts list

No.	Description	Material			Note
		AW10, 20	AW30	AW40, 40-06	
1	Body	Zinc die-cast	Aluminum die-cast		Platinum silver
2	Bonnet	Polyacetal			Black

### Replacement parts

No.	Description	Material	Part no.				
			AW10	AW20	AW30	AW40	AW40-06
3	Valve assembly	Stainless steel Brass, HNBR	AR10P-090S	AW20P-090AS	AW30P-090AS	AW40P-090AS	AW40P-090AS
4	Filter element	Non-woven fabric	AF10P-060S	AF20P-060S	AF30P-060S	AF40P-060S	AF40P-060S
5	Diaphragm assembly	Weatherability NBR	AR10P-150AS Note 1)	AR20P-150AS	AR30P-150AS	AR40P-150AS	AR40P-150AS
6	Bowl O-ring	NBR	C1SFP-260S	C2SFP-260S	C3SFP-260S	C4SFP-260S	C4SFP-260S
7	Bowl assembly Note 2)	PC	C1SF	C2SF	C3SF Note 3)	C4SF Note 3)	C4SF Note 3)



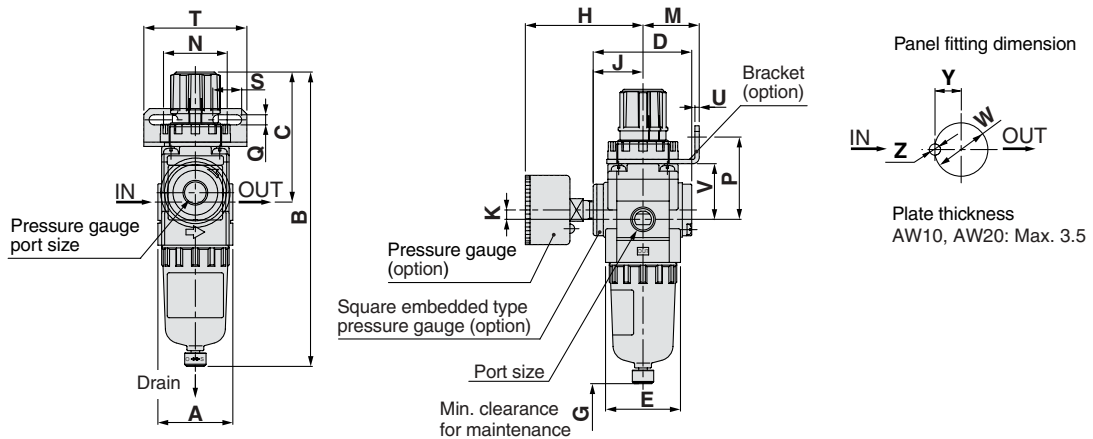
Note 1) AW10 is a piston and a gasket (KSYP-13) type assembly.

Note 2) Including O-Ring. Contact SMC regarding the bowl assembly supply for PSI and °F unit specifications.

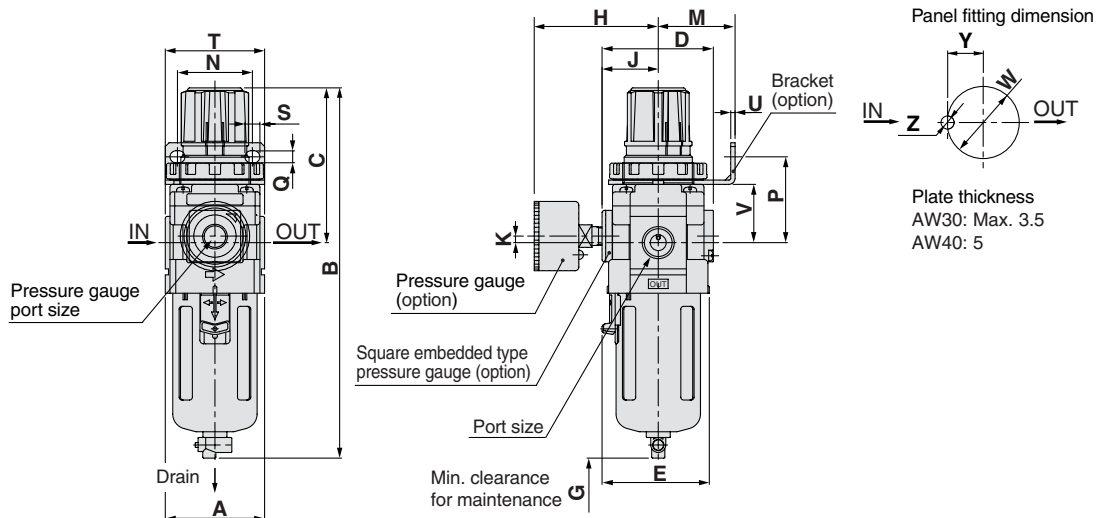
Note 3) The AW30 and AW40 bowl assembly comes with a bowl guard (steel band material).

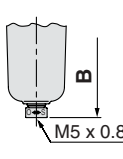
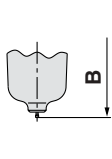
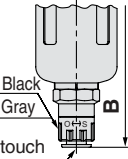
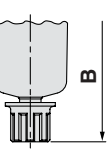
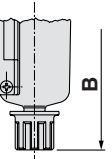
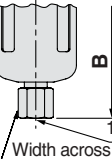
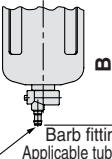
## Dimensions

### AW10, 20



### AW30, 40



Applicable model	AW10, AW20		AW30, AW40, AW40-06				
Optional specifications	With auto drain (N.C.)	Metal bowl	With auto drain (N.O./N.C.)	Metal bowl	Metal bowl with level gauge	With drain guide	Drain cock with barb fitting
							

Model	Port size	Standard specification						Accessory specification														
								With pressure gauge			Bracket mounting size						Panel mount				With auto drain	
		A	B	C	D	E	G	H	J	K	M	N	P	Q	S	T	U	V	W	Y	Z	B
AW10	M5 x 0.8	25	108	48	25	28	25	26	—	0	25	28	30	4.5	6.5	40	2	18	18.5	—	—	125
AW20	1/8, 1/4	40	160	73	52	40	40	63	27	5	30	34	44	5.4	15.4	55	2.3	30	28.5	14	6	177
AW30	1/4, 3/8	53	201	86	59	57	55	66	30.5	3.5	41	40	46	6.5	8	53	2.3	31	38.5	19	7	242
AW40	1/4, 3/8, 1/2	70	239	92	75	73	80	76	38.5	1.5	50	54	54	8.5	10.5	70	2.3	35.5	42.5	21	7	278
AW40-06	3/4	75	242	93	75	73	80	76	38.5	1.2	50	54	56	8.5	10.5	70	2.3	37	42.5	21	7	278

Model	Optional specification			
	With barb fitting	With drain guide	Metal bowl	Metal bowl with level gauge
AW10	—	—	107	—
AW20	—	—	160	—
AW30	209	208	214	234
AW40	247	246	251	272
AW40-06	250	249	255	275

# Filter Regulator AW20 to 40 Made to Order Specifications

Contact SMC for detailed dimensions, specifications, and lead times.



## ① Special Temperature Environment

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

### Specifications

Part no.	-X430	-X440
Environment	Low temperature	High temperature
Ambient temperature	-30 to 60°C	-5 to 80°C
Fluid temperature	-5 to 60°C (with no freezing)	
Material	Rubber parts	Special NBR
	Main parts	FPM

### Applicable models

Model	AW30	AW40	AW40-06
Port size	1/4, 3/8	1/4, 3/8, 1/2	3/4

### How to Order

**Filter regulator** **AW 30** **F 03 BG** **2 N** **X430**

**Body size**  
30 40

**Thread type**  
Nil Rc  
N Note 1) NPT  
F Note 2) G

**Port size**

Symbol	Port size	Body size
02	1/4	● ●
03	3/8	● ●
04	1/2	— ●
06	3/4	— ●

**Option** Note 3)

Symbol	Description	Applicable model
Nil	—	—
B	With bracket	AW30, 40
G Note 4)	With round pressure gauge (with limit indicator)	AW30, 40
H	With set nut (for panel mount)	AW30, 40

**Bowl**

Symbol	Description	Applicable model
Nil Note 5)	Metal bowl	AW30, 40

**Optional specifications**

Symbol	Description	Applicable model
1 Note 6)	0.02 to 0.2MPa setting	AW30, 40
J Note 7)	Drain guide 1/4	AW30, 40
N	Non-relieving type	AW30, 40
R	Flow direction: Right to left	AW30, 40
Z Note 8)	Name plate, caution plate for bowl, and pressure gauge in imperial units (PSI, °F)	AW30, 40

Note 1) Drain guide is NPT1/4 (applicable to AW30 to 40)  
Note 2) Drain guide is G1/4 (applicable to AW30 to 40).  
Note 3) Bracket is not assembled and is supplied loose at the time of shipment.  
Note 4) Mounting thread for pressure gauge: 1/8 for AW30; 1/4 for AW40  
Pressure gauge type: G43  
Note 5) Only Metal Bowl available

## ② High Pressure

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

### Specifications

Part no.	-X425
Proof pressure	3.0MPa
Maximum operating pressure	2.0MPa
Set pressure range	0.1 to 1.6MPa
Ambient and fluid temperature	-5 to 60°C (with no freezing)

### Applicable models

Model	AW20	AW30	AW40	AW40-06
Port size	1/8, 1/4	1/4, 3/8	1/4, 3/8, 1/2	3/4



### How to Order

**Filter regulator** **AW 30** **F 03 BG** **2 N** **X425**

**Body size**  
20 30 40

**Thread type**  
Nil Rc  
N Note 1) NPT  
F Note 2) G

**Port size**

Symbol	Port size	Body size
01	1/8	● — —
02	1/4	● ● ●
03	3/8	— ● ●
04	1/2	— — ●
06	3/4	— — ●

**Option** Note 3)

Symbol	Description	Applicable model
Nil	—	—
B	With bracket	AW20 to 40
G Note 4)	With round pressure gauge (with limit indicator)	AW20 to 40
H	With set nut (for panel mount)	AW20 to 40

**Bowl**

Symbol	Description	Applicable model
2 Note 5)	Metal bowl	AW20 to 40
8 Note 5)	Metal bowl with level gauge	AW30, 40

**Optional specifications**

Symbol	Description	Applicable model
J Note 6)	Drain guide 1/4	AW30, 40
N	Non-relieving type	AW20 to 40
R	Flow direction: Right to left	AW20 to 40
Z Note 7)	Name plate, caution plate for bowl, and pressure gauge in imperial units (PSI, °F)	AW20 to 40

Note 1) Drain guide is NPT1/4 (applicable to AW30 to 40)  
Note 2) Drain guide is G1/4 (applicable to AW30 to 40).  
Note 3) Bracket is not assembled and is supplied loose at the time of shipment.  
Note 4) Mounting thread for pressure gauge: 1/8 for AW20 to 30; 1/4 for AW40  
Pressure gauge type: G46  
Note 5) Only metal bowl or metal bowl with level gauge available.

\* When more than one specification is required, indicate in ascending alphanumeric order.

Note 6) The only difference from the standard specifications is the adjusting spring for the regulator. It does not restrict the setting of 0.2MPa or more.

Note 7) Without a valve function.

Note 8) 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 9) Consult SMC for detailed dimensions and available attachments and options.

Note 10) Comes with T type handle.

\* When more than one specification is required, indicate in ascending alphanumeric order.

Note 6) Without a valve function.

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.)



# Filter Regulator AW20(K) to AW40(K) Made to Order Specifications

Contact SMC for detailed dimensions, specifications, and lead times.



## ③ With Digital Pressure Switch

Digital pressure switch (ISE30-□□-□□-□L) is supplied loose for mounting on pressure gauge connection port.

### Specifications

Part number suffix		-X465
Pressure switch	Model	ISE30-□□-□□-□L
	Set pressure range (MPa)	-0.1 to 1
	Set and display resolution (MPa)	0.001
	Power supply voltage	12 to 24 VDC ± 10%, Ripple (p-p) 10% or less (with power supply polarity protection)
	Power consumption	45 mA or less (70 mA or less for current output)

\*Pressure gauge port size: 1/8

### Applicable models

Model	AW20(K)	AW30(K)	AW40(K)	AW40(K)-06
Port size	1/8, 1/4	1/4, 3/8	1/4, 3/8, 1/2	3/4



## How to Order

**AW 30 K - F 03 B - 1N - X465 A**

Filter regulator

Body size

20	30	40
----	----	----

With back flow mechanism

Nil	—
K	With back flow mechanism

Thread type

Nil	Rc
N Note 1)	NPT
F Note 2)	G



Note 1) Drain guide is NPT1/4 (applicable to AW30 to 40), and the exhaust port for auto drain comes with ø3/8" One-touch fitting (applicable to AW30 to 40).

Note 2) Drain guide is G1/4 (applicable to AW30 to 40).

Port size

Symbol	Port size	Body size		
		20	30	40
01	1/8	●	●	—
02	1/4	●	●	●
03	3/8	—	●	●
04	1/2	—	—	●
06	3/4	—	—	●

### Switch specifications

Symbol	Output specifications
A	NPN output
B	PNP output
C	1 to 5V output
D	4 to 20mA output

With digital pressure switch (Series ISE30) Note 7)

Note 7) Optional parts are not assembled and are supplied loose at the time of shipment.

### Optional specifications

Symbol	Description	Applicable model
1 Note 4)	0.02 to 0.2MPa setting	AW20(K) to 40(K)
2	Metal bowl	AW20(K) to 40(K)
6	Nylon bowl	AW20(K) to 40(K)
8	Metal bowl with level gauge	AW30(K), 40(K)
C	With bowl guard	AW20(K)
J Note 5)	Drain guide 1/4	AW30(K), 40(K)
N	Non-relieving type	AW20(K) to 40(K)
R	Flow direction: Right to left	AW20(K) to 40(K)
W	Drain cock with barb fitting: ø6 x ø4 nylon tubing	AW30(K), 40(K)
Z Note 6)	Name plate and caution plate for bowl in imperial units (PSI, °F)	AW20(K) to 40(K)



\* When more than one specification is required, indicate in ascending alphanumeric order.

Note 4) The only difference from the standard specifications is the adjusting spring for the regulator. It does not restrict the setting of 0.2MPa or more.

Note 5) Without a valve function.

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.)

### Option Note 3)

Symbol	Description	Applicable model
Nil	—	—
B	With bracket	AW20(K) to 40(K)
C	Float type auto drain (N.C.) Note 4)	AW20(K) to 40(K)
D	Float type auto drain (N.O.) Note 4)	AW30(K), 40(K)
H	With set nut (for panel mount)	AW20(K) to 40(K)



Note 3) Optional parts are not assembled and are supplied loose at the time of shipment (except for options C and D)

Note 4) Applicable tube O.D for auto drain connection should be ø3/8" in case NPT thread port is chosen.

Note 8) Consult SMC for detailed dimensions and available attachments and options.

Note 9) Refer to SMC catalog CAT.ES100-42 for detailed specifications and instructions of digital pressure switch.

# Filter Regulator with Back Flow Mechanism

## AW20K/30K/40K

### How to Order



AW40K



AW20K

**AW 30 K - F 03 BE - 1N**

Filter regulator

Body size

20 30 40

With back flow mechanism

Note) AW10 comes with a back flow mechanism as a standard feature. If the set pressure is not exceeding 0.15MPa, back flow may not occur. When a back flow mechanism is required with a set pressure of less than 0.15MPa, contact SMC.

Thread type

Nil	Rc
N Note 1)	NPT
F Note 2)	G

Note 1) Drain guide is NPT 1/4 (applicable to AW30K and 40K), and the exhaust port for auto drain comes with  $\phi 3/8"$  One-touch fitting (applicable to AW30K and AW40K).  
Note 2) Drain guide is G 1/4 (applicable to AW30K and AW40K).

Port size

Symbol	Port size	Body size		
		20	30	40
01	1/8	●	—	—
02	1/4	●	●	●
03	3/8	—	●	●
04	1/2	—	—	●
06	3/4	—	—	●

### Optional specifications

Symbol	Description	Applicable model
1 Note 4)	0.02 to 0.2MPa setting	AW20K to 40K
2	Metal bowl	AW20K to 40K
6	Nylon bowl	AW20K to 40K
8	Metal bowl with level gauge	AW30K, 40K
C	With bowl guard	AW20K
J Note 5)	Drain guide 1/4	AW30K, 40K
N	Non-relieving type	AW20K to 40K
R	Flow direction: Right to left	AW20K to 40K
W	Drain cock with barb fitting: $\phi 6 \times \phi 4$ nylon tubing	AW30K, 40K
Z Note 6)	Name plate, caution plate for bowl, and pressure gauge in imperial units (PSI, °F)	AW20K to 40K

\* When more than one specification is required, indicate in alphanumeric order.  
Note 4) The only difference from the standard specifications is the adjusting spring for the regulator. It does not restrict the setting of 0.2MPa or more.  
Note 5) Without a valve function.  
Note 6) For NPT thread type.  
This product is for overseas use only according to the new Measurement Law. (The SI unit type is provided for use in Japan.)

### Accessories

Symbol	Description	Applicable model
Nil	—	—
B	With bracket	AW20K to 40K
C	Float type auto drain (N.C.) Note 2)	AW20K to 40K
D	Float type auto drain (N.O.) Note 2)	AW30K, 40K
E	With square embedded type pressure gauge (with limit indicator)	AW20K to 40K
G	With round pressure gauge (with limit indicator)	AW20K to 40K
H	With set nut (for panel mount)	AW20K to 40K

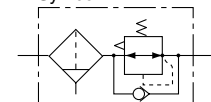
Note 1) Optional parts are not assembled and are supplied loose at the time of shipment (except for options C, D and E).  
Note 2) Applicable tube O.D for auto drain connection should be  $\phi 3/8"$  in case NPT thread port is chosen.

### Standard specifications

Model	AW20K	AW30K	AW40K	AW40K-06
Port sizes	1/8, 1/4	1/4, 3/8	1/4, 3/8, 1/2	3/4
Fluid	Air			
Proof pressure	1.5MPa			
Maximum operating pressure	1.0MPa			
Set pressure range <small>Note 1)</small>	0.05 to 0.85MPa			
Pressure gauge port size <small>Note 2)</small>	Rc, NPT, G 1/8	Rc, NPT, G 1/8	Rc, NPT, G 1/4	Rc, NPT, G 1/4
Relief pressure	Set pressure + 0.05MPa [at relief flow rate of 0.1L/min (ANR)]			
Ambient and fluid temperature	−5 to 60°C (with no freezing)			
Nominal filtration rating	5μm			
Drain capacity (cm <sup>3</sup> )	8	25	45	45
Bowl material	Polycarbonate			
Bowl guard	Option	Standard		
Construction	Relieving type			
Weight (kg)	0.32	0.40	0.72	0.75

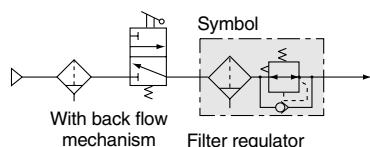
Note 1) Set the inlet pressure 0.05MPa or higher than the set pressure.  
Note 2) Pressure gauge connection threads are not required for regulators with a square embedded type pressure gauge (AW20K to AW40K).

Symbol



### Circuit diagram

When the air supply is cut off and releasing the inlet pressure to the atmosphere, the residual pressure release of the outlet side can be ensured for a safety purpose.



### Accessory part no.

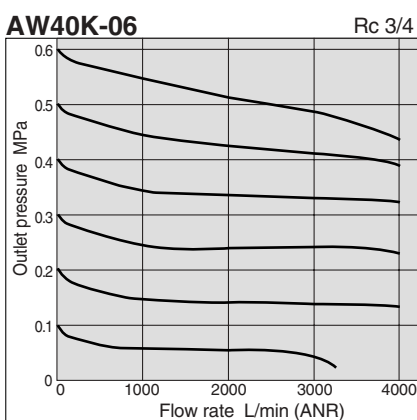
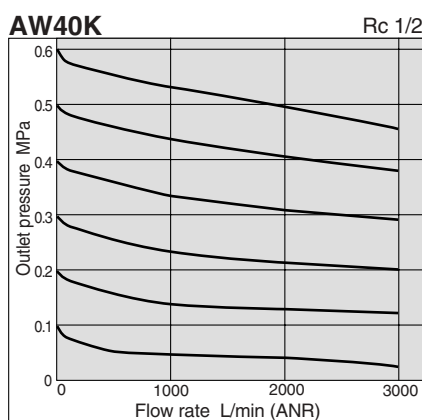
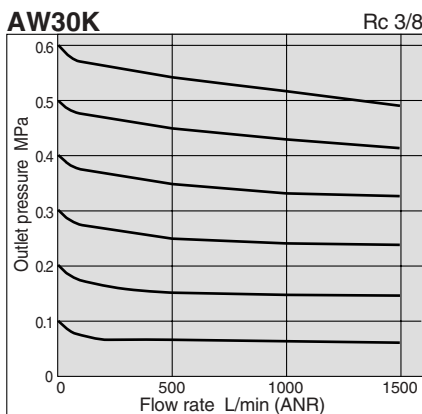
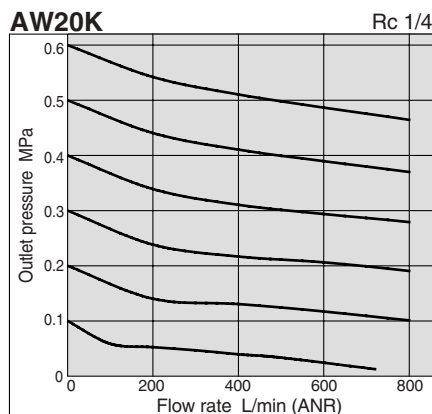
Applicable model		AW20K	AW30K	AW40K	AW40K-06
Accessory					
Bracket assembly Note 1)		AW20P-270AS	AR30P-270AS	AR40P-270AS	AR40P-270AS
Set nut		AR20P-260S	AR30P-260S	AR40P-260S	AR40P-260S
Pressure gauge Note 2)	1.0MPa	Round	G36-10-□01	G36-10-□01	G46-10-□02
		Square embedded type Note 3)	GC3-10AS	GC3-10AS	GC3-10AS
	0.2MPa	Round	G36-2-□01	G36-2-□01	G46-2-□02
		Square embedded type Note 3)	GC3-2AS	GC3-2AS	GC3-2AS
Float type auto drain Note 4)		N.O.	AD38	AD38N Note 5)	AD48
		N.C.	AD27	AD37	AD37N Note 5)

Note 1) Assembly includes 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. Contact SMC regarding the connection thread NPT and pressure gauge supply for PSI unit specifications.  
Note 3) Includes one O-ring and 2 mounting screws.  
Note 4) Minimum operating pressure: N.O. type-0.1MPa; N.C. type-0.1MPa (AD27) and 0.15MPa (AD37/47). Contact SMC regarding the specifications for PSI unit and "F".  
Note 5) When "N" is specified in the end of part number of auto drain, applicable tube O.D should be  $\phi 3/8"$ .



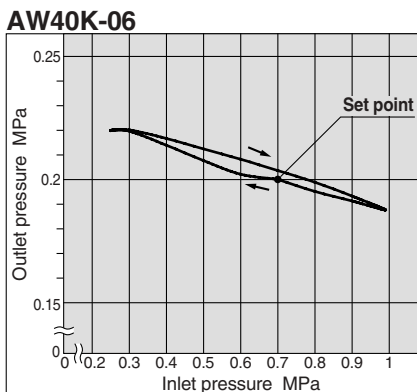
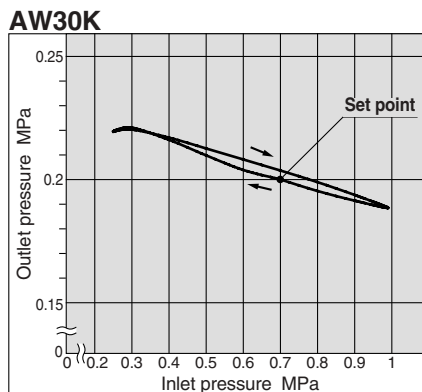
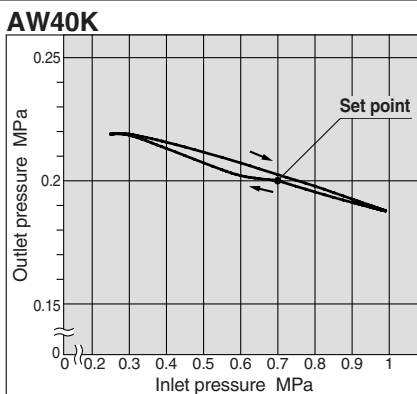
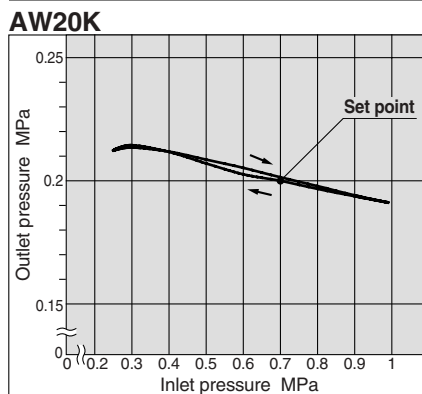
## Flow Characteristics (Representative values)

Condition:  
Inlet pressure 0.7MPa



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

## Pressure Characteristics (Representative values)



## ⚠ Specific Product Precautions

Be sure to read before handling.  
Refer to pages 75 through 78 for safety instructions and F.R.L. unit precautions.

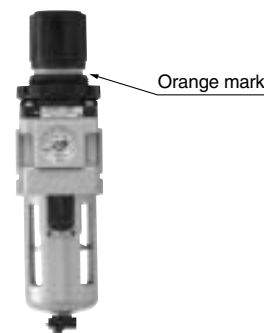
## Mounting & Adjustment

### ⚠ Warning

1. Set the regulator while checking the displayed values of the inlet and outlet pressure gauges. Turning the knob excessively can cause damage to the internal parts.
2. The pressure gauge included with regulators for 0.02 to 0.2MPa setting is for up to 0.2MPa use. Exceeding 0.2MPa of pressure can damage the gauge.
3. Do not use tools on the pressure regulator knob as this may cause damage. It must be operated manually.

### ⚠ 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. A knob cover is available to prevent careless operation of the knob. Refer to Features 1 for details.

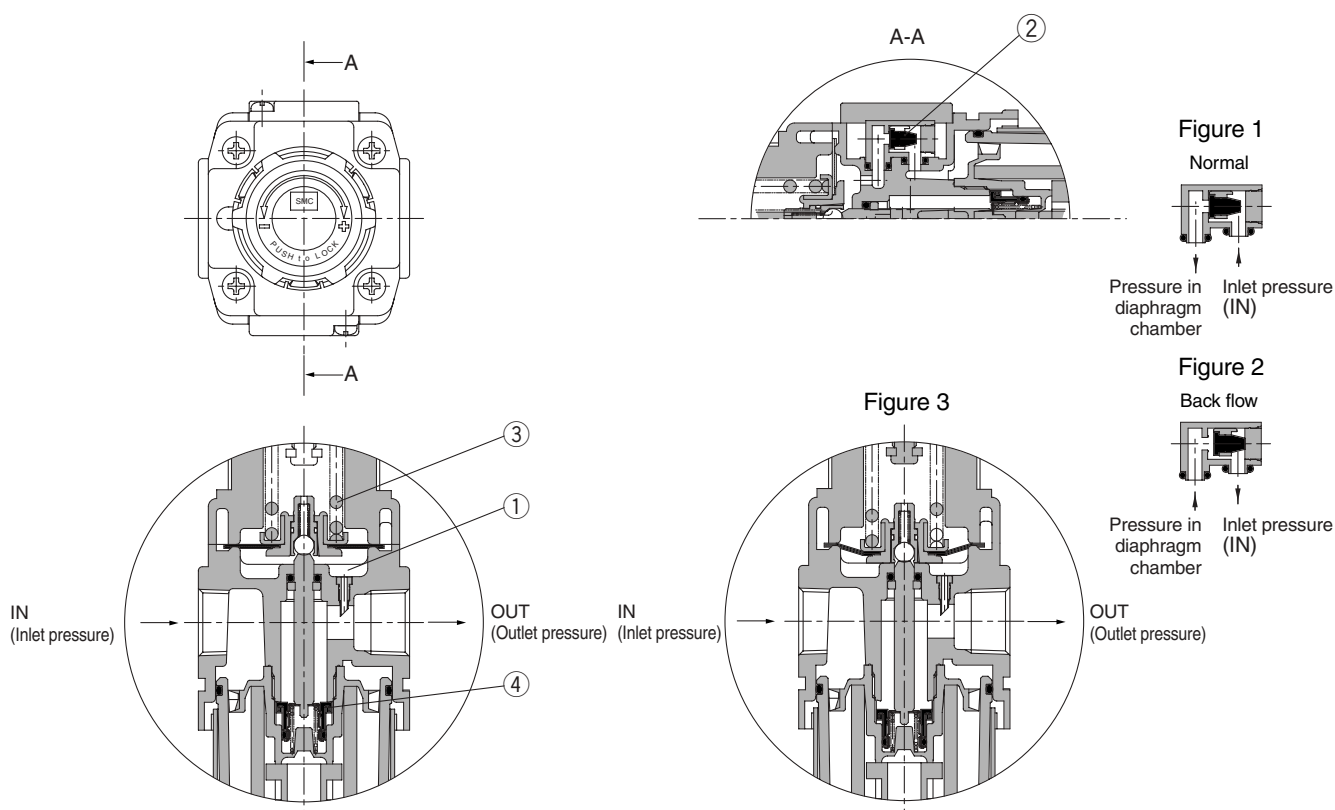
## Maintenance

### ⚠ Warning

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

# AW20K/30K/40K

## Operating Principle



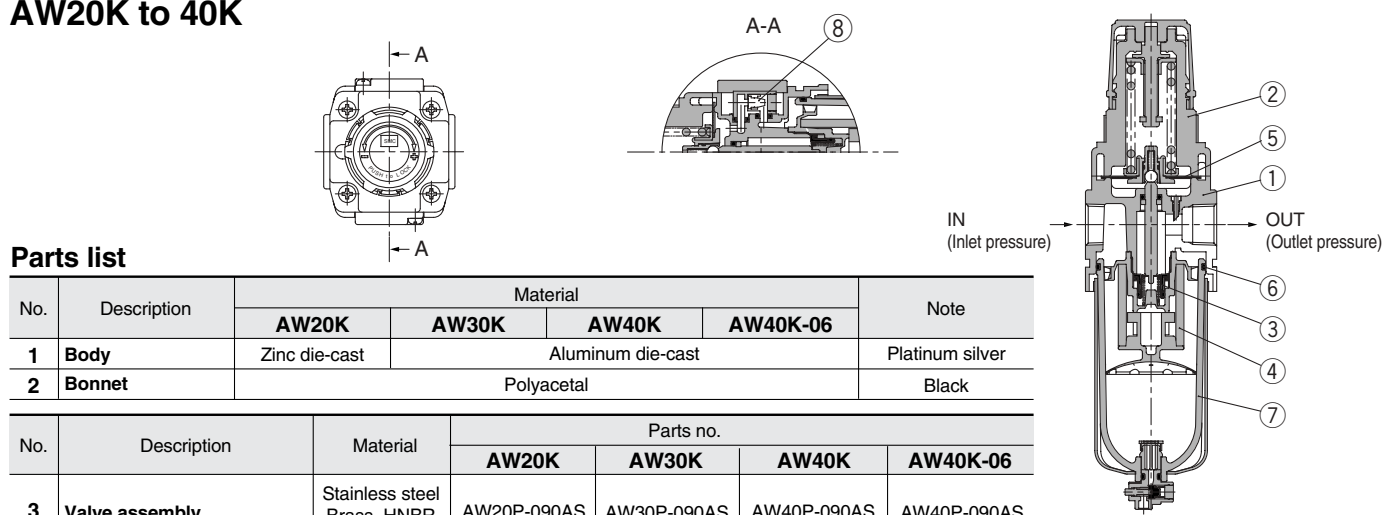
When the inlet pressure ( $P_1$ ) is higher than the set pressure, the check valve ② closes and operates as a normal regulator (Figure 1).

When the inlet pressure ( $P_1$ ) is shut off and released, the check valve ②, opens and the pressure in the diaphragm chamber ① is released into the inlet side (Figure 2).

This lowers the pressure in the diaphragm chamber ①, and the force generated by pressure regulator spring ③ lifts the diaphragm. Valve ④ opens through the stem, and the outlet pressure is released to the inlet side (Figure 3).

## Construction

### AW20K to 40K



### Parts list

No.	Description	Material				Note
		AW20K	AW30K	AW40K	AW40K-06	
1	Body	Zinc die-cast	Aluminum die-cast			Platinum silver
2	Bonnet	Polyacetal				Black

No.	Description	Material	Parts no.			
			AW20K	AW30K	AW40K	AW40K-06
3	Valve assembly	Stainless steel Brass, HNBR	AW20P-090AS	AW30P-090AS	AW40P-090AS	AW40P-090AS
4	Filter element	Non-woven fabric	AF20P-060S	AF30P-060S	AF40P-060S	AF40P-060S
5	Diaphragm assembly	Weatherability NBR	AR20P-150AS	AR30P-150AS	AR40P-150AS	AR40P-150AS
6	Bowl O-ring	NBR	C2SFP-260S	C3SFP-260S	C4SFP-260S	C4SFP-260S
7	Bowl assembly <sup>Note 1)</sup>	PC	C2SF	C3SF <sup>Note 2)</sup>	C4SF <sup>Note 2)</sup>	C4SF <sup>Note 2)</sup>
8	Check valve assembly <sup>Note 3)</sup>	POM, PBT	AR20KP-020AS	AR20KP-020AS	AR20KP-020AS	AR20KP-020AS

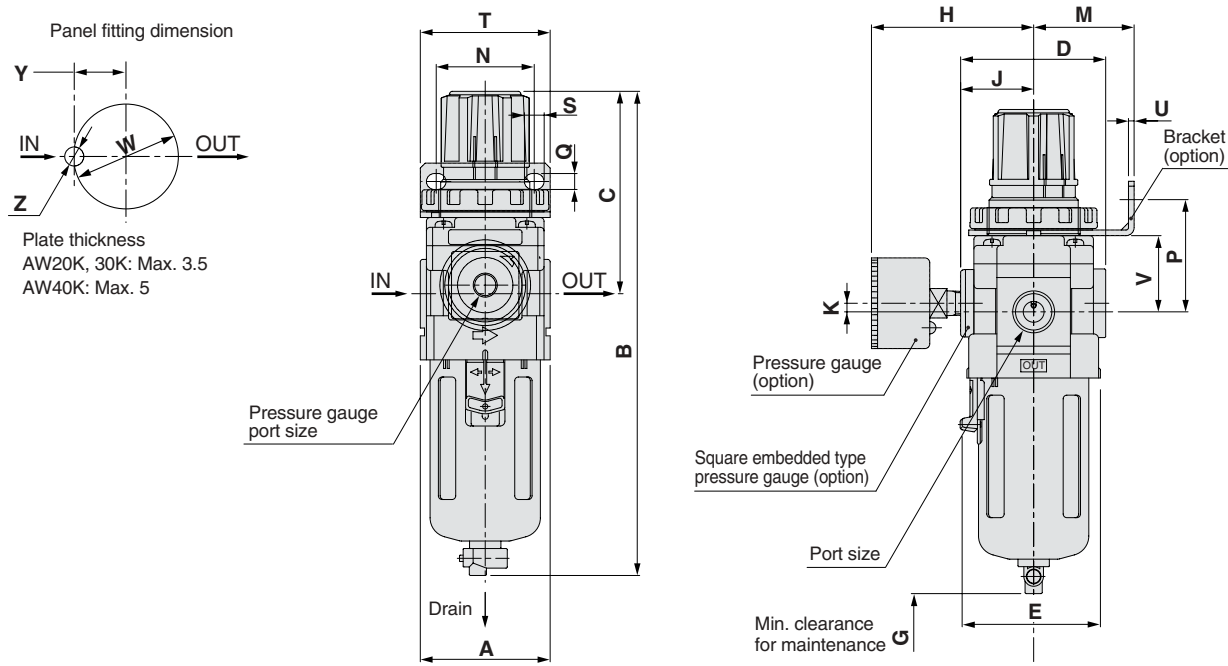
Note 1) Including O-Ring. Contact SMC regarding the bowl assembly supply for PSI and °F unit specifications.

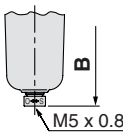
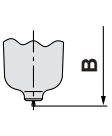
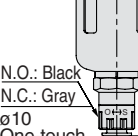
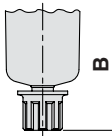
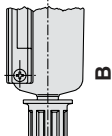
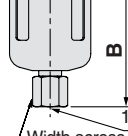
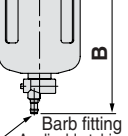
Note 2) Bowl assembly for AW30K to AW60K includes a bowl guard (steel band material).

Note 3) Check valve construction includes the check valve itself, check valve cover, and 2 screws.

## Dimensions

### AW20K/30K/40K



Applicable model	AW20K		AW30K, AW40K, AC40K-06				
Optional specifications	With auto drain (N.C.)	Metal bowl	With auto drain (N.O./N.C.)	Metal bowl	Metal bowl with level gauge	With drain guide	Drain cock with barb fitting
	 M5 x 0.8		 N.O.: Black N.C.: Gray ø10 One-touch fitting			 1/4 Width across flats 17	 Barb fitting Applicable tubing: T0604

Model	Port size	Standard specification						Accessory specification														
								With pressure gauge			Bracket mounting size						Panel mount				With auto drain	
		A	B	C	D	E	G	H	J	K	M	N	P	Q	S	T	U	V	W	Y	Z	B
AW20K	1/8, 1/4	40	160	73	52	40	40	63	27	5	30	34	44	5.4	15.4	55	2.3	30	28.5	14	6	177
AW30K	1/4, 3/8	53	201	86	59	57	55	66	30.5	3.5	41	40	46	6.5	8	53	2.3	31	38.5	19	7	242
AW40K	1/4, 3/8, 1/2	70	239	92	75	73	80	76	38.5	1.5	50	54	54	8.5	10.5	70	2.3	35.5	42.5	21	7	278
AW40K-06	3/4	75	242	93	75	73	80	76	38.5	1.2	50	54	56	8.5	10.5	70	2.3	37	42.5	21	7	278

Model	Port size	Optional specification			
		With barb fitting	With drain guide	Metal bowl	Metal bowl with level gauge
		B	B	B	B
AW20K	1/8, 1/4	—	—	160	—
AW30K	1/4, 3/8	209	208	214	234
AW40K	1/4, 3/8, 1/2	247	246	251	272
AW40K-06	3/4	250	249	255	275