


Modular Type Filter Regulators *Series AW*

Filter Regulator Series AW  P.59 to 65	Model	Port size	Options
	AW20-A	1/8, 1/4	Bracket
	AW30-A	1/4, 3/8	Float type auto drain
	AW40-A	1/4, 3/8, 1/2	Round type pressure gauge
	AW40-06-A	3/4	With set nut (for panel mount)*

* 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

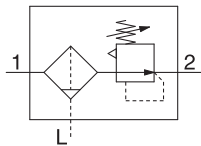
AL

AW

Filter Regulator

AW20-A to AW40-A

JIS Symbol
Filter Regulator



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

How to Order

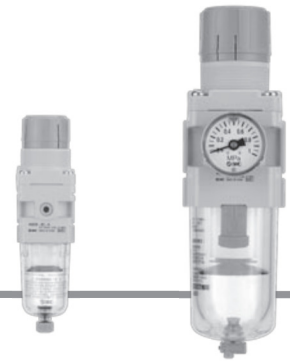
AW **30** - **03** **BG** - **1N** - A

①
②
③
④
⑤

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

	Symbol	Description	①				
			Body size				
			20	30	40		
②	With backflow function	Nil	Rc	●	●	●	
		N ^{Note 1)}	NPT	●	●	●	
		F ^{Note 2)}	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 ^{Note 4)}	With bracket	●	●	●
			H	With set nut (for panel mount)	●	●	●
	+						
	b	Float type auto drain	Nil	Without auto drain	●	●	●
			C ^{Note 5)}	N.C. (Normal close) Drain port is closed when pressure is not applied.	●	●	●
			D ^{Note 6)}	N.O. (Normal open) Drain port is open when pressure is not applied.	—	●	●
	+						
	c	Pressure gauge ^{Note 7)}	Nil	Without pressure gauge	●	●	●
G			Round type pressure gauge (with limit indicator)	●	●	●	
M			Round type pressure gauge (with color zone)	●	●	●	
+							
⑤	d	Set pressure ^{Note 8)}	Nil	0.05 to 0.7 MPa setting	●	●	●
			1	0.02 to 0.2 MPa setting	●	●	●
	+						
e	Bowl ^{Note 9)}	Nil	Polycarbonate bowl	●	●	●	
		C	With bowl guard	●	— ^{Note 10)}	— ^{Note 10)}	

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

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

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

Note 4) Assembly of a bracket and set nuts.

Note 5) When pressure is not applied, condensate which does not start the auto drain mechanism will be left in the bowl. Releasing the residual condensate before ending operations for the day is recommended.

Note 6) If the compressor is small (0.75 kW, discharge flow is less than 100 L/min[ANR]), air leakage from the drain cock may occur during start of operations. N.C. type is recommended.

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

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

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

Note 10) Standard material (polycarbonate)

Note 11) Without a valve function

Note 12) For thread type: NPT.

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

Note 13) ○: For thread type: NPT only

Note 14) Float type auto drain: The combination of C and D 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 ³)	8	25	45	
Bowl material	Polycarbonate			
Bowl guard	Semi-standard (Steel)	Standard (Polycarbonate)		
Construction	Relieving type			
Weight (kg)	0.21	0.41	0.75	0.81

Series AW20-A to AW40-A

Options/Part No.

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

Semi-standard/Bowl Assembly Part No.

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

Note 1) Assembly of a bracket and set nuts

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

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

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

⚠ Specific Product Precautions

Be sure to read before handling. Refer to back cover for Safety Instructions, “Handling Precautions for SMC Products” (M-E03-3) and the Operation Manual for F.R.L. Precautions. 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 and bowl guard are made of polycarbonate. **Do not use in an environment where they are exposed to or come in contact with organic solvents, chemicals, cutting oil, synthetic oil, alkali, and thread lock solutions.**

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

Type	Chemical name	Application examples	Material
			Polycarbonate
Acid	Hydrochloric acid 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 accelerato	×
Other	Thread-lock fluid Seawater Leak tester	—	×

△ : Some effects may occur × : Effects will occur

Maintenance

⚠ Warning

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

Mounting and Adjustment

⚠ 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 and 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. Consult 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.



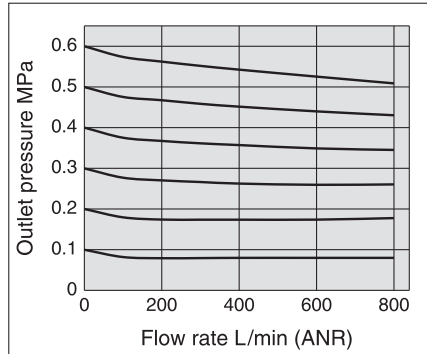
AC
AF+AR+AL
AW+AL
AF+AR
AF+AFM+AR
AW+AFM
Attachment
AF
AFM / AFD
AR
AL
AW

Series AW20-A to AW40-A

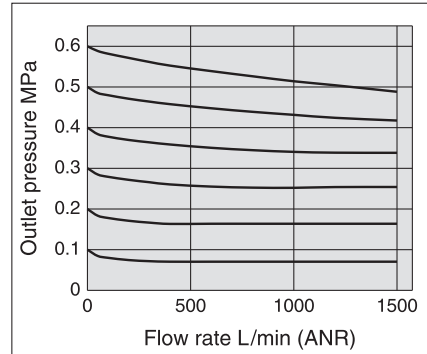
Flow Characteristics (Representative values)

Condition: Inlet pressure 0.7 MPa

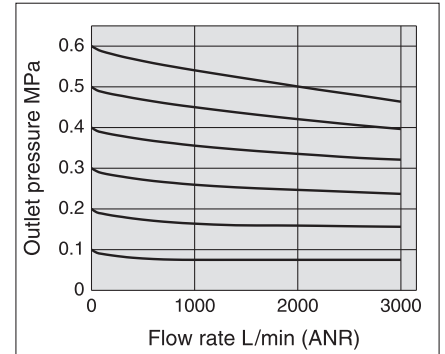
AW20-A Rc 1/4



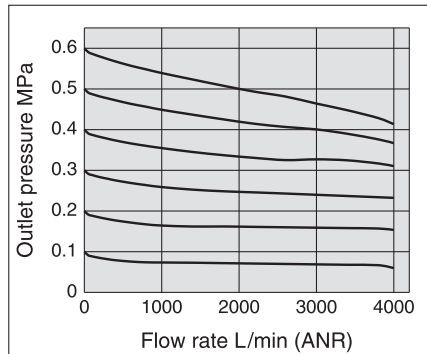
AW30-A Rc 3/8



AW40-A Rc 1/2



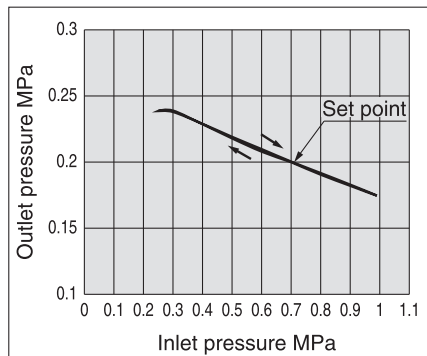
AW40-06-A Rc 3/4



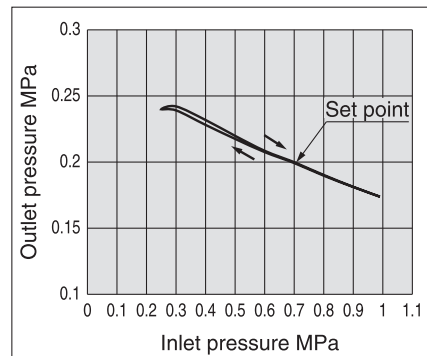
Pressure Characteristics (Representative values)

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

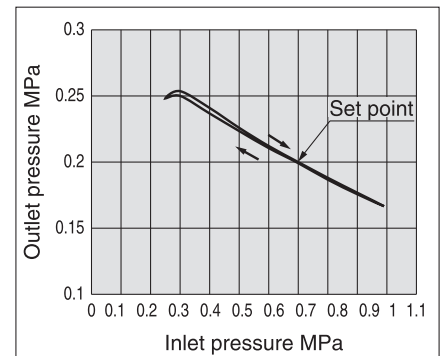
AW20-A



AW30-A

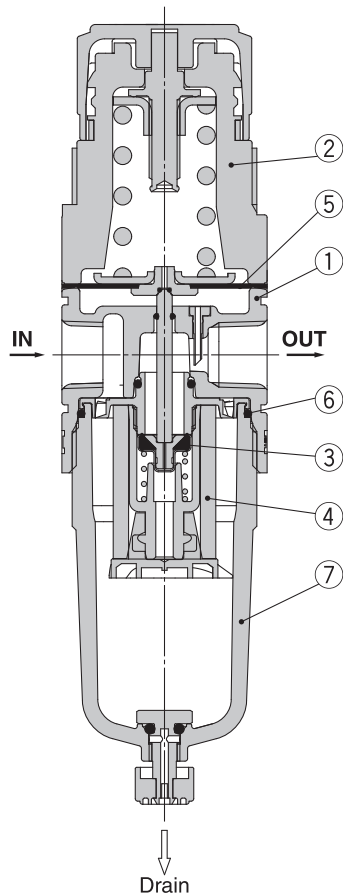


AW40-A/AW40-06-A

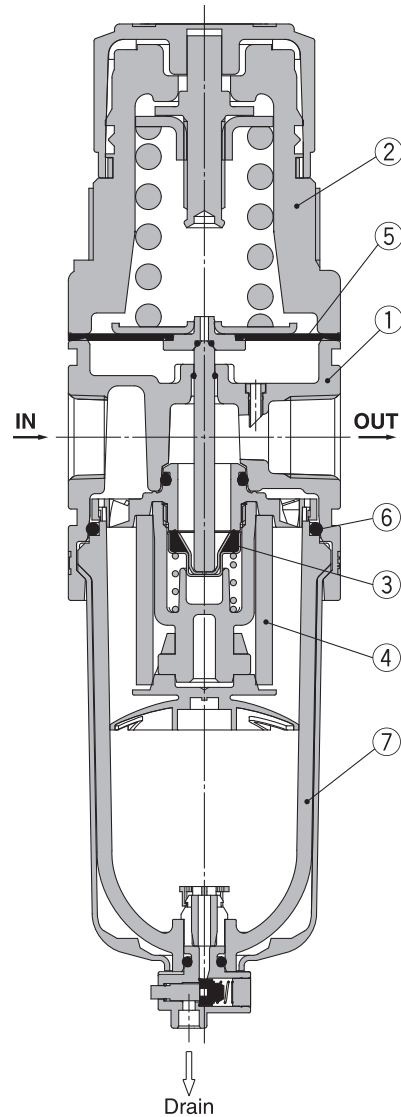


Construction

AW20-A



AW30-A to AW40-06-A



Component Parts

No.	Description	Material	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 <small>Note)</small>	Polycarbonate	C2SF-A	C3SF-A	C4SF-A	

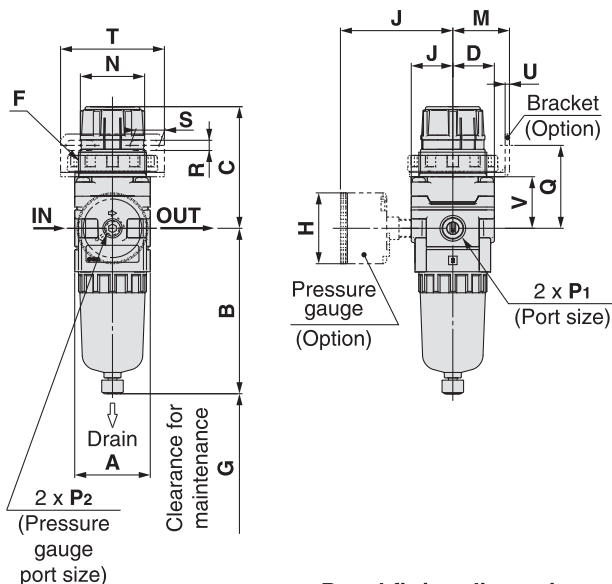
Note) Bowl seal is included. Please contact SMC regarding the bowl assembly supply for psi and °F unit specifications.

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

Series AW20-A to AW40-A

Dimensions

AW20-A



Panel fitting dimension

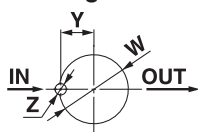
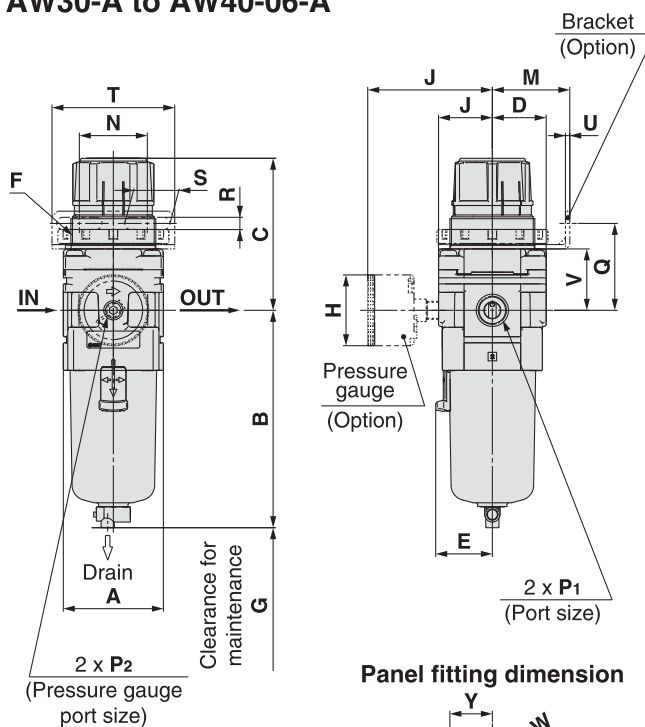


Plate thickness
AW20-A : Max.4

AW30-A to AW40-06-A



Panel fitting dimension

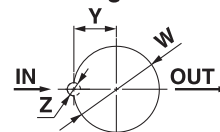


Plate thickness
AW30-A to AW40-06-A : MAX.8

Applicable model Optional/Semi-standard specifications	AW20-A		AW30-A to AW40-A				
	With auto drain (N.C.)	With drain guide	With auto drain (N.O./N.C.)	With drain guide	Drain cock with barb fitting		
Dimensions	 M5 x 0.8	 1/8 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	 Width across flats 17	 Barb fitting Applicable tubing: T0604		

Model	Standard specifications										Optional specifications			
	P1	P2	A	B	C ^{Note}	D	E	F	G	J	Round type pressure gauge	Round type pressure gauge (with color zone)	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	
	M	N	Q	R	S	T	U	V	W	Y	Z	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
AW30-A	41	36	46	6.5	24	65	2.3	32.5	45.5	22.5	7	156.8	123.6	121.9
AW40-A	50	38	54	8.5	26.5	70	2.3	38.4	52.5	26	7	186.9	155.6	153.9
AW40-06-A	50	38	55.5	8.5	26.5	70	2.3	39.9	52.5	26	7	188.9	157.6	155.9

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