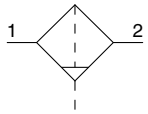
Modular Type
Air Filter
AF Series

Air Filter **AF Series**  **p. 74 to 83**	Model	Port size	Filtration [μm]	Options
	AF20-D	1/8, 1/4	5	Bracket Float type auto drain
	AF30-D	1/4, 3/8		
	AF40-D	1/4, 3/8, 1/2		
	AF40-06-D	3/4		
	AF50-D	3/4, 1		
	AF60-D	1		

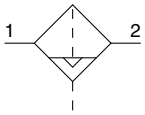
Air Filter
AF20-D to AF60-D

Symbol

Air Filter



Air Filter with Auto Drain





AF30-D

How to Order

AF 30 – ❷ 03 BD – ❺ –D

❶ ❷ ❸ ❹ ❺

Option and Semi-standard Symbol Selection

· Select one each for **a** to **g**.
· When more than one specification is required, indicate in alphanumeric order.
Example) AF30-F03BD-2LR-D

			Symbol	Description	❶ Body size 20	30	40	50	60
❷	Pipe thread type		**Nil**	Rc	●	●	●	●	●
			N	NPT	●	●	●	●	●
			F	G	●	●	●	●	●
			+						
❸	Port size		**01**	1/8	●	—	—	—	—
			02	1/4	●	●	●	—	—
			03	3/8	—	●	●	—	—
			04	1/2	—	—	●	—	—
			06	3/4	—	—	●	●	—
			10	1	—	—	—	●	●
			+						
❹	Option	**a** Mounting	**Nil**	Without mounting option	●	●	●	●	●
			B∗1	With bracket	●	●	●	●	●
			+						
		b Float type auto drain∗2	**Nil**	Without auto drain	●	●	●	●	●
			C∗3	N.C. (Normally closed) Drain port is closed when pressure is not applied.	●	●	●	●	●
			D∗4	N.O. (Normally open) Drain port is open when pressure is not applied.	—	●	●	●	●
			+						
❺	Semi-standard	**c** Bowl∗5	**Nil**	Polycarbonate bowl	●	●	●	●	●
			2	Metal bowl	●	●	●	●	●
			6	Nylon bowl	●	●	●	●	●
			8	Metal bowl with level gauge	—	●	●	●	●
			C	With bowl guard	●	—∗6	—∗6	—∗6	—∗6
			6C	With bowl guard (Nylon bowl)	●	—∗7	—∗7	—∗7	—∗7
			+						
		d Indicator	**Nil**	Without indicator	●	●	●	●	●
			L	With element service indicator∗14	●	●	●∗12	●	●
			+						
		e Drain port∗8	**Nil**	With drain cock	●	●	●	●	●
			J∗9	Drain guide 1/8	●	—	—	—	—
				Drain guide 1/4	—	●	●	●	●
			W∗10	Drain cock with barb fitting	—	●	●	●	●
			+						
		f Flow direction	**Nil**	Flow direction: Left to right	●	●	●	●	●
			R	Flow direction: Right to left	●	●	●	●	●
			+						
		g Unit	**Nil**	Unit on product label: MPa, °C	●	●	●	●	●
			Z∗11	Unit on product label: psi, °F	○∗13	○∗13	○∗13	○∗13	○∗13

∗1 Option B is included in the package with the product but does not come assembled. The assembly consists of 2 types of the bracket and 2 mounting screws.
∗2 The auto drain port is ø10 One-touch fitting (❷ Pipe thread type: Rc, G) or ø3/8" One-touch fitting (❷ Pipe thread type: NPT)
∗3 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.
∗4 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 the start of operations. N.C. type is recommended.
∗5 Refer to chemical data on page 83 for chemical resistance of the bowl.
∗6 A bowl guard is provided as standard equipment (polycarbonate).
∗7 A bowl guard is provided as standard equipment (nylon).
∗8 The combination of float type auto drain C and D is not available.
∗9 Without a valve function. The mounting screws are the same as the thread of ❷.
∗10 The combination of metal bowl 2 and 8 is not available.
∗11 For the pipe thread type: NPT. This product is for overseas use only according to the New Measurement Act. (The SI unit type is provided for use in Japan.)
∗12 Excludes port size "06"
∗13 ○: For the pipe thread type: NPT only
∗14 A special body type is required to mount the element service indicator. It cannot be mounted on a standard body.

Standard Specifications

Model		AF20-D	AF30-D	AF40-D	AF40-06-D	AF50-D	AF60-D
Port size		1/8, 1/4	1/4, 3/8	1/4, 3/8, 1/2	3/4	3/4, 1	1
Fluid		Air					
Ambient and fluid temperatures		–5 to 60°C (No freezing)					
Proof pressure		1.5 MPa					
Max. operating pressure		1.0 MPa					
Auto drain minimum operating pressure	**N.C.**	0.1 MPa	0.15 MPa				
	N.O.	—	0.1 MPa				
Nominal filtration rating∗1		5 µm					
Compressed air purity class∗2		ISO 8573-1:2010 [6 : 8 : 4]∗3					
Drain capacity		8 cm^3	25 cm^3	45 cm^3			
Bowl material		Polycarbonate					
Bowl guard		Semi-standard (Steel)	Standard (Polycarbonate)				
Weight		0.09 kg	0.17 kg	0.35 kg	0.39 kg	0.85 kg	0.92 kg

∗1 For the following conditions in accordance with [Test condition: ISO 8573-4:2001 compliant, Test method ISO 12500-3:2009 compliant]
Conditions: When a new element is used, and the flow capacity, inlet pressure, and the amount of solid bodies on the filter inlet side are stable

∗2 The compressed air purity class is indicated based on ISO 8573-1:2010 Compressed air – Part 1: Contaminants and purity classes.
For details on this standard, refer to page 131.

∗3 The compressed air quality class on the inlet side is [7 : 9 : 4].

Bowl Assembly/Part Nos.

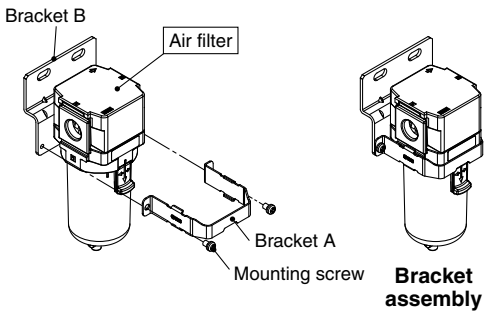
Bowl material	Drain discharge mechanism	Drain port	Other	Model					
				AF20-D	**AF30-D**	**AF40-D**	**AF40-06-D**	**AF50-D**	**AF60-D**
Polycarbonate	Manual	With drain cock	—	C2SF-D	—	—			
			With bowl guard	C2SF-C-D	C3SF-D	C4SF-D			
		Drain cock with barb fitting	With bowl guard	—	C3SF-W-D	C4SF-W-D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

∗1 The bowl assembly comes with a bowl seal.
□ in bowl assembly part numbers indicates a pipe thread type (applicable tubing for auto drain).
No indication is necessary for Rc thread; however, indicate N for NPT thread, and F for G thread (For auto drain, Nil: ø10, N: ø3/8").
Please contact SMC separately for psi and °F unit display specifications.

Option/Part Nos.

Optional specifications	Model					
	AF20-D	**AF30-D**	**AF40-D**	**AF40-06-D**	**AF50-D**	**AF60-D**
Bracket assembly∗1	AF24P-070AS	AF34P-070AS	AF44P-070AS	AF49P-070AS	AF54P-070AS	
Auto drain	Refer to “Bowl Assembly/Part Nos.”					

∗1 The assembly consists of a bracket A/B and 2 mounting screws.



Replacement Parts

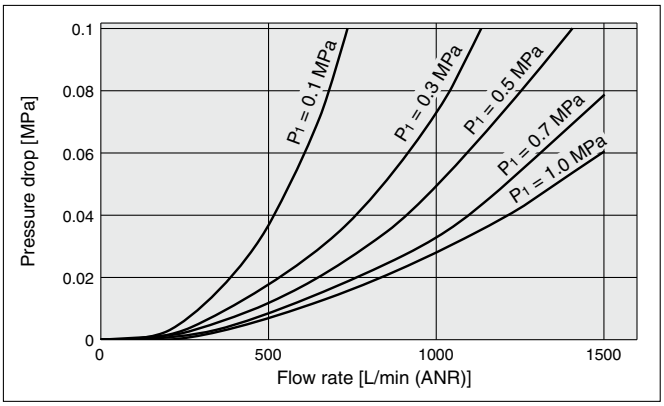
Description	Part no.					
	AF20-D	**AF30-D**	**AF40-D**	**AF40-06-D**	**AF50-D**	**AF60-D**
Filter element	AF20P-060S	AF30P-060S	AF40P-060S		AF50P-060S	AF60P-060S
Baffle	AF24P-040S	AF34P-040S	AF44P-040S		AF54P-040S	AF64P-040S
Bowl seal	C2SFP-260S	C32FP-260S	C42FP-260S			
Bowl assembly∗1, ∗2	Refer to “Bowl Assembly/Part Nos.”					

∗1 The bowl assembly comes with a bowl seal.
∗2 Please contact SMC separately for psi and °F unit display specifications.

Flow Rate Characteristics (Representative values)

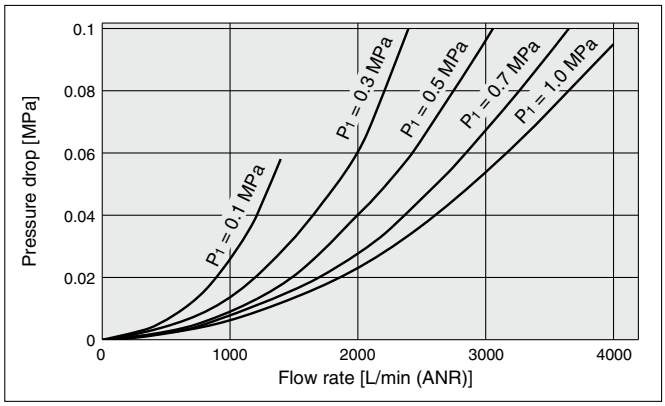
AF20-D

Rc1/4



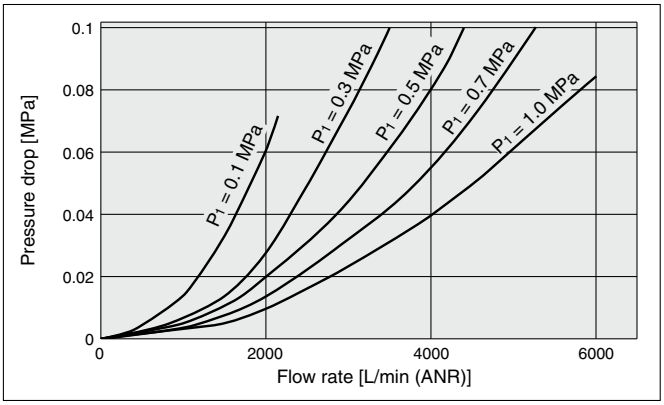
AF30-D

Rc3/8



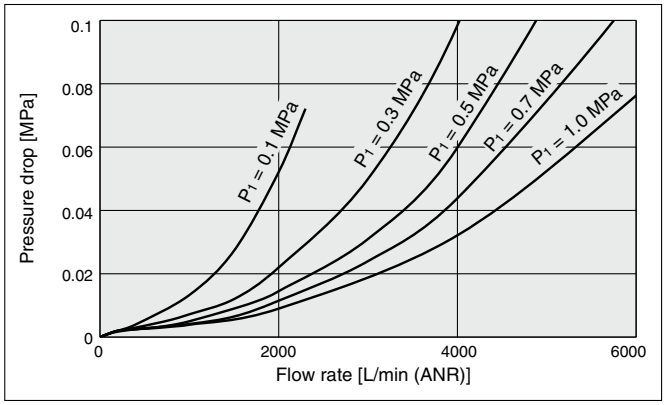
AF40-D

Rc1/2



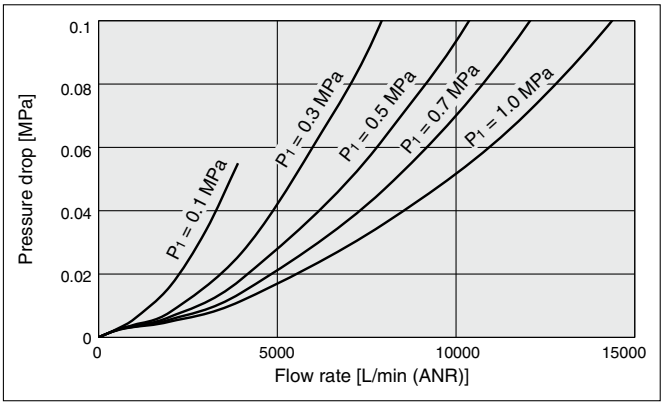
AF40-06-D

Rc3/4



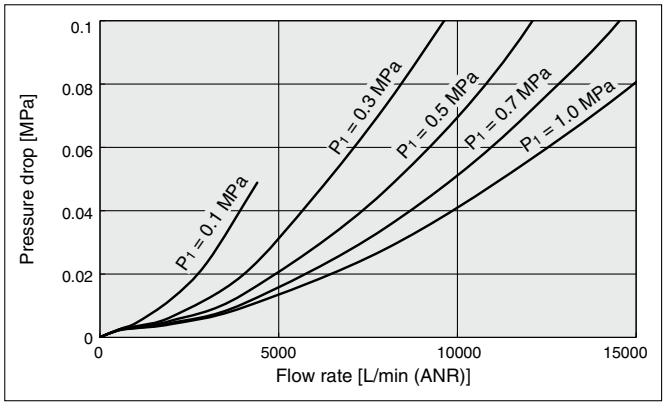
AF50-D

Rc1



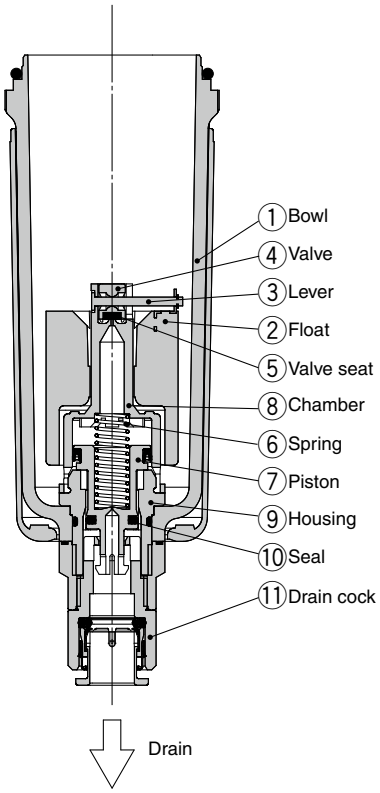
AF60-D

Rc1



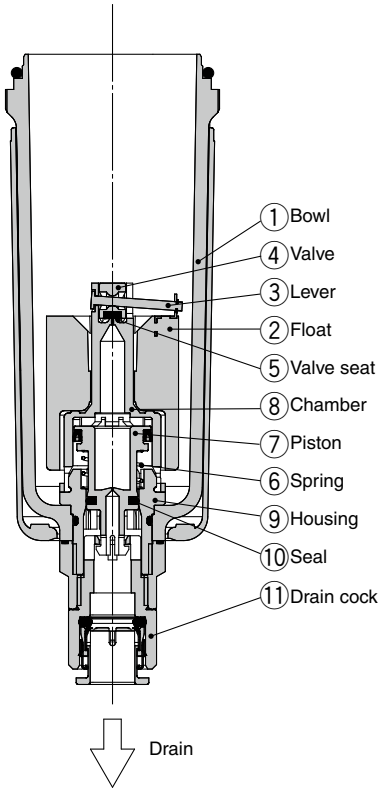
Working Principle: Float Type Auto Drain

N.O. type: AD38-D, AD48-D



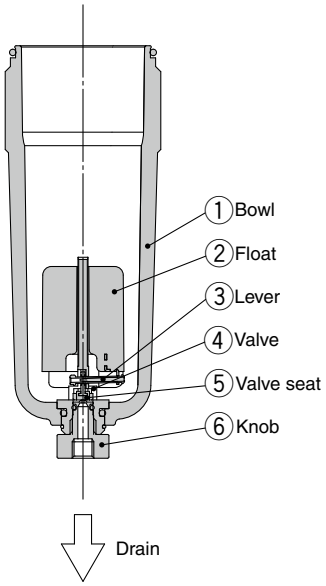
- **When pressure inside the bowl is released:**
  When pressure is released from the bowl ①, the piston ⑦ is lowered by the spring ⑥.
  The sealing action of the seal ⑩ is interrupted, and the outside air flows inside the bowl ① through the housing hole ⑨ and the drain cock ⑪.
  Therefore, if there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

N.C. type: AD37-D, AD47-D



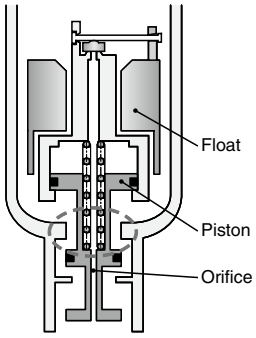
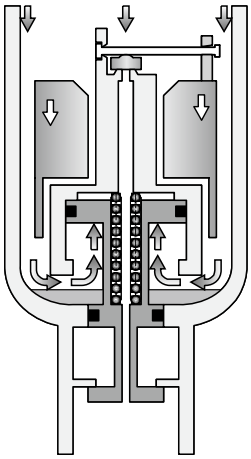
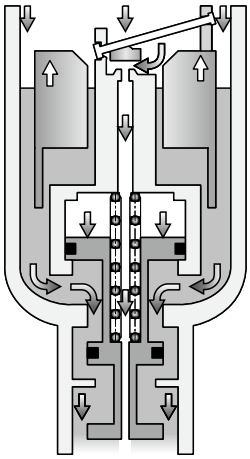
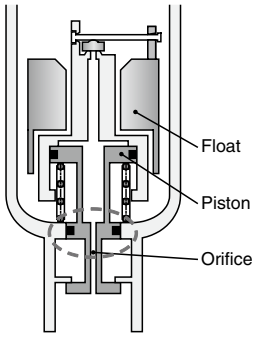
- **When pressure inside the bowl is released:**
  Even when pressure inside the bowl ① is released, spring ⑥ keeps the piston ⑦ in its upward position.
  This keeps the seal created by the seal ⑩ in place; thus, the inside of the bowl ① is shut off from the outside air.
  Therefore, even if there is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

Compact auto drain N.C. type: AD27-D

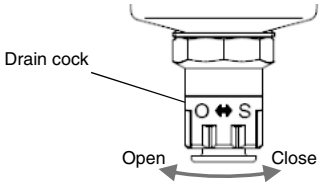


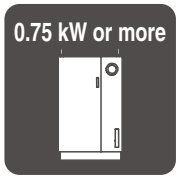
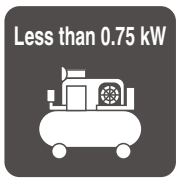
- **When pressure inside the bowl is released:**
  Even when pressure inside the bowl ① is released, the weight of the float ② causes the valve ④, which is connected to the lever ③, to seal the valve seat ⑤. As a result, the inside of the bowl ① is shut off from the outside air.
  Therefore, even if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

Operating State and Proper Use of Float Type Auto Drain

Auto drain	When pressure is not applied (After exhausting residual pressure)	When pressure is applied		Minimum operating pressure
		Before condensate accumulates	When condensate accumulates	
N.O. Normally open	Condensate discharged (Open) 	Condensate not discharged (Close) 	Condensate discharged (Open) 	**0.1 MPa or more** AF30-D to AF60-D
N.C. Normally closed	Condensate not discharged (Close) 			**0.1 MPa or more** AF20-D **0.15 MPa or more** AF30-D to AF60-D

◆ For both N.O. and N.C., the condensate can be discharged manually by turning the drain cock to the "O" position.

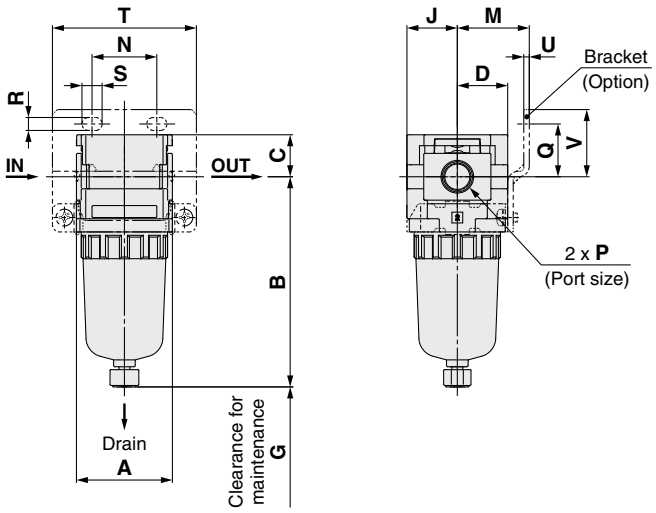


Proper Use			Recommended auto drain
Compressor	When pressure is not applied (After exhausting residual pressure)	Cold climates	
	**Condensate not accumulated** Do not want to accumulate condensate generated at the inlet side when pressure is not applied.	**Want to prevent troubles caused by freezing.**	N.O.*1 Normally open
	**Condensate accumulated**	—	N.C. Normally closed

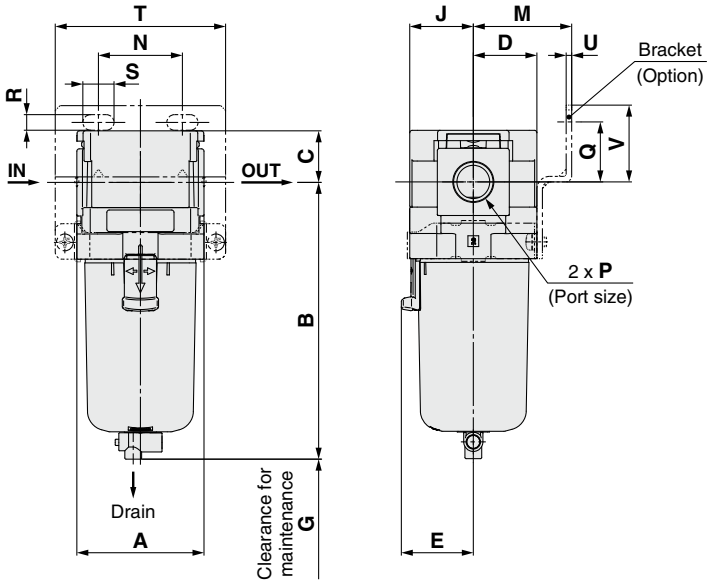
*1 For N.O. (Normally open) type, the condensate discharge passage is open when pressure is not applied. For this reason, the drain port is not closed completely in a compressor with a small supply amount (less than 0.75 kW) and the air will ceaselessly blow out.

Dimensions

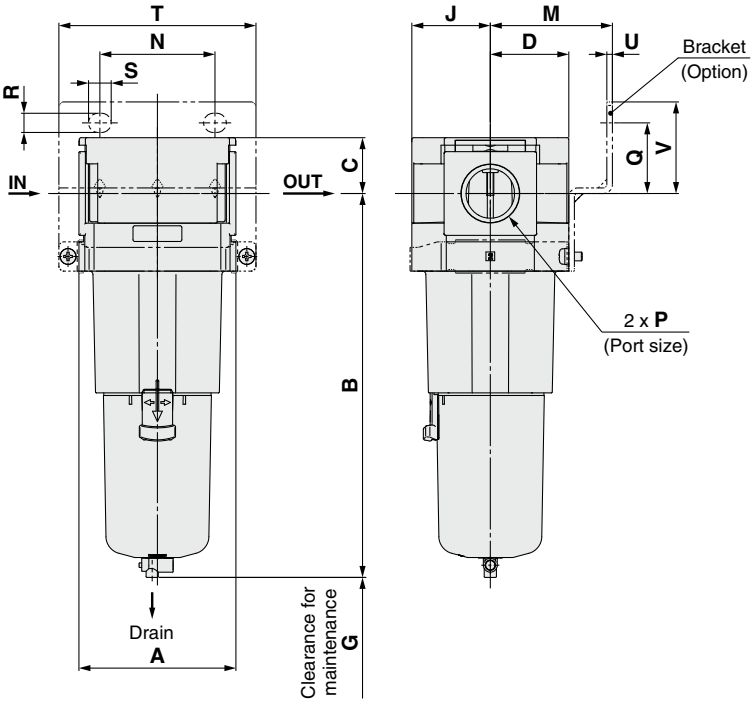
AF20-D

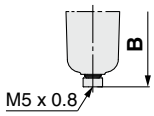
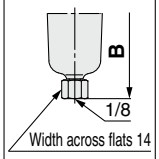
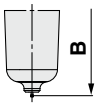
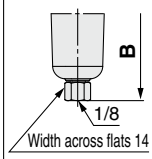
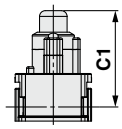
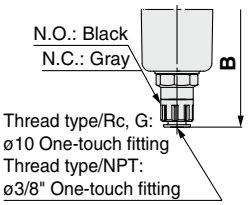
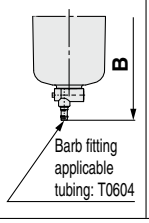
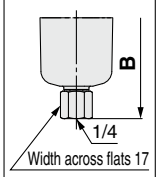
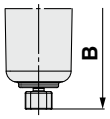
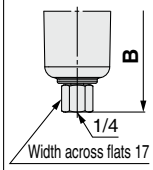
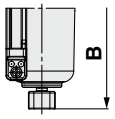
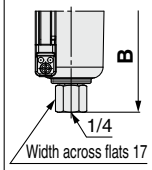
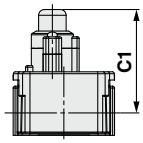


AF30-D to AF40-06-D



AF50-D to AF60-D



Applicable model	Optional specifications	Semi-standard							
	With auto drain	PC/PA bowl		Metal bowl		Metal bowl with level gauge		With element service indicator
		Drain cock with barb fitting	With drain guide	With drain cock	With drain guide	With drain cock	With drain guide	
AF20-D								
AF30-D to AF60-D								

Model	Standard specifications								Optional specifications								
									Bracket mount								With auto drain
	P	A	B	C	D	E	G	J	M	N	Q	R	S	T	U	V	B
AF20-D	1/8, 1/4	40	87.6	17.5	21	—	25	21	30	27	22	5.4	8.4	60	2.3	28	104.9
AF30-D	1/4, 3/8	53	115.4	21.5	26.5	30	35	26.5	41	35	25	6.5	13	71	2.3	32	157.1
AF40-D	1/4, 3/8, 1/2	70	147.1	25.5	35.5	38.4	40	35.5	50	52	30	8.5	12.5	88	2.3	39	186.9
AF40-06-D	3/4	75	149.1	27	35.5	38.4	40	35.5	50	52	34	8.5	12.5	88	2.3	43	188.9
AF50-D	3/4, 1	90	220.1	32	45	—	30	45	70	66	40.5	11	13	113	3.2	52.5	259.9
AF60-D	1	95	234.1	32	45	—	30	45	70	66	40.5	11	13	113	3.2	52.5	273.9

Model	Semi-standard specifications							
	PC/PA bowl		Metal bowl		Metal bowl with level gauge		With element service indicator	
	With barb fitting	With drain guide	With drain cock	With drain guide	With drain cock	With drain guide		
	B	B	B	B	B	B	A	C1
AF20-D	—	91.4	87.4	93.9	—	—	40	50.6
AF30-D	123.9	122.2	117.8	122.3	137.8	142.3	53	54.3
AF40-D	155.6	153.9	149.5	154	169.5	174	70	58.3
AF40-06-D	157.6	155.9	151.5	156	171.5	176	—	—
AF50-D	228.6	226.9	222.5	227	242.5	247	90	64.3
AF60-D	242.6	240.9	236.5	241	256.5	261	90*1	64.3

*1 For the type with an element service indicator, the A dimension differs from that of the standard specification.

Air Filter/*AF20-D to AF60-D*

Made to Order

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

Made to Order

① Long Bowl

Drain capacity is greater than that of standard models.

Applicable Models/Drain Capacity

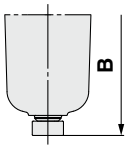
Model	AF20-D	AF30-D	AF40-D	AF40-06-D	AF50-D	AF60-D
Port size	1/8, 1/4	1/4, 3/8	1/4, 3/8, 1/2	3/4	3/4, 1	1
Drain capacity [cm³]	19	43	88			
B dimension [mm]∗1	108.1	137.4	167.2	169.2	240.2	254.2

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

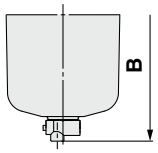
AF **30** - □ **03** □ - □ - **D** - **X64**

❶ ❷ ❸ ❹ ❺ ● Long bowl

AF20-D



AF30 to 60-D



Semi-standard Symbol Selection

· Select one each for **a** to **d**.
· When more than one specification is required, indicate in alphanumeric order.
Example) AF30-F03B-2JR-D-X64

			Symbol	Description	❶ Body size 20	30	40	50	60
❷	Pipe thread type		**Nil**	Rc	●	●	●	●	●
			N	NPT	●	●	●	●	●
			F	G	●	●	●	●	●
			+						
❸	Port size		**01**	1/8	●	—	—	—	—
			02	1/4	●	●	●	—	—
			03	3/8	—	●	●	—	—
			04	1/2	—	—	●	—	—
			06	3/4	—	—	●	●	—
			10	1	—	—	—	●	●
			+						
❹	Option (Mounting)		**Nil**	Without mounting option	●	●	●	●	●
			B∗1	With bracket	●	●	●	●	●
			+						
❺	Semi-standard	**a** Bowl∗2	**Nil**	Polycarbonate bowl	●	●	●	●	●
			2	Metal bowl	●	●	●	●	●
			6	Nylon bowl	●	●	●	●	●
			C	With bowl guard	●	—∗3	—∗3	—∗3	—∗3
			6C	With bowl guard (Nylon bowl)	●	—∗4	—∗4	—∗4	—∗4
			+						
		b Drain port	**Nil**	With drain cock	●	●	●	●	●
			J∗5	Drain guide 1/8	●	—	—	—	—
				Drain guide 1/4	—	●	●	●	●
			W∗6	Drain cock with barb fitting	—	●	●	●	●
			+						
		c Flow direction	**Nil**	Flow direction: Left to right	●	●	●	●	●
			R	Flow direction: Right to left	●	●	●	●	●
			+						
		d Unit	**Nil**	Unit on product label: MPa, °C	●	●	●	●	●
			Z∗7	Unit on product label: psi, °F	○∗8	○∗8	○∗8	○∗8	○∗8

∗1 Option B is included in the package with the product but does not come assembled. The assembly consists of 2 types of the bracket and 2 mounting screws.
∗2 Refer to chemical data on page 83 for chemical resistance of the bowl.
∗3 A bowl guard is provided as standard equipment (polycarbonate).
∗4 A bowl guard is provided as standard equipment (nylon).
∗5 Without a valve function. The mounting screws are the same as the thread of ❷.
∗6 The combination of metal bowl 2 is not available.
∗7 For the pipe thread type: NPT. This product is for overseas use only according to the New Measurement Act. (The SI unit type is provided for use in Japan.)
∗8 ○: For the pipe thread type: NPT only

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

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

Made to Order

③ Special Temperature Environment

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

Specifications

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

Applicable Model

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

AF 30 - ❶ ❷ 03 ❸ B ❹ - 2 ❺ ❻ - A - X430

For high/low temperature

X430	Low temperature
X440	High temperature

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

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

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

∗1 Drain guide is NPT1/4.
∗2 Drain guide is G1/4.
∗3 A bracket is not assembled and supplied loose at the time of shipment. Including 2 mounting screws
∗4 Only metal bowl 2 is available.
∗5 Without a valve function
∗6 For pipe thread type: NPT. This product is for overseas use only according to the new Measurement Act. (The SI unit type is provided for use in Japan.)
∗7 ○: For pipe thread type: NPT only

④ High Pressure

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

Specifications

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

Applicable Model

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

AF 30 - ❶ ❷ 03 ❸ B ❹ - 2 ❺ ❻ - A - X425

For high pressure

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

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

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

∗1 Drain guide is NPT1/8 (applicable to the AF20-A) and NPT1/4 (applicable to the AF30-A to AF60-A).
∗2 Drain guide is G1/8 (applicable to the AF20-A) and G1/4 (applicable to the AF30-A to AF60-A).
∗3 A bracket is not assembled and supplied loose at the time of shipment. Including 2 mounting screws
∗4 Only metal bowl 2 and 8 are available.
∗5 Without a valve function
∗6 For pipe thread type: NPT. This product is for overseas use only according to the new Measurement Act. (The SI unit type is provided for use in Japan.)
∗7 ○: For pipe thread type: NPT only

Air Filter/*AF20-D to AF60-D*

Made to Order

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



② Clean Series

For details, refer to the Clean Series/Low Particle Generation section of the **Web Catalog**.

10 – **Standard model no.**

- **Clean Series**

③ Copper, Fluorine and Silicone-free + Low Particle Generation

For details, refer to the Clean Series/Low Particle Generation section of the **Web Catalog**.

21 – **Standard model no.**

- **Copper, fluorine and silicone-free + Low particle generation**

AF-D Series
Specific Product Precautions

Be sure to read this before handling the products. Refer to the back cover for safety instructions. For F.R.L. units precautions, refer to the "Handling Precautions for SMC Products" and the "Operation Manual" on the SMC website: https://www.smcworld.com

Design / Selection

⚠ Warning

1. The bowl material of the standard air filter is 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.

Chemical resistance of polycarbonate or nylon bowl

Type	Chemical name	Application examples	Material	
			Polycarbonate	Nylon
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 Sodium carbonate	Degreasing of metals Industrial salts Water-soluble cutting oil	×	○
Inorganic salts	Sodium sulfide Potassium nitrate Sodium sulfate	—	×	△
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 diethyl 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	—	×	△

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

* When the above factors are present, or there is some doubt, use a metal bowl for safety.
* The display window material for the semi-standard type with an element service indicator is nylon.

Maintenance

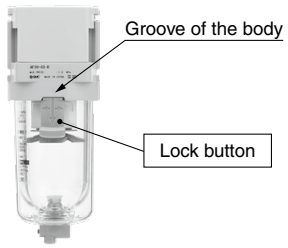
⚠ Warning

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

Mounting / Adjustment

⚠ Caution

1. When the bowl is installed on the air filter (AF30-D to AF60-D), 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.



Handling

⚠ Caution

1. The element service indicator (Semi-standard: L) is used to check the pressure differential between the IN and OUT sides. When operating at a flow rate with a pressure differential exceeding 0.025 MPa, the element service indicator may operate even when the element is in its initial state.

2. For models with an element service indicator, adjust the flow rate in the direction that increases the flow rate.
If the designated flow rate is exceeded, reset the flow rate to zero and readjust it until the designated flow rate is reached.

3. For models with an element service indicator, as the element becomes more clogged, the indicator will display an increasing level of red. Be sure to replace the element before the level of red reaches the top of the indicator.

Modular Type
Mist Separator/Micro Mist Separator
AFM/AFD Series

	Model	Port size	Filtration [μm]	Options
Mist Separator AFM Series  **p. 85 to 91**	**AFM20-D**	1/8, 1/4	0.3	Bracket Float type auto drain
	AFM30-D	1/4, 3/8		
	AFM40-D	1/4, 3/8, 1/2		
	AFM40-06-D	3/4		
Micro Mist Separator AFD Series  **p. 85 to 91**	**AFD20-D**	1/8, 1/4	0.01	Bracket Float type auto drain
	AFD30-D	1/4, 3/8		
	AFD40-D	1/4, 3/8, 1/2		
	AFD40-06-D	3/4		

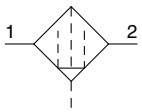
Mist Separator
AFM20-D to AFM40-D
Micro Mist Separator
AFD20-D to AFD40-D



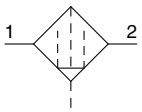
AFM30-D **AFD30-D**

Symbol

Mist Separator



Micro Mist Separator



How to Order

AFM **30** – □ **03** **BD** – □ –D

AFD **30** – □ **03** **BD** – □ –D

❶ ❷ ❸ ❹ ❺

Option and Semi-standard Symbol Selection

· Select one each for **a** to **g**.
· When more than one specification is required, indicate in alphanumeric order.
Example) AFM30-F03BD-2LR-D

				Symbol	Description	❶ Body size 20	30	40
❷	Pipe thread type			**Nil**	Rc	●	●	●
				N	NPT	●	●	●
				F	G	●	●	●
				+				
❸	Port size			**01**	1/8	●	—	—
				02	1/4	●	●	●
				03	3/8	—	●	●
				04	1/2	—	—	●
				06	3/4	—	—	●
				+				
❹	Option	**a**	Mounting	**Nil**	Without mounting option	●	●	●
				B∗1	With bracket	●	●	●
				+				
		b	Float type auto drain∗2	**Nil**	Without auto drain	●	●	●
				C∗3	N.C. (Normally closed) Drain port is closed when pressure is not applied.	●	●	●
				D∗4	N.O. (Normally open) Drain port is open when pressure is not applied.	—	●	●
				+				
❺	Semi-standard	**c**	Bowl∗5	**Nil**	Polycarbonate bowl	●	●	●
				2	Metal bowl	●	●	●
				6	Nylon bowl	●	●	●
				8	Metal bowl with level gauge	—	●	●
				C	With bowl guard	●	—∗6	—∗6
				6C	With bowl guard (Nylon bowl)	●	—∗7	—∗7
				+				
		d	Indicator	**Nil**	Without indicator	●	●	●
				L	With element service indicator∗14, ∗15	●	●	●∗12
				M	With clogging switch (1 point)∗14, ∗16	●	●	●∗12
				MM	With clogging switch (2 points)∗14, ∗16	●	●	●∗12
				+				
		e	Drain port∗8	**Nil**	With drain cock	●	●	●
				J∗9	Drain guide 1/8	●	—	—
					Drain guide 1/4	—	●	●
				W∗10	Drain cock with barb fitting	—	●	●
				+				
		f	Flow direction	**Nil**	Flow direction: Left to right	●	●	●
				R	Flow direction: Right to left	●	●	●
				+				
		g	Unit	**Nil**	Unit on product label: MPa, °C	●	●	●
				Z∗11	Unit on product label: psi, °F	○∗13	○∗13	○∗13

∗1 Option B is included in the package with the product but does not come assembled. The assembly consists of 2 types of the bracket and 2 mounting screws.
∗2 The auto drain port is ø10 One-touch fitting (❷ Pipe thread type: Rc, G) or ø3/8" One-touch fitting (❷ Pipe thread type: NPT)
∗3 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.
∗4 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 the start of operations. N.C. type is recommended.
∗5 Refer to chemical data on page 91 for chemical resistance of the bowl.
∗6 A bowl guard is provided as standard equipment (polycarbonate).
∗7 A bowl guard is provided as standard equipment (nylon).
∗8 The combination of float type auto drain C and D is not available.
∗9 Without a valve function. The mounting screws are the same as the thread of ❷.
∗10 The combination of metal bowl 2 and 8 is not available.
∗11 For the pipe thread type: NPT. This product is for overseas use only according to the New Measurement Act. (The SI unit type is provided for use in Japan.)
∗12 Excludes port size "06"
∗13 ○: For the pipe thread type: NPT only
∗14 A special body type is required to mount the element service indicator or clogging switch. It cannot be mounted on a standard body.
∗15 An auto switch cannot be installed with this option.
∗16 This option is equipped with a reed auto switch (model: D-A93VL). Refer to the auto switch catalog for the auto switch specifications.

Standard Specifications

Model			AFM20-D/AFD20-D	AFM30-D/AFD30-D	AFM40-D/AFD40-D	AFM40-06-D/AFD40-06-D
Port size			1/8, 1/4	1/4, 3/8	1/4, 3/8, 1/2	3/4
Fluid			Air			
Ambient and fluid temperatures			–5 to 60°C (No freezing)			
Proof pressure			1.5 MPa			
Max. operating pressure			1.0 MPa			
Min. operating pressure			0.05 MPa			
Auto drain minimum operating pressure	**N.C.**		0.1 MPa	0.15 MPa		
	N.O.		—	0.1 MPa		
Max. flow capacity∗1		**[AFM]**	200 L/min (ANR)	450 L/min (ANR)	1100 L/min (ANR)	
		[AFD]	120 L/min (ANR)	240 L/min (ANR)	600 L/min (ANR)	
Nominal filtration rating∗2		**[AFM]**	0.3 μm (Filtration efficiency: 99.9%)			
		[AFD]	0.01 μm (Filtration efficiency: 99.9%)			
Outlet side oil mist concentration∗3, ∗4		**[AFM]**	Max. 1.0 mg/m^3 (≈ 0.8 ppm)			
		[AFD]	Max. 0.1 mg/m^3 (Before saturated with oil 0.01 mg/m^3 or less ≈ 0.008 ppm)			
Compressed air purity class∗5		**[AFM]**	ISO 8573-1:2010 [3 : 7 : 3]∗6			
		[AFD]	ISO 8573-1:2010 [1 : 7 : 2]∗7			
Drain capacity			8 cm^3	25 cm^3	45 cm^3	
Bowl material			Polycarbonate			
Bowl guard			Semi-standard (Steel)	Standard (Polycarbonate)		
Weight			0.10 kg	0.18 kg	0.37 kg	0.40 kg

∗1 Inlet pressure: 0.7 MPa. Flow at 20°C, atmospheric pressure, and 65% of the relative humidity
The maximum flow capacity varies depending on the inlet pressure.
Keep the air flow within the maximum flow capacity to prevent an outflow of lubricant to the outlet side.

∗2 For the following conditions in accordance with [Test condition: ISO 8573-4:2001, Test method ISO 12500-3:2009 compliant] in addition to the conditions above
Conditions: When a new element is used, and the flow capacity, inlet pressure, and the amount of solid bodies on the filter inlet side are stable

∗3 The outlet side oil mist concentration for the following conditions in accordance with [Test condition: ISO 8573-2:2007, Test method ISO 12500-1:2007 compliant] in addition to the conditions above
Conditions: When a new element is used, the oil mist concentration on the filter inlet side is 10 mg/m^3, and the flow capacity, inlet pressure, and the oil mist concentration on the filter inlet side are stable

∗4 The bowl seal and other O-rings are slightly lubricated.

∗5 The compressed air purity class is indicated based on ISO 8573-1:2010 Compressed air – Part 1: Contaminants and purity classes.
For details on this standard, refer to page 131.

∗6 The compressed air quality class on the inlet side is [6 : 8 : 4].

∗7 The compressed air quality class on the inlet side is [3 : 7 : 3].

Bowl Assembly/Part Nos.

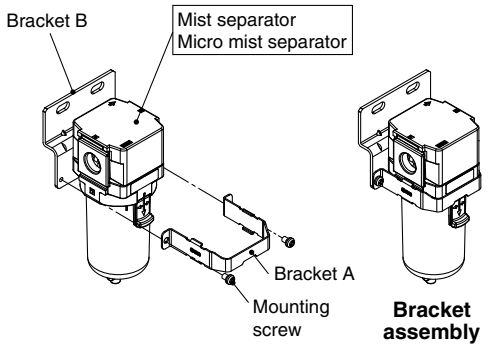
Bowl material	Drain discharge mechanism	Drain port	Other	Model			
				AFM20-D/AFD20-D	**AFM30-D/AFD30-D**	**AFM40-D/AFD40-D**	**AFM40-06-D/AFD40-06-D**
Polycarbonate	Manual	With drain cock	—	C2SF-D	—	—	
			With bowl guard	C2SF-C-D	C3SF-D	C4SF-D	
		Drain cock with barb fitting	With bowl guard	—	C3SF-W-D	C4SF-W-D	
		With drain guide (without valve function)	—	C2SF□-J-D	—	—	
			With bowl guard	C2SF□-CJ-D	C3SF□-J-D	C4SF□-J-D	
	Automatic (Auto drain)	Normally closed (N.C.)	—	AD27-D	—	—	
			With bowl guard	AD27-C-D	AD37□-D	AD47□-D	
		Normally open (N.O.)	With bowl guard	—	AD38□-D	AD48□-D	
Nylon	Manual	With drain cock	—	C2SF-6-A	—	—	
			With bowl guard	C2SF-6C-A	C3SF-6-D	C4SF-6-D	
		Drain cock with barb fitting	With bowl guard	—	C3SF-6W-D	C4SF-6W-D	
		With drain guide (without valve function)	—	C2SF□-6J-A	—	—	
			With bowl guard	C2SF□-6CJ-A	C3SF□-6J-D	C4SF□-6J-D	
	Automatic (Auto drain)	Normally closed (N.C.)	—	AD27-6-A	—	—	
			With bowl guard	AD27-6C-A	AD37□-6-D	AD47□-6-D	
		Normally open (N.O.)	With bowl guard	—	AD38□-6-D	AD48□-6-D	
Metal	Manual	With drain cock	—	C2SF-2-A	C3SF-2-A	C4SF-2-A	
			With level gauge	—	C3LF-8-A	C4LF-8-A	
		With drain guide (without valve function)	—	C2SF□-2J-A	C3SF□-2J-A	C4SF□-2J-A	
			With level gauge	—	C3LF□-8J-A	C4LF□-8J-A	
	Automatic (Auto drain)	Normally closed (N.C.)	—	AD27-2-A	AD37□-2-A	AD47□-2-A	
			With level gauge	—	AD37□-8-A	AD47□-8-A	
		Normally open (N.O.)	—	—	AD38□-2-A	AD48□-2-A	
			With level gauge	—	AD38□-8-A	AD48□-8-A	

∗1 The bowl assembly comes with a bowl seal. □ in bowl assembly part numbers indicates a pipe thread type (applicable tubing for auto drain). No indication is necessary for Rc thread; however, indicate N for NPT thread, and F for G thread (For auto drain, Nil: ø10, N: ø3/8").
Please contact SMC separately for psi and °F unit display specifications.

Option/Part Nos.

Optional specifications	Model			
	AFM20-D AFD20-D	**AFM30-D AFD30-D**	**AFM40-D AFD40-D**	**AFM40-06-D AFD40-06-D**
Bracket assembly∗1	AF24P-070AS	AF34P-070AS	AF44P-070AS	AF49P-070AS
Auto drain	Refer to "Bowl Assembly/Part Nos."			

∗1 The assembly consists of a bracket A/B and 2 mounting screws.



Replacement Parts

Description		Part no.			
		AFM20-D AFD20-D	**AFM30-D AFD30-D**	**AFM40-D AFD40-D**	**AFM40-06-D AFD40-06-D**
Element assembly	**AFM20 to 40-D**	AFM20P-060AS	AFM30P-060AS	AFM40P-060AS	
	AFD20 to 40-D	AFD20P-060AS	AFD30P-060AS	AFD40P-060AS	
Bowl seal		C2SFP-260S	C32FP-260S	C42FP-260S	
Bowl assembly∗1, ∗2		Refer to "Bowl Assembly/Part Nos."			

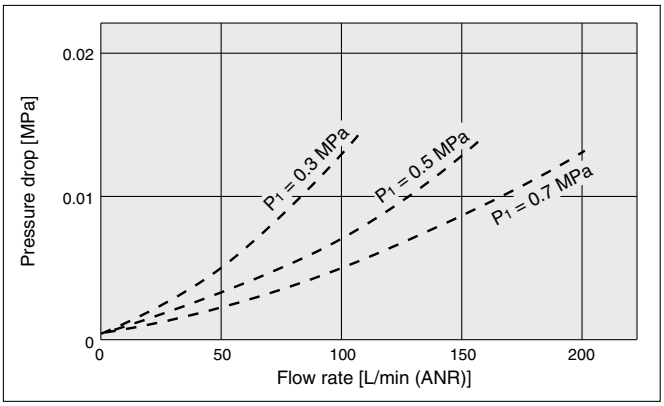
∗1 The bowl assembly comes with a bowl seal.

∗2 Please contact SMC separately for psi and °F unit display specifications.

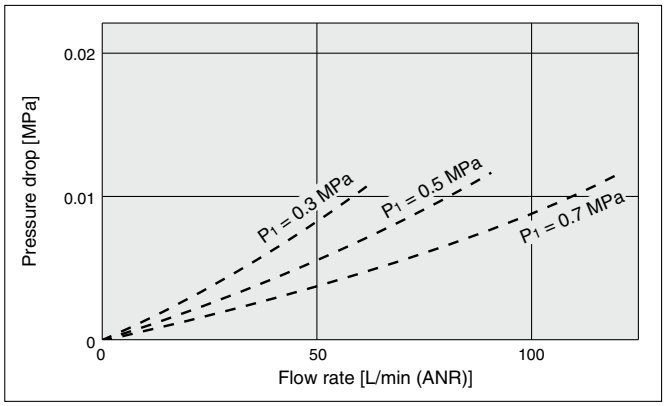
Flow Rate Characteristics (Representative values)

- - - - Initial state

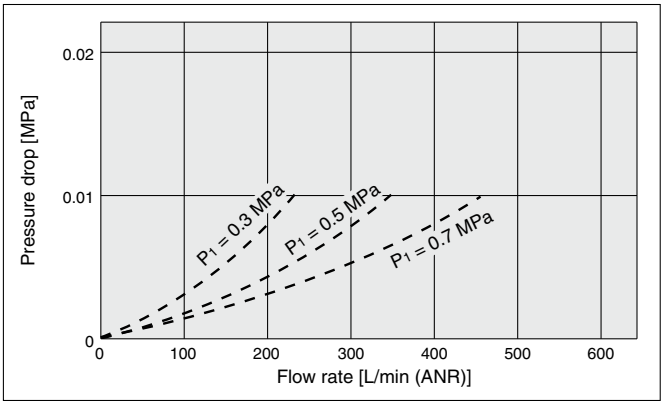
AFM20-D



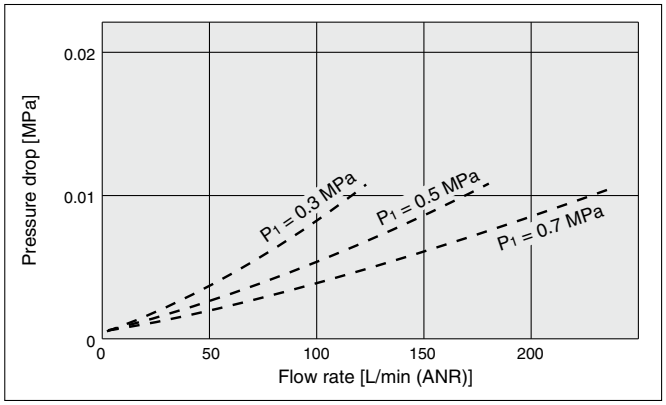
AFD20-D



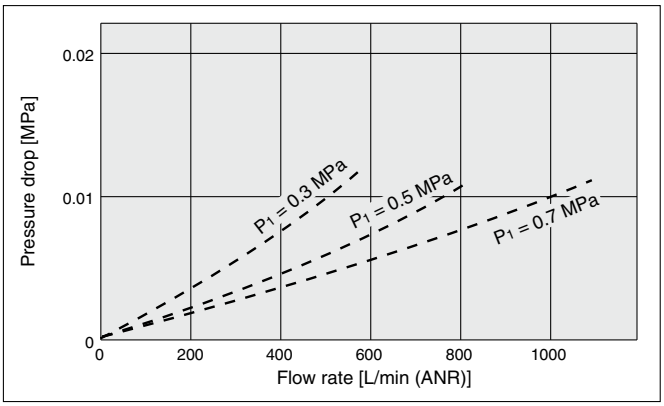
AFM30-D



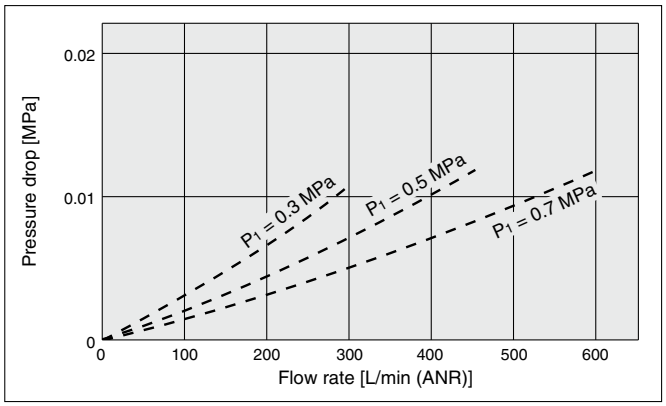
AFD30-D



AFM40-D

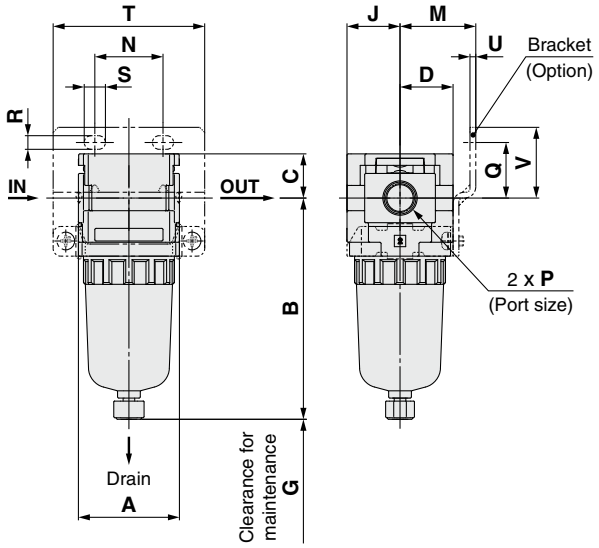


AFD40-D

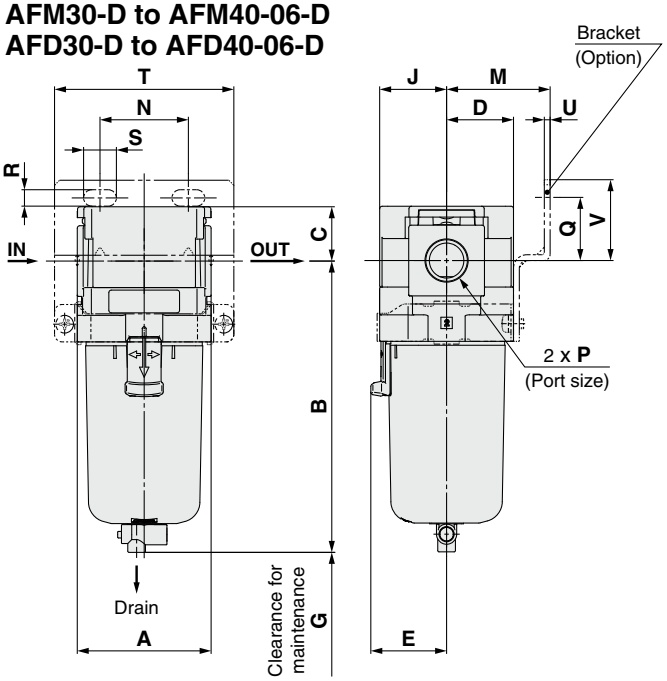


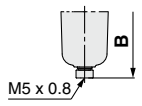
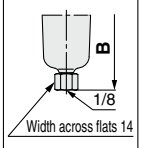
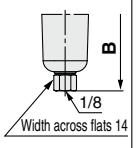
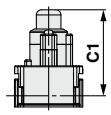
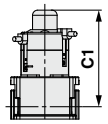
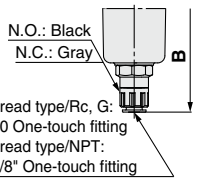
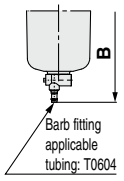
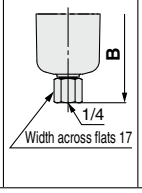
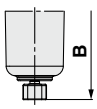
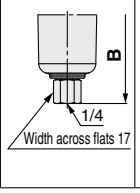
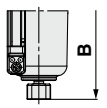
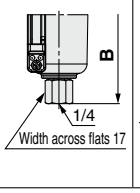
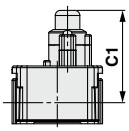
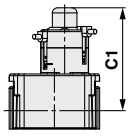
Dimensions

AFM20-D
AFD20-D



AFM30-D to AFM40-06-D
AFD30-D to AFD40-06-D



Applicable model	Optional specifications	Semi-standard							
	With auto drain	PC/PA bowl		Metal bowl		Metal bowl with level gauge		With element service indicator	With clogging switch
		Drain cock with barb fitting	With drain guide	With drain cock	With drain guide	With drain cock	With drain guide		
AFM20-D **AFD20-D**									
AFM30-D to AFM40-06-D **AFD30-D to AFD40-06-D**									

Model	Standard specifications								Optional specifications								
									Bracket mount								With auto drain
	P	A	B	C	D	E	G	J	M	N	Q	R	S	T	U	V	B
AFM20-D/AFD20-D	1/8, 1/4	40	87.6	17.5	21	—	45	21	30	27	22	5.4	8.4	60	2.3	28	104.9
AFM30-D/AFD30-D	1/4, 3/8	53	115.4	21.5	26.5	30	50	26.5	41	35	25	6.5	13	71	2.3	32	157.1
AFM40-D/AFD40-D	1/4, 3/8, 1/2	70	147.1	25.5	35.5	38.4	75	35.5	50	52	30	8.5	12.5	88	2.3	39	186.9
AFM40-06-D/AFD40-06-D	3/4	75	149.1	27	35.5	38.4	75	35.5	50	52	34	8.5	12.5	88	2.3	43	188.9

Model	Semi-standard specifications							
	PC/PA bowl		Metal bowl		Metal bowl with level gauge		With element service indicator	With clogging switch
	With barb fitting	With drain guide	With drain cock	With drain guide	With drain cock	With drain guide		
	B	B	B	B	B	B	C1	C1
AFM20-D/AFD20-D	—	91.4	87.4	93.9	—	—	50.6	56.6
AFM30-D/AFD30-D	123.9	122.2	117.8	122.3	137.8	142.3	54.3	60.3
AFM40-D/AFD40-D	155.6	153.9	149.5	154	169.5	174	58.3	64.3
AFM40-06-D/AFD40-06-D	157.6	155.9	151.5	156	171.5	176	—	—

Mist Separator/*AFM20-D to AFM40-06-D*
Micro Mist Separator/*AFD20-D to AFD40-06-D*
Made to Order

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

Made to Order

① Long Bowl

Drain capacity is greater than that of standard models.

Applicable Models/Drain Capacity

Model	AFM20-D/AFD20-D	AFM30-D/AFD30-D	AFM40-D/AFD40-D	AFM40-06-D/AFD40-06-D
Port size	1/8, 1/4	1/4, 3/8	1/4, 3/8, 1/2	3/4
Drain capacity [cm³]	19	43	88	
B dimension [mm]∗1	108.1	137.4	167.2	169.2

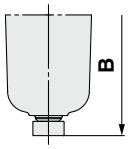
∗1 For polycarbonate bowls. Please contact SMC for other bowl materials.

AFM **30** - ☐ **03** ☐ - ☐ -D- **X64**

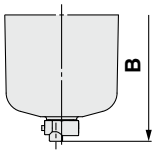
AFD **30** - ☐ **03** ☐ - ☐ -D- **X64**

❶ ❷ ❸ ❹ ❺ •**Long bowl**

AFM20-D
AFD20-D



AFM30 to 40-06-D
AFD30 to 40-06-D



Semi-standard Symbol Selection

· Select one each for **a** to **d**.
· When more than one specification is required, indicate in alphanumeric order.
Example) AFM30-F03B-2JR-D-X64

			Symbol	Description	❶ Body size 20	30	40
❷	Pipe thread type		**Nil**	Rc	●	●	●
			N	NPT	●	●	●
			F	G	●	●	●
			+				
❸	Port size		**01**	1/8	●	—	—
			02	1/4	●	●	●
			03	3/8	—	●	●
			04	1/2	—	—	●
			06	3/4	—	—	●
			+				
❹	Option (Mounting)		**Nil**	Without mounting option	●	●	●
			B∗1	With bracket	●	●	●
			+				
❺	Semi-standard	**a** Bowl∗2	**Nil**	Polycarbonate bowl	●	●	●
			2	Metal bowl	●	●	●
			6	Nylon bowl	●	●	●
			C	With bowl guard	●	—∗3	—∗3
			6C	With bowl guard (Nylon bowl)	●	—∗4	—∗4
			+				
		b Drain port	**Nil**	With drain cock	●	●	●
			J∗5	Drain guide 1/8	●	—	—
				Drain guide 1/4	—	●	●
			W∗6	Drain cock with barb fitting	—	●	●
			+				
		c Flow direction	**Nil**	Flow direction: Left to right	●	●	●
			R	Flow direction: Right to left	●	●	●
			+				
		d Unit	**Nil**	Unit on product label: MPa, °C	●	●	●
			Z∗7	Unit on product label: psi, °F	○∗8	○∗8	○∗8

∗1 Option B is included in the package with the product but does not come assembled. The assembly consists of 2 types of the bracket and 2 mounting screws.
∗2 Refer to chemical data on page 91 for chemical resistance of the bowl.
∗3 A bowl guard is provided as standard equipment (polycarbonate).
∗4 A bowl guard is provided as standard equipment (nylon).
∗5 Without a valve function. The mounting screws are the same as the thread of ❷.
∗6 The combination of metal bowl 2 is not available.
∗7 For the pipe thread type: NPT. This product is for overseas use only according to the New Measurement Act. (The SI unit type is provided for use in Japan.)
∗8 ○: For the pipe thread type: NPT only

Mist Separator/*AFM20-D to AFM40-06-D*
Micro Mist Separator/*AFD20-D to AFD40-06-D*
Made to Order

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



10-AFM 10-AFD

② Clean Series

For details, refer to the Clean Series/Low Particle Generation section of the **Web Catalog**.

10 – **Standard model no.**

• **Clean Series**

③ Copper, Fluorine and Silicone-free + Low Particle Generation

For details, refer to the Clean Series/Low Particle Generation section of the **Web Catalog**.

21 – **Standard model no.**

• **Copper, Fluorine and Silicone-free + Low Particle Generation**

AFM-D/AFD-D Series
Specific Product Precautions 1

Be sure to read this before handling the products. Refer to the back cover for safety instructions. For F.R.L. units precautions, refer to the "Handling Precautions for SMC Products" and the "Operation Manual" on the SMC website: https://www.smcworld.com

Design / Selection

⚠ Warning

1. The bowl material of the standard mist separator and micro mist separator is 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.

Chemical resistance of polycarbonate or nylon bowl

Type	Chemical name	Application examples	Material	
			Polycarbonate	Nylon
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 Sodium carbonate	Degreasing of metals Industrial salts Water-soluble cutting oil	×	○
Inorganic salts	Sodium sulfide Potassium nitrate Sodium sulfate	—	×	△
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 diethyl 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	—	×	△

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

* When the above factors are present, or there is some doubt, use a metal bowl for safety.
* The display window material for the semi-standard type with an element service indicator or clogging switch is nylon.

Air Supply

⚠ Caution

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

Maintenance

⚠ Warning

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

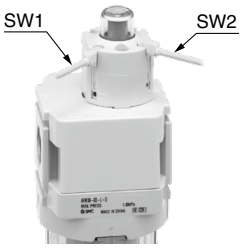
⚠ Caution

1. For the product equipped with a clogging switch, replace the element even if it has been used for 2 years or less when the installed auto switch (SW) is detected.

Element status when auto switch is detected

Symbol	No. of SW	Installation of SW	When SW is detected
-M	SW1	No	—
	SW2	Yes	Warning
-MM	SW1	Yes	Caution
	SW2	Yes	Warning

Caution: Replacement is recommended because the element is clogged.
Warning: The element is clogged, which may result in the destruction of the element. Be sure to replace the element.

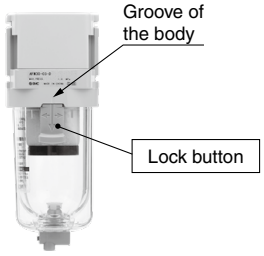


2. Since the clogging switch does not have an output holding mechanism, note that the output will be OFF when there is no air flow in the element (when the equipment is stopped, etc.).

Mounting / Adjustment

⚠ Caution

1. When the bowl is installed on the mist separator (AFM30-D/AFM40-D), or micro mist separator (AFD30-D/AFD40-D), 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.



AFM-D/AFD-D Series
Specific Product Precautions 2

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Mounting / Adjustment

⚠ Warning

1. When using the product with a clogging switch, note the following points

(1) Refer to the figure below to check the position of the auto switch.

For 1 switch (For symbol "M")

Only on the right side when looking at the nameplate



For 2 switches (For symbol "MM")

Both the right and left sides when looking at the nameplate



(2) Do not hit the auto switch with a tool or allow it to receive any other impacts. Doing so may cause damage.

(3) Do not attach or detach the auto switch equipped with a clogging switch. Otherwise, the detection accuracy of the clogging switch may be reduced. In addition, note that an auto switch with an element service indicator cannot be installed in combination.

(4) Do not place magnetic objects near the product. Otherwise, a machine failure may result.

Design

⚠ Caution

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

Selection

⚠ Caution

1. Do not allow air flow that exceeds the rated flow. If the air flow is allowed outside the range of the rated flow even momentarily, drainage and lubricant may splash at the outlet side or cause damage to the component.

2. Do not use in a low pressure application (such as a blower). An 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.

Handling

⚠ Caution

1. The element service indicator (semi-standard: L) and clogging switch (semi-standard: M, MM) are used to check the pressure differential between the IN and OUT sides.
When operating at a flow rate with a pressure differential exceeding 0.025 MPa, the element service indicator and clogging switch may operate even when the element is in its initial state.

2. For models with an element service indicator or clogging switch, adjust the flow rate in the direction that increases the flow rate.
If the designated flow rate is exceeded, reset the flow rate to zero and readjust it until the designated flow rate is reached.

3. For models with an element service indicator or clogging switch, as the element becomes more clogged, the indicator will display an increasing level of red. Be sure to replace the element before the level of red reaches the top of the indicator.