

Modular Connection Type

Compressed Air Preparation Filter/ Activated Carbon Filter

Compressed Air Purity Class **ISO 8573**

RoHS

New

Removes odor in the compressed air
Activated carbon filter
AMK Series



Modular connection is possible.

p. 15, 16



Solid/Oil Separation

Line Filter **AFF Series**

1
μm

Water droplet removal

Mist Separator **AM Series**

0.1
μm

Oil mist separation and removal

Micro Mist Separator **AMD Series**

0.01
μm

Oil mist separation and removal

Deodorization

Activated Carbon Filter **AMK Series**

Oil concentration
0.003
mg/m³

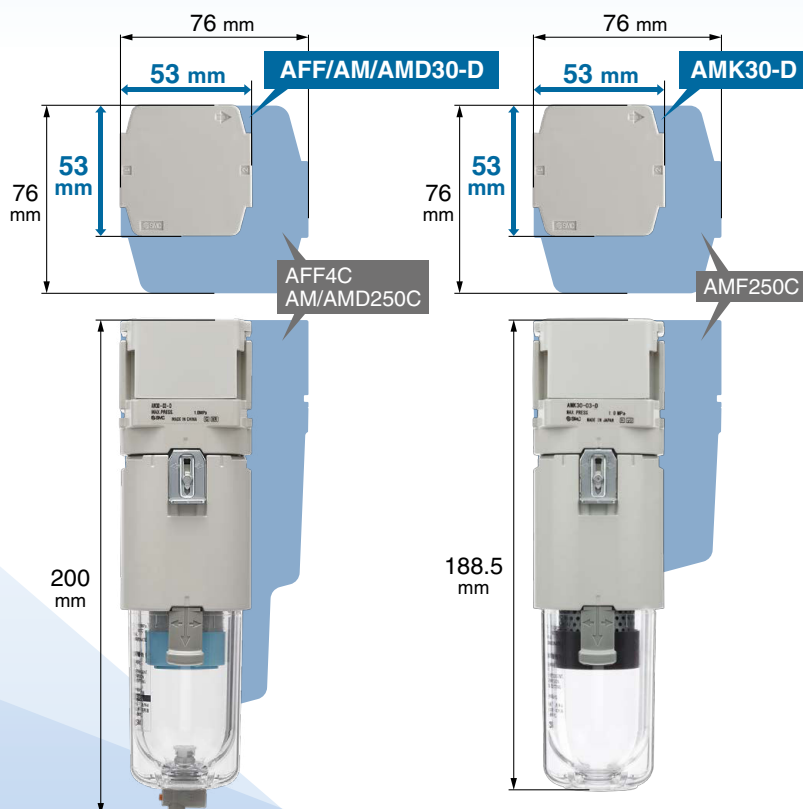
Oil vapor and odor removal

Weight reduced by 50%

AFF/AM/AMD20-D: 0.19 kg (Existing model: 0.38 kg)

Face-to-face and depth dimensions reduced by 30%

AFF/AM□30-D: □53 mm (Existing model: □76 mm)



AFF/AM/AMD/AMK Series



CAT.ES30-22B

The increased air flow capacity due to a reduced pressure drop contributes to energy saving.

Flow capacity

1500 L/min (ANR)

50% increase

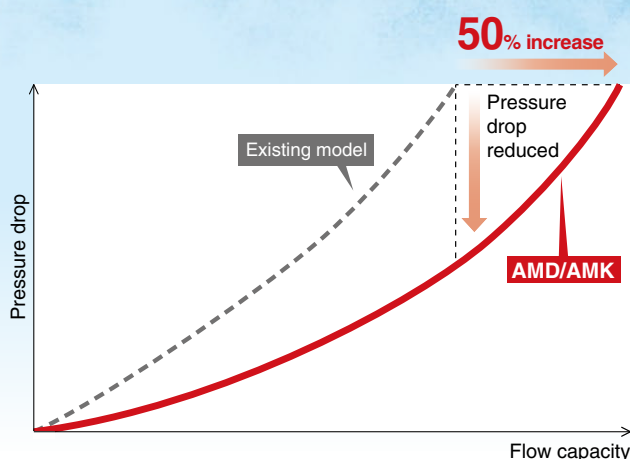
Micro mist separator **AMD Series**
Activated carbon filter **AMK Series**

Pressure drop

Max. 50% reduction

AMD40: 6.8 kPa (Existing model AMD350C: 13.6 kPa)

AMK40: 4.7 kPa (Existing model AMF350C: 9.4 kPa)



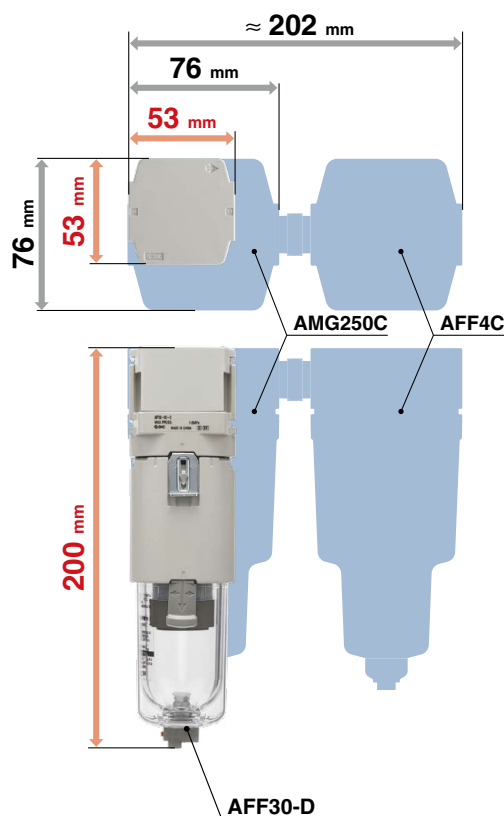
Space-saving design and reduced piping labor

AFF Series

	AMG250C + AFF4C	AFF30-D	
Face-to-face dimension	≈ 202 mm	53 mm	Approx. 150 mm reduction

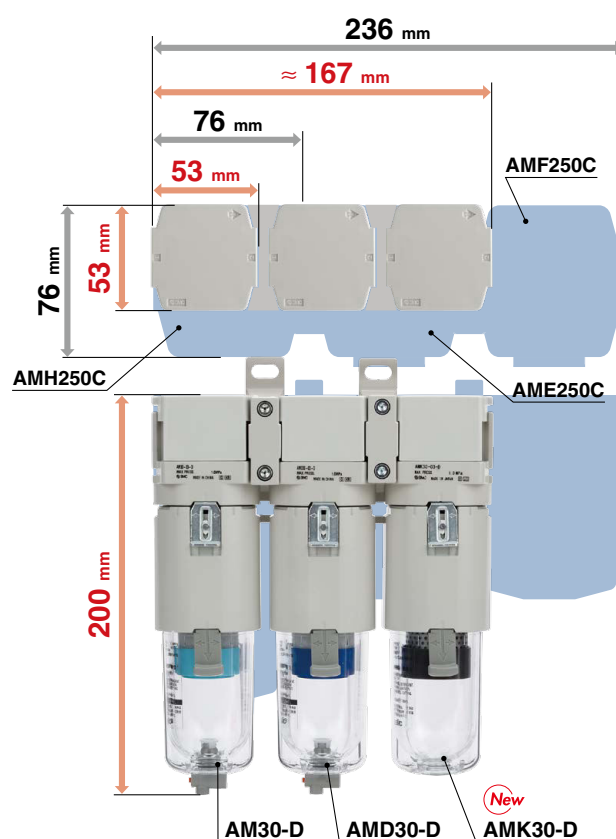
The AFF series line filter removes both water droplets and solid particles. It eliminates*1 the need for a separate filter for removing water droplets (water separator, AMG series), thus greatly reducing the face-to-face dimension and also reducing the required installation space and piping work.

*1 When used within the product's specification range



Modular connection

	AMH250C + AME250C + AMF250C	AM30-D + AMD30-D + AMK30-D	
Face-to-face dimension	236 mm	≈ 167 mm	Approx. 69 mm reduction
Weight	1.51 kg	1.17 kg	23% reduction
Flow capacity	500 L/min (ANR)	750 L/min (ANR)	50% increase



Lightweight



Weight

Max. 50% lighter*

0.19 kg ← 0.38 kg

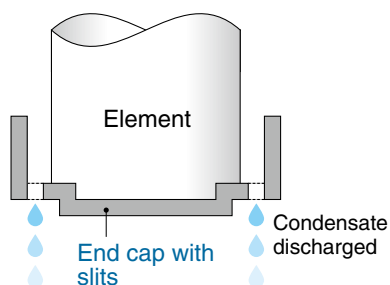
*1 Compared with existing products (AFF□C, AM□C, and AMD□C series)

*2 Compared with existing products (AMF series)

Series	Size	Weight	Reduction rate
AFF/AM/AMD* 	20	0.19 kg ← 0.38 kg	50%
	30	0.39 kg ← 0.55 kg	29%
	40	0.79 kg ← 0.9 kg	12%
AMK* 	20	0.19 kg ← 0.3 kg	37%
	30	0.39 kg ← 0.48 kg	19%
	40	0.79 kg ← 0.8 kg	1.3%

Color-identifiable elements

This eliminates the accumulation of condensate. Even high-velocity fluid is not spattered. The result is a compact bowl design.



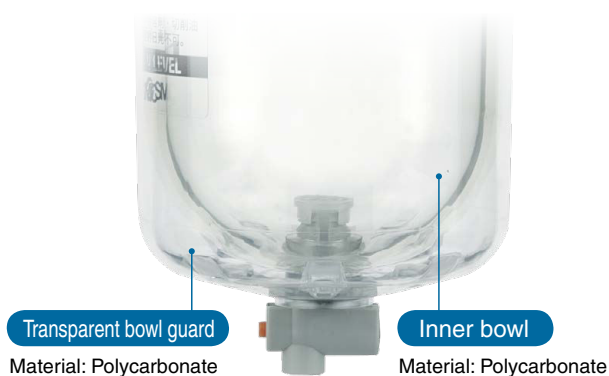
Condensate is not accumulated, so no water flows to the downstream side.



3 models (AFF/AM/AMD) with an end cap with slits

Transparent bowl guard (2-layer construction)

- The inside is visible from 360°.
- The bowl is completely protected from the environment, allowing for improved safety.







No tools are required.

Easy replacement of the element is possible as the element and the bowl are in one piece. Replacement can be done in hand.



Variations

Series	Size	Port size				Flow capacity L/min (ANR)	Option/ Accessory
		1/8	1/4	3/8	1/2		
AFF Series <small>p. 5</small> Line Filter Large dust particle filtration, Water droplet separation Water droplet removal ratio: 99% Nominal filtration rating: 1 μm [Filtration efficiency: 99%] 	20	●	●			300	· Bracket · Auto drain
	30		●	●		750	
	40		●	●	●	1500	
AM Series <small>p. 5</small> Mist Separator Dust filtration, Oil mist separation Nominal filtration rating: 0.1 μm [Filtration efficiency: 99%] Oil mist concentration on the outlet side: Max. 1.0 mg/m^3 [\approx 0.8 ppm] 	20	●	●			300	
	30		●	●		750	
	40		●	●	●	1500	
AMD Series <small>p. 5</small> Micro Mist Separator Dust filtration, Oil mist separation Nominal filtration rating: 0.01 μm [Filtration efficiency: 99.9%] Oil mist concentration on the outlet side: Max. 0.1 mg/m^3 [\approx 0.08 ppm] 	20	●	●			300	
	30		●	●		750	
	40		●	●	●	1500	
AMK Series <small>p. 11</small> Activated Carbon Filter Removes oil vapor and odor from compressed air Oil concentration on the outlet side: Max. 0.003 mg/m^3 [\approx 0.0025 ppm] 	20	●	●			300	· Bracket
	30		●	●		750	
	40		●	●	●	1500	

Flow capacity increased by 50%
Existing model (AMF150C): 200 L/min

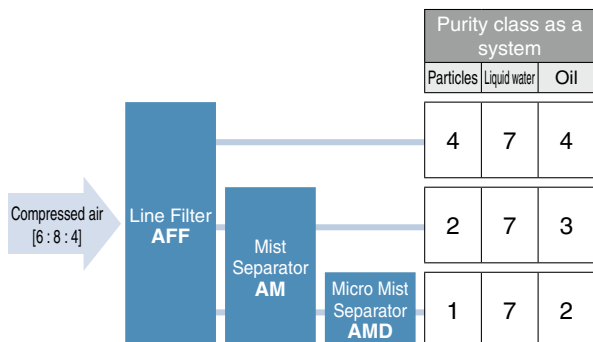
Flow capacity increased by 50%
Existing model (AMF250C): 500 L/min

Flow capacity increased by 50%
Existing model (AMF350C): 1000 L/min

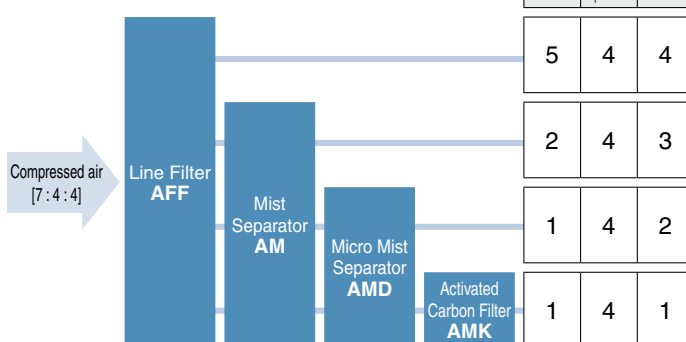
Compliant with ISO 8573 Compressed Air Purity Class

Systems which are in compliance with the degree of purity required for compressed air (For details → page 18)

System example 1)



System example 2)



Certified by a third party organization

Contaminants	ISO 12500: Filters for compressed air – test methods	ISO 8573: Compressed air
Particles	ISO 12500-3:2009 Filters for compressed air – test methods – Particulates	ISO 8573-4:2001 Compressed air – Test methods for solid particle content
Liquid water	ISO 12500-4:2009 Filters for compressed air – test methods – Water	ISO 8573-9:2004 Compressed air – Test methods for liquid water content
Oil	ISO 12500-1:2007 Filters for compressed air – test methods – Oil aerosols	ISO 8573-2:2007 Compressed air – Test methods for oil aerosol content



Simple Specials System



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

For modular connection units (shipped assembled), the simple specials system can be used.

Short lead times

This system enables us to respond to your special needs (additional machining, accessory assembly, or the designing of a modular unit) and deliver your personalized products as quickly as standard products.

Repeat orders

Once we receive a simple special part number from one of your previous orders, we will process the order, manufacture the product, and deliver it to you as quickly as possible.

Please contact your local sales representative for more details.

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Activated Carbon Filter AMK Series

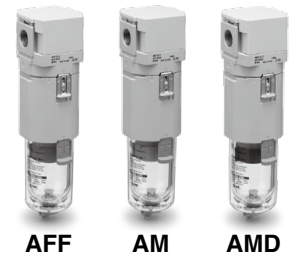
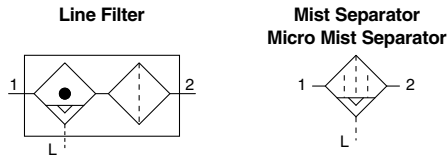
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Compressed Air Preparation Filter

AFF/AM/AMD Series

RoHS

Symbol



How to Order

AFF **30** - **03** **BD** - **D**

① ② ③ ④ ⑤ ⑥

· Option/Semi-standard: Select one each for a to f.
· Option/Semi-standard symbol: When more than one specification is required, indicate in alphanumeric order.
Example) AM30-N03BD-6RZ-D

	Symbol	Description	② Body size		
			20	30	40
①	Filter type	AFF	●	●	●
		AM	●	●	●
		AMD	●	●	●
③	Thread type	Nil	●	●	●
		N*1	●	●	●
		F*2	●	●	●
④	Port size	01	●	—	—
		02	●	●	●
		03	—	●	●
		04	—	—	●
⑤	a	Mounting	Nil	●	●
			B*3	●	●
		Float type auto drain	Nil	●	●
			C*4	●	●
	b	Without auto drain	●	●	●
			●	●	●
		N.C. (Normally closed)	—	●	●
			—	●	●
⑥	c	Bowl*6	Nil	●	●
			2	●	●
			6	●	●
			8	—	●
			C	●	—*7
			6C	●	—*8
		Drain port*9	Nil	●	●
			J*10	—	—
				●	●
			W*11	—	●
				●	●
				—	—
	e	Flow direction	Nil	●	●
			R	●	●
		Unit	Nil	●	●
			Z*12	○*13	○*13

*1 Drain guide is NPT1/8 (applicable to the AFF20, AM20, and AMD20) and NPT1/4 (applicable to the AFF30, AFF40, AM30, AM40, AMD30, and AMD40). The auto drain port comes with a ø3/8" One-touch fitting (applicable to the AFF30, AFF40, AM30, AM40, AMD30, and AMD40).

*2 Drain guide is G1/8 (applicable to the AFF20, AM20, and AMD20) and G1/4 (applicable to the AFF30, AFF40, AM30, AM40, AMD30, and AMD40).

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

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

*5 If the compressor is small (0.75 kW, discharge flow is less than 100 L/min

(ANR)), air leakage from the drain cock may occur during the start of operations. N.C. type is recommended.

*6 Refer to the chemical data on page 19 for chemical resistance of the bowl.

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

*8 A bowl guard is provided as standard equipment (nylon).

*9 The combination of float type auto drain C and D is not available.

*10 Without a valve function

The mounting screws are the same as the thread of ③.

*11 The combination of metal bowl 2 and 8 is not available.

*12 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.)

*13 ○: For pipe thread type: NPT only

Line Filter AFF Series

Standard Specifications

Model		AFF20	AFF30	AFF40
Fluid		Compressed air		
Ambient and fluid temperatures	°C	-5 to 60 (No freezing)		
Proof pressure	MPa	1.5		
Max. operating pressure	MPa	1.0		
Min. operating pressure	MPa	0.05		
Auto drain minimum operating pressure	(N.C.)	MPa	0.1	0.15
	(N.O.)	MPa	—	0.1
Nominal filtration rating*1	μm	1 (99% filtered particle size)		
Water droplet removal ratio*2, *3	%	99		
Compressed air purity class*4	—	ISO 8573-1:2010 [4 : 7 : 4]*5		
Max. flow capacity*6	L/min (ANR)	300	750	1500
Port size	—	1/8, 1/4	1/4, 3/8	1/4, 3/8, 1/2
Weight	kg	0.19	0.39	0.79
Bowl material		Polycarbonate		
Bowl guard		Semi-standard (Steel)	Standard (Polycarbonate)	
Drain capacity	cm ³	8	25	45

*1 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

- When the air flow capacity, inlet pressure, and the amount of solid bodies on the filter inlet side are stable
- When a new element is used

*2 For the following conditions in accordance with [Test condition: ISO 12500-4:2009 compliant] in addition to the conditions above

- Water droplet on the filter inlet side = 33 g/m³
(Water droplet indicates condensed moisture. Water vapor which is not condensed is not included.)
- Inlet temperature = 25°C
- When the air flow capacity, inlet pressure, and the amount of water droplets on the filter inlet side are stable
- When a new element is used

*3 The bowl seal and other O-rings are slightly lubricated.

*4 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 18.

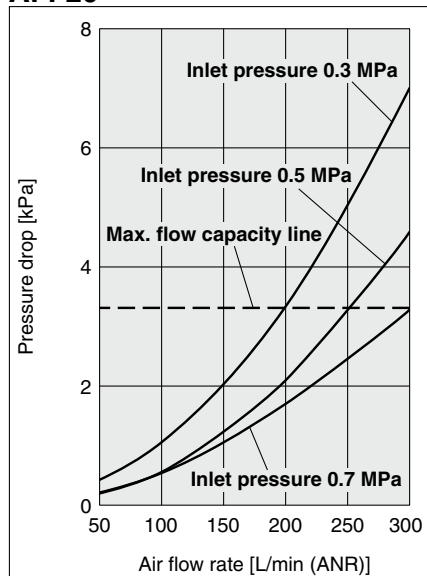
*5 The compressed air quality class on the inlet side is [6 : 8 : 4].

*6 Inlet pressure: 0.7 MPa
Flow at 20°C, atmospheric pressure, and 65% of the relative humidity

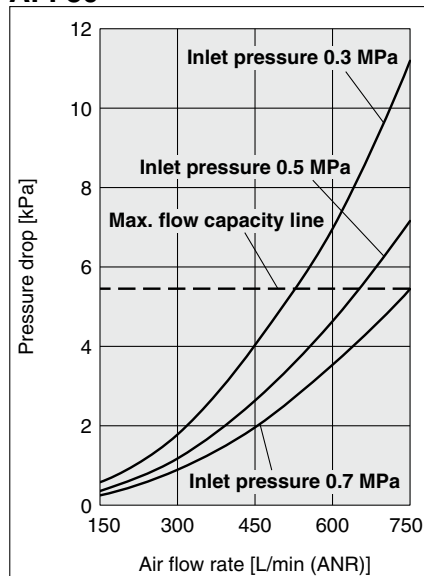
Flow Rate Characteristics (Representative values)

* Compressed air over the max. flow capacity line in the table below may not meet the specifications of the product.

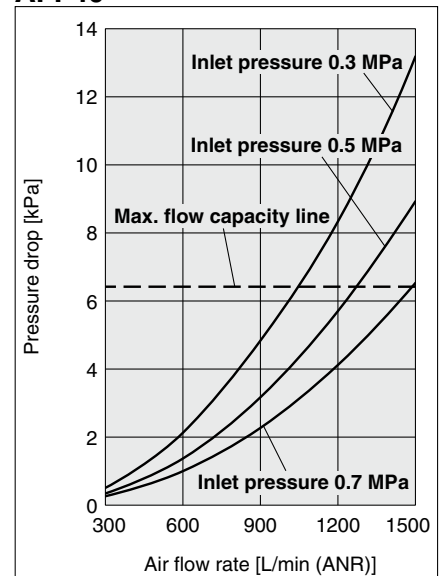
AFF20



AFF30



AFF40



Mist Separator AM Series

Standard Specifications

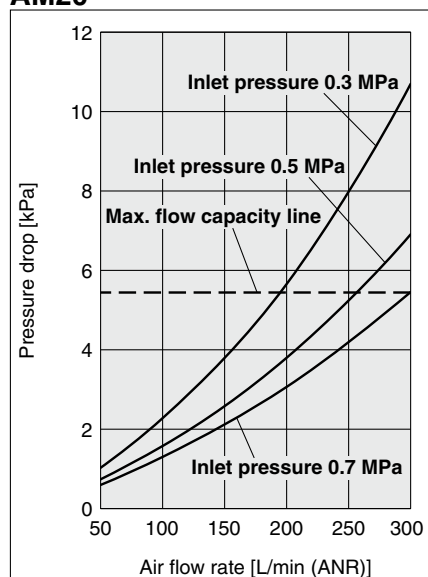
Model		AM20	AM30	AM40
Fluid		Compressed air		
Ambient and fluid temperatures		°C		
Proof pressure		MPa		
Max. operating pressure		MPa		
Min. operating pressure		MPa		
Auto drain minimum operating pressure	(N.C.)	MPa	0.1	0.15
	(N.O.)	MPa	—	0.1
Nominal filtration rating*1		μm		
Oil mist concentration on the outlet side*2, *3		mg/m ³		
Compressed air purity class*4		—		
Max. flow capacity*6		L/min (ANR)		
Port size		—		
Weight		kg		
Bowl material		Polycarbonate		
Bowl guard		Semi-standard (Steel)		
Drain capacity		cm ³		

- *1 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
- When the air flow capacity, inlet pressure, and the amount of solid bodies on the filter inlet side are stable
 - When a new element is used
- *2 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
- Oil mist concentration on the filter inlet side = 10 mg/m³
 - When the air flow capacity, inlet pressure, and the oil mist concentration on the filter inlet side are stable
 - When a new element is used
- *3 The bowl seal and other O-rings are slightly lubricated.
- *4 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 18.
- *5 The compressed air quality class on the inlet side is [4 : 7 : 4].
- *6 Inlet pressure: 0.7 MPa
Flow at 20°C, atmospheric pressure, and 65% of the relative humidity

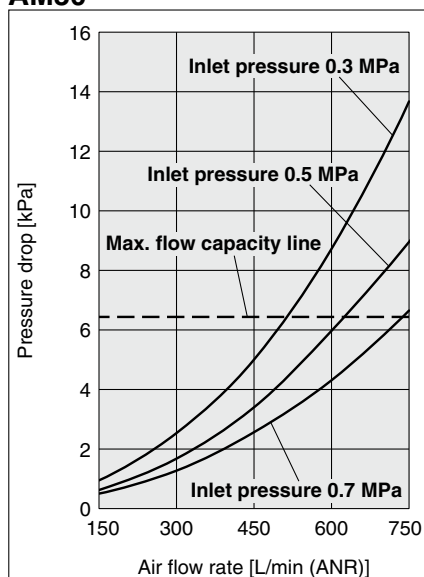
Flow Rate Characteristics (Representative values)

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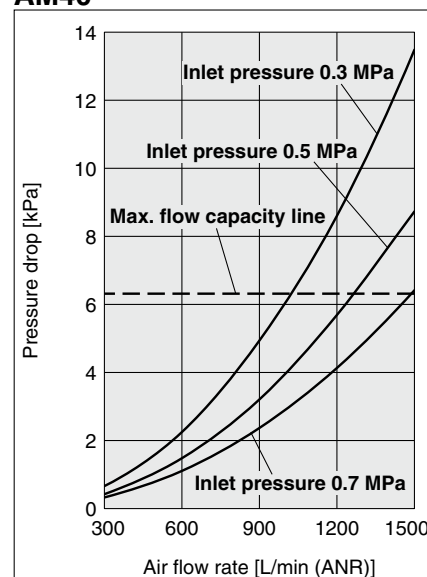
AM20



AM30



AM40



Micro Mist Separator AMD Series

Standard Specifications

Model		AMD20	AMD30	AMD40
Fluid		Compressed air		
Ambient and fluid temperatures	°C	-5 to 60 (No freezing)		
Proof pressure	MPa	1.5		
Max. operating pressure	MPa	1.0		
Min. operating pressure	MPa	0.05		
Auto drain minimum operating pressure	(N.C.)	MPa	0.1	0.15
	(N.O.)	MPa	—	0.1
Nominal filtration rating ^{*1}	μm	0.01 (99.9% filtered particle size)		
Oil mist concentration on the outlet side ^{*2, *3}	mg/m ³	0.1 (≈ 0.08 ppm) or less ^{*4}		
Compressed air purity class ^{*5}	—	ISO 8573-1:2010 [1 : 7 : 2] ^{*6}		
Max. flow capacity ^{*7}	L/min (ANR)	300	750	1500
Port size	—	1/8, 1/4	1/4, 3/8	1/4, 3/8, 1/2
Weight	kg	0.19	0.39	0.79
Bowl material		Polycarbonate		
Bowl guard		Semi-standard (Steel)	Standard (Polycarbonate)	
Drain capacity	cm ³	8	25	45

*1 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

- When the air flow capacity, inlet pressure, and the amount of solid bodies on the filter inlet side are stable
- When a new element is used

*2 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

- Oil mist concentration on the filter inlet side = 1 mg/m³
- When the air flow capacity, inlet pressure, and the oil mist concentration on the filter inlet side are stable
- When a new element is used

*3 The bowl seal and other O-rings are slightly lubricated.

*4 0.01 (≈ 0.008 ppm) or less in the initial state

*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 18.

*6 The compressed air quality class on the inlet side is [2 : 7 : 3].

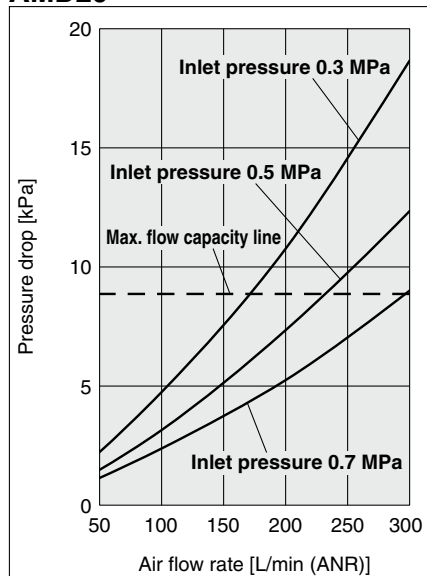
*7 Inlet pressure: 0.7 MPa

Flow at 20°C, atmospheric pressure, and 65% of the relative humidity

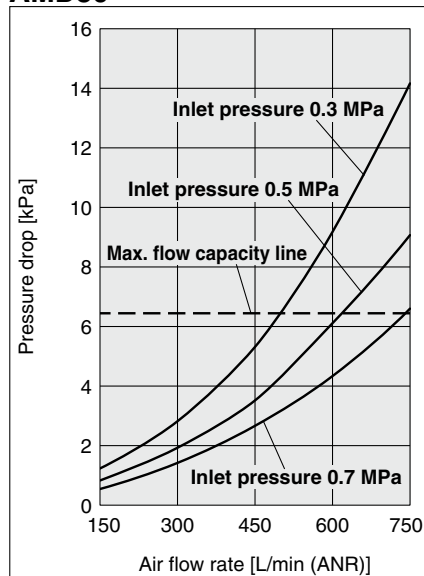
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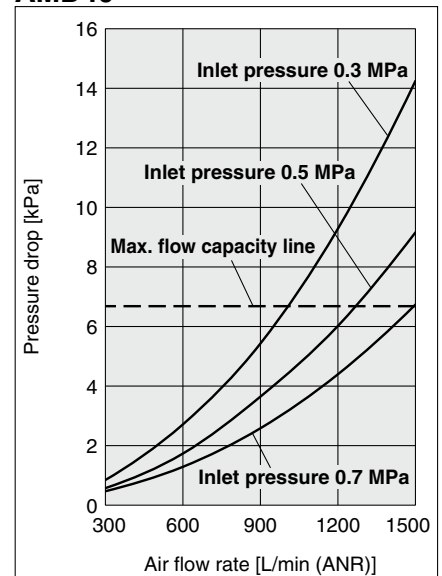
AMD20



AMD30

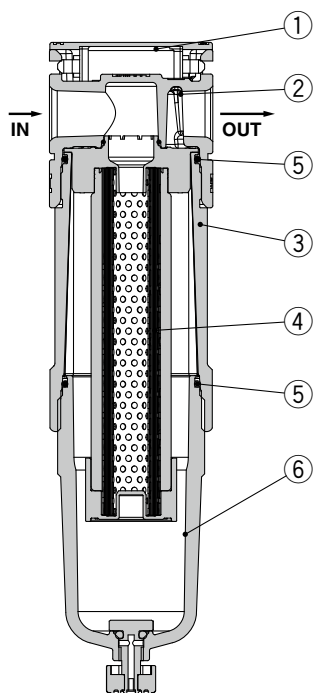


AMD40



AFF/AM/AMD Series

Construction: AFF, AM, AMD



Component Parts

No.	Description	Material
1	Body cover	Resin
2	Body	Aluminum die-cast
3	Joint	Aluminum die-cast

Replacement Parts

No.	Description	Part number		
		20	30	40
4	Element	AFF	AFF24P-060AS	AFF34P-060AS
		AM	AM24P-060AS	AM34P-060AS
		AMD	AMD24P-060AS	AMD34P-060AS
5	Bowl seal	C2SFP-260S	C32FP-260S	C42FP-260S
6	Bowl assembly	Refer to "Bowl Assembly/Part Nos."		

* The guideline for the element replacement is within 2 years of operation or when pressure drop exceeds 0.1 MPa, whichever comes first.

Bowl Assembly/Part Nos.

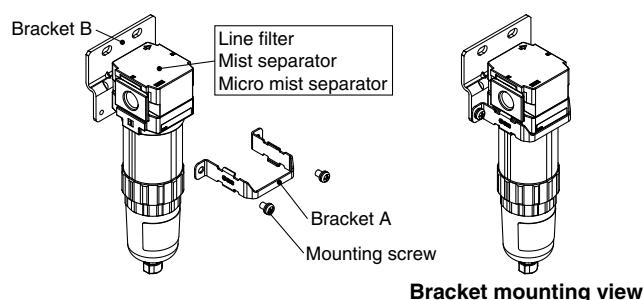
Bowl material	Drain discharge mechanism	Drain port	Other	Model		
				20	30	40
Polycarbonate	Manual	With drain cock	—	C2SF-D	—	—
		With bowl guard	With bowl guard	C2SF-C-D	C3SF-D	C4SF-D
		Drain cock with barb fitting	With bowl guard	—	C3SF-W-D	C4SF-W-D
		With drain guide (without valve function)	—	C2SF□-J-D	—	—
	Automatic*1 (Auto drain)	Normally closed (N.C.)	With bowl guard	C2SF□-CJ-D	C3SF□-J-D	C4SF□-J-D
		Normally open (N.O.)	With bowl guard	AD27-D	—	—
Nylon	Manual	With drain cock	—	C2SF-6-A	—	—
		With bowl guard	With bowl guard	C2SF-6C-A	C3SF-6-A	C4SF-6-A
		Drain cock with barb fitting	With bowl guard	—	C3SF-6W-A	C4SF-6W-A
		With drain guide (without valve function)	—	C2SF□-6J-A	—	—
	Automatic*1 (Auto drain)	Normally closed (N.C.)	With bowl guard	C2SF□-6CJ-A	C3SF□-6J-A	C4SF□-6J-A
		Normally open (N.O.)	With bowl guard	AD27-6-A	—	—
Metal	Manual	With drain cock	—	C2SF-2-A	AD37□-6-A	AD47□-6-A
		With bowl guard	With level gauge	—	AD38□-6-A	AD48□-6-A
		With drain guide (without valve function)	—	C2SF□-2J-A	C3SF□-2-A	C4SF-2-A
		With level gauge	—	—	C3LF-8-A	C4LF-8-A
	Automatic*1 (Auto drain)	Normally closed (N.C.)	With level gauge	AD27-2-A	C3SF□-8J-A	C4SF□-2J-A
		Normally open (N.O.)	With level gauge	—	C3LF□-8J-A	C4LF□-8J-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.

Description	Part number		
	20	30	40
Bracket assembly	AF24P-070AS	AF34P-070AS	AF44P-070AS
Auto drain	Refer to "Bowl Assembly/Part Nos."		

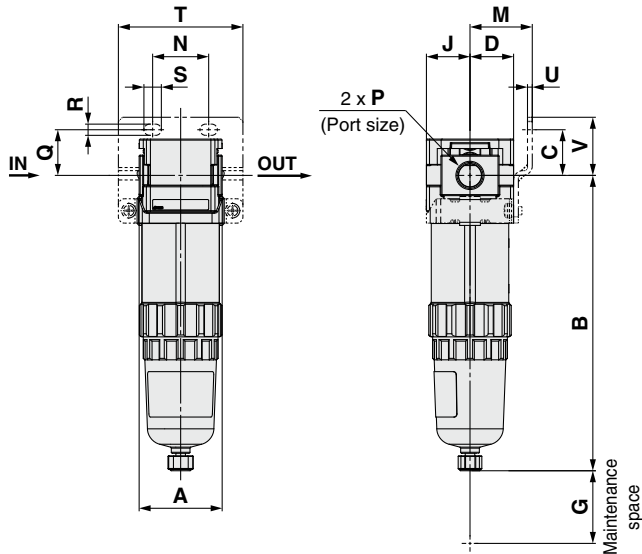
* The assembly consists of a bracket A/B and 2 mounting screws.



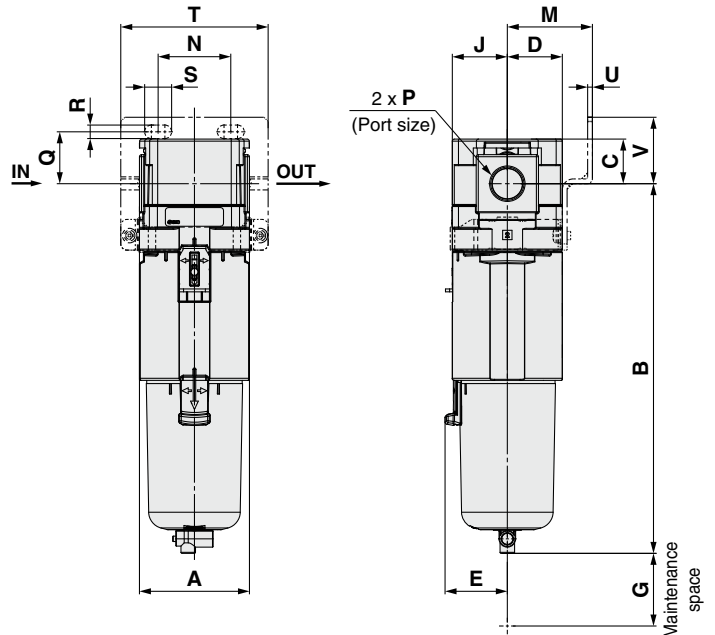
Bracket mounting view

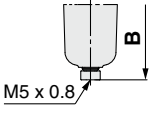
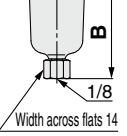

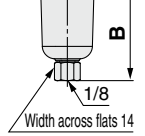
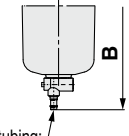
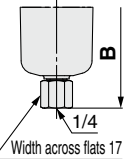

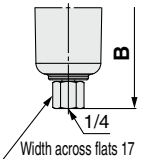
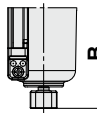
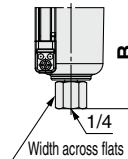
Dimensions

AFF/AM/AMD20



AFF/AM/AMD30 AFF/AM/AMD40



Applicable model	Optional specifications	Semi-standard					
	With auto drain	PC/PA bowl		Metal bowl		Metal bowl with level gauge	
		Drain cock with barb fitting	With drain guide	With drain cock	With drain guide	With drain cock	With drain guide
AFF/AM/AMD20							
AFF/AM/AMD30 AFF/AM/AMD40	N.O.: Black N.C.: Gray Thread type/Rc, G: ø10 One-touch fitting Thread type/NPT: ø3/8" One-touch fitting						

Model	Standard specifications									Optional specifications							
										Bracket mount							With auto drain
										P	A	B	C	D	E	G	
AFF20-D/AM20-D/AMD20-D	1/8, 1/4	40	142.3	17.5	21	—	25	21	30	27	22	5.4	8.4	60	2.3	28	159.6
AFF30-D/AM30-D/AMD30-D	1/4, 3/8	53	178.1	21.5	26.5	30	35	26.5	41	35	25	6.5	13	71	2.3	32	219.8
AFF40-D/AM40-D/AMD40-D	1/4, 3/8, 1/2	70	223.7	25.5	35.5	38.4	40	35.5	50	52	30	8.5	12.5	88	2.3	39	263.5

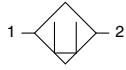
Model	Semi-standard specifications					
	PC/PA bowl		Metal bowl		Metal bowl with level gauge	
	With barb fitting	With drain guide	With drain cock	With drain guide	With drain cock	With drain guide
	B	B	B	B	B	B
AFF20-D/AM20-D/AMD20-D	—	146.1	142.1	148.6	—	—
AFF30-D/AM30-D/AMD30-D	186.6	184.9	180.6	185.1	200.6	205.1
AFF40-D/AM40-D/AMD40-D	232.2	230.5	226.1	230.6	246.1	250.6

Activated Carbon Filter *AMK Series*

RoHS



Symbol



How to Order

AMK **30** - **F** **03** **B** - - **D**

① ② ③ ④ ⑤ ⑥

· Option/Semi-standard: Select one each for **a** to **d**.
· Option/Semi-standard symbol: When more than one specification is required, indicate in alphanumeric order.
Example) AMK30-N03B-6RZ-D

		Symbol	Description	②					
				Body size					
				20	30	40			
①	Filter type	AMK	Activated carbon filter		●	●	●		
+									
③	Thread type	Nil	Rc		●	●	●		
		N	NPT		●	●	●		
		F	G		●	●	●		
+									
④	Port size	01	1/8		●	—	—		
		02	1/4		●	●	●		
		03	3/8		—	●	●		
		04	1/2		—	—	●		
+									
⑤	Option	a	Mounting	Nil	Without mounting option		●	●	●
				B*1	With bracket		●	●	●
+									
⑥	Semi-standard	b	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
		+							
		c	Flow direction	Nil	Flow direction: Left to right		●	●	●
				R	Flow direction: Right to left		●	●	●
		+							
		d	Pressure unit	Nil	Name plate and caution plate in imperial units: MPa/°C		●	●	●
Z*5	Name plate and caution plate in imperial units: psi/°F			○*6	○*6	○*6			

*1 A bracket is not assembled and supplied loose at the time of shipment.
Including 2 mounting screws

*2 Refer to the chemical data on page 19 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 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.)

*6 ○: For pipe thread type: NPT only

Activated Carbon Filter AMK Series

Standard Specifications

Model		AMK20	AMK30	AMK40
Fluid		Compressed air		
Ambient and fluid temperatures	°C	-5 to 60 (No freezing)		
Proof pressure	MPa	1.5		
Max. operating pressure	MPa	1.0		
Min. operating pressure	MPa	0.05		
Oil concentration on the outlet side*1, *2	mg/m ³	0.003 (≈ 0.0025 ppm) or less		
Compressed air purity class*3	—	ISO 8573-1: 2010 [1 : 4 : 1]*4		
Max. flow capacity*5	L/min (ANR)	300	750	1500
Port size	—	1/8, 1/4	1/4, 3/8	1/4, 3/8, 1/2
Bowl material		Polycarbonate		
Bowl guard		Semi-standard (Steel)	Standard (Polycarbonate)	
Weight	kg	0.19	0.39	0.79

*1 For the following conditions in addition to the conditions above

- When a micro mist separator (AMD series) is installed on the inlet side
- When the air flow capacity, upstream pressure, and oil concentration on the filter inlet side are stable
- When a new element is used

*2 The bowl seal and other O-rings are slightly lubricated.

*3 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 18.

*4 The compressed air quality class on the inlet side is [1 : 4 : 2].

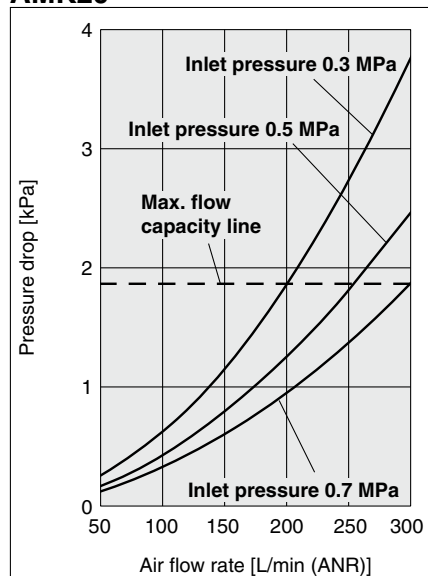
*5 Inlet pressure: 0.7 MPa

Flow at 20°C, atmospheric pressure, and 65% of the relative humidity

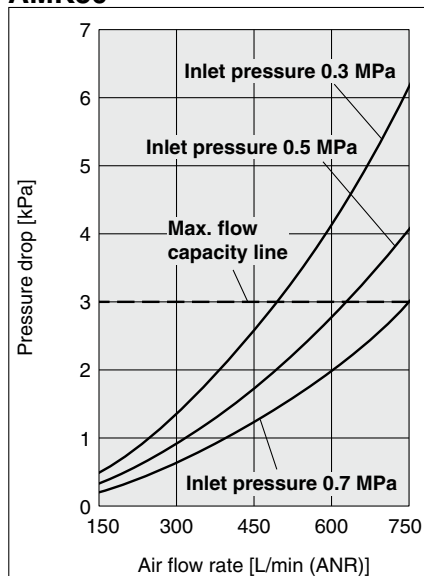
Flow Rate Characteristics (Representative values)

* Compressed air over the max. flow capacity line in the table below may not meet the specifications of the product.

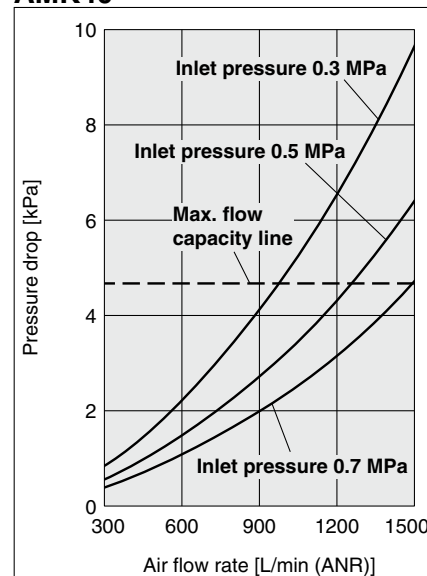
AMK20



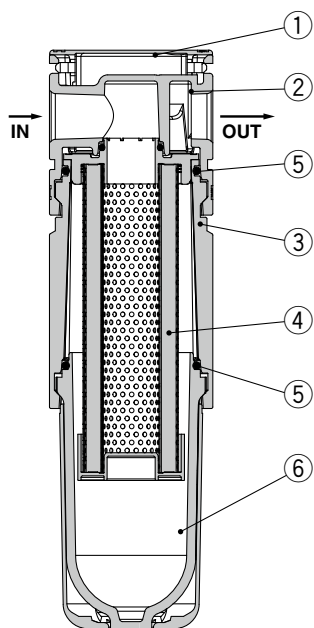
AMK30



AMK40



Construction



Component Parts

No.	Description	Material
1	Body cover	Resin
2	Body	Aluminum die-cast
3	Joint	Aluminum die-cast

Replacement Parts

No.	Description	Part number		
		AMK20	AMK30	AMK40
4	Element	AMK24P-060AS	AMK34P-060AS	AMK44P-060AS
5	Bowl seal	C2SFP-260S	C32FP-260S	C42FP-260S
6	Bowl assembly	Refer to "Bowl Assembly/Part Nos."		

* When it is time to replace the element, refer to the maintenance instructions in the specific product precautions (page 20).

Bowl Assembly/Part Nos.

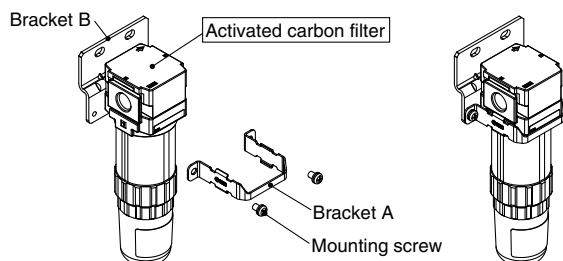
Bowl material	Other	Model		
		AMK20	AMK30	AMK40
Polycarbonate	—	C2SF-D-X401	C3SK-D	C4SK-D
	With bowl guard	C2SK-C-D	—	—
Nylon	—	C2SF-6-A-X401	C3SK-6-D	C4SK-6-D
	With bowl guard	C2SK-6C-D	—	—
Metal	—	C2SF-2-A-X401	C3SF-2-A-X401	C4SF-2-A-X401

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

Option/Part Nos.

Description	Part number		
	AMK20	AMK30	AMK40
Bracket assembly	AF24P-070AS	AF34P-070AS	AF44P-070AS

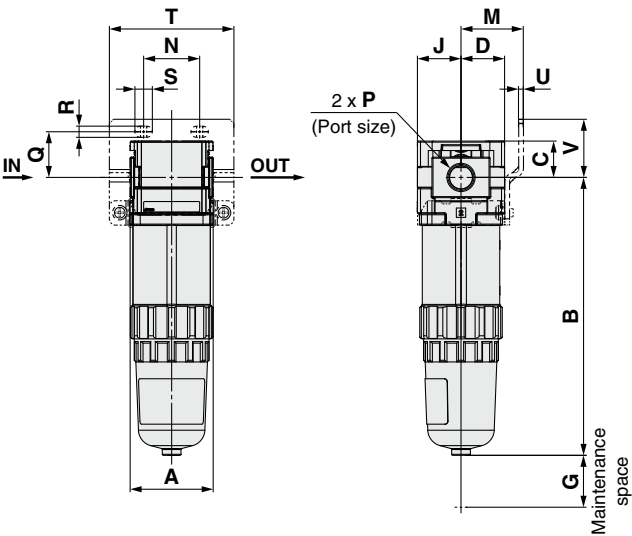
* The assembly consists of a bracket A/B and 2 mounting screws.



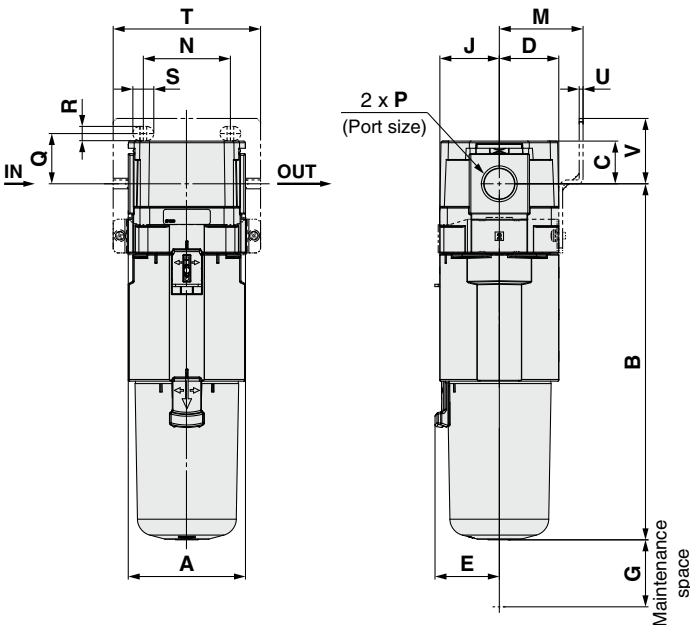
Bracket mounting view



Dimensions

AMK20



AMK30
AMK40



Applicable model	Semi-standard
	Metal bowl
AMK20-D	
AMK30-D AMK40-D	

Model	Standard specifications								Optional specifications							
									Bracket mount							
	P	A	B	C	D	E	G	J	M	N	Q	R	S	T	U	V
AMK20-D	1/8, 1/4	40	133.9	17.5	21	—	25	21	30	27	22	5.4	8.4	60	2.3	28
AMK30-D	1/4, 3/8	53	167	21.5	26.5	30	35	26.5	41	35	25	6.5	13	71	2.3	32
AMK40-D	1/4, 3/8, 1/2	70	212.7	25.5	35.5	38.4	40	35.5	50	52	30	8.5	12.5	88	2.3	39

Model	Semi-standard specifications
	Metal bowl
	B
AMK20-D	139.1
AMK30-D	167
AMK40-D	212.6

AFF/AM/AMD/AMK Series

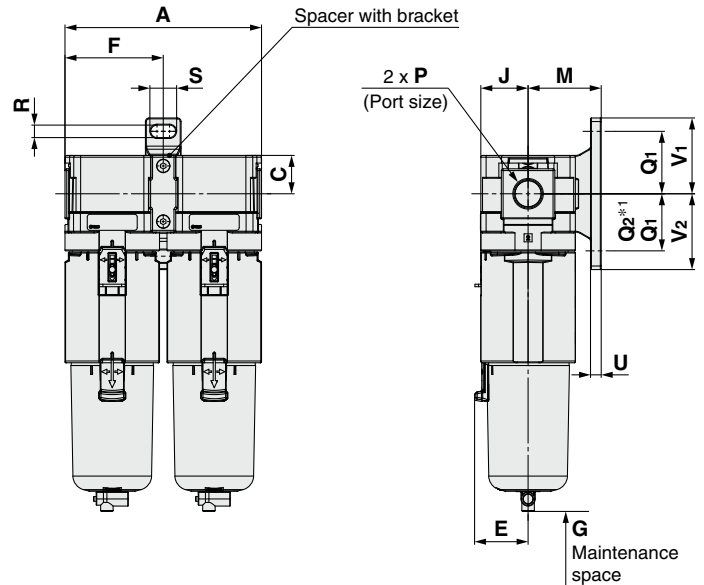
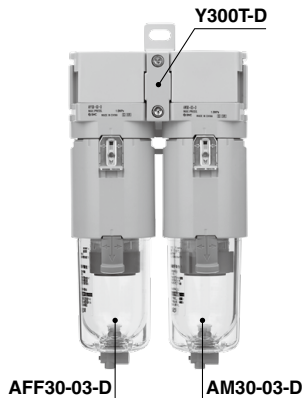
Modular Connection Example (Dimensions)

Products do not come assembled. They should be ordered separately and assembled by the customer.

For modular connection units (shipped assembled), the simple specials system can be used. For details, refer to page 4.

Combination example ①

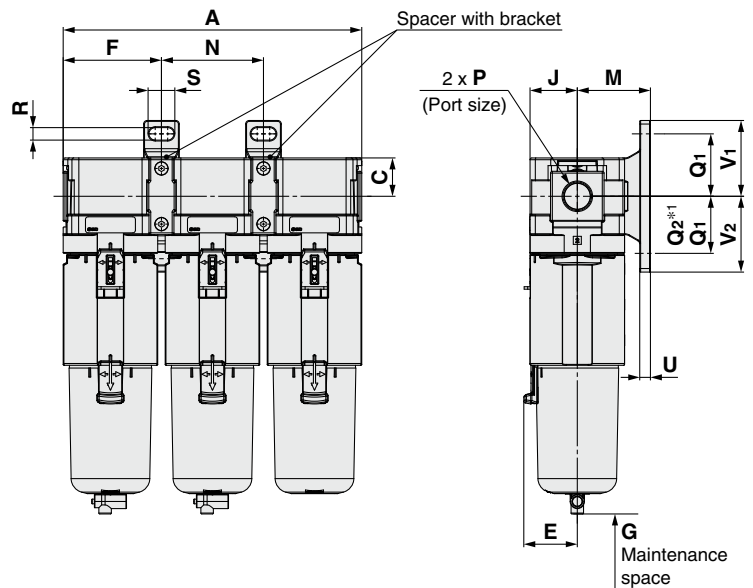
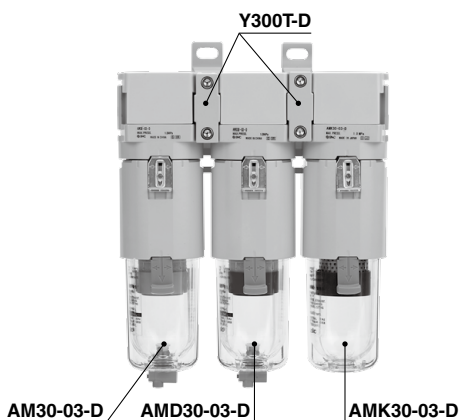
Line Filter AFF30-03-D _____ 1 pc.
Mist Separator AM30-03-D _____ 1 pc.
Spacer with Bracket Y300T-D _____ 1 pc.



*1 Q₂ (Sizes 20, 40) Q₁ (Size 30)

Combination example ②

Mist Separator AM30-03-D _____ 1 pc.
Micro Mist Separator AMD30-03-D _____ 1 pc.
Activated Carbon Filter AMK30-03-D _____ 1 pc.
Spacer with Bracket Y300T-D _____ 2 pcs.

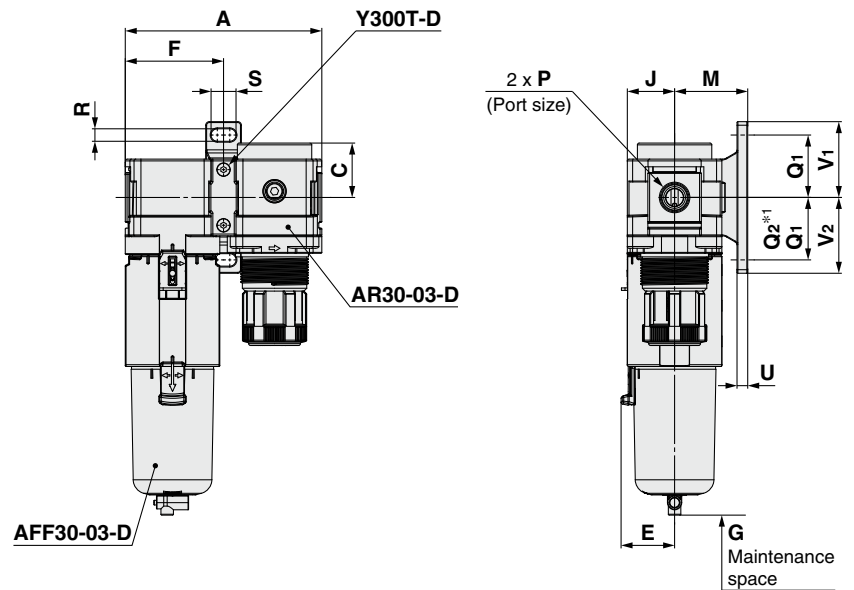


*1 Q₂ (Sizes 20, 40) Q₁ (Size 30)

Model	Number of components	Standard specifications								Optional specifications							
		P	A	C	E	F	G	J	M	Bracket mount							
										N	Q ₁	Q ₂	R	S	U	V ₁	V ₂
Size 20	2	1/8, 1/4	83.2	17.5	—	41.6	25	21	30	—	24	33	5.5	11.5	3.5	29	38
	3		126.4							43.2							
Size 30	2	1/4, 3/8	110.2	21.5	30	55.1	35	26.5	41	—	35	—	7	14	6	42.5	42.5
	3		167.4							57.2							
Size 40	2	1/4, 3/8, 1/2	145.2	25.5	38.4	72.6	40	35.5	50	—	40	55	9	18	7	50	65
	3		220.4							75.2							

Combination example ③

Line Filter AFF30-03-D ——— 1 pc.
 Regulator AR30-03-D ——— 1 pc.
 Spacer with Bracket Y300T-D ——— 1 pc.

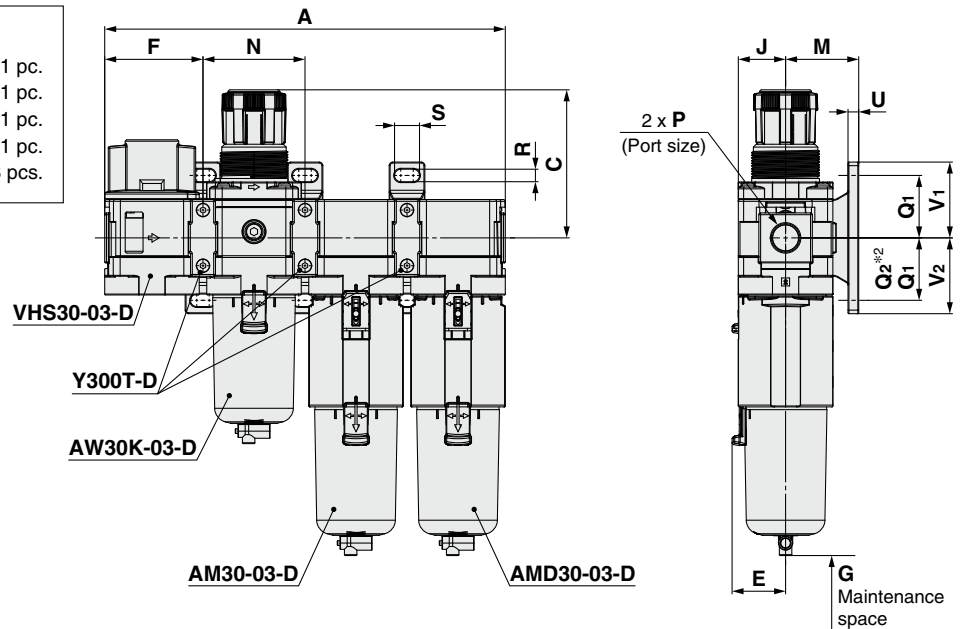


*1 Q₂ (Sizes 20, 40) Q₁ (Size 30)

Model	Number of components	Standard specifications								Optional specifications							
		P	A	C	E	F	G	J	M	Bracket mount							
Size 20	2	1/8, 1/4	83.2	26.5	—	41.6	25	21	30	24	33	5.5	11.5	3.5	29	38	
Size 30	2	1/4, 3/8	110.2	30.5	30	55.1	35	26.5	41	35	—	7	14	6	42.5	42.5	
Size 40	2	3/8, 1/2	145.2	35.5	38.4	72.6	40	35.5	50	40	55	9	18	7	50	65	

Combination example ④

Pressure Relief 3-port Valve VHS30-03-D ——— 1 pc.
 Filter Regulator AW30K-03-D ——— 1 pc.
 Mist Separator AM30-03-D ——— 1 pc.
 Micro Mist Separator AMD30-03-D ——— 1 pc.
 Spacer with Bracket Y300T-D ——— 3 pcs.



*2 Q₂ (Sizes 20, 40) Q₁ (Size 30)

Model	Number of components	Standard specifications							Optional specifications								
									Bracket mount								
		P	A	C	E	F	G	J	M	N	Q1	Q2	R	S	U	V1	V2
Size 20	4	1/8, 1/4	169.6	71.8	—	41.6	25	21	30	43.2	24	33	5.5	11.5	3.5	29	38
Size 30	4	1/4, 3/8	224.6	86.5	30	55.1	35	26.5	41	57.2	35	—	7	14	6	42.5	42.5
Size 40	4	3/8, 1/2	295.6	91.5	38.4	72.6	40	35.5	50	75.2	40	55	9	18	7	50	65

AFF/AM/AMD/AMK Series

Accessories Sold Separately (for Individual Parts)

Spacer / Spacer with Bracket

Y 300 - D

① ②

	Symbol	Description	① Body size [Applicable size]		
			200	300	400
			AFF20 AM20 AMD20 AMK20	AFF30 AM30 AMD30 AMK30	AFF40 AM40 AMD40 AMK40
②	Bracket	Nil	Spacer	●	●
		T	Spacer with bracket	●	●

Spacer
(Y□-D)



Spacer with bracket
(Y□T-D)



Standard Specifications

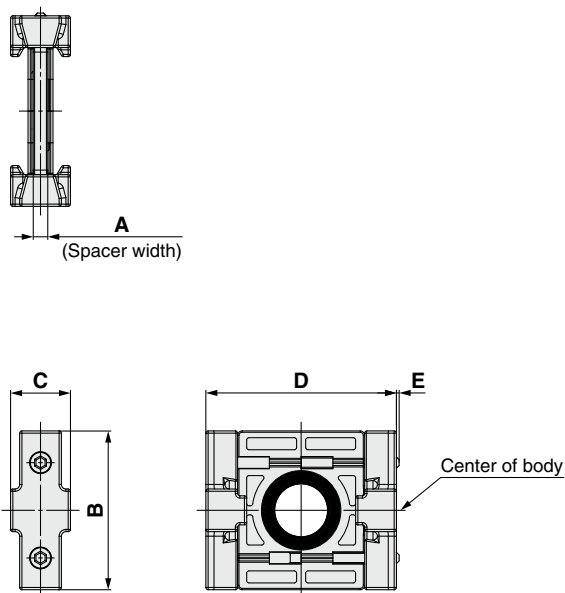
Fluid	Air
Ambient and fluid temperatures	-5 to 60°C (No freezing)
Proof pressure	1.5 MPa
Max. operating pressure	1.0 MPa

Replacement Parts

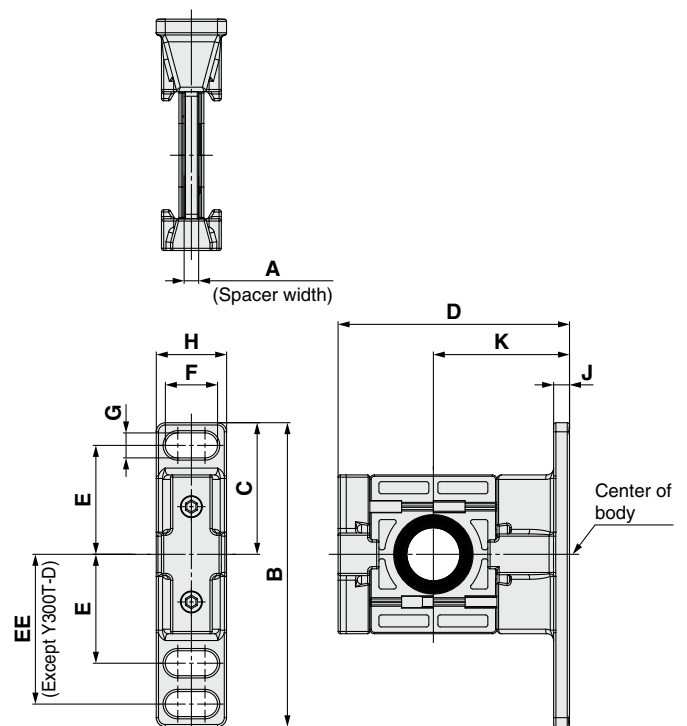
Description	Material	Part number		
		Y200-D Y200T-D	Y300-D Y300T-D	Y400-D Y400T-D
Seal	HNBR	Y220P-050S	Y320P-050S	Y420P-050S

Dimensions

Spacer



Spacer with bracket



Part no.	A	B	C	D	E	Applicable model
Y200-D	3.2	35	13.2	42	0.6	AFF/AM/AMD/AMK20
Y300-D	4.2	43	16.2	53	—	AFF/AM/AMD/AMK30
Y400-D	5.2	51	19.2	71	—	AFF/AM/AMD/AMK40

Part no.	A	B	C	D	E	EE	F	G	H	J	K	Applicable model
Y200T-D	3.2	67	29	51	24	33	11.5	5.5	15.5	3.5	30	AFF/AM/AMD/AMK20
Y300T-D	4.2	85	42.5	67.5	35	—	14	7	20	6	41	AFF/AM/AMD/AMK30
Y400T-D	5.2	115	50	85.5	40	55	18	9	26	7	50	AFF/AM/AMD/AMK40

International Standard ISO 8573-1:2010

Compressed Air Purity Classes

Compressed air is used in a variety of manufacturing processes. In this age, compressed air with a high degree of purity is becoming increasingly necessary.

For this reason, it is necessary to remove contaminants from systems which supply compressed air and to secure the quality. The standard which stipulates the class according to the quantities of contaminants in compressed air is ISO 8573-1.

[Outline]

Stipulates the purity class of contaminants (particles, water, oil) mixed in with the compressed air

[Scope]

Can be used in various places in compressed air systems

[Purity Classes]

Class	Particles			Humidity and liquid water		Oil
	Maximum number of particles per cubic meter as a function of particle size d [μm]			Pressure dew point	Concentration of liquid water Cw	Concentration of total oil
	0.1 < d ≤ 0.5	0.5 < d ≤ 1.0	1.0 < d ≤ 5.0	[mg/m ³]	[°C]	[g/m ³]
0	As specified by the equipment user or supplier and more stringent than class 1					
1	≤ 20000	≤ 400	≤ 10	—	≤ -70	—
2	≤ 400000	≤ 6000	≤ 100	—	≤ -40	—
3	—	≤ 90000	≤ 1000	—	≤ -20	—
4	—	—	≤ 10000	—	≤ +3	—
5	—	—	≤ 100000	—	≤ +7	—
6	—	—	—	0 < Cp ≤ 5	≤ +10	—
7	—	—	—	5 < Cp ≤ 10	—	Cw ≤ 0.5
8	—	—	—	—	—	0.5 < Cw ≤ 5
9	—	—	—	—	—	5 < Cw ≤ 10
x	—	—	—	Cp > 10	—	Cw > 10

[Terms and Definitions]

- Purity class: An index assigned for each classification obtained by dividing the concentration of each contaminant into ranges
- Particle: Small discrete mass of solid or liquid matter
- Humidity and liquid water: Water vapor (gas), Water droplets
- Oil: Liquid oil, Oil mist, Vapor

[How to Perform a Test to Check the Performance]

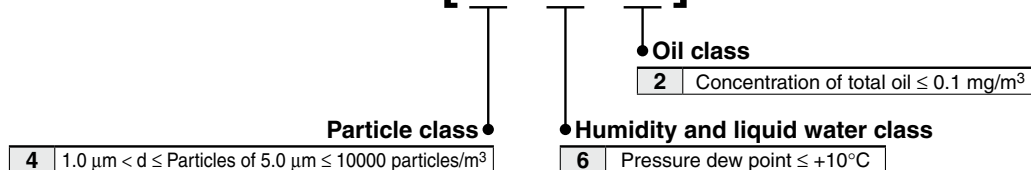
ISO 12500, which sets out the test method to be used in order to check the filter performance for each of the three kinds of contaminants, is indicated below.

- Particle: ISO 12500-3:2009
- Liquid water: ISO 12500-4:2009
- Oil: ISO 12500-1:2007

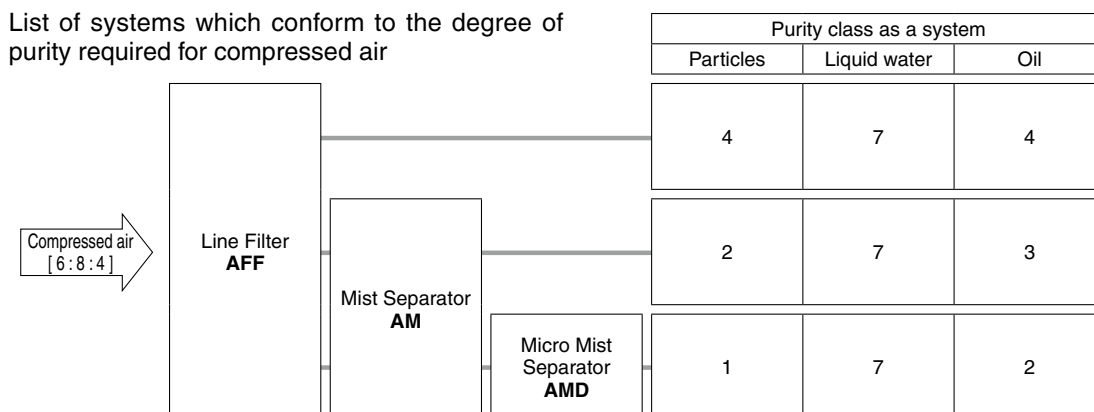
* Measured using a dedicated evaluation system which has been certified according to ISO 12500-□ and also by a third party (Certified)

[Purity Class Designation Example]

ISO 8573-1:2010 [4 : 6 : 2]



List of systems which conform to the degree of purity required for compressed air



The class indicates the compressed air purity according to ISO 8573-1:2010 (JIS B 8392-1:2012) and indicates the maximum purity class which can be obtained using that system. Note, however, that this value will differ according to the inlet air conditions.



AFF/AM/AMD/AMK Series

Specific Product Precautions 1

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

Design

⚠ Warning

1. Resin is used for some of the external parts such as the bowl (Material: polycarbonate).

Do not use the product when the following organic solvents are present in the atmosphere: synthetic fluid, chemicals including acetone, alcohol, ethylene chloride, sulphuric acid, nitrate, hydrochloric acid, cutting oil, kerosene, gasoline, and thread lock adhesive

Effects of organic solvents and chemicals on the equipment. Shown below is the chemical data of the substances which cause degradation for reference.

Type	Chemical name	Application examples	Material	
			Polycarbonate	Nylon
Acid	Hydrochloric acid Sulfuric acid Phosphoric acid Acetic 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	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.

Design

⚠ Warning

- Applications in which the difference between the inlet and outlet pressure exceeds 0.1 MPa must be avoided. Failure to do so may result in element breakage.
- For air blow applications, prevent airborne particles from the operating environment from entering into the compressed air stream. Foreign matter may adhere to workpieces during air blow as a result.
- If air equipment is installed on the outlet side of the product, particles may be generated from the equipment and thus the required cleanliness may not be obtained. Please consider installing air equipment on the inlet side of the product.

⚠ Caution

- The activated carbon filter (AMK series) adsorbs the oil vapor contained in compressed air and removes the odor derived from it, but it does not remove all odor.

Selection

⚠ Warning

- Select a model so that the max. discharge (instantaneous) flow rate value does not exceed the rated air capacity.
- Use the N.O. type auto drain under the following conditions to avoid a malfunction.
Output of compressor: 0.75 kW or more
Discharged flow rate: 100 L/min (ANR) or more
If multiple auto drains are to be used, confirm whether the compressor has a sufficient capacity by multiplying the above capacity by the number of auto drains to be used.
{ For example, in order to use 2 auto drains, the compressor needs a capacity of 1.5 kW [200 L/min (ANR)] or more. } Set the operating pressure at 0.1 MPa or more.
- Use the N.C. type auto drain under the following conditions to avoid a malfunction.
Operating pressure for the AD27-D: 0.1 MPa or more
Operating pressure for the AD37-D/AD47-D: 0.15 MPa or more

Mounting

⚠ Warning

- Connect the product according to the "1"(IN) and "2"(OUT) indications or the arrows for air direction. Incorrect connection may result in a malfunction.
- Install with adequate space for maintenance beneath the product. Refer to the dimensions of each part for the necessary amount of space.
- Install vertically so that the drain outlet turns downward. Using with the drain outlet turned horizontal or upward may result in a malfunction.



AFF/AM/AMD/AMK Series

Specific Product Precautions 2

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

Piping

Warning

1. Tighten the 2 holding screws on the spacer with bracket or spacer evenly.

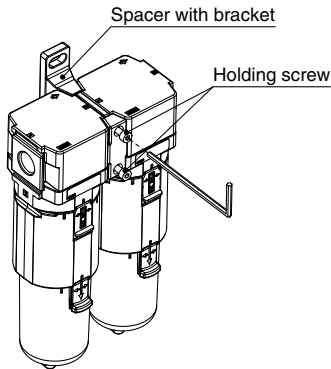
Tighten them to the recommended tightening torque.

Insufficient tightening torque may result in loosening or sealing failure. Excessive tightening torque may damage the thread, etc.

Recommended Torque

Unit: N·m

Applicable model	AFF20 AM20 AMD20 AMK20	AFF30 AM30 AMD30 AMK30	AFF40 AM40 AMD40 AMK40
Spacer with bracket part number	Y200T-D	Y300T-D	Y400T-D
Spacer part number	Y200-D	Y300-D	Y400-D
Torque	0.36 ±0.036	1.2 ±0.05	1.2 ±0.05



2. Piping load and moment

Avoid any torsional or bending moments other than those caused by the equipment's own weight as failure to do so may result in damage.

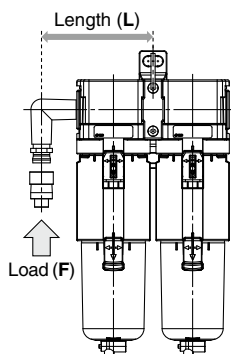
Support external piping separately. If moment application is unavoidable during operation, the moment should be lower than the max. moment shown below.

Piping materials without flexibility, such as steel tube piping, are prone to being affected by excess moment loads or vibrations from the piping side. Use flexible tubing in between to avoid such effects.

Unit: N·m

Applicable model	AFF20 AM20 AMD20 AMK20	AFF30 AM30 AMD30 AMK30	AFF40 AM40 AMD40 AMK40
Max. moment (M)	14.5	16	19.5

Max. moment (M) = Length (L) x Load (F)



Piping

Warning

3. Connect piping/fittings using the recommended torque while holding the female thread side tightly.

Insufficient tightening torque can result in loose piping or sealing failure. Over tightening may break the thread. If the female side is not held while tightening, excessive force will be applied to the bracket directly, resulting in breakage.

Recommended Tightening Torque

Unit: N·m

Connection thread	1/8	1/4	3/8	1/2
Torque	7 to 9	12 to 14	22 to 24	28 to 30

4. When an SMC One-touch fitting is used, refer to the operation manual for the One-touch fitting.

Air Supply

Warning

1. Air containing too much moisture may deteriorate product performance. Install a refrigerated air dryer or an aftercooler on the inlet side of the product.

Caution

1. Install a micro mist separator (AMD series) on the inlet side of the activated carbon filter (AMK series) to avoid performance degradation.

Maintenance

Warning

1. Replace the element according to the replacement timing explained below. Failure to do so may result in element breakage.

a. AFF20 to 40-D, AM20 to 40-D, and AMD20 to 40-D

Within 2 years from the start of use or prior to a product pressure drop (difference in outlet pressure in relation to the inlet pressure) of 0.1 MPa

b. AMK20 to 40-D


1 year from the start of use or before the service life reaches 2000 hours (The replacement timing of the element varies depending on the operating conditions. Even before the above replacement timing is reached, if an oil smell is emitted from the outlet, replace the element periodically thereafter.)


Caution


1. For the N.C. type auto drain, when there is no pressure, condensate, which is not enough to activate the auto drain mechanism, will remain in the bowl. It is recommended that the residual condensate be released manually at the end of each work day.

Safety Instructions

These safety instructions are intended to prevent hazardous situations and/or equipment damage. These instructions indicate the level of potential hazard with the labels of “**Caution**,” “**Warning**” or “**Danger**.” They are all important notes for safety and must be followed in addition to International Standards (ISO/IEC)*1), and other safety regulations.

 **Caution:** **Caution** indicates a hazard with a low level of risk which, if not avoided, could result in minor or moderate injury.

 **Warning:** **Warning** indicates a hazard with a medium level of risk which, if not avoided, could result in death or serious injury.

 **Danger :** **Danger** indicates a hazard with a high level of risk which, if not avoided, will result in death or serious injury.

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

Warning

1. The compatibility of the product is the responsibility of the person who designs the equipment or decides its specifications.

Since the product specified here is used under various operating conditions, its compatibility with specific equipment must be decided by the person who designs the equipment or decides its specifications based on necessary analysis and test results. The expected performance and safety assurance of the equipment will be the responsibility of the person who has determined its compatibility with the product. This person should also continuously review all specifications of the product referring to its latest catalog information, with a view to giving due consideration to any possibility of equipment failure when configuring the equipment.

2. Only personnel with appropriate training should operate machinery and equipment.

The product specified here may become unsafe if handled incorrectly. The assembly, operation and maintenance of machines or equipment including our products must be performed by an operator who is appropriately trained and experienced.

3. Do not service or attempt to remove product and machinery/equipment until safety is confirmed.

1. The inspection and maintenance of machinery/equipment should only be performed after measures to prevent falling or runaway of the driven objects have been confirmed.
2. When the product is to be removed, confirm that the safety measures as mentioned above are implemented and the power from any appropriate source is cut, and read and understand the specific product precautions of all relevant products carefully.
3. Before machinery/equipment is restarted, take measures to prevent unexpected operation and malfunction.

4. Contact SMC beforehand and take special consideration of safety measures if the product is to be used in any of the following conditions.

1. Conditions and environments outside of the given specifications, or use outdoors or in a place exposed to direct sunlight.
2. Installation on equipment in conjunction with atomic energy, railways, air navigation, space, shipping, vehicles, military, medical treatment, combustion and recreation, or equipment in contact with food and beverages, emergency stop circuits, clutch and brake circuits in press applications, safety equipment or other applications unsuitable for the standard specifications described in the product catalog.
3. An application which could have negative effects on people, property, or animals requiring special safety analysis.
4. Use in an interlock circuit, which requires the provision of double interlock for possible failure by using a mechanical protective function, and periodical checks to confirm proper operation.

Caution

1. The product is provided for use in manufacturing industries.

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

Limited warranty and Disclaimer/ Compliance Requirements

The product used is subject to the following “Limited warranty and Disclaimer” and “Compliance Requirements”.

Read and accept them before using the product.

Limited warranty and Disclaimer

1. The warranty period of the product is 1 year in service or 1.5 years after the product is delivered, whichever is first.*2)
Also, the product may have specified durability, running distance or replacement parts. Please consult your nearest sales branch.
2. For any failure or damage reported within the warranty period which is clearly our responsibility, a replacement product or necessary parts will be provided.
This limited warranty applies only to our product independently, and not to any other damage incurred due to the failure of the product.
3. Prior to using SMC products, please read and understand the warranty terms and disclaimers noted in the specified catalog for the particular products.

*2) Vacuum pads are excluded from this 1 year warranty.

A vacuum pad is a consumable part, so it is warranted for a year after it is delivered.
Also, even within the warranty period, the wear of a product due to the use of the vacuum pad or failure due to the deterioration of rubber material are not covered by the limited warranty.

Compliance Requirements

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

Caution

SMC products are not intended for use as instruments for legal metrology.

Measurement instruments that SMC manufactures or sells have not been qualified by type approval tests relevant to the metrology (measurement) laws of each country. Therefore, SMC products cannot be used for business or certification ordained by the metrology (measurement) laws of each country.

Revision History

Edition B * The AMK series activated carbon filter has been added.
* Number of pages has been increased from 16 to 24.

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Safety Instructions

Be sure to read the “Handling Precautions for SMC Products” (M-E03-3) and “Operation Manual” before use.