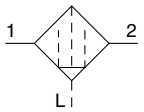
Mist Separator
AFM20-A to AFM40-A
Micro Mist Separator
AFD20-A to AFD40-A

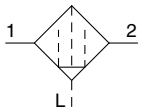
Symbol
Mist Separator



AFM20-A

AFM40-A

Micro Mist Separator



AFD20-A

AFD40-A

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

How to Order

AFM ❶**30** – ❷ ❸**03** ❹**BD** – ❺ **–A** –
AFD ❶**30** – ❷ ❸**03** ❹**BD** – ❺ **–A** –

- Option/Semi-standard: Select one each for **a** to **f**.
- Option/Semi-standard symbol: When more than one specification is required, indicate in alphanumeric order.

Example) AFM30-03BD-R-A

Made to Order
(Refer to pages 51 and 52 for details.)

			Symbol	Description	❶ Body size 20	30	40
❷	Pipe thread type		**Nil**	Rc	●	●	●
			N Note 1)	NPT	●	●	●
			F Note 2)	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 Note 3)	With bracket	●	●	●
		b Float type auto drain	**Nil**	Without auto drain	●	●	●
			C Note 4)	N.C. (Normally closed) Drain port is closed when pressure is not applied.	●	●	●
			D Note 5)	N.O. (Normally open) Drain port is open when pressure is not applied.	—	●	●
❺	Semi-standard	**c** Bowl Note 6)	**Nil**	Polycarbonate bowl	●	●	●
			2	Metal bowl	●	●	●
			6	Nylon bowl	●	●	●
			8	Metal bowl with level gauge	—	●	●
			C	With bowl guard	●	— Note 7)	— Note 7)
			6C	With bowl guard (Nylon bowl)	●	— Note 8)	— Note 8)
		d Drain port Note 12)	**Nil**	With drain cock	●	●	●
			J Note 9)	Drain guide 1/8	●	—	—
				Drain guide 1/4	—	●	●
			W Note 13)	Drain cock with barb fitting (for ø6 x ø4 nylon tube)	—	●	●
		e Flow direction	**Nil**	Flow direction: Left to right	●	●	●
			R	Flow direction: Right to left	●	●	●
		f Pressure unit	**Nil**	Name plate and caution plate for bowl in imperial units: MPa	●	●	●
			Z Note 10)	Name plate and caution plate for bowl in imperial units: psi, °F	○ Note 11)	○ Note 11)	○ Note 11)

Note 1) Drain guide is NPT1/8 (applicable to the AFM20-A, AFD20-A) and NPT1/4 (applicable to the AFM30-A/40-A, AFD30-A/40-A).
The auto drain port comes with ø3/8" One-touch fitting (applicable to the AFM30-A/40-A, AFD30-A/40-A).
Note 2) Drain guide is G1/8 (applicable to the AFM20-A, AFD20-A) and G1/4 (applicable to the AFM30-A/40-A, AFD30-A/40-A).
Note 3) A bracket is not assembled and supplied loose at the time of shipment. Including 2 mounting screws
Note 4) When pressure is not applied, condensate which does not start the auto drain mechanism will be left in the bowl.
Releasing the residual condensate before ending operations for the day is recommended.
Note 5) If the compressor is small (0.75 kW, discharge flow is less than 100 L/min [ANR]), air leakage from the drain cock may occur during start of operations. N.C. type is recommended.
Note 6) Refer to Chemical data on page 48 for chemical resistance of the bowl.
Note 7) A bowl guard is provided as standard equipment (polycarbonate).
Note 8) A bowl guard is provided as standard equipment (nylon).
Note 9) Without a valve function
Note 10) For pipe thread type: NPT. This product is for overseas use only according to the new Measurement Law. (The SI unit type is provided for use in Japan.)
Note 11) ○: For pipe thread type: NPT only
Note 12) The combination of float type auto drain: C and D is not available.
Note 13) The combination of metal bowl: 2 and 8 is not available.

Standard Specifications

Model		AFM20-A AFD20-A	AFM30-A AFD30-A	AFM40-A AFD40-A	AFM40-06-A AFD40-06-A
Port size		1/8, 1/4	1/4, 3/8	1/4, 3/8, 1/2	3/4
Fluid		Air			
Ambient and fluid temperature		– 5 to 60°C (with no freezing)			
Proof pressure		1.5 MPa			
Maximum operating pressure		1.0 MPa			
Minimum operating pressure		0.05 MPa			
Nominal filtration rating	**AFM20-A to AFM40-06-A**	0.3 μm (99.9% filtered particle size)			
	AFD20-A to AFD40-06-A	0.01 μm (99.9% filtered particle size)			
Outlet side oil mist concentration	**AFM20-A to AFM40-06-A**	Max. 1.0 mg/m³ (ANR) (≈ 0.8 ppm) Note 2) Note 3)			
	AFD20-A to AFD40-06-A	Max. 0.1 mg/m³ (ANR) (Before saturated with oil 0.01 mg/m³ (ANR) or less ≈ 0.008 ppm) Note 2) Note 3)			
Rated flow (L/min (ANR)) Note 1)	**AFM20-A to AFM40-06-A**	200	450	1100	
	AFD20-A to AFD40-06-A	120	240	600	
Drain capacity (cm³)		8	25	45	
Bowl material		Polycarbonate			
Bowl guard		Semi-standard (Steel)	Standard (Polycarbonate)		
Weight (kg)		0.09	0.19	0.38	0.43

Note 1) Conditions: Inlet pressure: 0.7 MPa; The rated flow varies depending on the inlet pressure.
Keep the air flow within the rated flow to prevent an outflow of lubricant to the outlet side.
Note 2) When the compressor oil mist discharge concentration is 30 mg/m³ (ANR).
Note 3) Bowl seal and other O-rings are slightly lubricated.

Options/Part No.

Optional specifications		Model			
		AFM20-A AFD20-A	**AFM30-A AFD30-A**	**AFM40-A AFD40-A**	**AFM40-06-A AFD40-06-A**
Bracket assembly Note 1)		AF22P-050AS	AF32P-050AS	AF42P-050AS	AF42P-070AS
Float type auto drain Note 2) Note 3)	**N.C.**	AD27-A	AD37-A	AD47-A	
	N.O.	—	AD38-A	AD48-A	

Note 1) Assembly of a bracket and 2 mounting screws
Note 2) Minimum operating pressure: N.O. type–0.1 MPa; N.C. type–0.1 MPa (AD27-A) and 0.15 MPa (AD37-A/AD47-A).
Please consult with SMC separately for psi and °F unit display specifications.
Note 3) Please consult with SMC for details on drain piping to fit NPT or G port sizes.

Bowl Assembly/Part No.

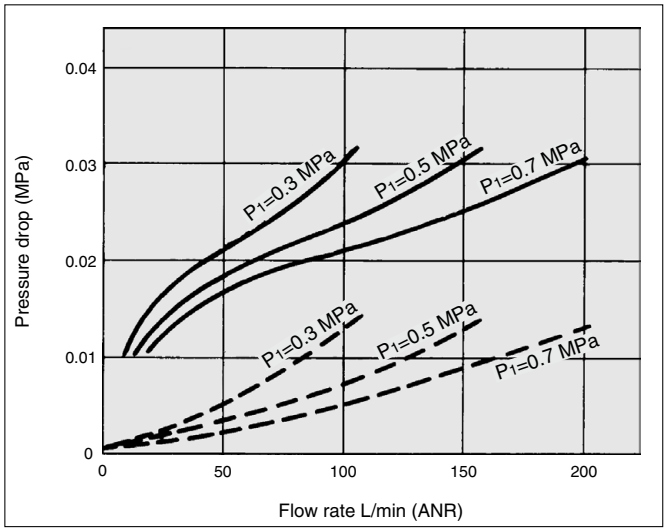
Bowl material	Drain discharge mechanism	Drain port	Other	Model			
				AFM20-A AFD20-A	**AFM30-A AFD30-A**	**AFM40-A AFD40-A**	**AFM40-06-A AFD40-06-A**
Polycarbonate bowl	Manual discharge	With drain cock	—	C2SF-A	—	—	
			With bowl guard	C2SF-C-A	C3SF-A	C4SF-A	
		Drain cock with barb fitting	With bowl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

Note) Minimum operating pressure: N.O. type–0.1 MPa (AD38-A, AD48-A); N.C. type–0.1 MPa (AD17-A, AD27-A) and 0.15 MPa (AD37-A, AD47-A).
Bowl assembly for the AFM20-A to AFM40-06-A, AFD20-A to AFD40-06-A models 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 consult with SMC separately for psi and °F unit display specifications.

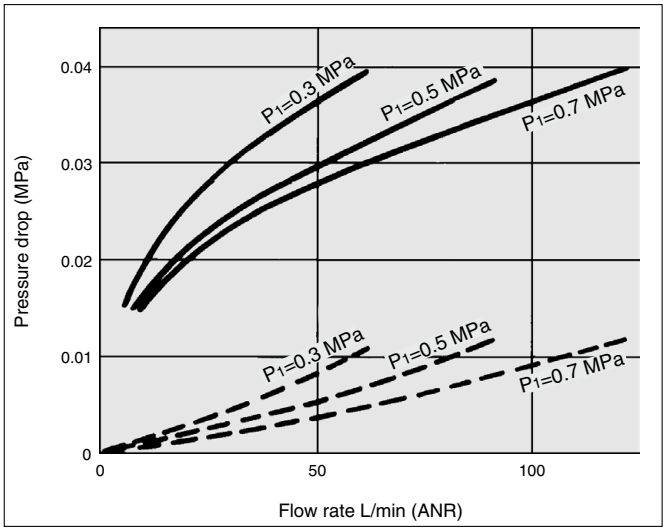
Flow-rate Characteristics (Representative values)

When saturated with oil
Initial state

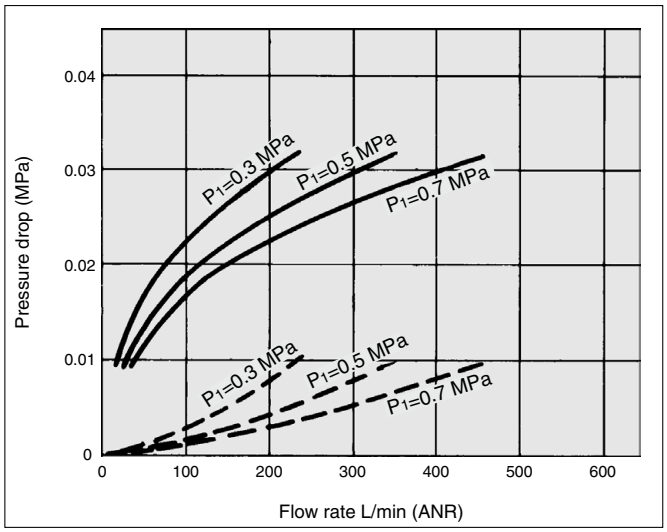
AFM20-A



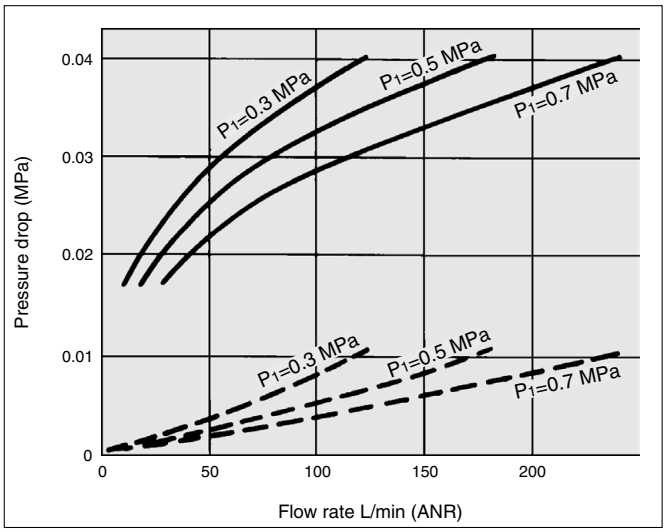
AFD20-A



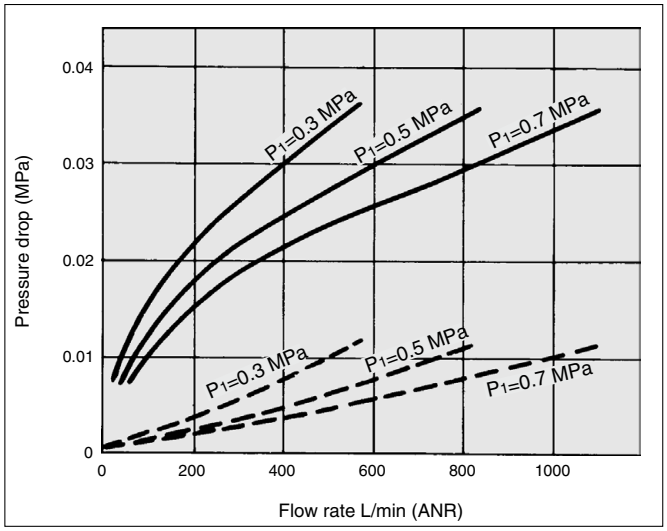
AFM30-A



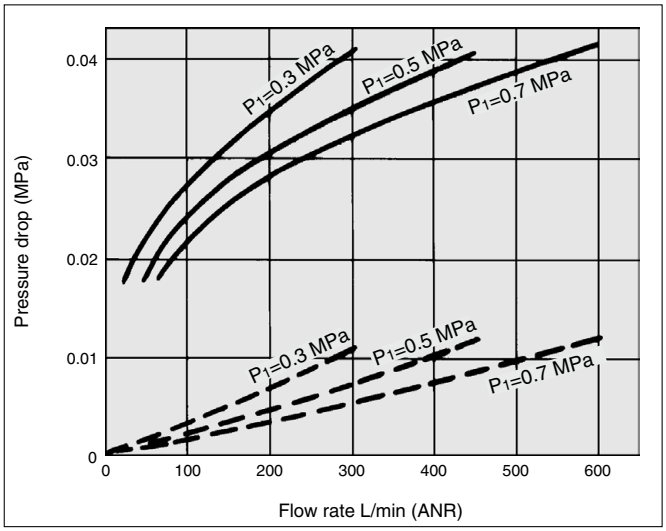
AFD30-A



AFM40-A



AFD40-A



⚠ Specific Product Precautions

Be sure to read this before handling. Refer to the back cover for Safety Instructions, "Handling Precautions for SMC Products" and the Operation Manual for F.R.L. Precautions, http://www.smcworld.com

Design/Selection

⚠ Warning

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

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

Type	Chemical name	Application examples	Material	
			Polycar-bonate	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 Carbonate of soda	Degreasing of metals Industrial salts Water-soluble cutting oil	×	○
Inorganic salts	Sodium sulfide Sulfate of potash Sulfate of soda	—	×	△
Chlorine solvents	Carbon tetrachloride Chloroform Ethylene chloride Methylene chloride	Cleansing liquid for metals Printing ink Dilution	×	△
Aromatic series	Benzene Toluene Paint thinner	Coatings Dry cleaning	×	△
Ketone	Acetone Methyl ethyl ketone Cyclohexane	Photographic film Dry cleaning Textile industries	×	×
Alcohol	Ethyl alcohol IPA Methyl alcohol	Antifreeze Adhesives	△	×
Oil	Gasoline Kerosene	—	×	○
Ester	Phthalic acid dimethyl Phthalic acid 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.

Air Supply

⚠ Caution

1. Install an air filter (Series AF) as a pre-filter on the inlet side of the mist separator to prevent premature clogging.
2. Install a mist separator (Series AFM) 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

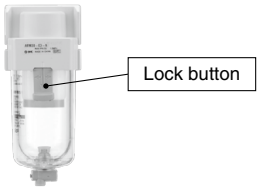
⚠ Warning

1. Replace the element every 2 years or when the 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 mist separator (AFM30-A/AFM40-A), or micro mist separator (AFD30-A/AFD40-A), install them so that the lock button lines up to the groove of the front (or the back) of the body to avoid drop or damage of the bowl.



Design

⚠ Caution

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

Selection

⚠ Caution

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.