

# Micro-Mist Separator

## AFD20/30/40

### How to Order

**AFD 30** — **F 03** **BD** — **2R**

Micro-mist separator: AFD 30  
 Body size: 20 30 40  
 Thread type: Nil, Rc, N (Note 1), NPT, F (Note 2), G

Port size: 01 (1/8), 02 (1/4), 03 (3/8), 04 (1/2), 06 (3/4)

Accessories: Nil, B (Note 3), C (Note 4), D (Note 4)

Optional specifications: 2, 6, 8, C, J (Note 5), R, W, Z (Note 6)

Note 1) Drain guide is NPT1/4 (applicable to AFD30 and 40), and the exhaust port for auto drain comes with ø3/8" One-touch fitting (applicable to AFD30 and 40).  
 Note 2) Drain guide is G1/4 (applicable to AFD30 and 40).  
 Note 3) Bracket is not assembled and is supplied loose at the time of shipment.  
 Note 4) Applicable tube O.D for auto drain connection should be ø3/8" in case NPT thread port is chosen.  
 \* When more than one specification is required, indicate in ascending alphanumerical order.  
 Note 5) Without a valve function. Note 6) For NPT thread type.

### Accessory/Optional specification combinations

Combination	Symbol	Accessory			Optional specification								Applicable micro mist separator			
		B	C	D	2	6	8	C	J	R	W	Z	AFD20	AFD30 to 40		
<b>Accessories</b>																
With bracket	B	⊙	○	○	⊙	⊙	○	○	○	⊙	○	△	⊙	⊙		
Float type auto drain (N.C.)	C	⊙	⊙	○	⊙	⊙	○	○	○	⊙	⊙	△	⊙	⊙		
Float type auto drain (N.O.)	D	⊙	⊙	○	⊙	⊙	○	○	○	⊙	⊙	△	⊙	⊙		
<b>Optional specifications</b>																
Metal bowl	-2	⊙	⊙	○	⊙	⊙	○	○	○	⊙	⊙	△	⊙	⊙		
Nylon bowl	-6	⊙	⊙	○	⊙	⊙	○	○	○	⊙	⊙	△	⊙	⊙		
Metal bowl with level gauge	-8	⊙	⊙	○	⊙	⊙	○	○	○	⊙	⊙	△	⊙	⊙		
With bowl guard	-C	⊙	⊙	○	⊙	⊙	○	○	○	⊙	⊙	△	⊙	⊙		
Drain guide 1/4	-J	⊙	⊙	○	⊙	⊙	○	○	○	⊙	⊙	△	⊙	⊙		
Flow direction: Right to left	-R	⊙	⊙	○	⊙	⊙	○	○	○	⊙	⊙	△	⊙	⊙		
Drain cock with barb fitting: ø6 x ø4 nylon tube	-W	⊙	⊙	○	⊙	⊙	○	○	○	⊙	⊙	△	⊙	⊙		
Name plate and caution plate for bowl in imperial units (PSI, °F)	-Z	△	△	△	△	△	△	△	△	△	△	△	△	△		

### Standard specifications

Model	AFD20	AFD30	AFD40	AFD40-06
Port size	1/8 1/4	1/4 3/8	1/4 3/8 1/2	3/4
Fluid	Air			
Proof pressure	1.5MPa			
Maximum operating pressure	1.0MPa			
Minimum operating pressure	0.05MPa			
Ambient and fluid temperature	-5 to 60°C (with no freezing)			
Rated flow L/min (ANR) <sup>Note 1)</sup>	120	240	600	600
Nominal filtration rating	0.01µm (95% filtered particle size)			
Outlet side oil mist concentration	Max.0.1mg/m <sup>3</sup> (ANR) (before saturated with oil: 0.01mg/m <sup>3</sup> (ANR) or less, approx. 0.008ppm) <sup>Note 2)</sup>			
Bowl material	Polycarbonate			
Bowl guard	Option	Standard		
Drain capacity (cm <sup>3</sup> )	8	25	45	45
Weight (kg)	0.18	0.22	0.44	0.49

Note 1) When the inlet pressure is 0.7MPa. The flow rate varies depending on the inlet pressure.  
 Note 2) When the compressor oil mist discharge concentration is 30mg/m<sup>3</sup> (ANR).

### Accessory part no.

Accessory	Applicable model			
	AFD20	AFD30	AFD40	AFD40-06
Bracket assembly <sup>Note 1)</sup>	AF20P-050AS	AF30P-050AS	AF40P-050AS	AF40P-070AS
Float type auto drain <sup>Note 2)</sup>	N.O.	AD38	AD38N <sup>Note 3)</sup>	AD48
	N.C.	AD27	AD37N <sup>Note 3)</sup>	AD47
			AD48N <sup>Note 3)</sup>	AD48N <sup>Note 3)</sup>
			AD47N <sup>Note 3)</sup>	AD47N <sup>Note 3)</sup>

Note 1) Assembly includes a bracket and 2 mounting screws.  
 Note 2) Minimum operating pressure: N.O. type=0.1MPa; N.C. type=0.1MPa (AD27) and 0.15MPa (AD37/47).  
 Note 3) When "N" is specified in the end of part number of auto drain, applicable tube O.D should be ø3/8".

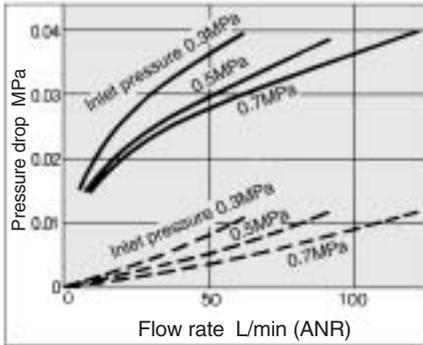


# AFD20/30/40

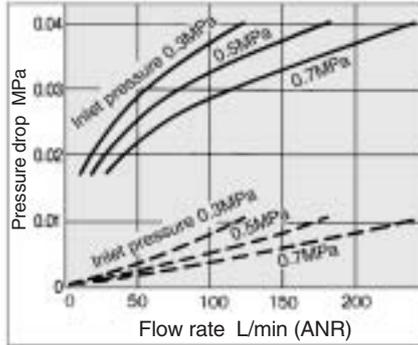
## Flow Characteristics (Representative values)

— : When saturated with oil  
 - - - : Initial state

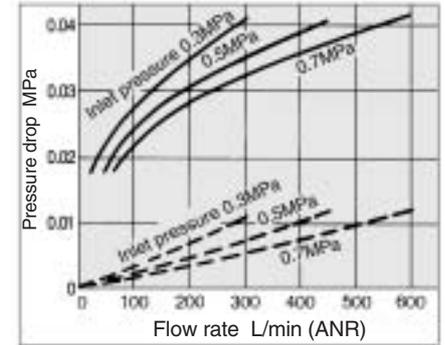
AFD 20



AFD 30

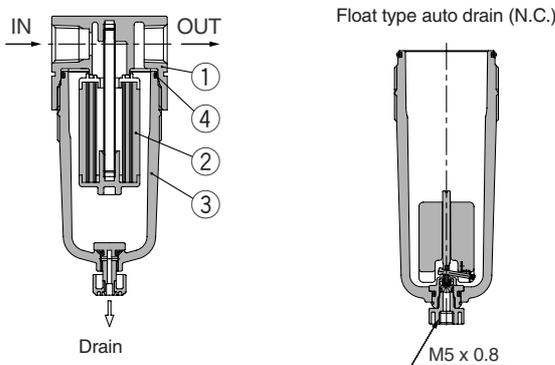


AFD 40

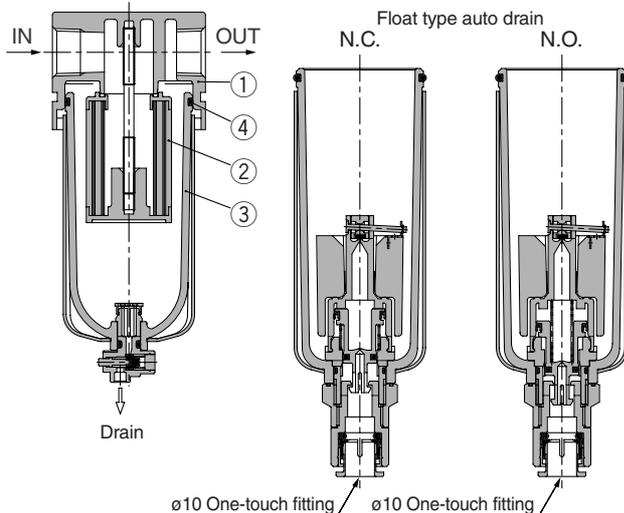


## Construction

AFD20



AFD30, 40



### Parts list

No.	Description	Material		Note
		AFD20	AFD30, AFD40, AFD40-06	
1	Body	Zinc die-cast	Aluminum die-cast	Platinum silver

### Replacement parts

No.	Description	Material	Part no.			
			AFD20	AFD30	AFD40	AFD40-06
2	Element assembly	—	AFD20P-060AS	AFD30P-060AS	AFD40P-060AS	AFD40P-060AS
3	Bowl assembly <sup>Note 1)</sup>	PC	C2SF	C3SF <sup>Note 2)</sup>	C4SF <sup>Note 2)</sup>	C4SF <sup>Note 2)</sup>
4	Bowl O-ring	NBR	C2SFP-260S	C3SFP-260S	C4SFP-260S	C4SFP-260S

Note 1) Including O-Ring. Contact SMC regarding the bowl assembly supply for PSI and \*F unit specifications.  
 Note 2) Bowl assembly for AFD30 to AFD40-06 includes a bowl guard (steel band material).

## Specific Product Precautions

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

### Air Supply

## Caution

1. Install a mist separator (Series AFM) as a preliminary filter on the inlet side of the micro-mist separator to prevent premature clogging.
2. 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 drops becomes 0.1MPa, whichever comes first, to prevent damage to the element.

### 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 0.1MPa, as exceeding this value could cause damage.

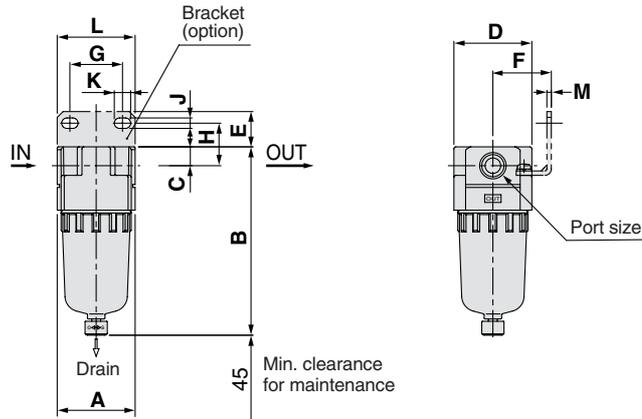
### Selection

## Caution

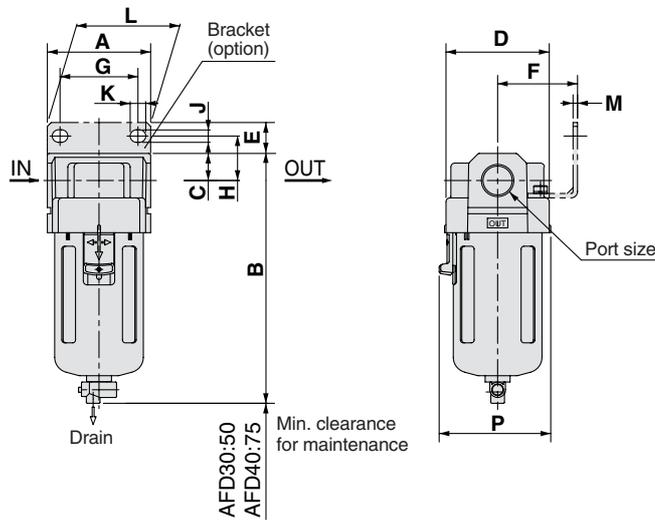
1. Do not allow air flow that exceeds the rated flow. If the air flow is allowed outside the range of the rated flow even momentarily, drainage and lubricant may splash at the outlet side or cause damage to the component.
2. Do not use in a low pressure application (such as a blower). F.R.L. unit has 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. Contact SMC if an application under such conditions cannot be avoided.

**Dimensions**

**AFD20**



**AFD30, 40, 40-06**



Applicable model	AFD20			AFD30, AFD40, AFD40-06			
Optional specifications	With compact auto drain (N.C.)	Metal bowl	With auto drain (N.O./N.C.)	Metal bowl	Metal bowl with level gauge	With drain guide	Drain cock with barb fitting

Model	Port size	Standard specification					Accessory specification								
		A	B	C	D	P	With bracket							With auto drain	
		E	F	G	H	J	K	L	M	B					
AFD20	1/8, 1/4	40	97	10	40	—	18	30	27	22	5.4	8.4	40	2.3	115
AFD30	1/4, 3/8	53	129	14	53	57	16	41	40	23	6.5	8	53	2.3	170
AFD40	1/4, 3/8, 1/2	70	165	18	70	73	17	50	54	26	8.5	10.5	70	2.3	204
AFD40-06	3/4	75	169	20	70	73	14	50	54	25	8.5	10.5	70	2.3	208

Model	Optional specification				
	With drain guide	With barb fitting	Metal bowl	Metal bowl with level gauge	
		B	B	B	B
AFD20	—	—	97	—	
AFD30	136	137	142	162	
AFD40	172	173	178	198	
AFD40-06	176	177	182	202	