

Micro Mist Separator

Series AFD20/30/40

How to Order

AFD 30 — **F 03** **BD** — **2R** — Option

Micro mist separator

Body size: 20 30 40

Thread type:

Nil	Rc
N ⁽¹⁾	NPT
F ⁽²⁾	G

Port size:

Symbol	Port size	Body size		
		20	30	40
01	1/8	●	—	—
02	1/4	●	●	—
03	3/8	—	●	●
04	1/2	—	—	●
06	3/4	—	—	●

Accessory:

Symbol	Description	Applicable model
Nil	—	—
B ⁽³⁾	With bracket	AFD20 to 40
C	Float type ⁽⁴⁾ auto-drain (N.C.)	AFD20 to 40
D	Float type ⁽⁴⁾ auto-drain (N.O.)	AFD30/40

Option:

Symbol	Description	Applicable model
2	Metal bowl	AFD20 to 40
6	Nylon bowl	AFD20 to 40
8	Metal bowl with level gauge	AFD30/40
C	With bowl guard	AFD20
J ⁽⁵⁾	Drain guide 1/4	AFD30/40
R	Flow direction: Right → Left	AFD20 to 40
W	Drain cock with barb fitting: ø6 x ø4 nylon tubing	AFD30/40
Z ⁽⁶⁾	Name plate and caution plate for bowl in imperial units (PSI, °F)	AFD20 to 40

Note 1) Drain guide is NPT 1/4 (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 G 1/4 (applicable to AFD30 and 40).

Note 3) Bracket is not assembled and is supplied loose at the time of shipment.

Note 4) Applicable tubing O.D for auto-drain connection should be ø3/8" in case NPT thread port is chosen.

Note 5) Without a valve function.

Note 6) For NPT thread type.

⊙: Combination available
○: Varies depending on the model
◻: Combination not available
△: Available only with NPT thread

Accessory/Optional Specifications Combinations

Combination	Symbol	Accessory			Optional specifications								Applicable micro mist separator		
		B	C	D	2	6	8	C	J	R	W	Z	AFD20	AFD30 to 40	
Accessory/Optional specifications															
Accessory	With bracket	B	⊙	○	⊙	⊙	○	○	○	⊙	○	△	⊙	⊙	
	Float type auto-drain (N.C.)	C	⊙	○	⊙	⊙	○	○	○	⊙	○	△	⊙	⊙	
	Float type auto-drain (N.O.)	D	⊙	○	⊙	⊙	○	○	○	⊙	○	△	⊙	⊙	
Optional specifications	Metal bowl	-2	⊙	⊙	○	○	○	○	○	⊙	○	△	⊙	⊙	
	Nylon bowl	-6	⊙	⊙	○	○	○	○	○	⊙	○	△	⊙	⊙	
	Metal bowl with level gauge	-8	⊙	⊙	○	○	○	○	○	⊙	○	△	⊙	⊙	
	With bowl guard	-C	⊙	⊙	○	○	○	○	○	⊙	○	△	⊙	⊙	
	Drain guide 1/4	-J	⊙	○	○	○	○	○	○	⊙	○	△	⊙	⊙	
	Flow direction: Right → Left	-R	⊙	⊙	○	⊙	⊙	○	○	⊙	○	△	⊙	⊙	
	Drain cock with barb fitting: ø6 x ø4 nylon tubing	-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	1.5 MPa			
Maximum operating pressure	1.0 MPa			
Minimum operating pressure	0.05 MPa			
Ambient and fluid temperature	-5 to 60°C (With no freezing)			
Rated flow (l/min (ANR)) ⁽¹⁾	120	240	600	600
Nominal filtration rating	0.01 μm (95% filtered particle size)			
Outlet side oil mist concentration	Max. 0.1 mg/m ³ (ANR) (Before saturated with oil: 0.01 mg/m ³ (ANR) or less, approx. 0.008 ppm) ⁽²⁾			
Bowl material	Polycarbonate			
Bowl guard	Option	Standard		
Drain capacity (cm ³)	8	25	45	45
Weight (kg)	0.18	0.22	0.44	0.49

Note 1) When the inlet pressure is 0.7 MPa. The flow rate varies depending on the inlet pressure.

Note 2) When the compressor oil mist discharge concentration is 30 mg/m³ (ANR).

Accessory Part No.

Applicable model	AFD20	AFD30	AFD40	AFD40-06	
Accessory					
Bracket assembly ⁽¹⁾	AF20P-050AS	AF30P-050AS	AF40P-050AS	AF40P-070AS	
Float type auto-drain ⁽²⁾	N.O.	AD38	AD38N ⁽³⁾	AD48	AD48N ⁽³⁾
	N.C.	AD27	AD37	AD37N ⁽³⁾	AD47

Note 1) Assembly includes a bracket and 2 mounting screws.

Note 2) Minimum operating pressure: N.O. type—0.1 MPa; N.C. type—0.1 MPa (AD27) and 0.15 MPa (AD37/47).

Note 3) When "N" is specified in the end of part number of auto-drain, applicable tubing O.D should be ø3/8".



AFD20

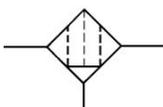


AFD30



AFD40

JIS Symbol



F.R.L.

AV

AU

AF

AR

IR

VEX

AMR

ITV

IC

VBA

VE□

VY1

G

PPA

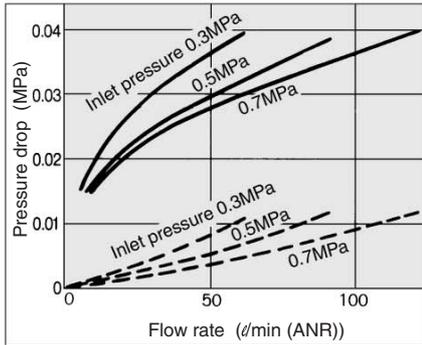
AL

Series AFD20/30/40

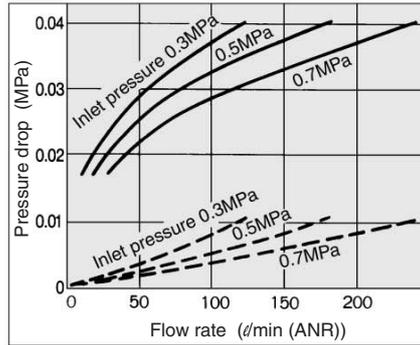
Flow Characteristics (Representative values)

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

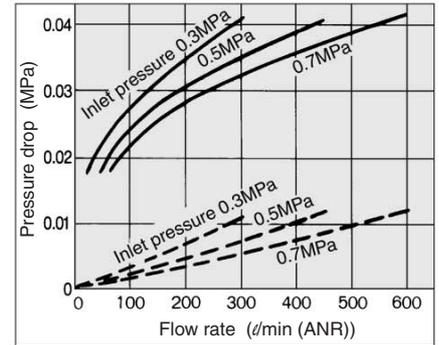
AFD20



AFD30

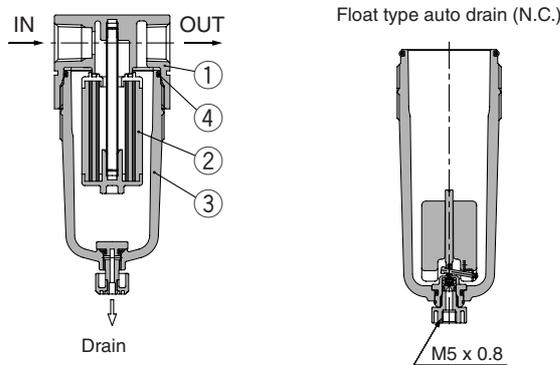


AFD40

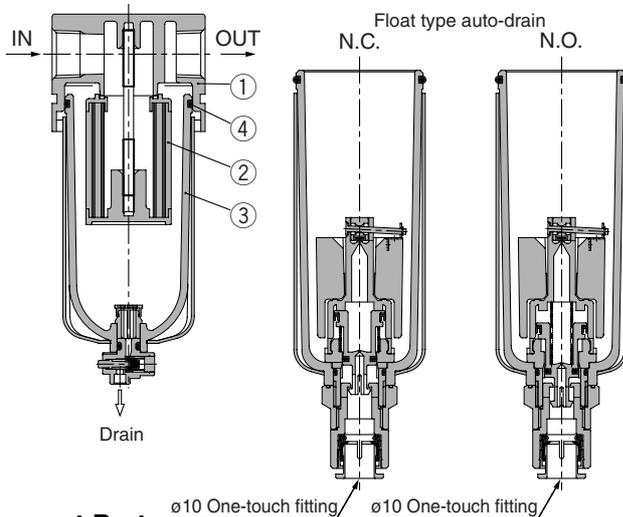


Construction

AFD20



AFD30/40



Component Parts

No.	Description	Material		Note
		AFD20	AFD30, AFD40, AFD40-06	
①	Body	Zinc die-casted	Aluminum die-casted	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 (1)	PC	C2SF	C3SF (2)	C4SF (2)	C4SF (2)
④	Bowl O-ring	NBR	C2SFP-260S	C3SFP-260S	C4SFP-260S	C4SFP-260S

Note 1) Including O-ring. Please 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).

⚠ Precautions

Be sure to read before handling.
 Refer to pages 14-21-3 to 14-21-4 for Safety Instructions and Common 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 0.1 MPa, 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 0.1 MPa, as exceeding this value could cause damage.

Selection

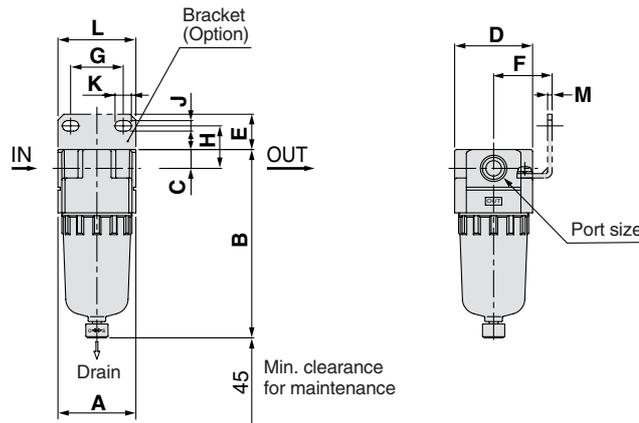
⚠ Caution

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). 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.

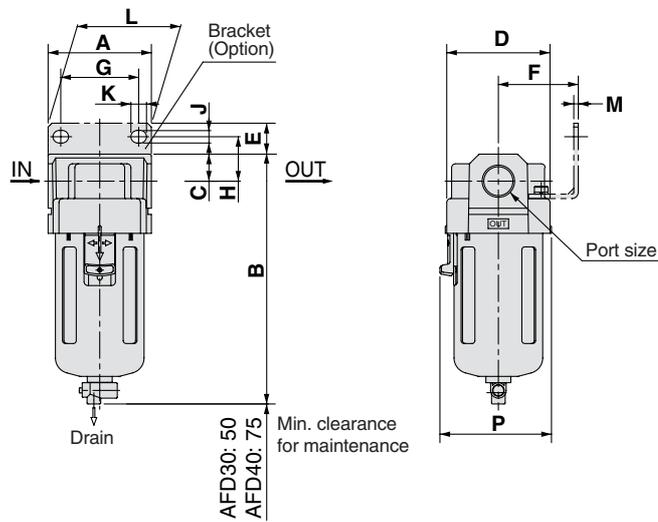
Micro Mist Separator Series AFD20/30/40

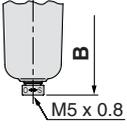
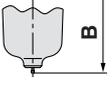
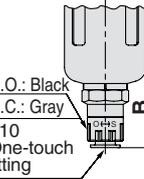
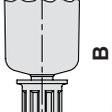
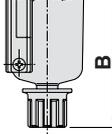
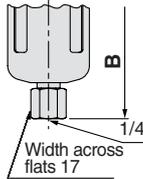
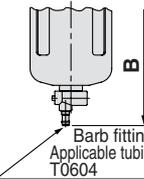
Dimensions

AFD20



AFD30/40/40-06



Applicable model	AFD20		AFD30, AFD40, AFD40-06				
	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
Optional specifications			 N.O.: Black N.C.: Gray ø10 One-touch fitting			 Width across flats 17	 Barb fitting Applicable tubing: T0604

(mm)

Model	Port size	Standard specifications					Accessory specifications									
							With bracket									
		A	B	C	D	P	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 specifications			
	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