

Modular Type Air Filter Series AF

Air filter Series AF	Model	Port size	Filtration (μm)	Accessory
 <p data-bbox="116 902 379 936">Pages 23 through 27</p>	AF10	M5 x 0.8	5	Bracket Float type auto drain
	AF20	1/8, 1/4		
	AF30	1/4, 3/8		
	AF40	1/4, 3/8, 1/2		
	AF40-06	3/4		
	AF50	3/4, 1		
	AF60	1		
 <p data-bbox="116 1205 379 1238">Pages 29 through 31</p>	AFM20	1/8, 1/4	0.3	Bracket Float type auto drain
	AFM30	1/4, 3/8		
	AFM40	1/4, 3/8, 1/2		
	AFM40-06	3/4		
 <p data-bbox="116 1512 379 1536">Pages 32 through 34</p>	AFD20	1/8, 1/4	0.01	Bracket Float type auto drain
	AFD30	1/4, 3/8		
	AFD40	1/4, 3/8, 1/2		
	AFD40-06	3/4		

Air Filter

AF10 to 60

How to Order

AF 30 - F 03 BD - 2R

Body size
10 20 30 40 50 60

Thread type

Nil	Metric thread (M5)
N Note 1)	Rc
F Note 2)	NPT
	G

Port size

Symbol	Port size	Body size					
		10	20	30	40	50	60
M5	M5	●	—	—	—	—	—
01	1/8	—	●	—	—	—	—
02	1/4	—	●	●	●	—	—
03	3/8	—	—	●	●	—	—
04	1/2	—	—	—	●	—	—
06	3/4	—	—	—	●	●	—
10	1	—	—	—	—	●	●

Accessories

Symbol	Description	Applicable model
Nil	—	—
B Note 3)	With bracket	AF20 to 60
C	Float type Note 4) auto drain (N.C.)	AF10 to 60
D	Float type Note 4) auto drain (N.O.)	AF30 to 60

Optional specifications

Symbol	Description	Applicable model
2	Metal bowl	AF10 to 60
6	Nylon bowl	AF10 to 60
8	Metal bowl with level gauge	AF30 to 60
C	With bowl guard	AF20
J Note 5)	Drain guide 1/4	AF30 to 60
R	Flow direction: Right to left	AF10 to 60
W	Drain cock with barb fitting: ø6 x ø4 nylon tubing	AF30 to 60
Z Note 6)	Name plate and caution plate for bowl in imperial units (PSI, "F)	AF10 to 60

Note 1) Drain guide is NPT1/4 (applicable to AF30 to 60), and the exhaust port for auto drain comes with ø3/8" One-touch fitting (applicable to AF30 to 60).

Note 2) Drain guide is G1/4 (applicable to AF30 to 60).

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 alphanumeric order.

Note 5) Without a valve function.

Note 6) This product is for overseas use only according to the new Measurement Law. (The SI unit type is provided for use in Japan.)

⊙: Combination available ⊖: Combination not available

○: Varies depending on the model △: Available only with NPT thread

Accessories/Optional specifications	Combination	Symbol	Accessory			Optional specification							Applicable filter			
			B	C	D	2	6	8	C	J	R	W	Z	AF10	AF20	AF30 to 60
Accessories	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 to 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	AF10	AF20	AF30	AF40	AF40-06	AF50	AF60
Port sizes	M5 x 0.8	1/8, 1/4	1/4, 3/8	1/4, 3/8, 1/2	3/4	3/4, 1	1
Fluid	Air						
Proof pressure	1.5MPa						
Maximum operating pressure	1.0MPa						
Ambient and fluid temperature	-5 to 60°C (with no freezing)						
Nominal filtration rating	5µm						
Bowl material	Polycarbonate						
Bowl guard	—	Option	Standard				
Drain capacity (cm ³)	2.5	8	25	45	45	45	45
Weight (kg)	0.06	0.18	0.22	0.45	0.49	0.99	1.05

Accessory part no.

Accessory	Applicable model							
	AF10	AF20	AF30	AF40	AF40-06	AF50	AF60	
Bracket assembly Note 1)	—	AF20P-050AS	AF30P-050AS	AF40P-050AS	AF40P-070AS	AF50P-050AS	AF60P-050AS	
Float type auto drain Note 2)	N.O.	—	AD38 AD38N Note 3)	AD48 AD48N Note 3)				
	N.C.	AD17	AD27	AD37 AD37N Note 3)	AD47 AD47N Note 3)	AD47 AD47N Note 3)	AD47 AD47N Note 3)	

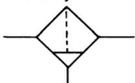
Note 1) Assembly includes a bracket and 2 mounting screws.

Note 2) Minimum operating pressure: N.O. type-0.1MPa; N.C. type-0.1MPa (AD17/27) 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".

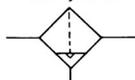


JIS symbol



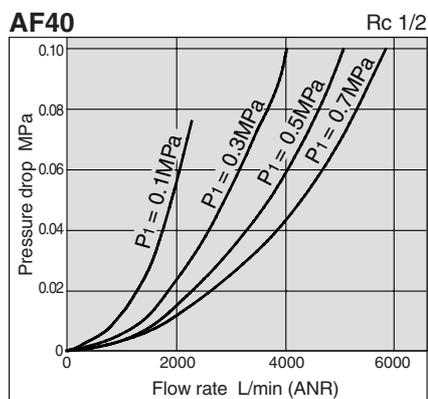
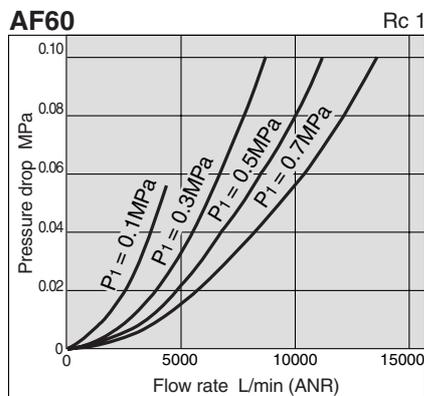
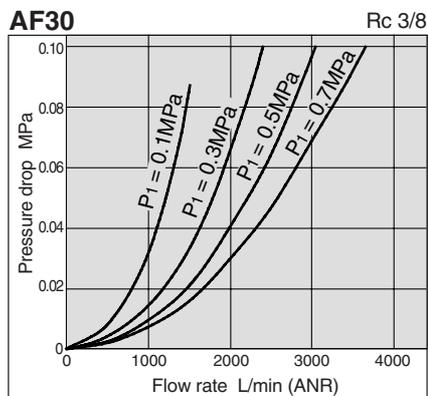
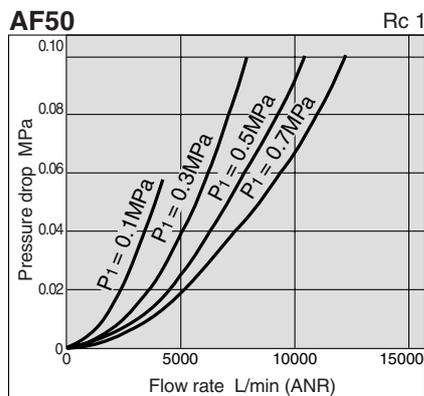
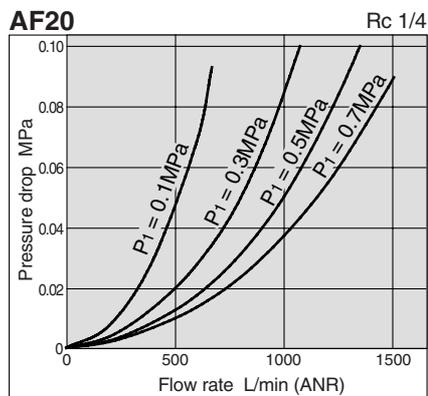
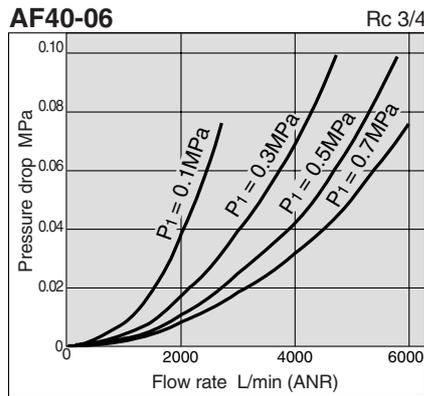
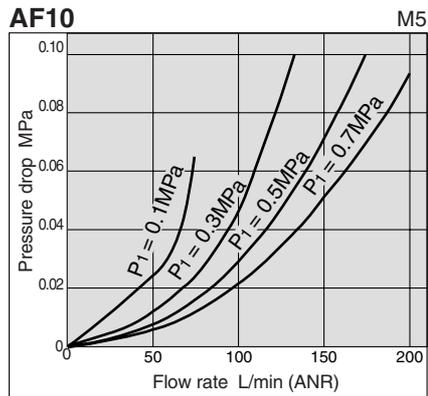
With auto drain

JIS symbol



Page 28

Flow Characteristics (Representative values)



⚠ Specific Product Precautions

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

Maintenance

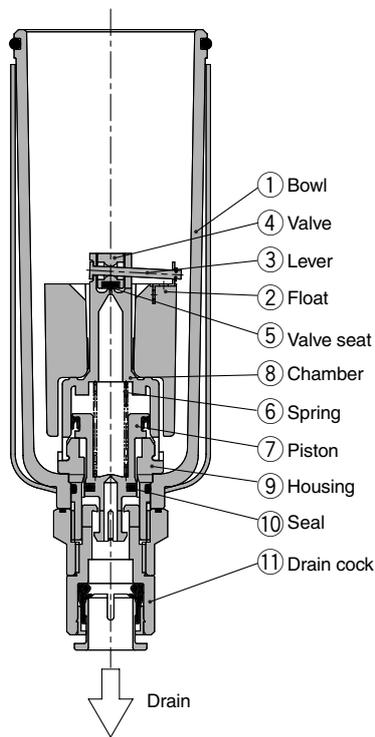
⚠ Warning

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

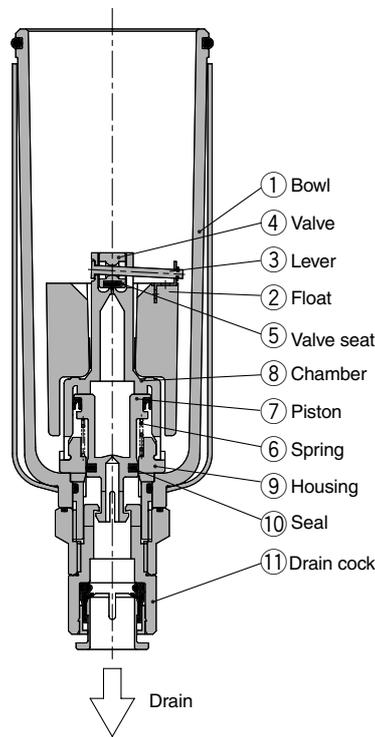
AF10 to 60

Operation Principle: Float Type Auto Drain

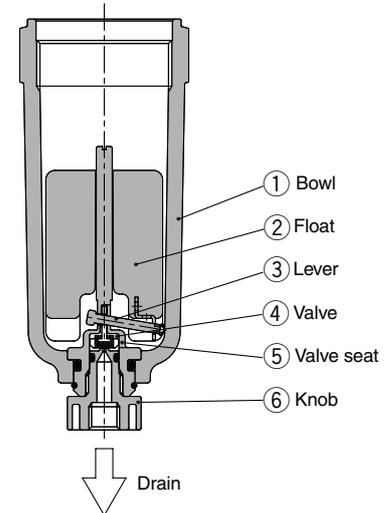
N.O. type: AD38, 48



N.C. type: AD37, 47



Compact auto drain
N.C. type: AD17, 27



- **When the pressure inside the bowl is released:**

When pressure is released from the bowl ①, piston ⑦ is lowered by spring ⑥.

The sealing action of seal ⑩ is interrupted, and the outside air flows inside the bowl ①, through housing hole ⑨ and 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 the pressure exceeds 0.1MPa, the force of piston ⑦ surpasses the force of 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 float ② will be pulled down by its own weight, causing valve ④, which is connected to lever ③, to seal valve seat ⑤.

- **When there is an accumulation of condensate in the bowl:**

Float ② rises due to its own buoyancy and pushes open the seal created by the valve seat, ⑤.

This allows the pressure inside the bowl ①, to enter the chamber ⑧. The result is that the combined pressure inside chamber ⑧ and the force of the spring ⑥, lower the piston ⑦.

This causes the sealing action of seal ⑩ to be interrupted, and the accumulated condensate in the bowl ①, drains out through the drain cock ⑪.

Turning drain cock ⑪ manually counterclockwise lowers piston ⑦, which pushes open the seal created by seal ⑩, thus allowing the condensate to drain out.

- **When the pressure inside the bowl is released:**

Even when pressure inside the bowl ①, is released, spring ⑥ keeps piston ⑦ in its upward position.

This keeps the seal created by the seal ⑩, in place, thus shutting the outside air from inside the bowl ①.

Therefore, even if there should be some condensate accumulation inside 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 spring ⑥ and the pressure inside the bowl ①, keeps piston ⑦ in its upward position.

This maintains the seal created by the seal ⑩, in place, thus shutting the outside air from inside the bowl ①.

If there is no accumulation of condensate in the bowl ①, at this time float ② will be pulled down by its own weight, causing valve ④, which is connected to lever ③, to seal valve seat ⑤.

- **When there is an accumulation of condensate in the bowl:**

Float ② rises due to its own buoyancy and pushes open the seal created by the valve seat ⑤. Pressure passes from the bowl to chamber ⑧.

The result is that the pressure inside chamber ⑧ surpasses the force of the spring ⑥, and pushes piston ⑦ downwards.

This causes the sealing action of seal ⑩ to be interrupted and the accumulated condensate in the bowl ①, drains out through the drain cock ⑪.

Turning drain cock ⑪ manually counterclockwise lowers piston ⑦, which pushes open the seal created by seal ⑩, thus allowing the condensate to drain out.

- **When the pressure inside the bowl is released:**

Even when pressure inside the bowl ①, is released, the weight of the float ② causes valve ④, which is connected to lever ③, to seal 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 valve ④ cause valve ④ to seal valve seat ⑤, and the outside air is shut off from the inside of the bowl ①.

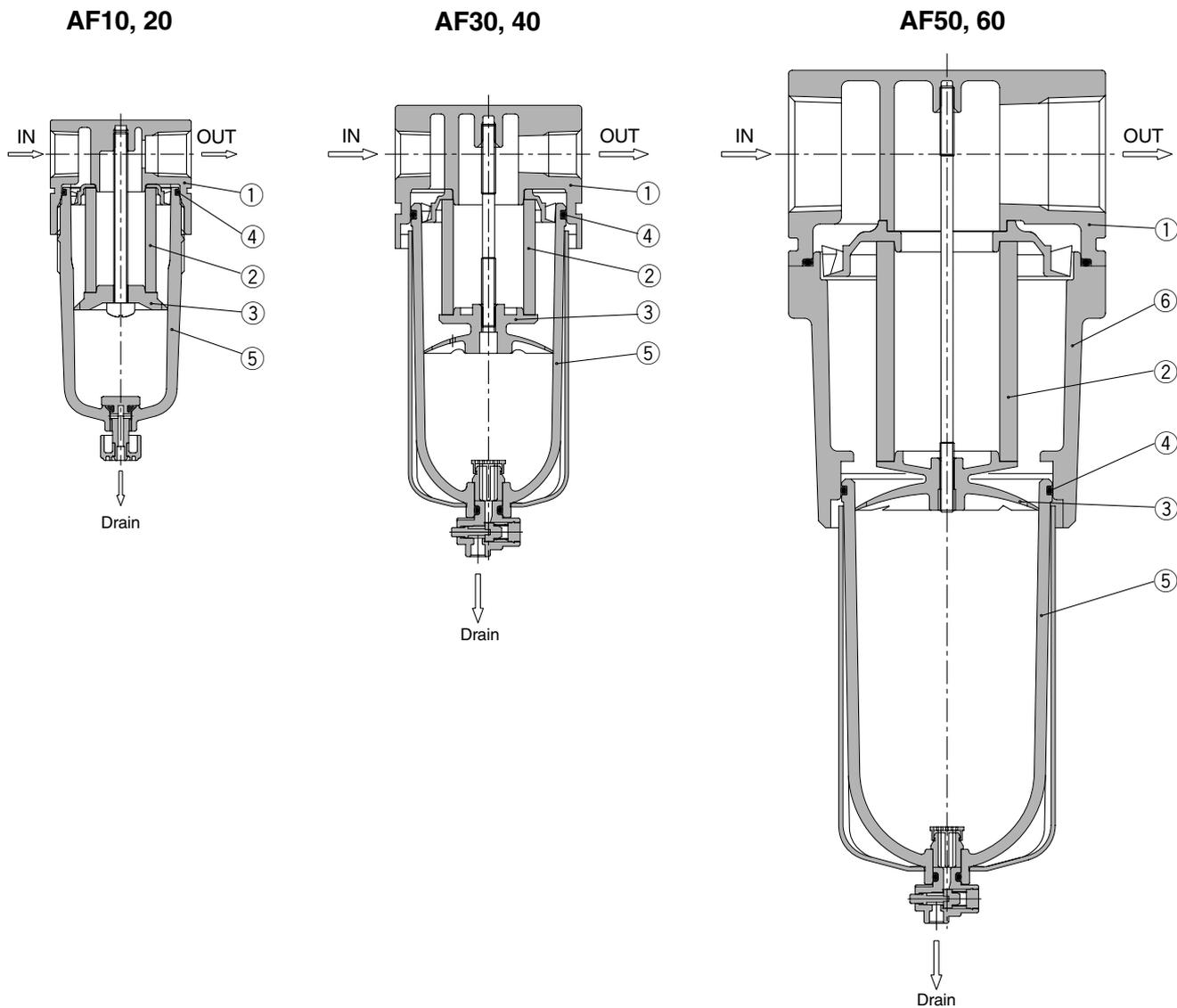
- **When the drain is accumulated in the bowl:**

Float ② rises due to its own buoyancy and the seal at valve seat ⑤ is interrupted.

The condensate inside the bowl ① drains out through the knob, ⑥.

Turning knob ⑥ manually counterclockwise lowers it and causes the sealing action of valve seat ⑤ to be interrupted, thus allowing the condensate to drain out.

Construction



Parts list

No.	Description	Material			Color
		AF10, 20	AF30, 40, 40-06	AF50, 60	
1	Body	Zinc die-cast	Aluminum die-cast		Platinum silver
6	Housing	—		Aluminum die-cast	Platinum silver

Air filter replacement parts

No.	Description	Material	Part no.						
			AF10	AF20	AF30	AF40	AF40-06	AF50	AF60
2	Filter element	Non-woven fabric	AF10P-060S	AF20P-060S	AF30P-060S	AF40P-060S	AF40P-060S	AF50P-060S	AF60P-060S
3	Baffle	PBT	AF10P-040S ^{Note 1)}	AF20P-040S	AF30P-040S	AF40P-040S	AF40P-040S	AF50P-040S	AF60P-040S
4	Bowl O-ring	NBR	C1SFP-260S	C2SFP-260S	C3SFP-260S	C4SFP-260S	C4SFP-260S	C4SFP-260S	C4SFP-260S
5	Bowl assembly ^{Note 2)}	PC	C1SF	C2SF	C3SF ^{Note 3)}	C4SF ^{Note 3)}	C4SF ^{Note 3)}	C4SF ^{Note 3)}	C4SF ^{Note 3)}

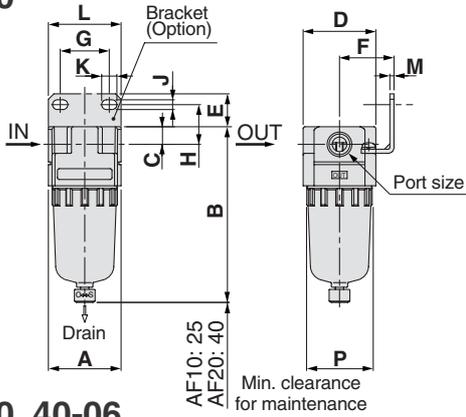


Note 1) The material of the baffle for AF10 (AF10P-040S) only is POM.
 Note 2) Contact P/A regarding the bowl assembly supply for PSI and °F unit specifications.
 Note 3) Bowl assembly for AF30 to 60 models comes with a bowl guard (steel band material).

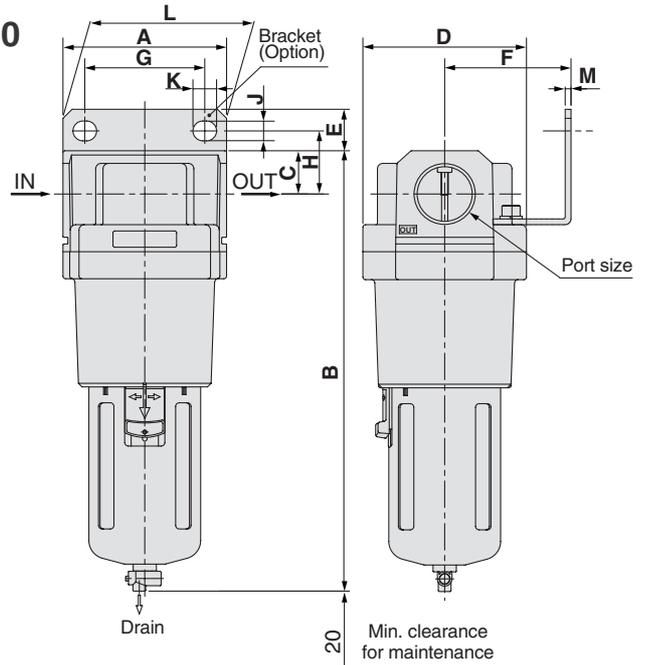
AF10 to 60

Dimensions

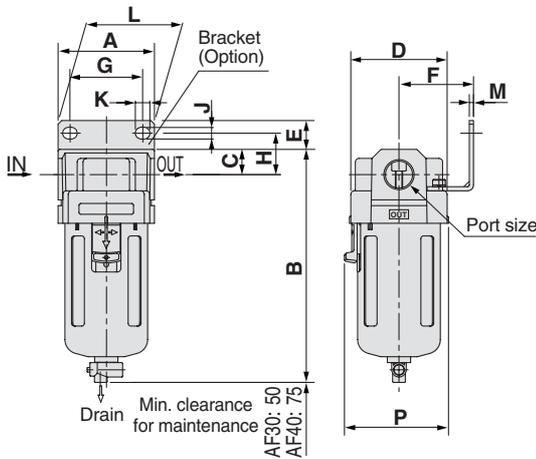
AF10, 20



AF50, 60



AF30, 40, 40-06



Applicable model	AF10, AF20		AF30, AF40, AF40-06, AF50, AF60				
Optional specifications	With auto drain (N.C.) M5 x 0.8	Metal bowl 	With auto drain (N.O./N.C.) N.O.: Black N.C.: Gray ø10 One-touch fitting	Metal bowl 	Metal bowl with level gauge 	With drain guide 1/4 Width across flats 17	Drain cock with barb fitting Barb fitting Applicable tubing: T0604

Model	Port size	Standard specification					Accessory specification										
		A	B	C	D	P	Bracket mounting size										With auto drain
		E	F	G	H	J	K	L	M	B							
AF10	M5 x 0.8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	85
AF20	1/8, 1/4	18	30	27	22	5.4	8.4	40	2.3	115							
AF30	1/4, 3/8	16	41	40	23	6.5	8	53	2.3	170							
AF40	1/4, 3/8, 1/2	17	50	54	26	8.5	10.5	70	2.3	204							
AF40-06	3/4	14	50	54	25	8.5	10.5	70	2.3	208							
AF50	3/4, 1	23	70	66	35	11	13	90	3.2	284							
AF60	1	23	70	66	35	11	13	90	3.2	297							

Model	Optional specification			
	With drain guide	With barb fitting	Metal bowl	Metal bowl with level gauge
	B	B	B	B
AF10	—	—	66	—
AF20	—	—	97	—
AF30	136	137	142	162
AF40	172	173	178	198
AF40-06	176	177	182	202
AF50	252	253	258	278
AF60	265	266	271	291

Air Filter AF20 to 60 Made to Order Specifications

Contact P/A for detailed dimensions, specifications, and lead times.



① 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

Part no.	-X430	-X440
Environment	Low temperature	High temperature
Ambient temperature	-30 to 60°C	-5 to 80°C
Fluid temperature	-5 to 60°C (with no freezing)	
Material	Rubber parts	Special NBR
	Main parts	FPM
	Metal (Aluminum die-cast)	

Applicable models

Model	AF30	AF40	AF40-06	AF50	AF60
Port sizes	1/4 3/8	1/4 3/8 1/2	3/4	3/4 1	1

How to Order

AF 30 F 03 B 2 R X430

Air filter | Body size (30, 40, 50, 60) | Thread type (Nil, Rc, NPT, G) | Optional specifications (J, R, Z) | Bowl (2) | Option (B)

For high/low temperature
X430 Low temperature
X440 High temperature

Optional specifications

Symbol	Description	Applicable model
J Note 5	Drain guide 1/4	AF30 to 60
R	Flow direction: Right to left	AF30 to 60
Z Note 6	Name plate and caution plate for bowl in imperial units (PSI, °F)	AF30 to 60

* When more than one specification is required, indicate in ascending alphanumeric order.

Note 5) Without a valve function.
Note 6) For 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.)

Bowl

Symbol	Description	Applicable model
2 Note 4	Metal bowl	AF30 to 60

Note 4) Only Metal Bowl available.

Option

Symbol	Description	Applicable model
Nil	—	—
B Note 3	With bracket	AF30 to 60

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

Port size

Symbol	Port size	Body size			
		30	40	50	60
02	1/4	●	●	—	—
03	3/8	●	●	—	—
04	1/2	●	●	—	—
06	3/4	—	●	●	—
10	1	—	—	●	●

Note 1) Drain guide is NPT 1/4 (applicable to AC30 to 60)
Note 2) Drain guide is G1/4 (applicable to AF30 to 60).

② High Pressure

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

Specifications

Part no.	-X425
Proof pressure	3.0MPa
Maximum operating pressure	2.0MPa
Ambient and fluid temperature	-5 to 60°C (with no freezing)

Applicable models

Model	AF20	AF30	AF40	AF40-06	AF50	AF60
Port sizes	1/8 1/4	1/4 3/8	1/4 3/8 1/2	3/4	3/4 1	1

How to Order

AF 30 F 03 B 2 R X425

Air filter | Body size (20, 30, 40, 50, 60) | Thread type (Nil, Rc, NPT, G) | Optional specifications (J, R, Z) | Bowl (2) | Option (B)

For high pressure

Optional specifications

Symbol	Description	Applicable model
J Note 5	Drain guide 1/4	AF30 to 60
R	Flow direction: Right to left	AF20 to 60
Z Note 6	Name plate and caution plate for bowl in imperial units (PSI, °F)	AF20 to 60

* When more than one specification is required, indicate in ascending alphanumeric order.

Note 5) Without a valve function.
Note 6) For 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.)

Bowl

Symbol	Description	Applicable model
2 Note 4	Metal bowl	AF20 to 60
8 Note 3	Metal bowl with level gauge	AF30 to 60

Note 4) Only metal bowl or metal bowl with level gauge available.

Option

Symbol	Description	Applicable model
Nil	—	—
B Note 3	With bracket	AF20 to 60

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

Port size

Symbol	Port size	Body size				
		20	30	40	50	60
01	1/8	●	—	—	—	—
02	1/4	●	●	—	—	—
03	3/8	—	●	●	—	—
04	1/2	—	—	●	—	—
06	3/4	—	—	●	●	—
10	1	—	—	—	●	●

Note 1) Drain guide is NPT 1/4 (applicable to AF30 to 60)
Note 2) Drain guide is G1/4 (applicable to AF30 to 60).

Note) Contact P/A regarding the detailed dimensions and optional availability.

Mist Separator

AFM20/30/40

How to Order

AFM 30-F 03 BD-2R

Mist separator → **AFM**
 Body size → **30**
 Thread type → **F**
 Port size → **03**
 Accessories → **BD**
 Optional specifications → **2R**

Accessories

Symbol	Description	Applicable model
Nil	—	—
B ^{Note 3)}	With bracket	AFM20 to 40
C	Float type auto drain (N.C.) ^{Note 4)}	AFM20 to 40
D	Float type auto drain (N.O.) ^{Note 4)}	AFM30, 40

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	—	—	●

Thread type

Nil	Rc
N ^{Note 1)}	NPT
F ^{Note 2)}	G

Optional specifications

Symbol	Description	Applicable model
2	Metal bowl	AFM20 to 40
6	Nylon bowl	AFM20 to 40
8	Metal bowl with level gauge	AFM30, 40
C	With bowl guard	AFM20
J ^{Note 5)}	Drain guide 1/4	AFM30, 40
R	Flow direction: Right to left	AFM20 to 40
W	Drain cock with barb fitting: ø6 x ø4 nylon tube	AFM30, 40
Z ^{Note 6)}	Name plate and caution plate for bowl in imperial units (PSI, °F)	AFM20 to 40

Note 1) Drain guide is NPT1/4 (applicable to AFM30 and 40), and the exhaust port for auto drain comes with ø3/8" One-touch fitting (applicable to AFM30 and 40).
 Note 2) Drain guide is G1/4 (applicable to AFM30 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.
 Note 5) Without a valve function.
 Note 6) For NPT thread type.
 * When more than one specification is required, indicate in ascending alphanumeric order.
 This product is for overseas use only according to the new Measurement Law. (The SI unit type is provided for use in Japan.)

Accessory/Optional specification combinations

Combination	Symbol	Accessory			Optional specification							Applicable mist separator		
		B	C	D	2	6	8	C	J	R	W	Z	AFM20	AFM30 to 40
Accessories														
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 to 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	△	△	△	△	△	△	△	△	△	△	△	△	△

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



Standard specifications

Model	AFM20	AFM30	AFM40	AFM40-06
Port sizes	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) ^{Note 1)}	200	450	1100	1100
Nominal filtration rating	0.3µm (95% filtered particle size)			
Outlet side oil mist concentration	Maximum 1.0 ^m g/m ³ (ANR) (approx. 0.8ppm) ^{Note 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

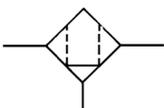
Note 1) When the inlet pressure is 0.7MPa. Flow rate varies depending on the inlet pressure.
 Note 2) When the compressor oil mist discharge concentration is 30mg/m³ (ANR).

Accessory part no.

Applicable model	AFM20	AFM30	AFM40	AFM40-06
Accessory				
Bracket assembly ^{Note 1)}	AF20P-050AS	AF30P-050AS	AF40P-050AS	AF40P-070AS
Float type auto drain ^{Note 2)}	N.O.	—	AD38	AD38N ^{Note 3)}
	N.C.	AD27	AD37	AD37N ^{Note 3)}
			AD48	AD48N ^{Note 3)}
			AD47	AD47N ^{Note 3)}

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 (AD17/27) 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".

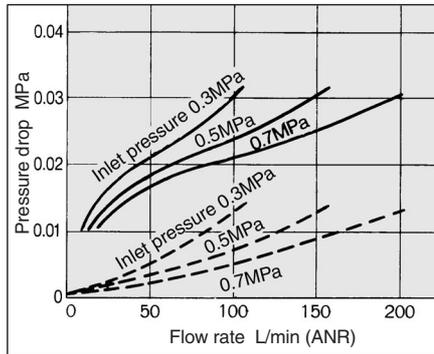
JIS symbol



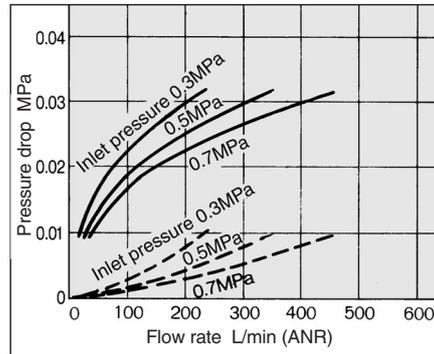
Flow Characteristics (Representative values)

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

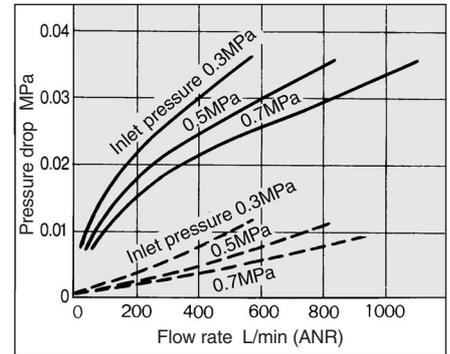
AFM20



AFM30

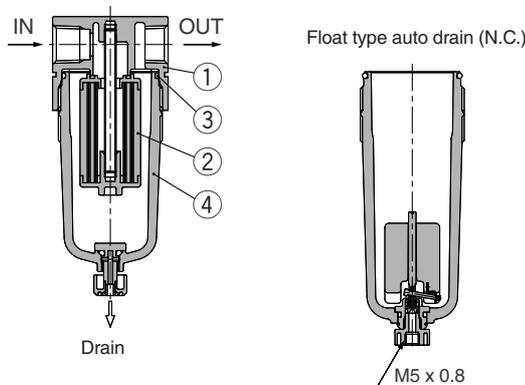


AFM40

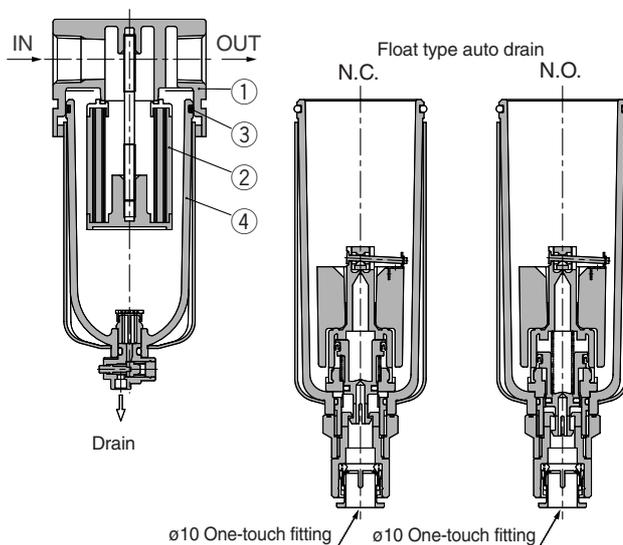


Construction

AFM20



AFM30, 40



⚠ 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 an air filter (Series AF) as a preliminary filter on the inlet side of the 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 drop 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 P/A if an application under such conditions cannot be avoided.

Parts list

No.	Description	Material		Note
		AFM20	AFM30, AFM40, AFM40-06	
1	Body	Zinc die-cast	Aluminum die-cast	Platinum silver

Replacement parts

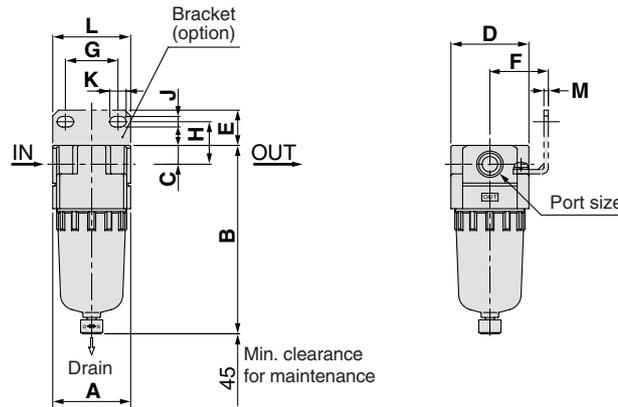
No.	Description	Material	Part no.			
			AFM20	AFM30	AFM40	AFM40-06
2	Element assembly	—	AFM20P-060AS	AFM30P-060AS	AFM40P-060AS	AFM40P-060AS
3	Bowl O-ring	NBR	C2SFP-260S	C3SFP-260S	C4SFP-260S	C4SFP-260S
4	Bowl assembly <small>Note 1)</small>	PC	C2SF	C3SF <small>Note 2)</small>	C4SF <small>Note 2)</small>	C4SF <small>Note 2)</small>

Note 1) Including O-Ring. Contact P/A regarding the bowl assembly supply for PSI and °F unit specifications.
 Note 2) Bowl assembly for AFM30 to AFM40-06 includes a bowl guard (steel band material).

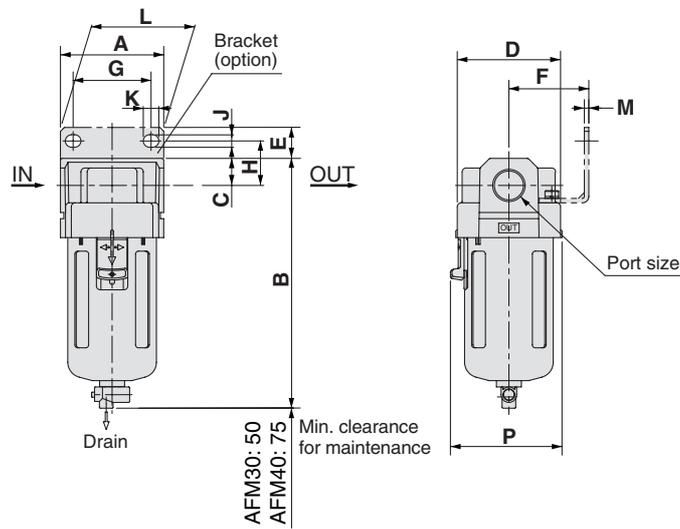
AFM20/30/40

Dimensions

AFM20



AFM30, 40, 40-06



Applicable model	AFM20		AFM30, AFM40, AFM40-06				
	With 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							

Model	Port size	Standard specification					Accessory specification								
							With bracket								
		A	B	C	D	P	E	F	G	H	J	K	L	M	B
AFM20	1/8, 1/4	40	97	10	40	—	18	30	27	22	5.4	8.4	40	2.3	115
AFM30	1/4, 3/8	53	129	14	53	57	16	41	40	23	6.5	8	53	2.3	170
AFM40	1/4, 3/8, 1/2	70	165	18	70	73	17	50	54	26	8.5	10.5	70	2.3	204
AFM40-06	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
AFM20	—	—	97	—
AFM30	136	137	142	162
AFM40	172	173	178	198
AFM40-06	176	177	182	202

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

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

Accessories

Symbol	Description	Applicable model
Nil	—	—
B ^{Note 3)}	With bracket	AFD20 to 40
C	Float type auto drain (N.C.) ^{Note 4)}	AFD20 to 40
D	Float type auto drain (N.O.) ^{Note 4)}	AFD30, 40

Optional specifications

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 ^{Note 5)}	Drain guide 1/4	AFD30, 40
R	Flow direction: Right to left	AFD20 to 40
W	Drain cock with barb fitting: ø6 x ø4 nylon tube	AFD30, 40
Z ^{Note 6)}	Name plate and caution plate for bowl in imperial units (PSI, °F)	AFD20 to 40

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.
 Note 5) When more than one specification is required, indicate in ascending alphanumerical order.
 Note 6) 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
Accessories														
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 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	△	△	△	△	△	△	△	△	△	△	△	△	△

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

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)^{Note 1)}	120	240	600	600
Nominal filtration rating	0.01µm (95% filtered particle size)			
Outlet side oil mist concentration	Max.0.1mg/m ³ (ANR) (before saturated with oil: 0.01mg/m ³ (ANR) or less, approx. 0.008ppm) ^{Note 2)}			
Bowl material	Polycarbonate			
Bowl guard	Option	Standard		
Drain capacity (cm³)	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/m³ (ANR).

Accessory part no.

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

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

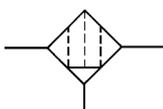


AFD30



AFD40

Symbol

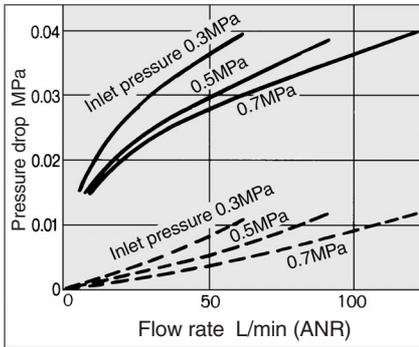


AFD20/30/40

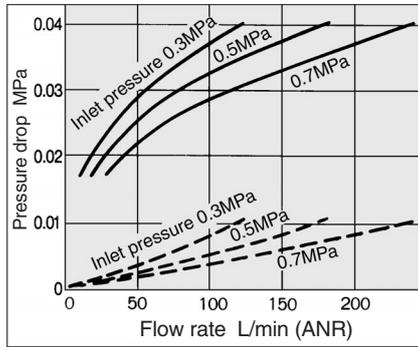
Flow Characteristics (Representative values)

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

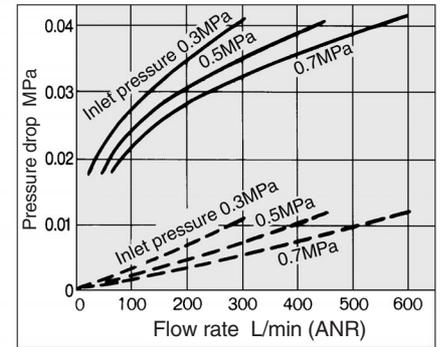
AFD 20



AFD 30

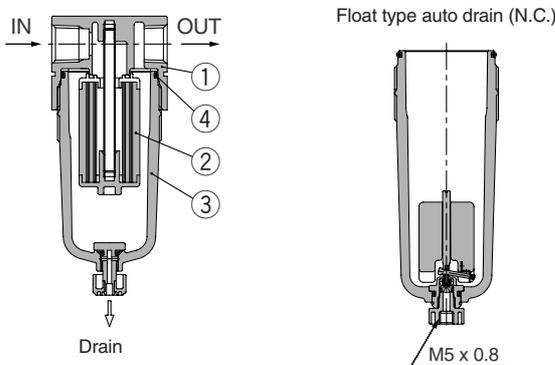


AFD 40

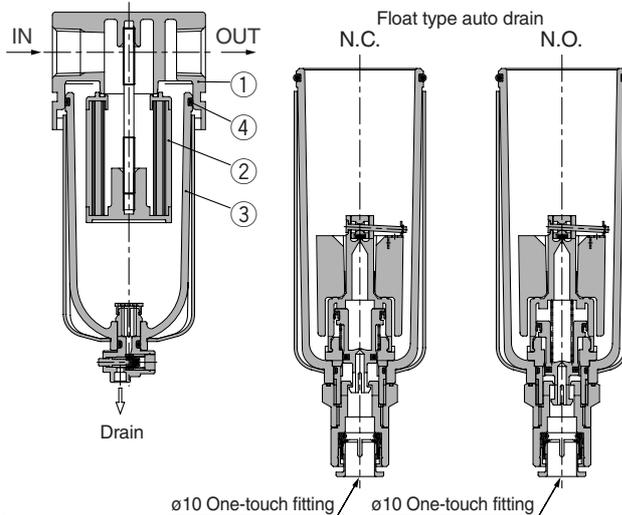


Construction

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 ^{Note 1)}	PC	C2SF	C3SF ^{Note 2)}	C4SF ^{Note 2)}	C4SF ^{Note 2)}
4	Bowl O-ring	NBR	C2SFP-260S	C3SFP-260S	C4SFP-260S	C4SFP-260S

Note 1) Including O-Ring. Contact P/A 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.

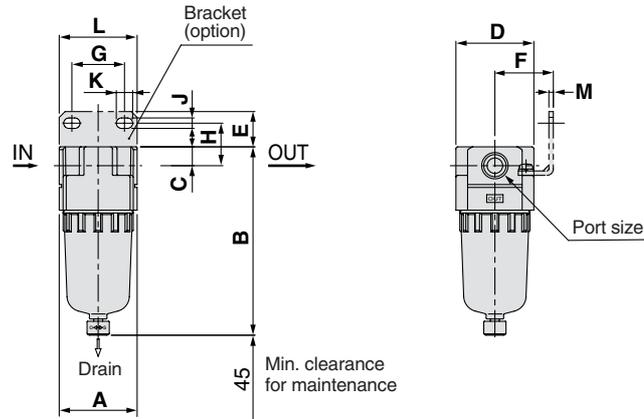
Selection

Caution

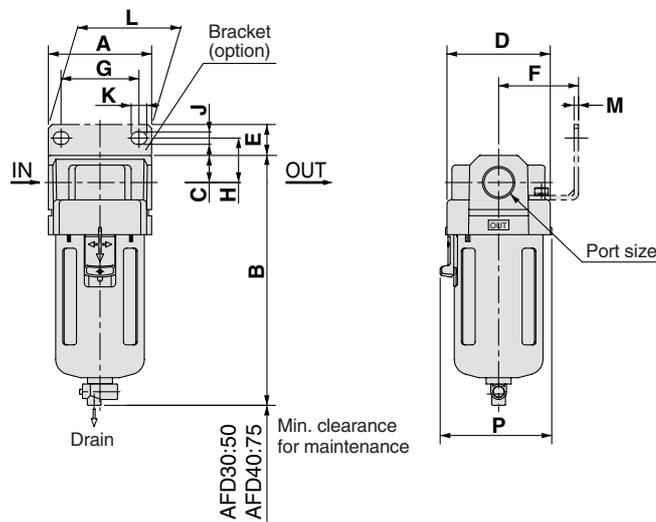
1. Do not allow air flow that exceeds the rated flow. If the air flow is allowed outside the range of the rated flow even momentarily, drainage and lubricant may splash at the outlet side or cause damage to the component.
2. Do not use in a low pressure application (such as a blower). F.R.L. unit has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