

Modular Type Air Filter *Series AF*

Air filter Series AF 	Model	Port size	Filtration (μm)	Accessory
	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		
Pages 23 through 27				
Mist separator Series AFM 	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		
Pages 29 through 31				
Micro-mist separator Series AFD 	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		
Pages 32 through 34				

Air Filter

AF10 to 60

How to Order

AF 30 - F 03 BD - 2R

Body size

10 20 30 40 50 60

Thread type

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

Accessory/Optional specification combinations

⊙: Combination available

□: Combination not available

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

Combination		Symbol	Accessory			Optional specification								Applicable filter		
Accessory/Optional specifications			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 (cm³)	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.

Applicable model		AF10	AF20	AF30	AF40	AF40-06	AF50	AF60
Accessory								
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)	AD48 AD48N Note 3)	AD48 AD48N 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)	AD47 AD47N Note 3)

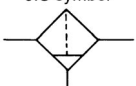
Note 1) Assembly includes a bracket and 2 mounting screws.

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".

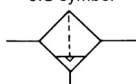


JIS symbol



With auto drain

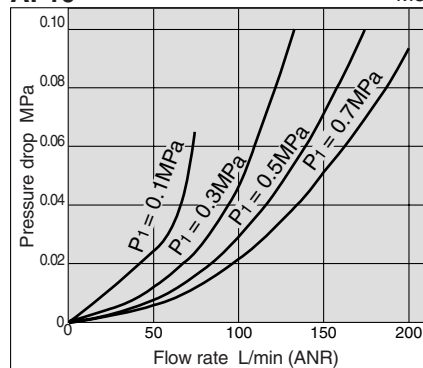
JIS symbol



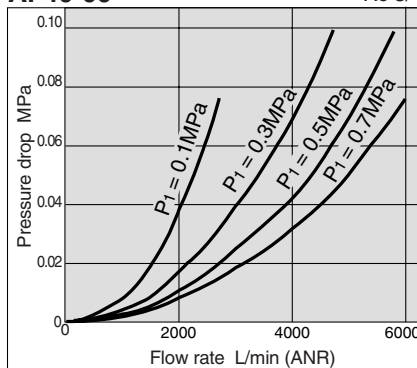
Page 28

Flow Characteristics (Representative values)

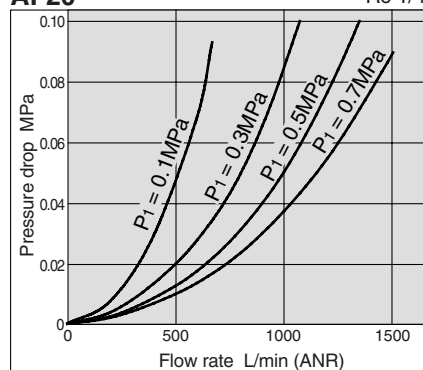
AF10 M5



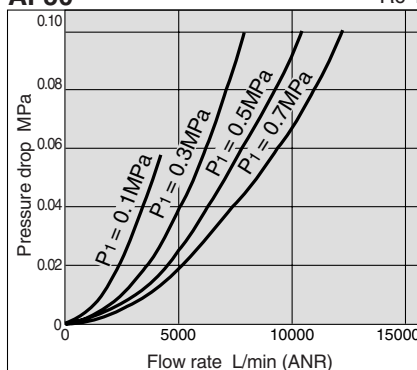
AF40-06 Rc 3/4



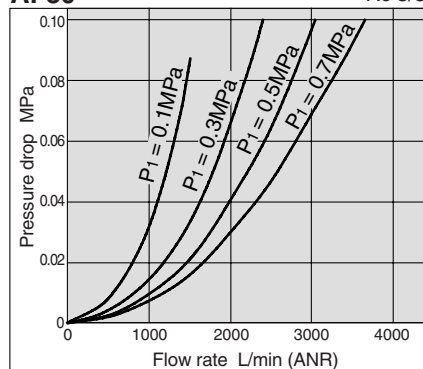
AF20 Rc 1/4



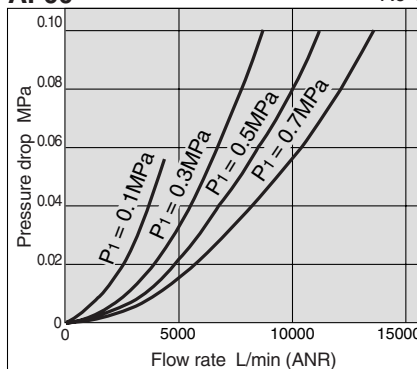
AF50 Rc 1



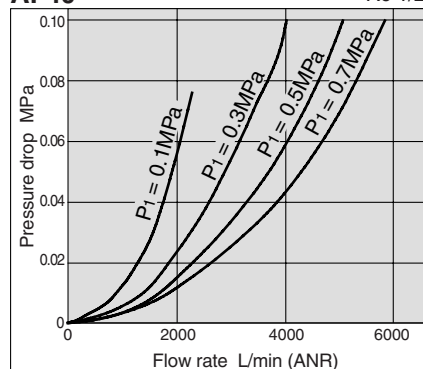
AF30 Rc 3/8



AF60 Rc 1



AF40 Rc 1/2



⚠ 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

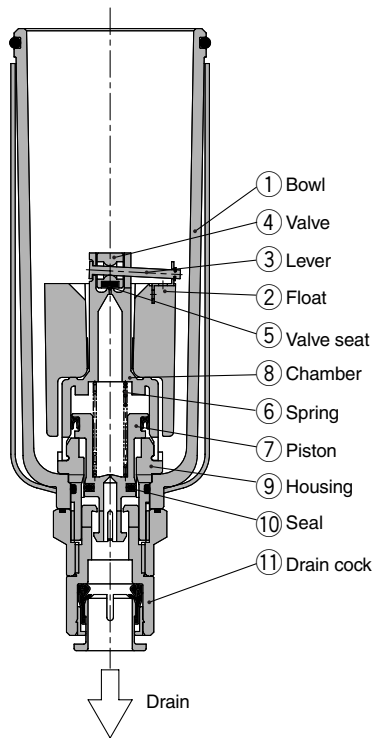
⚠ Warning

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

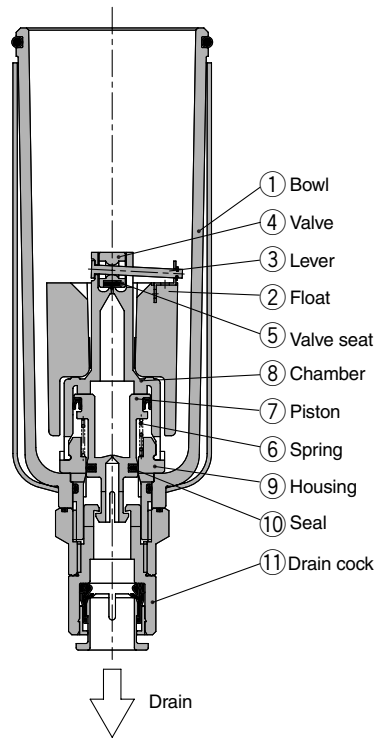
AF10 to 60

Operation Principle: Float Type Auto Drain

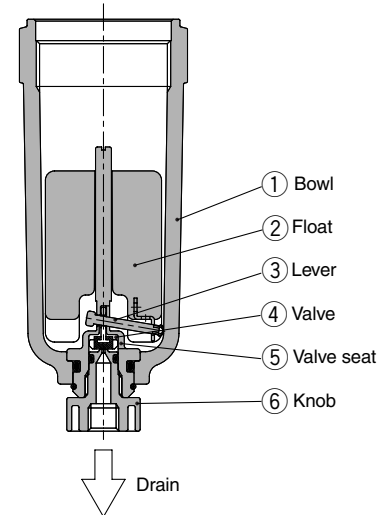
N.O. type: AD38, 48



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.

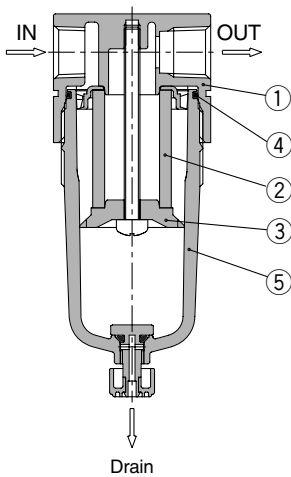
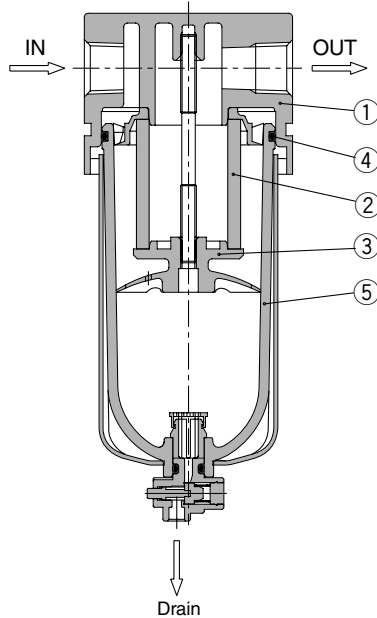
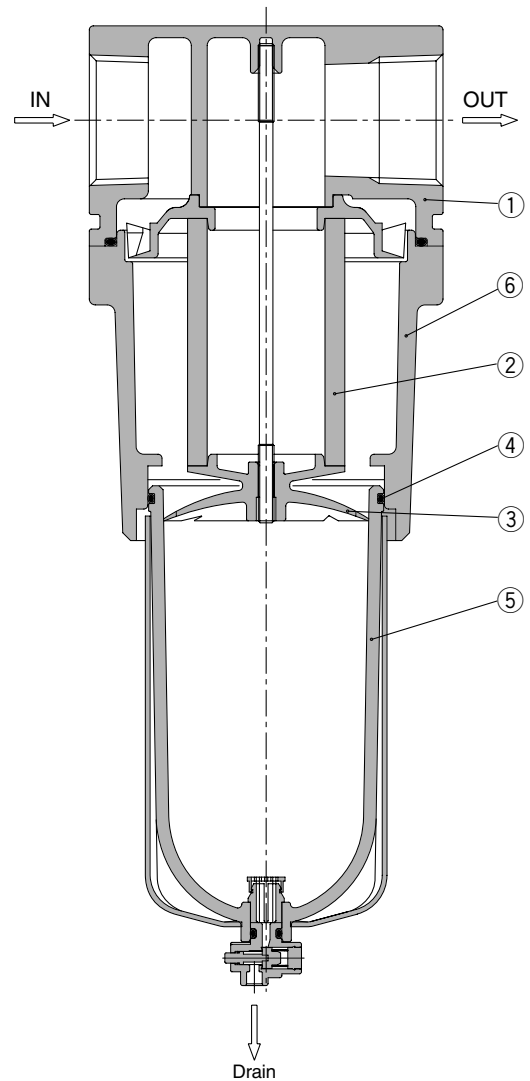
- **When the drain is accumulated in the bowl:**

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

AF10, 20

AF30, 40

AF50, 60


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.

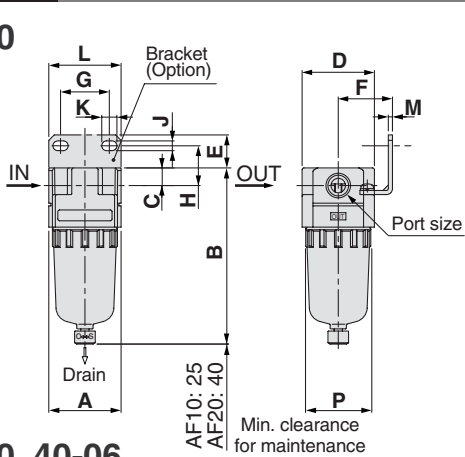
Note 2) Contact P/A regarding the bowl assembly supply for PSI and °F unit specifications.

Note 3) Bowl assembly for AF30 to 60 models comes with a bowl guard (steel band material).

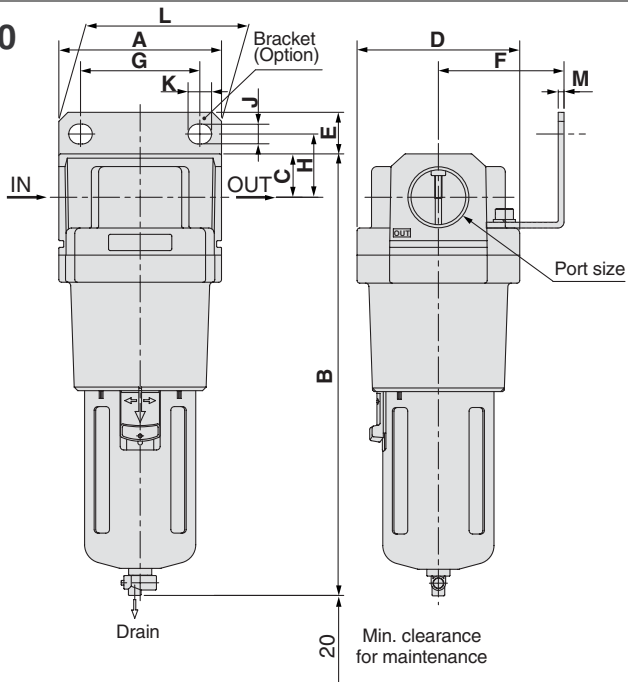
AF10 to 60

Dimensions

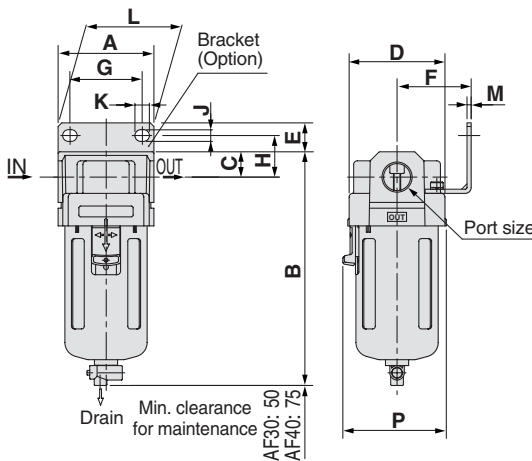
AF10, 20



AF50, 60



AF30, 40, 40-06



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

Model	Port size	Standard specification						Accessory specification								
		A	B	C	D	P	E	F	G	H	J	K	L	M	With auto drain	B
AF10	M5 x 0.8	25	67	7	25	28	—	—	—	—	—	—	—	—	85	
AF20	1/8, 1/4	40	97	10	40	—	18	30	27	22	5.4	8.4	40	2.3	115	
AF30	1/4, 3/8	53	129	14	53	57	16	41	40	23	6.5	8	53	2.3	170	
AF40	1/4, 3/8, 1/2	70	165	18	70	73	17	50	54	26	8.5	10.5	70	2.3	204	
AF40-06	3/4	75	169	20	70	73	14	50	54	25	8.5	10.5	70	2.3	208	
AF50	3/4, 1	90	245	24	90	—	23	70	66	35	11	13	90	3.2	284	
AF60	1	95	258	24	95	—	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
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
N Note 2)	NPT
F Note 3)	G

Note 1) Drain guide is NPT1/4 (applicable to AF30 to 60)
Note 2) Drain guide is G1/4 (applicable to AF30 to 60).

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.)

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	— — ● ●

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.

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
N Note 1)	NPT
F Note 2)	G

Note 1) Drain guide is NPT1/4 (applicable to AF30 to 60)
Note 2) Drain guide is G1/4 (applicable to AF30 to 60).

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.)

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	— — — ● ●

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.

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 → **Body size** → 20 30 40

Thread type → Nil Rc
N Note 1) NPT
F Note 2) G

Accessories

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

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

* 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	△	△	△	△	△	△	△	△	△	△	△			△	△



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 1.0mg/m ³ (ANR) (approx. 0.8ppm) ^{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

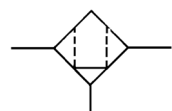
Note 1) When the inlet pressure is 0.7MPa. Flow rate varies depending on the inlet pressure.
Note 2) When the compressor oil mist discharge concentration is 30mg/m³ (ANR).

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	AD48	AD48
	N.C.	AD27	AD37	AD47

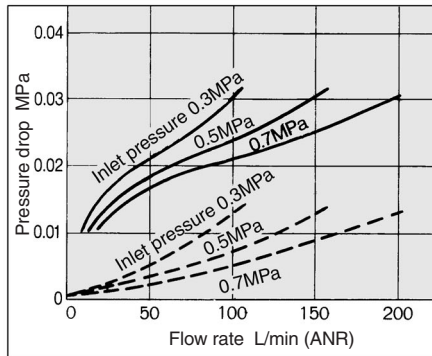
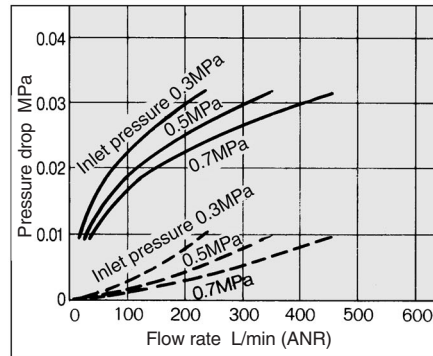
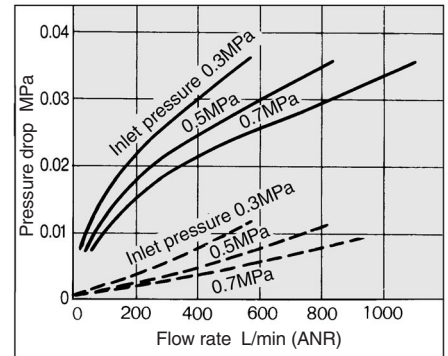
Note 1) Assembly includes a bracket and 2 mounting screws.
Note 2) Minimum operating pressure: N.O. type-0.1MPa; N.C. type-0.1MPa (AD17/27) and 0.15MPa (AD37/47).
Note 3) When "N" is specified in the end of part number of auto drain, applicable tube O.D should be ø3/8".

JIS symbol

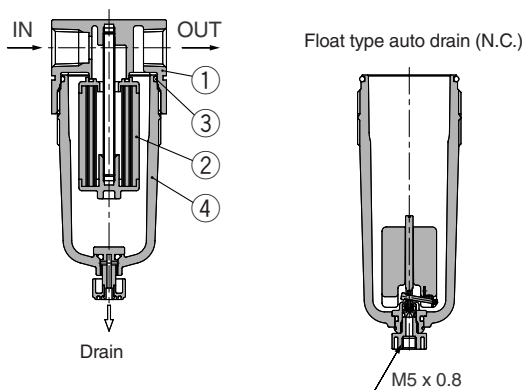
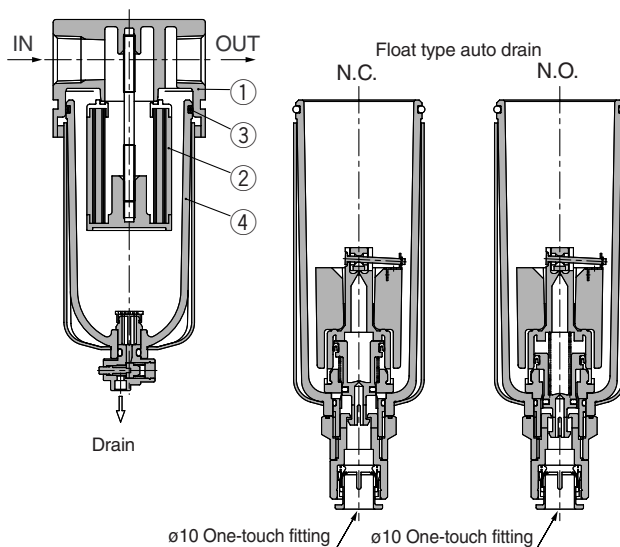


Flow Characteristics (Representative values)

— : 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

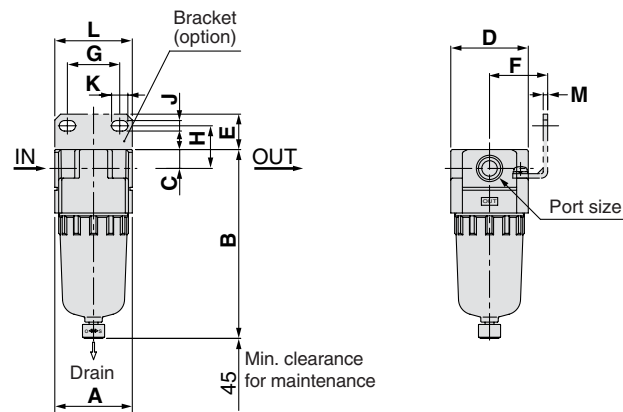
No.	Description	Material	Part no.			
			AFM20	AFM30	AFM40	AFM40-06
2	Element assembly	—	AFM20P-060AS	AFM30P-060AS	AFM40P-060AS	AFM40P-060AS
3	Bowl O-ring	NBR	C2SFP-260S	C3SFP-260S	C4SFP-260S	C4SFP-260S
4	Bowl assembly Note 1)	PC	C2SF	C3SF Note 2)	C4SF Note 2)	C4SF Note 2)

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).

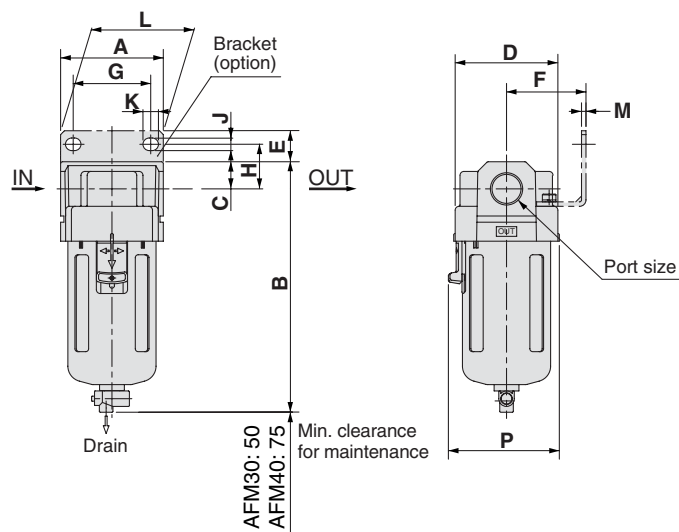
AFM20/30/40

Dimensions

AFM20



AFM30, 40, 40-06



Applicable model	AFM20		AFM30, AFM40, AFM40-06				
Optional specifications	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
	 M5 x 0.8		 N.O.: Black N.C.: Gray ø10 One-touch fitting			 1/4 Width across flats 17	 Barb fitting Applicable tubing: T0604

Model	Port size	Standard specification					Accessory specification								
							With bracket								With auto drain
		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

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.
* 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
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	△	△	△	△	△	△	△	△	△	△		△	△

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 (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. 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.

Applicable model		AFD20	AFD30	AFD40	AFD40-06
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)}	AD48 AD48N ^{Note 3)}	AD48 AD48N ^{Note 3)}
	N.C.	AD27	AD37 AD37N ^{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 (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

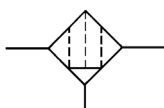


AFD30



AFD40

Symbol

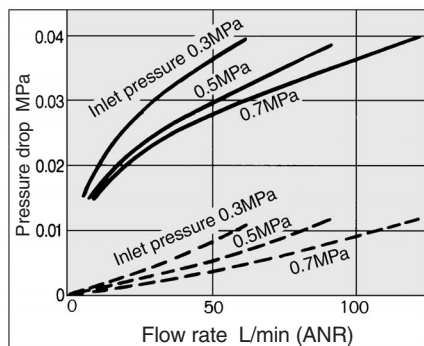


AFD20/30/40

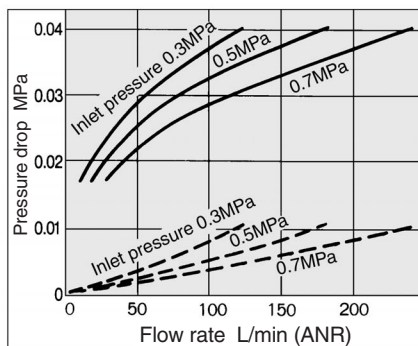
Flow Characteristics (Representative values)

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

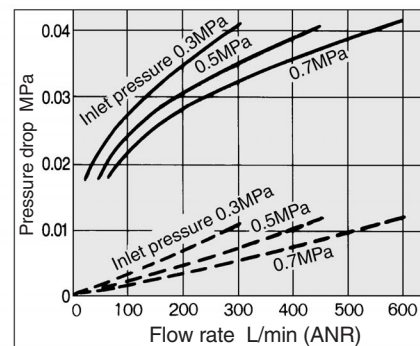
AFD 20



AFD 30

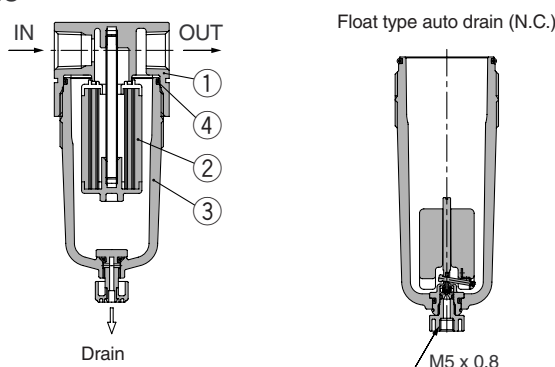


AFD 40

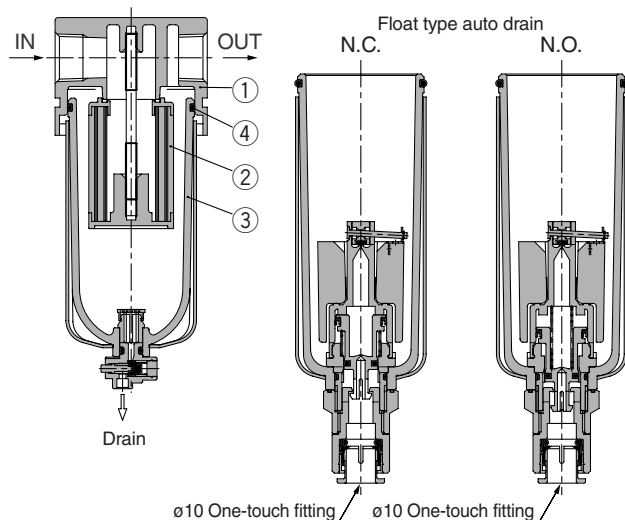


Construction

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.

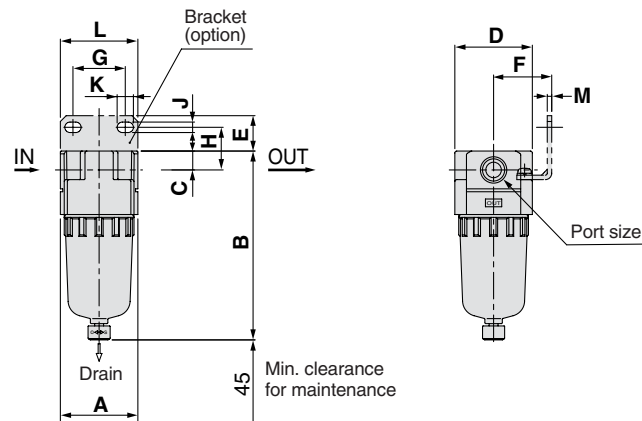
Selection

Caution

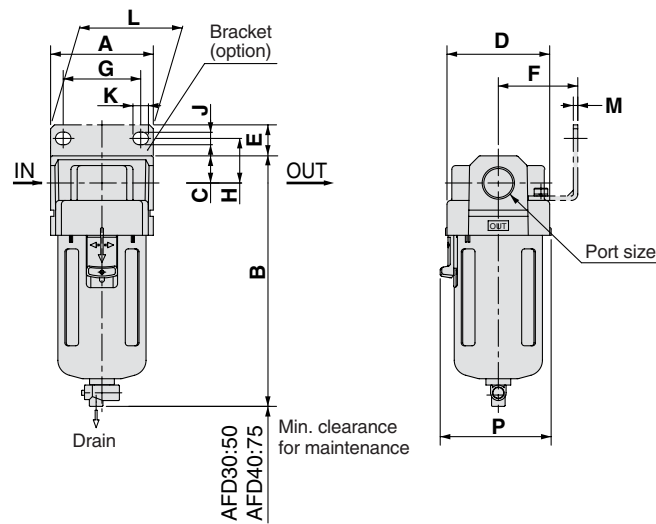
1. Do not allow air flow that exceeds the rated flow. If the air flow is allowed outside the range of the rated flow even momentarily, drainage and lubricant may splash at the outlet side or cause damage to the component.
2. Do not use in a low pressure application (such as a blower). F.R.L. unit has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

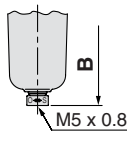
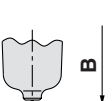
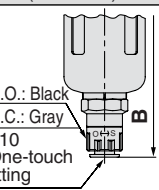
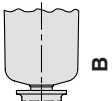
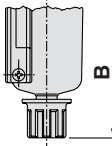
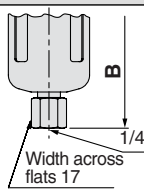
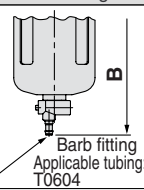
Dimensions

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								
							With bracket								With auto drain
		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 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