Please refer to pages 14-20-62 to 64 for specific product precautions.

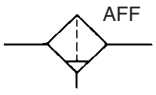
Main Line Filter

Series AFF

Series AFF is mounted to main piping to remove impurities like oil, water and foreign matter in compressed air. It improves the function of downward dryer, extends the life of precision filter, and prevents trouble with the equipment.

AFF□B AFF□A

JIS Symbol



Made to Order P. 14-20-55

⚠ Caution

Be sure to read before handling. Refer to pages 14-21-3 to 4 for Safety Instructions and Common Precautions on the products mentioned in this catalog, pages 14-14-6 to 8 for Precautions on every series, and pages 14-20-62 to 64 for more detailed precautions on every series.

Specifications

Fluid	Compressed air
Max. operating pressure	1.0 MPa
Min. operating pressure *	0.05 MPa
Proof pressure	1.5 MPa
Ambient and fluid temperature	5 to 60°C
Filtration degree	3 μm (95% particle size collection)
Element life	2 years (1 year for A type) or when pressure drop reaches 0.1 MPa

* 0.1 MPa (N.O. type) or 0.15 MPa (N.C. type) in the case of types with auto-drain.

Refer to "Made to Order Specifications" on pages 14-20-55 to 14-20-57.

Accessory (Option)/For AFF2B to AFF75B

Applicable model	AFF2B	AFF4B	AFF8B	AFF11B	AFF22B	AFF37B	AFF75B
Bracket assembly (With cap bolt and spring washer)	BM51	BM52	BM53	BM54	BM55	BM56	BM57

Accessory (Option)/For AFF75A to AFF220A

Applicable model	AFF75A	AFF125A	AFF150A	AFF220A
Auto drain (2 pcs. each)	AD402-03-2			
Pressure gauge (2 pcs. each)	G46-15-02			
Companion flange (2 pcs. each)	2^BJIS 10^KFF	3^BJIS 10^KFF	4^BJIS 10^KFF	
Anchor bolt (3 pcs. each)	AI-2S			

Model

Model	AFF2B	AFF4B	AFF8B	AFF11B	AFF22B	AFF37B	AFF75B	AFF75A	AFF125A	AFF150A	AFF220A
Rated flow Note) (ℓ/min (ANR))	300	750	1500	2200	3500	6000	12000	12000	22000	28000	42000
Port size (Nominal size B)	1/8, 1/4, 3/8	1/4, 3/8, 1/2	3/8, 1/2, 3/4	1/2, 3/4, 1	3/4, 1	1, 1 1/2	1 1/2, 2	2^B flange	3^B flange	4^B flange	4^B flange
Weight (kg)	0.38	0.55	0.9	1.4	2.1	4.2	10.5	50	52	72	87

Note) Max. flow is at 0.7 MPa. Max. flow varies depending on operating pressure. Refer to page 14-20-11 for flow characteristics and the graph below for max. air flow.

Model Selection

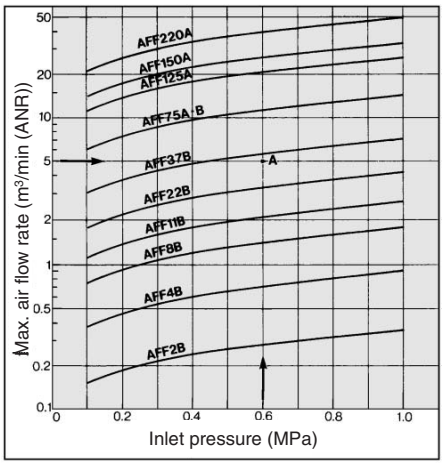
Select the model in accordance with the following procedure taking the inlet pressure and max. air flow into consideration.

(Example) Inlet pressure: 0.6 MPa
Max. air flow capacity: 5 m³/min (ANR)

1. Select the point of contact A of inlet pressure and max. air capacity in the graph.
2. To select one with the maximum air flow rate line that is located above the obtained intersection point A, the model will be AFF37B.

Note) Make sure to select a model that has the maximum flow rate line above the obtained intersecting point. With a model that has the maximum flow rate line below the obtained intersecting point, the flow rate will be exceeded, thus leading to a problem such as being unable to satisfy the specifications.

Max. Air Flow — Max. flow line



How to Order

AFF2B to AFF75B

AFF **8B** — **[ ]** **03** **B** — **J**

Body size

2B	1/8 Standard
4B	1/4 Standard
8B	3/8 Standard
11B	1/2 Standard
22B	3/4 Standard
37B	1 Standard
75B	1 1/2 Standard

Thread type

Nil	Rc
F	G
N	NPT

Port size

01	1/8B	**06**	3/4B
02	1/4B	**10**	1B
03	3/8B	**14**	1 1/2B
04	1/2B	**20**	2B

Accessory (Option) *

Symbol	Description
Nil	—
B	Bracket
C	N.C. auto-drain
D	N.O. auto-drain

* Refer to the table below for accessory/option combinations.

Option *

J	Drain guide 1/4B female thread
R	IN-OUT reversal direction
T	Element service indicator

Note) Refer to page 14-20-59 for "How to Order Bowl Assembly".

Accessory/Option Combinations

◎ Available ■ Not available ○ Depends on model

Accessory (Option)			Accessory C	Accessory D	Optional specification J	Optional specification R	Optional specification T	AFF2B	AFF4B	AFF8B	AFF11B	AFF22B	AFF37B	AFF75B
Accessory	N.C. auto-drain	**C**				◎	◎	◎	◎	◎	◎	◎		
	N.O. auto-drain	**D**				◎	◎	◎	◎	◎	◎	◎	◎	◎
Option	Drain guide 1/4 B	**-J**				◎	◎	◎	◎	◎	◎	◎	◎	
	IN-OUT reversal direction	**-R**	◎	◎	◎		◎	◎	◎	◎	◎	◎	◎	◎
	Element service indicator	**-T**	◎	◎	◎	◎		◎	◎	◎	◎	◎	◎	◎

AFF75A to AFF220A

AFF **75A** — **20** **D**

Basic size (Applicable compressor rating)

75A	75 kW
125A	110 to 125 kW
150A	150 kW
220A	180 to 220 kW

Port size

20	2B JIS 10k flange
30	3B JIS 10k flange
40	4B JIS 10k flange

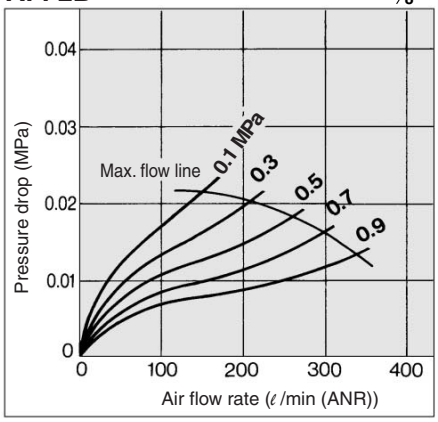
Accessory (Option)

D	Auto-drain
G	Pressure gauge
F	Companion flange
L	Anchor bolt

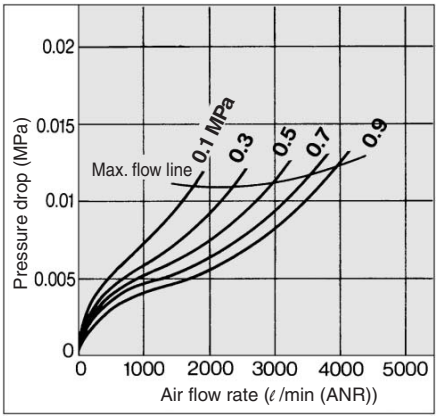
Flow Characteristics/Select the model taking the max. flow capacity into consideration. —— **Element oil saturation**

Note) Compressed air over max. flow line in the table below may not meet the specifications of the product. It may cause damage to the element.

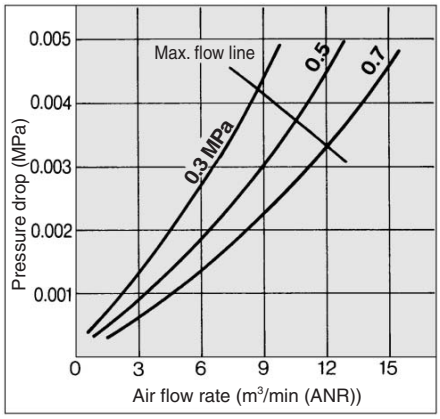
AFF2B 1/8B



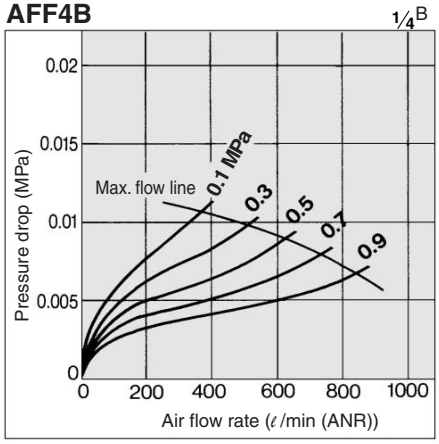
AFF22B 3/4B



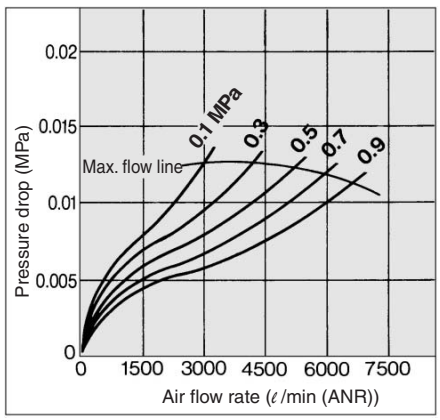
AFF75A 2B



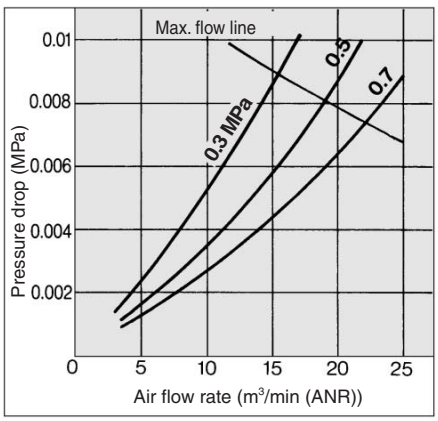
AFF4B 1/4B



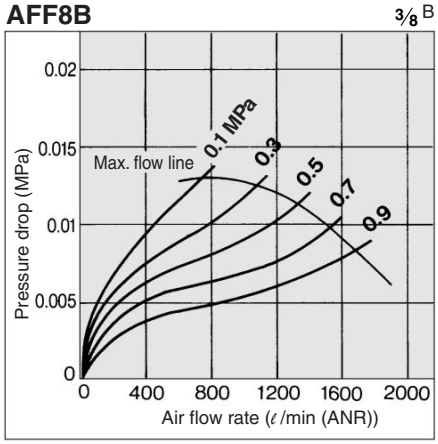
AFF37B 1B



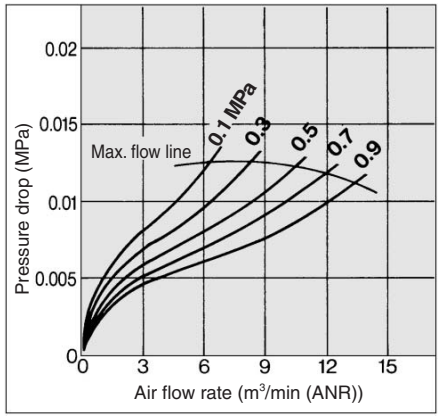
AFF125A 3B



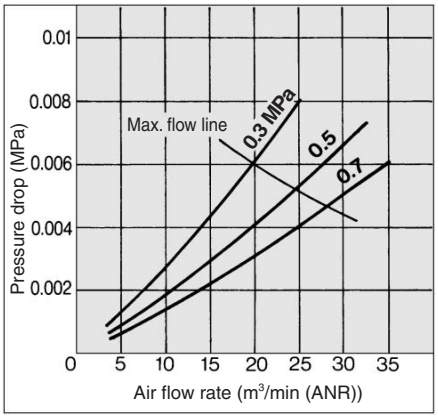
AFF8B 3/8B



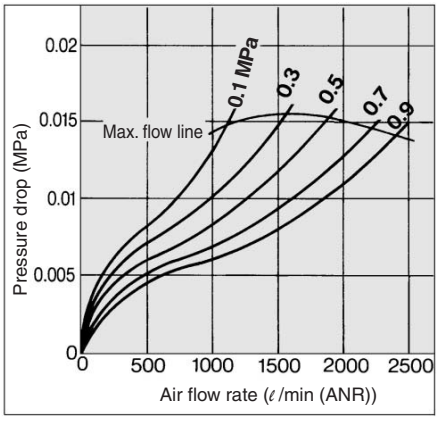
AFF75B 1 1/2B



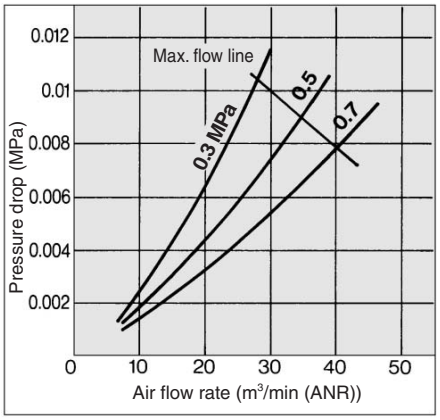
AFF150A 4B



AFF11B 1/2B

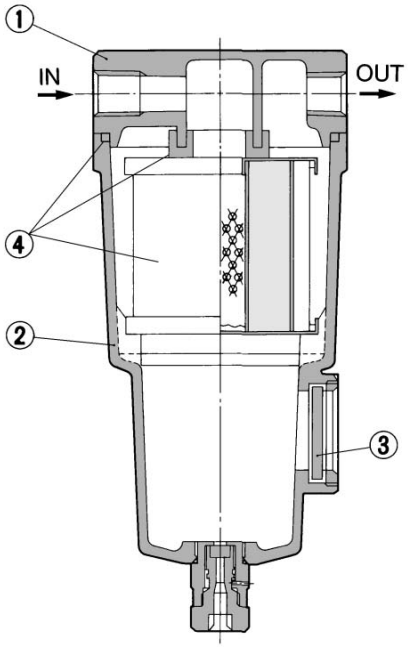


AFF220A 4B

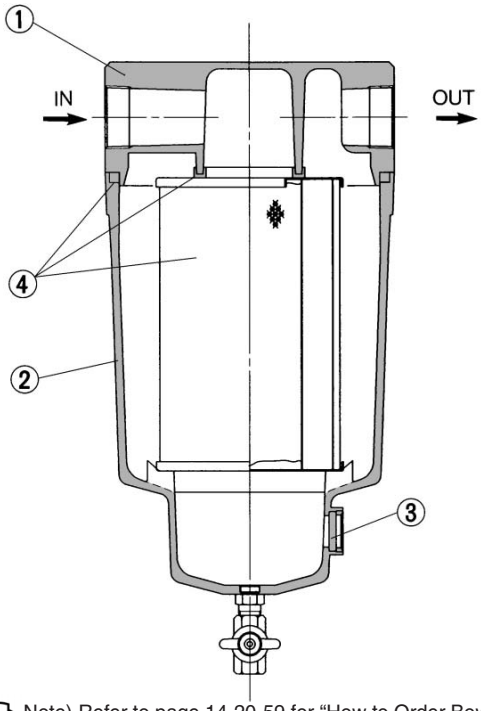


Construction

AFF2B to AFF37B



AFF75B



Component Parts

No.	Description	Material	Note
①	Body	Aluminum die-casted	Chrome treated
②	Housing	Aluminum die-casted*	Epoxy coating on inner surface
③	Sight glass	Tempered glass	

∗ AFF75B is aluminum casted.

Note) Refer to page 14-20-59 for "How to Order Bowl Assembly".

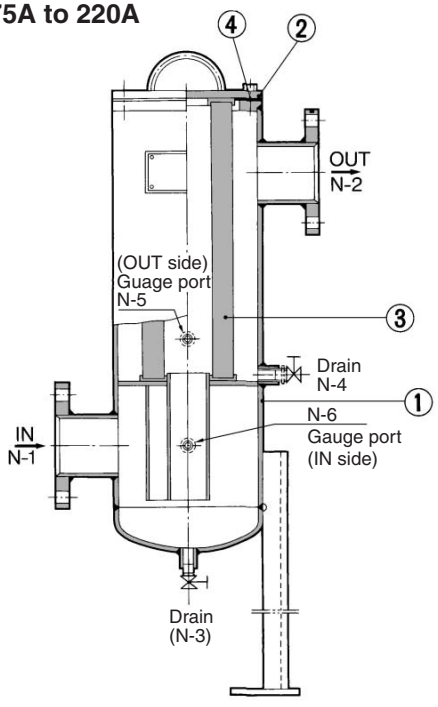
Note: Sight glass is indicated in the figure above for easy understanding of parts, however mounting position is different. Please refer to pages 14-20-13 to 14-20-14 for details.

Replacement Parts

No.	Description	Material	Model						
			AFF2B	AFF4B	AFF8B	AFF11B	AFF22B	AFF37B	AFF75B
④	Element assembly	Cotton paper, Others	AFF-EL2B	AFF-EL4B	AFF-EL8B	AFF-EL11B	AFF-EL22B	AFF-EL37B	AFF-EL75B

∗ Element assembly: With gasket and O-ring

AFF75A to 220A



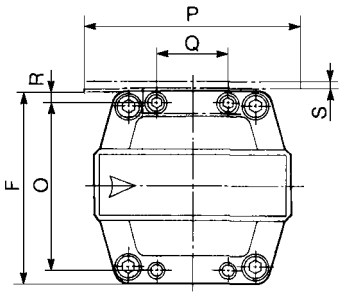
Component Parts

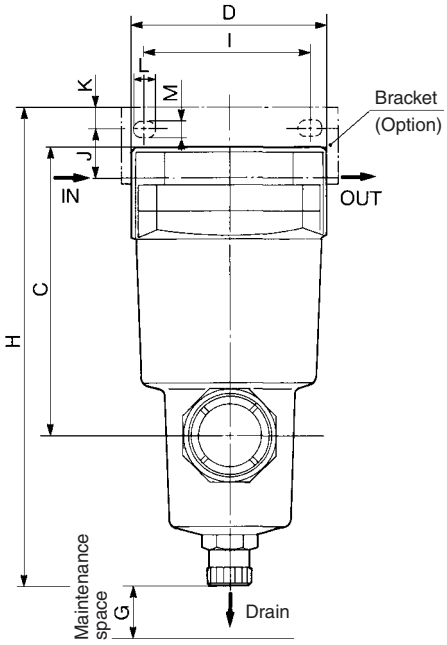
No.	Description	Material	Note
①	Case	SGP-E, SS400	
②	Cover	SS400	

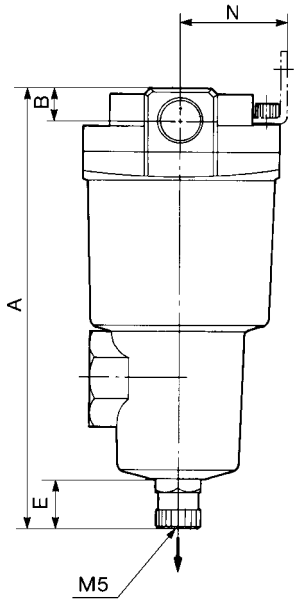
Replacement Parts

No.	Description	Material	Model			
			AFF75A	AFF125A	AFF150A	AFF220A
③	Element		EC700-003N		EC800-003N	EC900-003N
④	Packing	NBR	AL-33S		AL-34S	AL-35S

AFF2B to AFF37B Dimensions

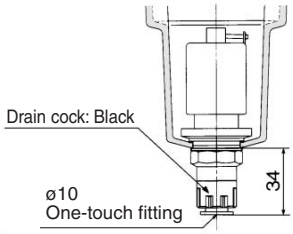




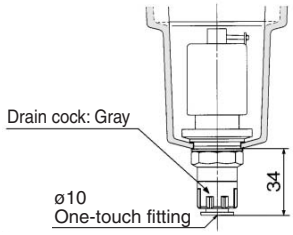


Accessory

D: With auto-drain (N.O.)



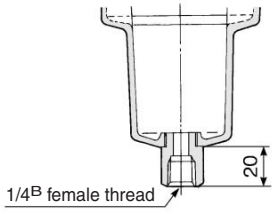
C: With auto-drain (N.C.)



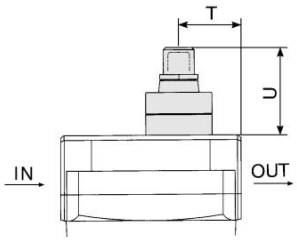
∗ N.C. auto-drain not available for AFF37B.

Option

J: With drain guide

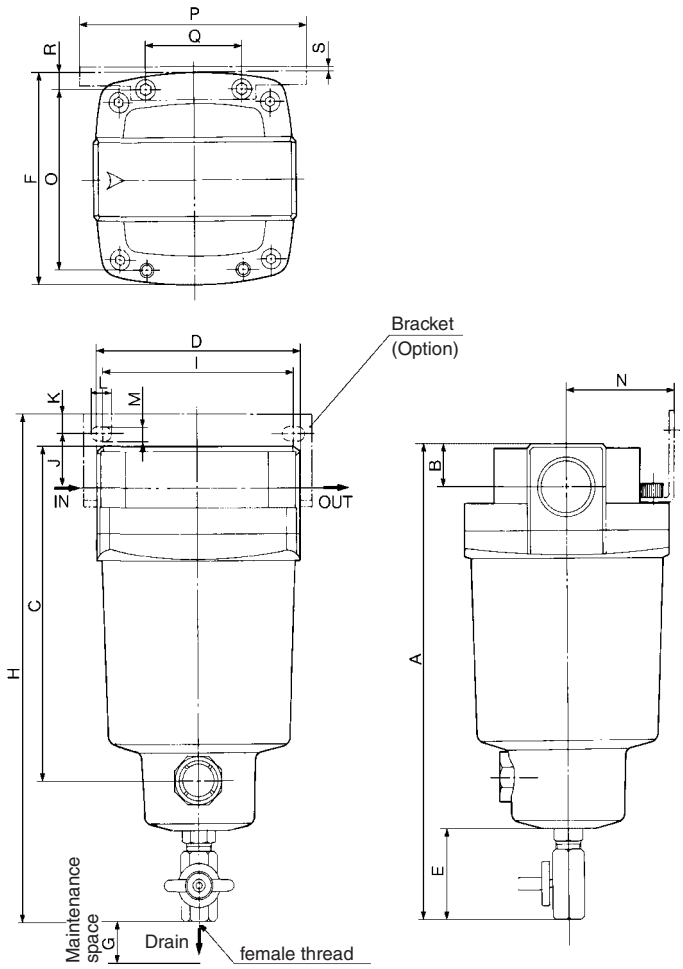


T: With element service indicator



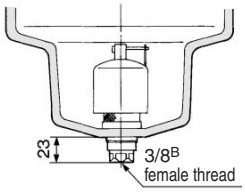
Model	Port size (Nominal size B)	A	B	C	D	E	F	G	Dimensions with mounting bracket												Element service indicator	
									H	I	J	K	L	M	N	O	P	Q	R	S	T	U
AFF2B	1/8, 1/4, 3/8	159	13	100	63	20	63	10	166	56	15	5	9	5.5	35	54	70	26	4.5	1.6	24	37
AFF4B	1/4, 3/8	172	13	113	76	20	76	10	187	66	20	8	12	6	40	66	84	28	5	2.0	27	37
	1/2	178	16	119	76	20	76	10	187	66	17	8	12	6	40	66	84	28	5	2.0	27	37
AFF8B	3/8, 1/2	204	16	145	90	20	90	10	218	80	22	8	14	7	50	80	100	34	5	2.3	32	37
	3/4	210	19	151	90	20	90	10	218	80	19	8	14	7	50	80	100	34	5	2.3	32	37
AFF11B	1/2, 3/4	225	19	166	106	20	106	10	241	90	25	10	14	9	55	88	110	50	9	3.2	37	37
	1	232	22	173	106	20	106	10	241	90	21	10	14	9	55	88	110	50	9	3.2	37	37
AFF22B	3/4, 1	259	22	200	122	20	122	10	277	100	30	10	16	9	65	102	130	60	10	4.5	39	37
AFF37B	1, 1 1/2	311	32	253	160	20	160	10	334	150	40	15	20	11	85	136	180	76	12	4.5	55	37

AFF75B Dimensions



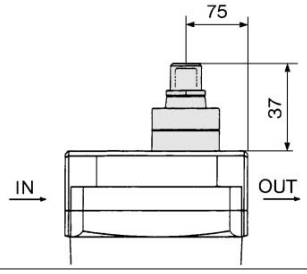
Accessory

D: With auto-drain (N.O.) for AFF75B



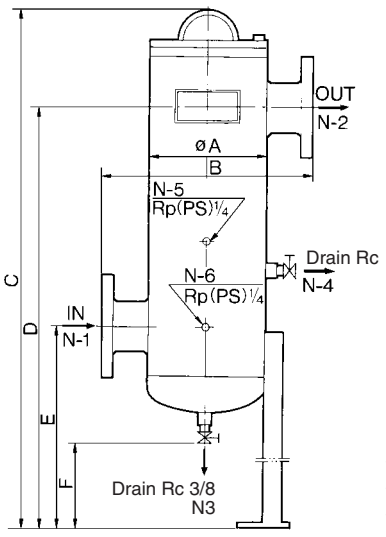
Option

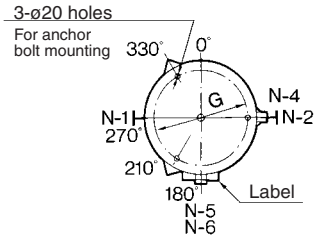
T: With element service indicator



Model	Port size (Nominal size B)	A	B	C	D	E	F	G	Dimensions with mounting bracket											
									H	I	J	K	L	M	N	O	P	Q	R	S
AFF75B	1½, 2	460.5	42	348	220	57.5	220	10	463.5	180	30	15	24	13	120	184	220	110	18	6.0

AFF75A to AFF220A/Dimensions





ORIENTATION

Model	Port size	øA	B	C	D	E	F	G
AFF75A	2BJIS10k flange	8^B	380	1125	935	505	265	184
AFF125A	3BJIS10k flange	8^B	380	1125	935	505	265	184
AFF150A	4BJIS10k flange	10^B	450	1178	980	540	265	236
AFF220A	4BJIS10k flange	12^B	500	1291	1070	670	325	282

Safety Instructions

These safety instructions are intended to prevent a hazardous situation and/or equipment damage. These instructions indicate the level of potential hazard by labels of **"Caution", "Warning"** or **"Danger"**. To ensure safety, be sure to observe ISO 4414 Note 1), JIS B 8370 Note 2) and other safety practices.

⚠ **Caution :** Operator error could result in injury or equipment damage.

⚠ **Warning :** Operator error could result in serious injury or loss of life.

⚠ **Danger :** In extreme conditions, there is a possible result of serious injury or loss of life.

Note 1) ISO 4414: Pneumatic fluid power--General rules relating to systems.
Note 2) JIS B 8370: General Rules for Pneumatic Equipment

⚠ Warning

1. The compatibility of pneumatic equipment is the responsibility of the person who designs the pneumatic system or decides its specifications.

Since the products specified here are used in various operating conditions, their compatibility for the specific pneumatic system must be based on specifications or after analysis and/or tests to meet your specific requirements. The expected performance and safety assurance will be the responsibility of the person who has determined the compatibility of the system. This person should continuously review the suitability of all items specified, referring to the latest catalog information with a view to giving due consideration to any possibility of equipment failure when configuring a system.

2. Only trained personnel should operate pneumatically operated machinery and equipment.

Compressed air can be dangerous if an operator is unfamiliar with it. Assembly, handling or repair of pneumatic systems should be performed by trained and experienced operators.

3. Do not service machinery/equipment or attempt to remove components until safety is confirmed.

1. Inspection and maintenance of machinery/equipment should only be performed once measures to prevent falling or runaway of the driver objects have been confirmed.
2. When equipment is to be removed, confirm the safety process as mentioned above. Cut the supply pressure for this equipment and exhaust all residual compressed air in the system.
3. Before machinery/equipment is restarted, take measures to prevent shooting-out of cylinder piston rod, etc.

4. Contact SMC if the product is to be used in any of the following conditions:

1. Conditions and environments beyond the given specifications, or if product is used outdoors.
2. Installation on equipment in conjunction with atomic energy, railway, air navigation, vehicles, medical equipment, food and beverages, recreation equipment, emergency stop circuits, clutch and brake circuits in press applications, or safety equipment.
3. An application which has the possibility of having negative effects on people, property, or animals, requiring special safety analysis.

Common Precautions

Be sure to read before handling.
For detailed precautions on every series, refer to main text.

Selection

⚠ Warning

1. Confirm the specifications.

Products represented in this catalog are designed for use in compressed air appllications only (including vacuum), unless otherwise indicated.
Do not use the product outside their design parameters.
Please contact SMC when using the products in applications other than compressed air (including vacuum).

Mounting

⚠ Warning

1. Instruction manual

Install the products and operate them only after reading the instruction manual carefully and understanding its contents. Also keep the manual where it can be referred to as necessary.

2. Securing the space for maintenance

When installing the products, please allow access for maintenance.

3. Tightening torque

When installing the products, please follow the listed torque specifications.

Piping

⚠ Caution

1. Before piping

Make sure that all debris, cutting oil, dust, etc, are removed from the piping.

2. Wrapping of pipe tape

When screwing piping or fittings into ports, ensure that chips from the pipe threads or sealing material do not get inside the piping. Also, when the pipe tape is used, leave 1.5 to 2 thread ridges exposed at the end of the threads.

Air Supply

⚠ Warning

1. Operating fluid

Please consult with SMC when using the product in applications other than compressed air (including vacuum).
Regarding products for general fluid, please ask SMC about applicable fluids.

2. Install an air dryer, aftercooler, etc.

Excessive condensate in a compressed air system may cause valves and other pneumatic equipment to malfunction.
Installation of an air dryer, after cooler etc. is recommended.

3. Drain flushing

If condensate in the drain bowl is not emptied on a regular basis, the bowl will over flow and allow the condensate to enter the compressed air lines.
If the drain bowl is difficult to check and remove, it is recommended that a drain bowl with the auto-drain option be installed.
For compressed air quality, refer to “Air Preparation Equipment” catalog.

4. Use clean air

If the compressed air supply is contaminated with chemicals, cynthetic materials, corrosive gas, etc., it may lead to break down or malfunction.

Operating Environment

⚠ Warning

1. Do not use in environments where the product is directly exposed to corrosive gases, chemicals, salt water, water or steam.

2. Do not expose the product to direct sunlight for an extended period of time.

3. Do not use in a place subject to heavy vibrations and/or shocks.

4. Do not mount the product in locations where it is exposed to radiant heat.

Maintenance

⚠ Warning

1. Maintenance procedures are outlined in the operation manual.

Not following proper procedures could cause the product to malfunction and could lead to damage to the equipment or machine.

2. Maintenance work

If handled improperly, compressed air can be dangerous.
Assembly, handling and repair of pneumatic systems should be performed by qualified personnel only.

3. Drain flushing

Remove drainage from air filters regularly. (Refer to the specifications.)

4. Shut-down before maintenance

Before attempting any kind of maintenance make sure the supply pressure is shut of and all residual air pressure is released from the system to be worked on.

5. Start-up after maintenance and inspection

Apply operating pressure and power to the equipment and check for proper operation and possible air leaks. If operation is abnormal, please verify product set-up parameters.

6. Do not make any modifications to be product.

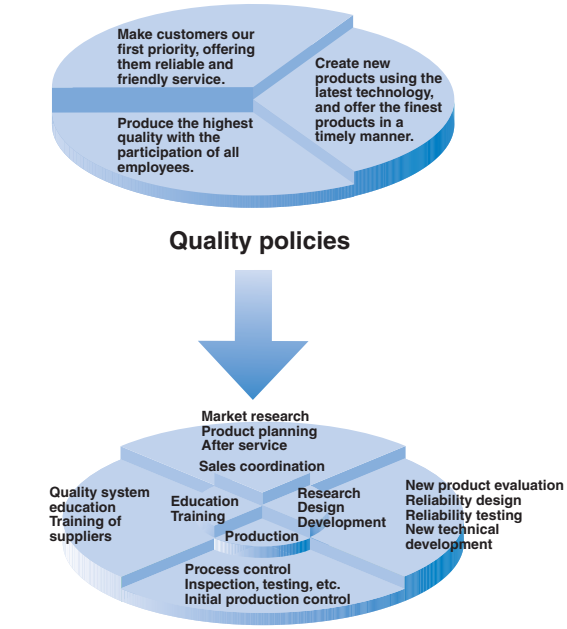
Do not take the product apart.

Quality Assurance Information (ISO 9001, ISO 14001)

Reliable quality of products in the global market

To enable our customers throughout the world to use our products with even greater confidence, SMC has obtained certification for international standards “ISO 9001” and “ISO 14001”, and created a complete structure for quality assurance and environmental controls. SMC products pursue to meet its customers’ expectations while also considering company’s contribution in society.

SMC’s quality control system



Quality management system

ISO 9001

This is an international standard for quality control and quality assurance. SMC has obtained a large number of certifications in Japan and overseas, providing assurance to our customers throughout the world.



Environmental management system

ISO 14001

This is an international standard related to environmental management systems and environmental inspections. While promoting environmentally friendly automation technology, SMC is also making diligent efforts to preserve the environment.



SMC Product Conforming to Inter

SMC products complying with EN/ISO, CSA/UL standards are supporting

CE Mark

The CE mark indicates that machines and components meet essential requirements of all the EC Directives applied.
It has been obligatory to apply CE marks indicating conformity with EC Directives when machines and components are exported to the member Nations of the EU.
Once “A manufacturer himself” declares a product to be safe by means of CE marking (declaration of conformity by manufacturer), free distribution inside the member Nations of the EU is permissible.

■ CE Mark

SMC provides CE marking to products to which EMC and Low Voltage Directives have been applied, in accordance with CETOP (European hydraulics and pneumatics committee) guide lines.

■ As of February 1998, the following 18 countries will be obliged to conform to CE mark legislation

Iceland, Ireland, United Kingdom, Italy, Austria, Netherlands, Greece, Liechtenstein, Sweden, Spain, Denmark, Germany, Norway, Finland, France, Belgium, Portugal, Luxembourg

■ EC Directives and Pneumatic Components

• Machinery Directive

The Machinery Directive contains essential health and safety requirements for machinery, as applied to industrial machines e.g. machine tools, injection molding machines and automatic machines. Pneumatic equipment is not specified in Machinery Directive. However, the use of SMC products that are certified as conforming to EN Standards, allows customers to simplify preparation work of the Technical Construction File required for a Declaration of Conformity.

• Electromagnetic Compatibility (EMC) Directive

The EMC Directive specifies electromagnetic compatibility. Equipment which may generate electromagnetic interference or whose function may be compromised by electromagnetic interference is required to be immune to electromagnetic affects (EMS/immunity) without emitting excessive electromagnetic affects (EMI/emission).

• Low Voltage Directive

This directive is applied to products, which operate above 50 VAC to 1000 VAC and 75 VDC to 1500 VDC operating voltage, and require electrical safety measures to be introduced.

• Simple Pressure Vessels Directive

This directive is applied to welded vessels whose maximum operating pressure (PS) and volume of vessel (V) exceed 50 bar/L. Such vessels require EC type examination and then CE marking.

national Standards

you to comply with EC directives and CSA/UL standards.

Mark of compliance for CSA/UL

Mark of compliance for CSA

NRTL /C

■ CSA Standards & UL Standards

UL and CSA standards have been applied in North America (U.S.A. and Canada) symbolizing safety of electric products, and are defined to mainly prevent danger from electric shock or fire, resulting from trouble with electric products. Both UL and CSA standards are acknowledged in North America as the first class certifying body. They have a long experience and ability for issuing product safety certificate. Products approved by CSA or UL standards are accepted in most states and governments beyond question.
Since CSA is a test certifying body as the National Recognized Testing Laboratory (NRTL) within the jurisdiction of Occupational Safety and Health Administration (OSHA), SMC was tested for compliance with CSA Standards and UL Standards at the same time and was approved for compliance with the two Standards. The above CSA NRTL/C logo is described on a product label in order to indicate that the product is approved by CSA and UL Standards.

■ TSSA (MCCR) Registration Products

TSSA is the regulation in Ontario State, Canada. The products that the operating pressure is more than 5 psi (0.03 MPa) and the piping size is bigger than 1 inch. fall into the scope of TSSA regulation.

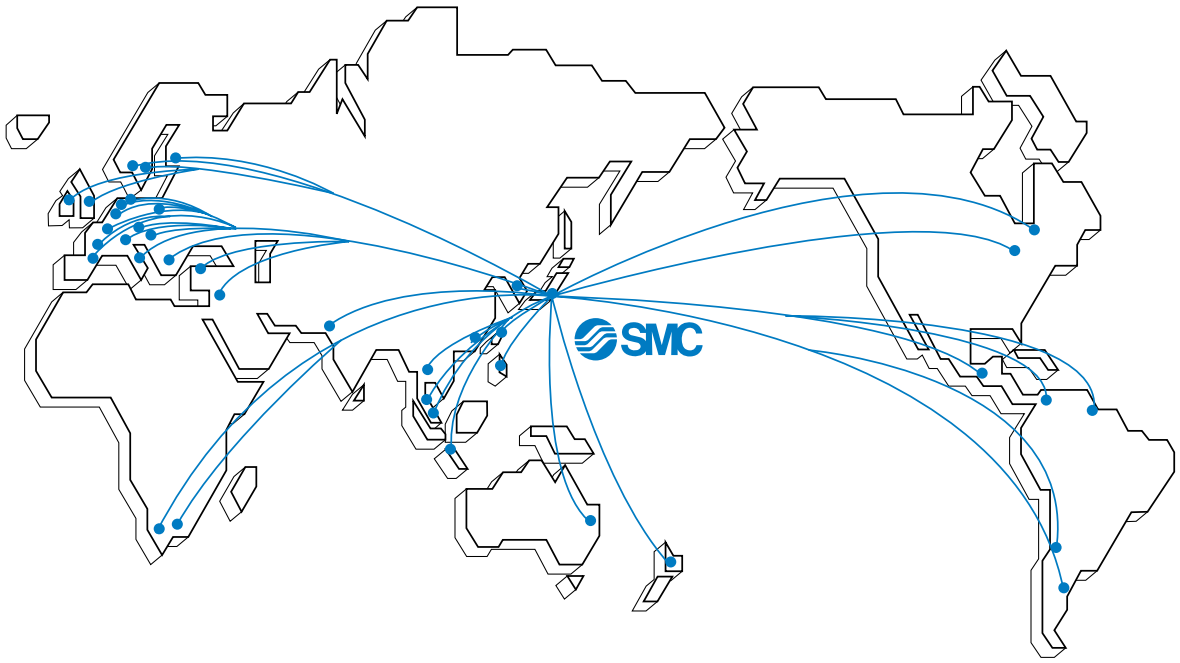
Products conforming to CE Standard

With CE symbol for simple visual recognition

In this catalog each accredited product series is indicated with a CE mark symbol. However, in some cases, every available models may not meet CE compliance. Please visit our web site for the latest selection of available models with CE mark.

http://www.smcworld.com

SMC's Global Service Network



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Main Line Filter
Series AFF

Can remove impurities such as oil, water and foreign matter in compressed air and can improve the function of a dryer in the downstream, extend the life of precision filter, and prevent trouble with the equipment.

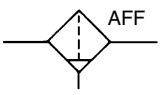
Modular connection is possible with AFF2C to 22C.
(For details, refer to page 61.)

AFF2C to 22C

AFF37B/75B

AFF75A to 220A

JIS Symbol



Made to Order
(For details, refer to page 67.)

⚠ Caution

Be sure to read this before handling.
Refer to back pages 1 and 2 for Safety Instructions, "Precautions for Handling Pneumatic Devices" (M-03-E3A) for Common Precautions, and back pages 3 through to 7 for Specific Product Precautions.

Model

Model	AFF2C	AFF4C	AFF8C	AFF11C	AFF22C	AFF37B	AFF75B	AFF75A	AFF125A	AFF150A	AFF220A
Rated flow Note) (ℓ/min (ANR))	300	750	1500	2200	3700	6000	12000	12000	22000	28000	42000
Port size	1/8, 1/4	1/4, 3/8	3/8, 1/2	1/2, 3/4	3/4, 1	1, 1 1/2	1 1/2, 2	50(2B)	80(3B)	100(4B)	100(4B)
								JIS 10K FF flange			
Mass (kg)	0.38	0.55	0.9	1.4	2.1	4.2	10.5	50	52	72	87

Note) Max. flow at 0.7 MPa.
Max. flow varies depending on the operating pressure.
Refer to "Flow Characteristics" (page 13) and "Maximum Air Flow" below.

Specifications

Fluid	Compressed air
Max. operating pressure	1.0 MPa
Min. operating pressure*	0.05 MPa
Proof pressure	1.5 MPa
Ambient and fluid temperature	5 to 60°C
Nominal filtration rating	3 μm (Filtration efficiency: 99%)
Element life	2 years (1 year for A type) or when pressure drop reached 0.1 MPa

* With auto drain: 0.1 MPa (N.O. type) or 0.15 MPa (N.C. type)

Accessory/For AFF2C to 22C, AFF37B/75B

Applicable model	AFF2C	AFF4C	AFF8C	AFF11C	AFF22C	AFF37B	AFF75B
Bracket assembly (with 2 mounting screws)	AM-BM101	AM-BM102	AM-BM103	AM-BM104	AM-BM105	BM56	BM57

Accessory/For AFF75A to 220A

Applicable model	AFF75A	AFF125A	AFF150A	AFF220A
Auto drain (2 pcs. each)	AD402-03-2			
Pressure gauge (2 pcs. each)	G46-15-02			
Companion flange (2 pcs. each)	50(2B)JIS 10K FF flange	80(3B)JIS 10K FF flange	100(4B)JIS 10K FF flange	
Anchor bolt (3 pcs. each)	AI-2S			

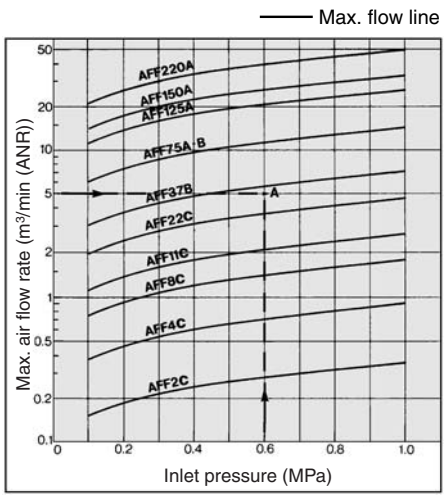
Model Selection

Select a model in accordance with the following procedure taking the inlet pressure and the max. air flow rate into consideration.
(Example) Inlet pressure: 0.6 MPa
Max. air flow rate: 5 m³/min (ANR)

1. Obtain the intersecting point A of inlet pressure and max. air flow rate in the graph.
2. The AFF37B is obtained when the max. flow line is above the intersecting point A in the graph.

Note) Make sure to select a model that has the max. flow line above the obtained intersecting point. With a model that has the max. flow line below the obtained intersecting point, the flow rate will be exceeded, thus leading to a problem such as being unable to satisfy the specifications.

Maximum Air Flow



How to Order

AFF2C to 22C

AFF 22C – □ 10 □ □ – □ – □

Body size

Symbol	Applicable compressor output (guide)
2C	2.2 kW
4C	3.7 kW
8C	7.5 kW
11C	11 kW
22C	22 kW

Thread type

Symbol	Type
Nil	Rc
F	G*1
N	NPT

*1 Conforms to ISO1179-1.

Port size

Symbol	Size	Applicable body size				
		2C	**4C**	**8C**	**11C**	**22C**
01	1/8	●				
02	1/4	●	●			
03	3/8		●	●		
04	1/2			●	●	
06	3/4				●	●
10	1					●

Accessory

Symbol	Description
Nil	—
B	Bracket *2

*2 Bracket is included, (but not assembled).

Made to Order

("How to Order" and the applicable models are different from those shown on this page. Be sure to refer to "Made to Order".)

Symbol	Description	Page for details
Nil	—	—
X6	With differential pressure gauge (GD40-2-01)	P.68
X15	With IN-OUT flange	P.69
X17	With differential pressure gauge (GD40-2-01) and IN-OUT flange	P.69
X26	N.C., N.O. auto drain, drain piping type	P.70

Option *3

Symbol	Description
Nil	—
F	Rubber material: Fluororubber
H	For medium air pressure (1.6 MPa)
J	Drain guide 1/4 female threaded *4
R	IN-OUT reversal direction
S	With differential pressure switch (125 VAC, 30 VDC) *5, Note)
U	With differential pressure switch (30 V) *5, Note)
T	With element service indicator
V	Degreasing wash,*6 white vaseline

*4 Drain piping and piping for a stop valve such as ball valve are required.
*5 Differential pressure gauge is included, (but not assembled).
*6 Only body/housing is degreasing washed.
Note) Order "U" if conformity to the EU directive is required.

Auto drain *3

Symbol	Description
Nil	Drain cock (Without auto-drain)
C	N.C. auto drain
D	N.O. auto drain

*3 Refer to "Auto Drain Specifications/Option Combinations".

Auto Drain Specifications/Option Combinations

◎: Available ■: Not available
○, △: Plural options cannot be selected.
(i.e. Combinations such as C-FV, D-FHV, J-ST are not possible.)

Symbol	**F**	**H**	**R**	**S**	**U**	**T**	**V**
Auto drain specifications **Nil**	◎	◎	◎	○	○	○	◎
C	△	■	◎	○	○	○	△
D	△	△	◎	○	○	○	△
J	◎	◎	◎	○	○	○	◎

Options

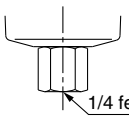
Symbol F: Rubber material: Fluororubber

Fluororubber is used for the parts such as O-ring and gasket.

Symbol H: For medium air pressure (1.6 MPa)

Can be used up to 1.6 MPa at maximum.

Symbol J: Drain guide 1/4 female threaded

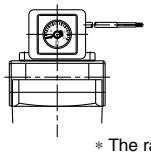


Can be pipied to the drain exhaust port.

Symbol R: IN-OUT reversal direction

Air flow in the separator is changed to right to left.
(Air flow direction of the standard: Left to right.)

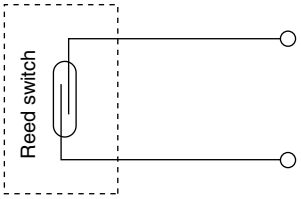
Symbol S: With differential pressure switch (with indicator)



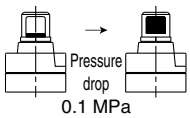
Saturation of the separator can be observed visually or by an electrical signal. (Element life check)

* The rated contact voltage is different from "U".

Max. contact capacity: 10 VA AC, 10 W DC
Rated contact voltage (max. operating current): 125 V AC (0.08 A), 30 V DC (0.33 A)

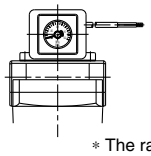


Symbol T: With element service indicator



Saturation of the separator can be observed visually. (Element life check)

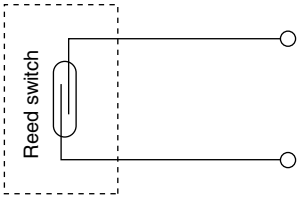
Symbol U: With differential pressure switch (with indicator)



Saturation of the separator can be observed visually or by an electrical signal. (Element life check)

* The rated contact voltage is different from "S".

Max. contact capacity: 10 W DC
Rated contact voltage (max. operating current): 30 V DC (0.33 A)



Symbol V: Degreasing wash, white vaseline

Body/housing is degreasing washed. The lubrication grease for O-ring and gasket is changed to white vaseline.

How to Order

AFF37B/75B

AFF 37B – □ 10 □ □ – □ – □

Body size

Symbol	Applicable compressor output (guide)
37B	37 kW
75B	75 kW

Thread type

Symbol	Type
Nil	Rc
F	G
N	NPT

Port size

Symbol	Size	Applicable body size	
		37B	**75B**
10	1	●	—
14	1 1/2	●	●
20	2	—	●

Accessory

Symbol	Description
Nil	—
B	Bracket *1

*1 Bracket is included, (but not assembled).

Auto drain *2

Symbol	Description
Nil	Drain cock (Without auto drain) *3
D	N.O. auto drain

*2 Refer to "Auto Drain Specifications/Option Combinations".

*3 Body size 75B is equipped with a ball valve (Rc3/8 female threaded). Mount a piping adapter IDF-AP609 (page 62) to the ball valve if NPT3/8 female threaded is required.

Option *2

Symbol	Description
Nil	—
J	Drain guide 1/4 female threaded *4
R	IN-OUT reversal direction
T	With element service indicator

*4 Drain piping and piping for a stop valve such as ball valve are required.

Made to Order

("How to Order" and the applicable models are different from those shown on this page. Be sure to refer to "Made to Order".)

Symbol	Description	Page for details
Nil	—	—
X6	With differential pressure gauge (GD40-2-01)	P.68
X37	With differential pressure switch (With indicator, 125 VAC, 30 VDC)	P.68
X15	With IN-OUT flange	P.69
X17	With differential pressure gauge (GD40-2-01) and IN-OUT flange	P.69
X26	N.C., N.O. auto drain, drain piping type	P.70
X12	White vaseline specifications	P.70

Note) Refer to "How to Order Bowl Assembly" on page 63.

Auto Drain Specifications/Option Combinations

◎: Available ■: Not available

Auto drain specifications/Option			Auto drain specifications	Option			Applicable model	
			D	**J**	**R**	**T**	**AFF37B**	**AFF75B**
Auto drain specifications	N.O. auto drain	**D**	■	■	◎	◎	◎	◎
Option	Drain guide 1/4	**J**	■	■	◎	◎	◎	■
	IN-OUT reversal direction	**R**	◎	◎	■	◎	◎	◎
	With element service indicator	**T**	◎	◎	◎	■	◎	◎

AFF75A to 220A

AFF 75A – 20 D □

Standard size (Applicable compressor)

Symbol	Compressor output
75A	75 kW
125A	110 to 125 kW
150A	150 kW
220A	180 to 220 kW

Port size

Symbol	Size	Applicable body size			
		75A	**125A**	**150A**	**220A**
20	50(2B) JIS 10K FF flange	●	—	—	—
30	80(3B) JIS 10K FF flange	—	●	—	—
40	100(4B) JIS 10K FF flange	—	—	●	●

Made to Order

("How to Order" and the applicable models are different from those shown on this page. Be sure to refer to "Made to Order".)

Symbol	Description	Page for details
Nil	—	—
X13	Mist separator for high flow rate (Nominal filtration rating: 0.3 μm)	P.71

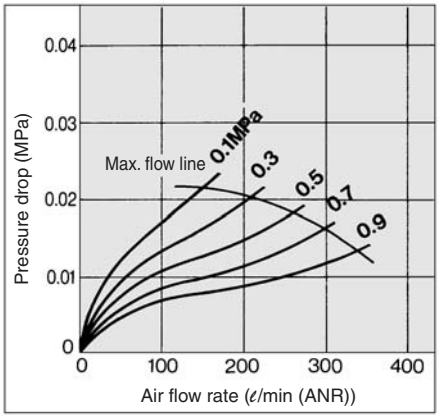
Accessory

Symbol	Description
Nil	—
D	Auto drain
G	Pressure gauge
F	Companion flange
L	Anchor bolt

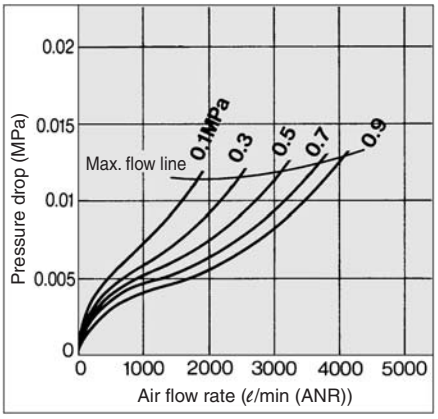
Flow Characteristics/Select the model taking the max. flow capacity into consideration. (Element oil saturation)

Note) Compressed air over max. flow line in the table below may not meet the specifications of the product.
It may cause damage to the element.

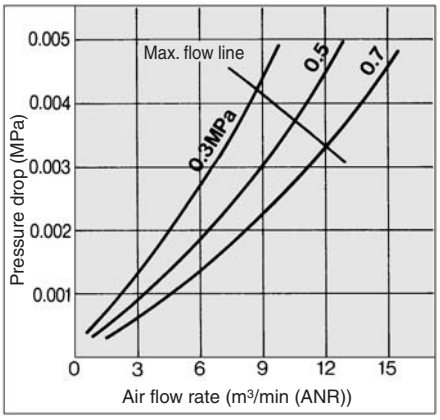
AFF2C



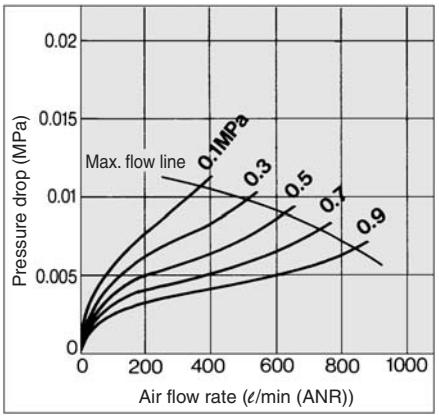
AFF22C



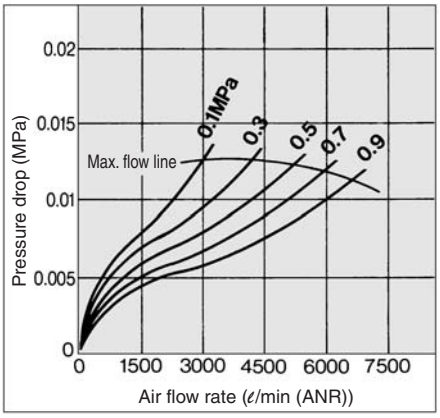
AFF75A



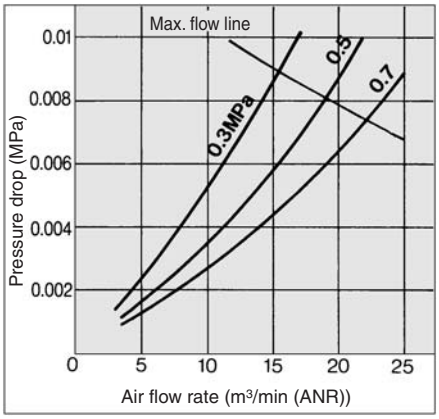
AFF4C



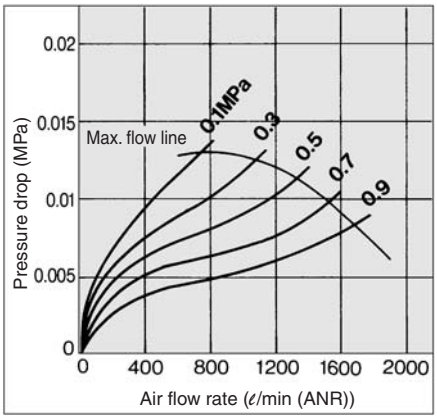
AFF37B



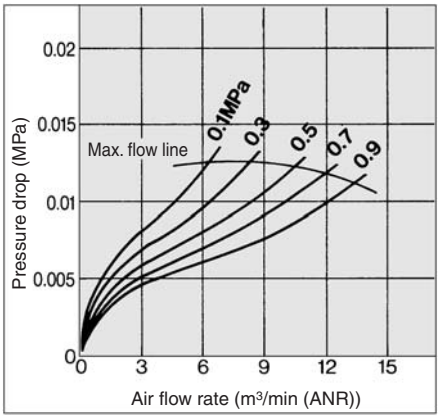
AFF125A



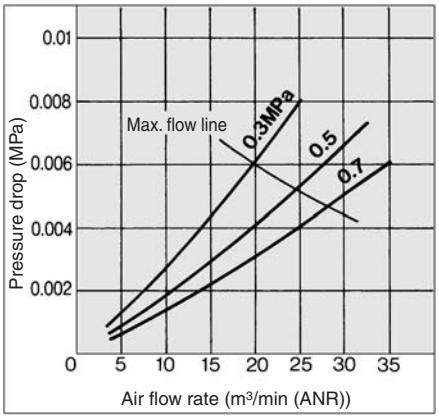
AFF8C



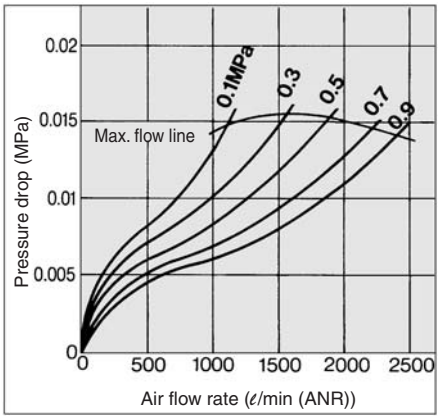
AFF75B



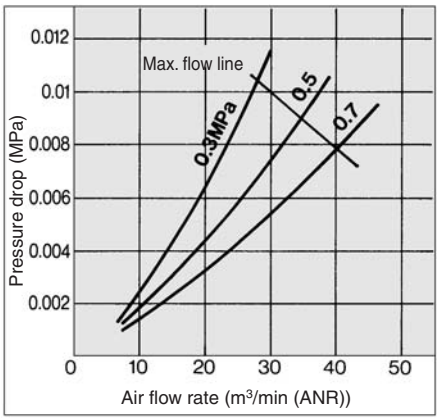
AFF150A



AFF11C

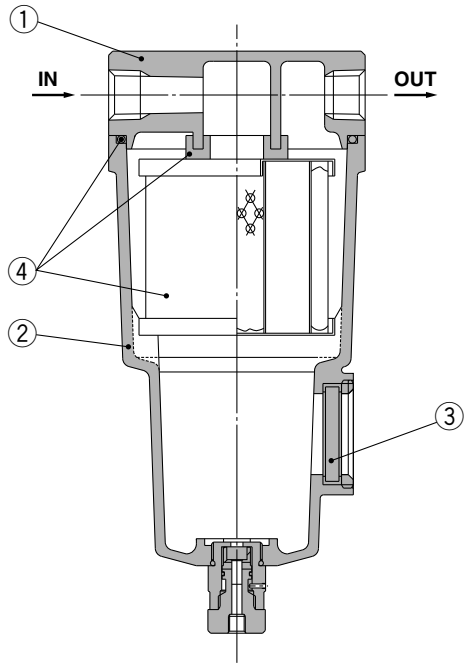


AFF220A

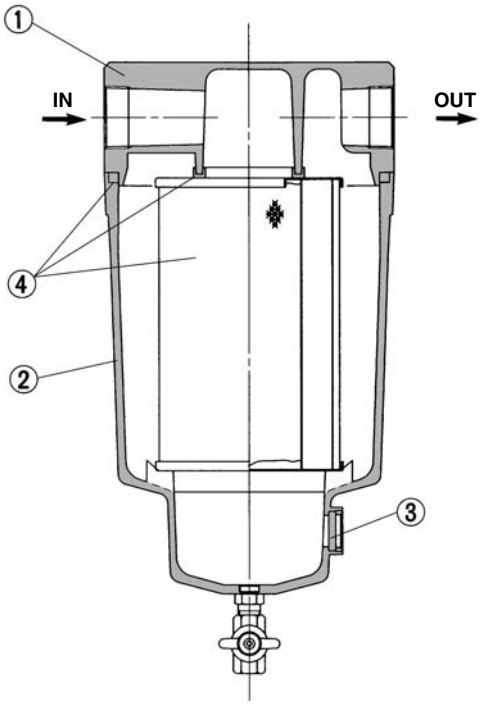


Construction

AFF2C to 22C, AFF37B



AFF75B



Component Parts

No.	Description	Material	Note
1	**Body**	Aluminum die-casted	Chrome treated
2	**Housing**	Aluminum die-casted*	Epoxy coating on inner surface
3	**Sight glass**	Tempered glass	—

∗ The AFF75B is aluminum casted.

Note) Refer to “How to Order Bowl Assembly” on page 63.

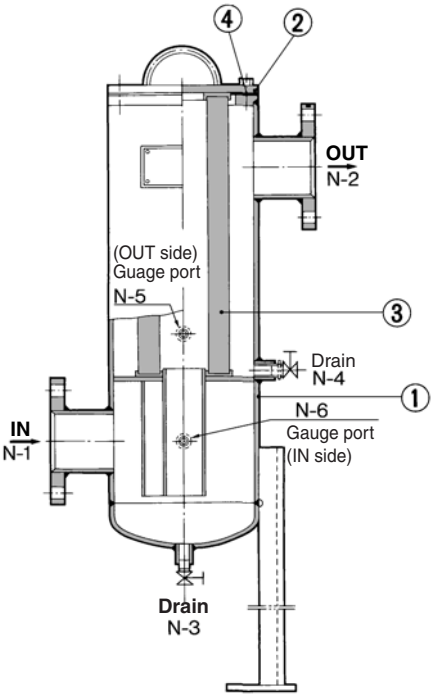
Note) Sight glass is indicated in the figure for easy understanding of component parts. However, it differs from the actual construction. Please refer to pages 15 through to 17 for details.

Replacement Parts

No.	Description	Material	Applicable model	Model						
				AFF2C	**AFF4C**	**AFF8C**	**AFF11C**	**AFF22C**	**AFF37B**	**AFF75B**
4	**Element assembly**	Cotton paper, others	Except option F	AFF-EL2B	AFF-EL4B	AFF-EL8B	AFF-EL11B	AFF-EL22B	AFF-EL37B	AFF-EL75B
			For option F	AFF-EL2B-F	AFF-EL4B-F	AFF-EL8B-F	AFF-EL11B-F	AFF-EL22B-F	—	—

∗ Element assembly: With gasket (1 pc.) and O-ring (1 pc.)
∗ Refer to back page 6 for replacement of auto drain.
∗ Element assemblies for Made to Order (X6, X12, X15, X17, X20, X26, X37) are same as those for standard (see the above table).

AFF75A to 220A



Component Parts

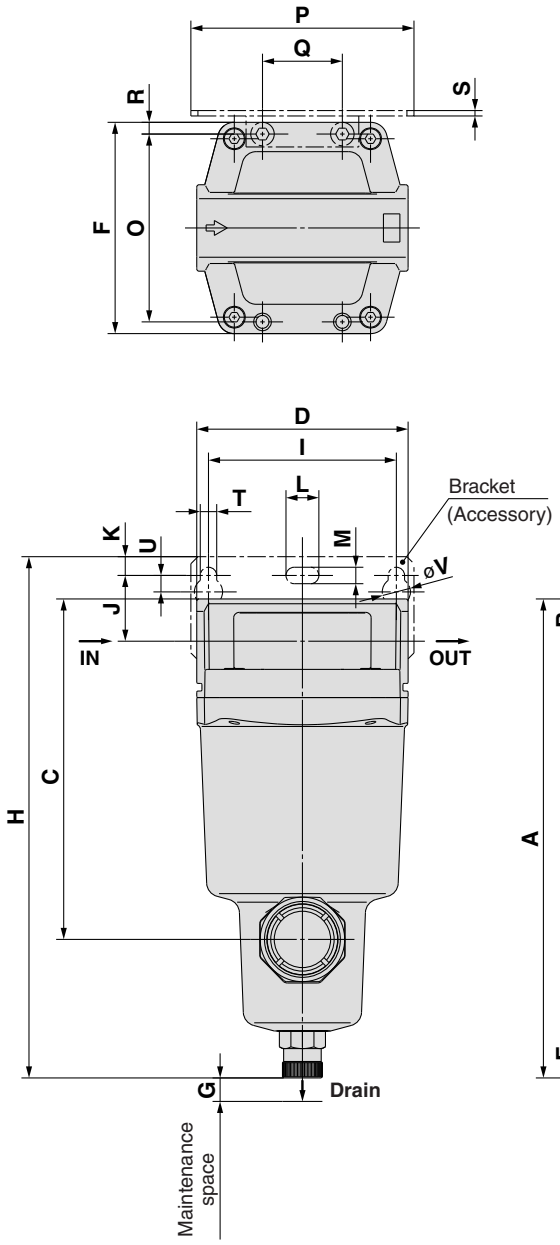
No.	Description	Material	Note
1	**Case**	SGP-E, SS400	
2	**Cover**	SS400	

Replacement Parts

No.	Description	Material	Qty.	Model			
				AFF75A	**AFF125A**	**AFF150A**	**AFF220A**
3	**Element**	—	1	EC700-003N		EC800-003N	EC900-003N
4	**Seal**	NBR	1	AL-33S		AL-34S	AL-35S

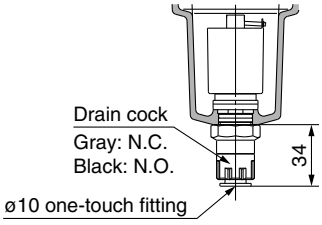
Dimensions

AFF2C to 22C

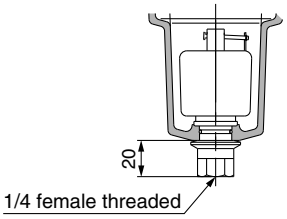


Auto drain

C: With auto drain (N.C.)
D: With auto drain (N.O.)

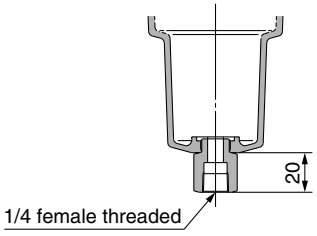


Combination of D: With auto drain (N.O.) and H: For medium air pressure

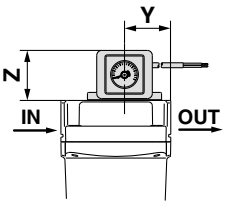


Option

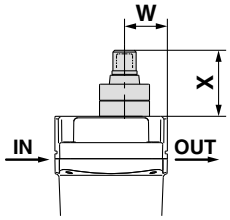
J: Drain guide 1/4 female threaded



S, U: With differential pressure switch (with indicator)



T: With element service indicator

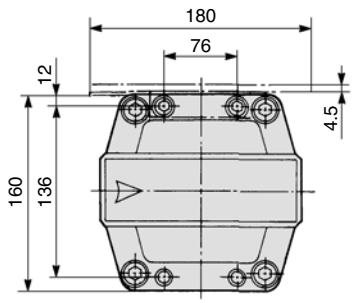


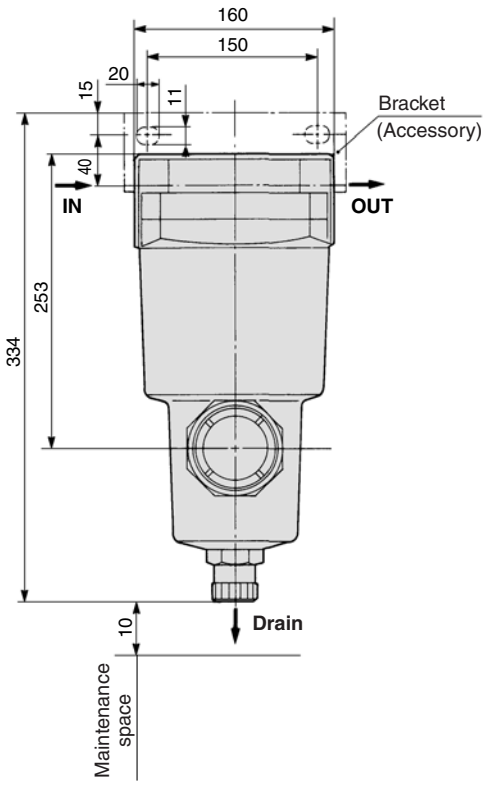
(mm)

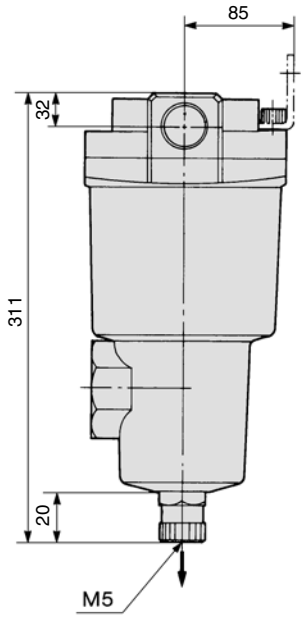
Model	Port size	A	B	C	D	E	F	G	Bracket related dimensions																Element service indicator related dimensions		Differential pressure switch related dimensions	
									H	I	J	K	T	U	L	M	V	N	O	P	Q	R	S	W	X	Y	Z
AFF2C	1/8, 1/4	158	10	99	63	20	63	10	173	56	20	5	6	6	12	6	10	35	54	70	26	4.5	1.6	24	37	32	41
AFF4C	1/4, 3/8	172	14	113	76	20	76	10	190	66	24	8	6	6	12	6	10	40	66	80	28	5	2	27	37	36	41
AFF8C	3/8, 1/2	204	18	145	90	20	90	10	222	80	28	8	7	7	14	7	12	50	80	95	34	5	2.3	32	37	42	41
AFF11C	1/2, 3/4	225	20	166	106	20	106	10	246	90	31	10	9	9	18	9	15	55	88	111	50	9	3.2	37	37	43	41
AFF22C	3/4, 1	259	24	200	122	20	122	15	278	100	33	10	9	9	18	9	15	65	102	126	60	10	3.2	39	37	51	41

Dimensions

AFF37B

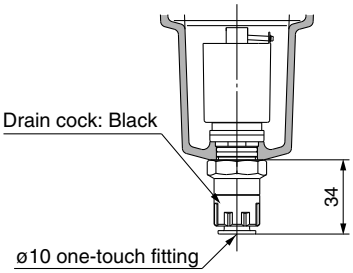






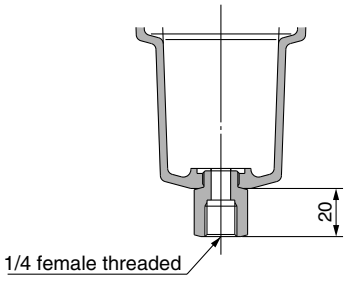
Auto drain

D: With auto drain (N.O.)

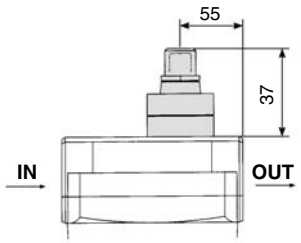


Option

J: Drain guide 1/4 female threaded

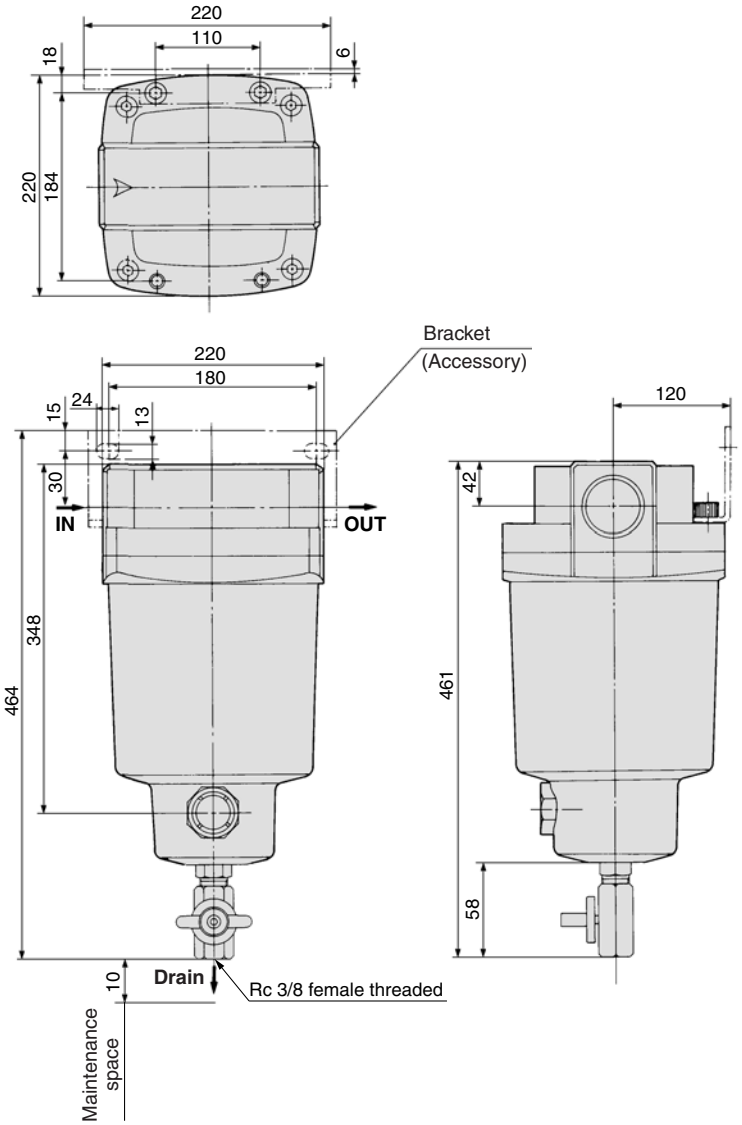


T: With element service indicator



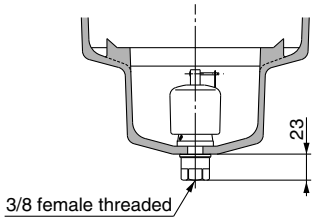
Dimensions

AFF75B



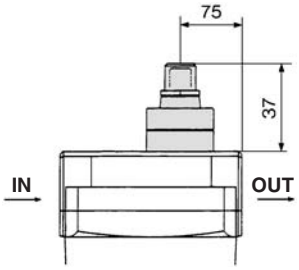
Auto drain

D: With auto drain (N.O.) for AFF75B

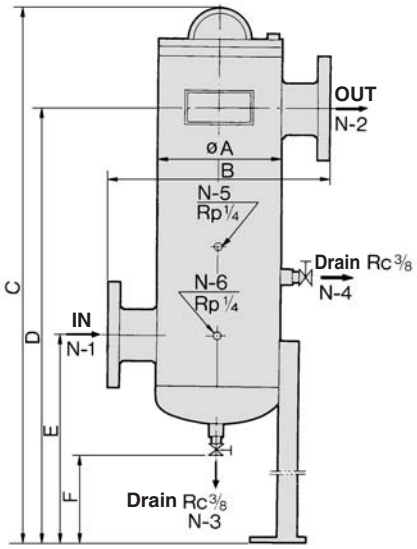


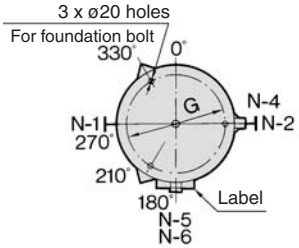
Option

T: With element service indicator



AFF75A to 220A





ORIENTATION

(mm)

Model	Port size	øA	B	C	D	E	F	G
AFF75A	50(2B)JIS10K FF flange	200 (8B)	380	1125	935	505	265	184
AFF125A	80(3B)JIS10K FF flange	200 (8B)	380	1125	935	505	265	184
AFF150A	100(4B)JIS10K FF flange	250 (10B)	450	1178	980	540	265	236
AFF220A	100(4B)JIS10K FF flange	300 (12B)	500	1291	1070	670	325	282

Spacer for Modular Connection

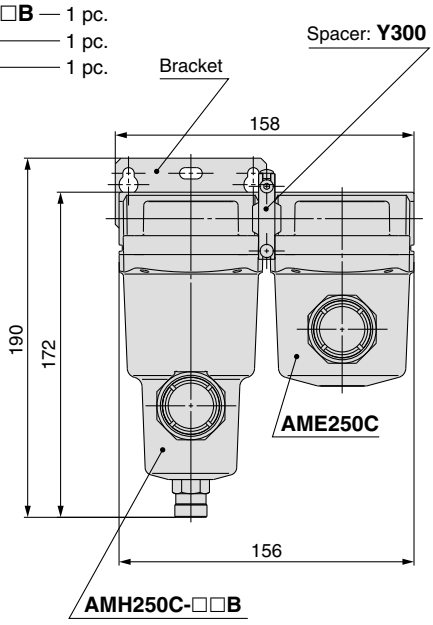
Select a spacer from those listed below when combining modular type AFF2C to 22C, AM□150C to 550C. The spacer must be ordered separately.
(Note: Spacer with bracket (Y200T to Y600T) cannot be used.)

⚠ Caution

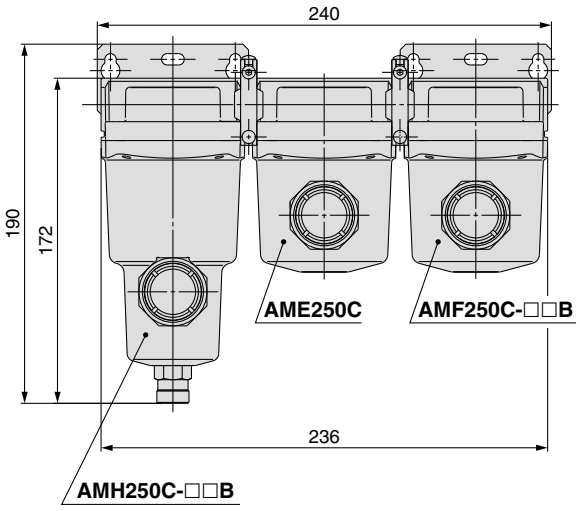
Modular connection
Mount the attached bracket on one side when connecting 2 sets.
Mount the attached brackets on both sides when connecting 3 sets or more.
As a guideline for the number of brackets, one bracket should be mounted for every 2 products.

Combination examples of modular applicable products

Arrangement example
AMH250C-□□B — 1 pc.
AME250C ——— 1 pc.
Y300 ——— 1 pc.



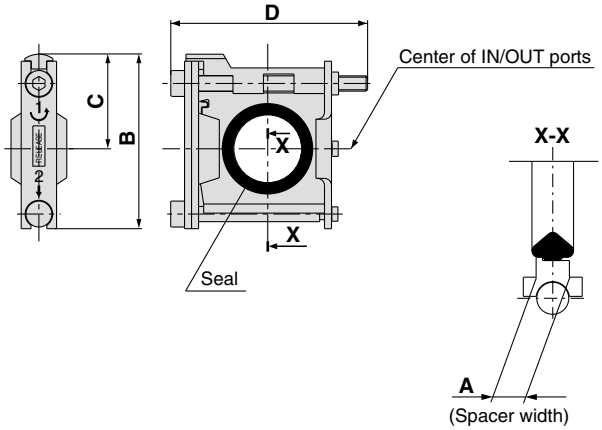
Arrangement example
AMH250C-□□B — 1 pc.
AME250C ——— 1 pc.
AMF250C-□□B — 1 pc.
Y300 ——— 2 pcs.



Spacer

Y200

Y400

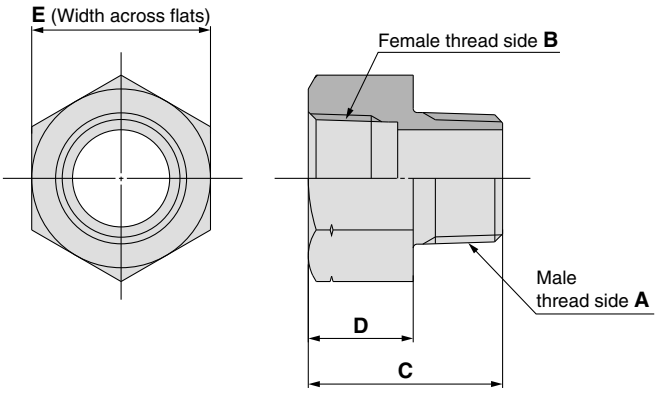


Model	A	B	C	D	Model
Y200	3	35.5	18.5	48	**AFF2C, AM□150C**
Y300	4	47	26	59	**AFF4C, AM□250C**
Y400	5	57	31	65	**AFF8C, AM□350C**
Y500	5	61	33	75	**AFF11C, AM□450C**
Y600	6	75.5	41	86	**AFF22C, AM□550C**

Replacement Parts

Description	Material	Part no.				
		Y200	**Y300**	**Y400**	**Y500**	**Y600**
Seal	HNBR	Y200P-061S	Y300P-060S	Y400P-060S	Y500P-060S	Y600P-060S

Piping Adapter



Dimensions (mm)

Part no.	Thread type and port size		C	D	E	Material
	Male thread side **A**	Female thread side **B**				
IDF-AP609	R 3/8	NPT 3/8	30	15	22	Brass

Bowl Assembly
AFF-CA□/AM□-CA□

Bowl Assembly

Bowl assembly for the AFF and AM□ series can be replaced without removing the main body from piping if the drain exhaust specification is to be changed from the drain cock type to the auto drain type or if the bowl has been damaged.

How to Order Bowl Assembly

■ AFF2C to 22C, AM, AMD, AMH, AMG150C to 550C

AM − CA [ ] − [ ][ ] − [ ]

Body size

150C
250C
350C
450C
550C

Drain exhaust

Symbol	Description
A	With drain cock
C	With N.C. auto drain
D	With N.O. auto drain
J	With drain guide Note 1)

Note 1) Drain piping and piping for a stop valve such as a ball valve are required.

Thread type Note 2)

Symbol	Type
Nil	Rc
F Note 3)	G
N	NPT

Note 2) Corresponded to the drain exhaust symbol C, D and J. Select according to the body thread type.

Note 3) Not corresponded to the drain exhaust symbol C and D. Select no symbol when the body thread symbol is F.

Option

Symbol	Description
Nil	—
F	Rubber material: Fluororubber
H	For medium air pressure (1.6 MPa)
V	Degreasing wash, white vaseline

Applicable Model

Bowl assembly model	Applicable model
AM-CA150C	AFF2C, AM150C, AMD150C, AMH150C, AMG150C
AM-CA250C	AFF4C, AM250C, AMD250C, AMH250C, AMG250C
AM-CA350C	AFF8C, AM350C, AMD350C, AMH350C, AMG350C
AM-CA450C	AFF11C, AM450C, AMD450C, AMH450C, AMG450C
AM-CA550C	AFF22C, AM550C, AMD550C, AMH550C, AMG550C

Auto Drain Specifications/ Option Combinations

◎: Available ■: Not available
△: Plural options cannot be selected. (i.e. Combinations such as C-FV, D-FHV are not possible.)

Symbol	F	H	V
A	◎	◎	◎
C	△	■	△
D	△	△	△
J	◎	◎	◎

■ AFF37B/75B

AFF − CA [37B] − [ ][ ]

Body size

37B
75B

Drain exhaust

Symbol	Description
A	With drain cock Note 1)
D	With N.O. auto drain
J	With drain guide Note 2)

Thread type Note 3)

Symbol	Type
Nil	Rc
F Note 4)	G
N	NPT

Note 3) Corresponded to the drain exhaust symbol D and J. Select according to the body thread type.

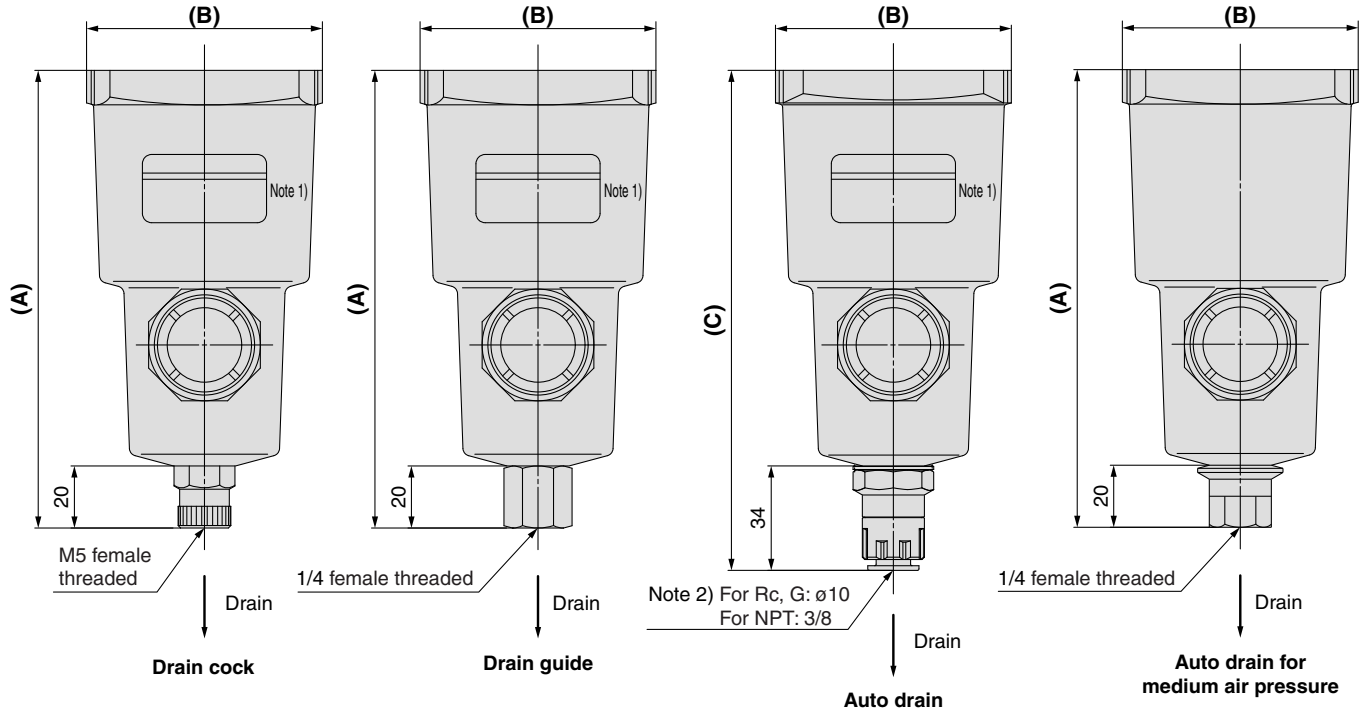
Note 4) Not corresponded to the drain exhaust symbol C and D. Select no symbol when the body thread symbol is F.

Note 1) Body size 75B is equipped with a ball valve (Rc3/8 female threaded). Mount a piping adapter IDF-AP609 (page 62) to the ball valve if NPT3/8 female threaded is required.

Note 2) Drain piping and piping for a stop valve such as a ball valve are required. For body size 75B, substitute with a ball valve. (symbol: A)

Dimensions: AFF, AM, AMD, AMH, AMG Series

Size: AFF2C to 22C, AFF37B, AM□150C to 550C, AM□650

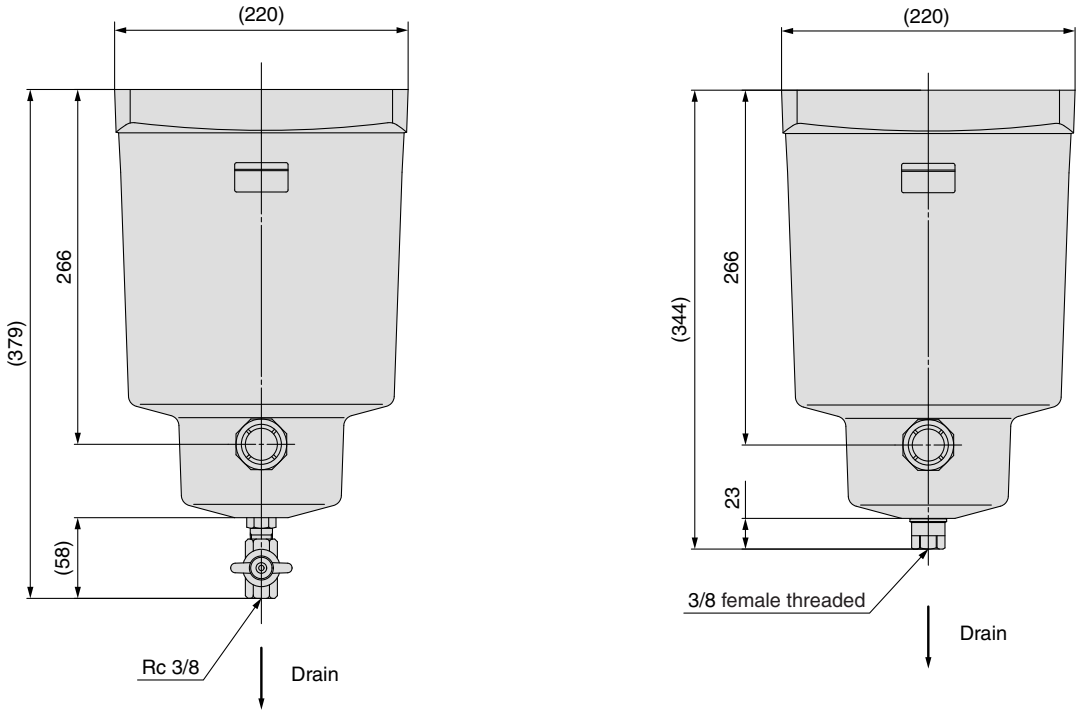


(mm)

AFF series Size	AM, AMD, AMG, AMH series Size	A	B	C
2C	**150C**	134	63	148
4C	**250C**	139	76	153
8C	**350C**	162	90	176
11C	**450C**	178	106	192
22C	**550C**	202	122	216
37B	**650**	245	160	259

Note 1) Model no. labels are not affixed to the AM-CA150C to 550C.
Note 2) Select according to the body thread type.
Applicable tubing size for one-touch fitting
Rc, G: ø10
NPT: ø3/8 inch

Size: AFF75B, AM□850



Compressed Air Cleaning Filter Series

Made to Order/Special Specifications

Please consult with SMC for detailed specifications, size and delivery.

Made to Order

Contents	Symbol	Applicable model							Reference page
		AFF	AM	AMD	AME	AMF	AMG	AMH	
1. With Differential Pressure Gauge (GD40-2-01)	X6	●	●	●	—	—	—	●	P.68
2. With Differential Pressure Switch (With Indicator)	X37	●	●	●	—	—	—	●	
3. With IN-OUT Flange	X15	●	●	●	—	—	●	●	P.69
4. With Pressure Differential Gauge (GD40-2-01), IN-OUT Flange	X17	●	●	●	—	—	—	●	
5. N.C., N.O. Auto Drain, Drain Piping Type	X26	●	●	●	—	—	●	●	P.70
6. White Vaseline Specifications	X12	●	●	●	●	●	●	●	
7. Mist Separator for High Flow Rate (0.3 μm)	X13	●	—	—	—	—	—	—	P.71

Special Specifications

Contents	Applicable model							Reference page
	AFF	AM	AMD	AME	AMF	AMG	AMH	
Clean Series (10-Series)	●	●	●	●	●	—	●	P.72
Copper-free, Fluorine-free (20-Series)	●	●	—	—	—	●	—	

Compressed Air Cleaning Filter Series

Made to Order 1

Made to Order

Please consult with SMC for detailed specifications, size and delivery.

1. With Differential Pressure Gauge (GD40-2-01)

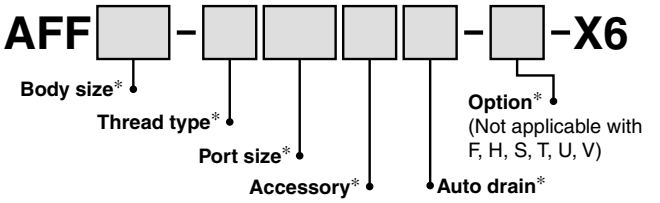
A differential pressure gauge that keeps track of the filter life is installed on the filter itself. This facilitates piping and achieves a compact design.

Specifications

Applicable model	AFF2C to 22C, 37B, 75B

How to Order

∗ Refer to "How to Order" for standard specifications.

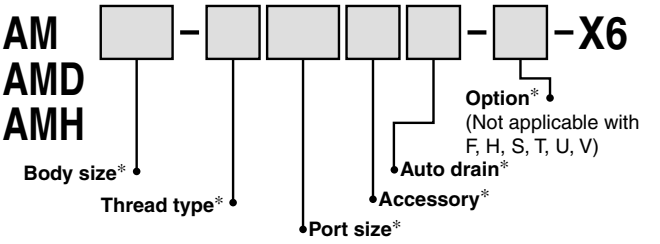


Specifications

Applicable model	AM150C to 550C, 650, 850, AMD150C to 550C, 650, 850, AMH150C to 550C, 650, 850

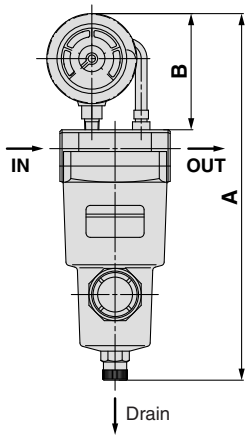
How to Order

∗ Refer to "How to Order" for standard specifications.



Note) • The AMG series is not applicable since water drops could ingress inside its differential pressure gauge, resulting in malfunction or damage to the product.
• Cannot be mounted to the AME and AMF series. (It affects the cleanliness at the outlet.)

Dimensions



(mm)

AFF series Size	AM, AMD, AMH series Size	Port size	A	B
2C	**150C**	1/8, 1/4	239	80
4C	**250C**	1/4, 3/8	252	80
8C	**350C**	3/8, 1/2	284	80
11C	**450C**	1/2, 3/4	305	80
22C	**550C**	3/4, 1	339	80
37B	**650**	1, 1 1/2	391	80
75B	**850**	1 1/2, 2	541	80

2. With Differential Pressure Switch (With indicator) (125 VAC, 30 VDC)

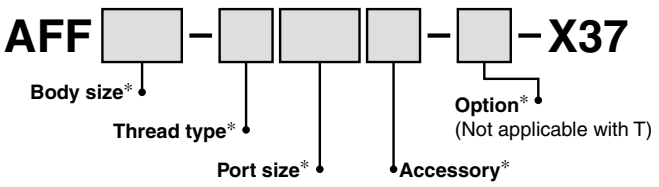
Allows visual confirmation of differential pressure which indicates the element life. The built-in contact enables remote control.

Specifications

Applicable model	AFF37B, 75B

How to Order

∗ Refer to "How to Order" for standard specifications.

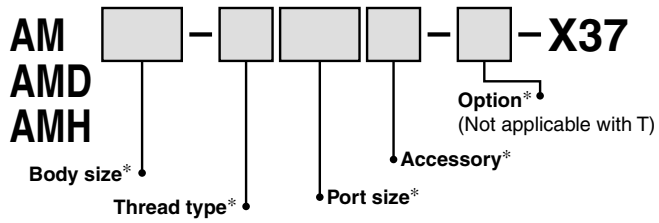


Specifications

Applicable model	AM650, 850, AMD650, 850, AMH650, 850

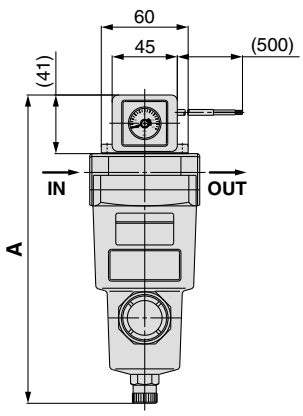
How to Order

∗ Refer to "How to Order" for standard specifications.



Note) • The AMG series is not applicable since water drops could ingress inside its differential pressure gauge, resulting in malfunction or damage to the product.

Dimensions



(mm)

AFF series Size	AM, AMD, AMH series Size	Port size	A
37B	**650**	1, 1 1/2	352
75B	**850**	1 1/2, 2	501

Compressed Air Cleaning Filter Series

Made to Order 2

Please consult with SMC for detailed specifications, size and delivery.

Made to Order

3. With IN-OUT Flange

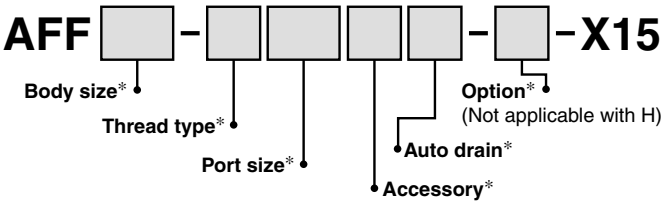
Makes flange piping easier when filter ports on IN and OUT are flange connection. (Flange material: Carbon steel)

Specifications

Applicable model	AFF11C, 22C, 37B, 75B

How to Order

∗ Refer to "How to Order" for standard specifications.

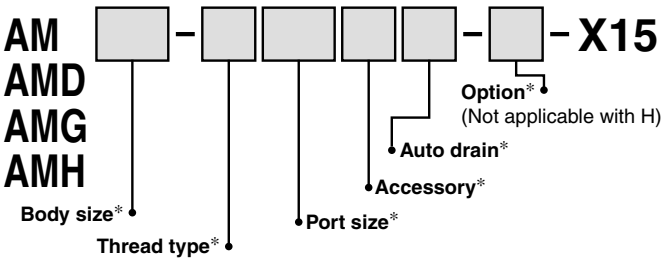


Specifications

Applicable model	AM450C, 550C, 650, 850, AMD450C, 550C, 650, 850, AMH450C, 550C, 650, 850, AMG450C, 550C, 650, 850

How to Order

∗ Refer to "How to Order" for standard specifications.



4. With Differential Pressure Gauge (GD40-2-01), IN-OUT Flange

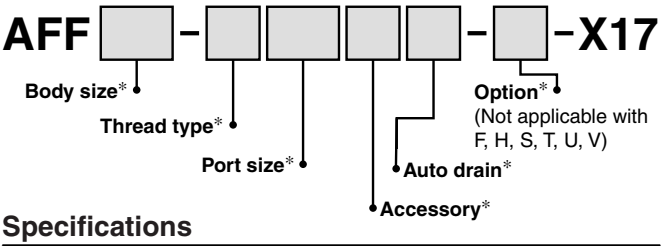
The differential pressure gauge is mounted on the main body to monitor the life of a filter by checking its clogging status. Ports on IN and OUT are flange connection type. (Flange material: Carbon steel)

Specifications

Applicable model	AFF11C, 22C, 37B, 75B

How to Order

∗ Refer to "How to Order" for standard specifications.

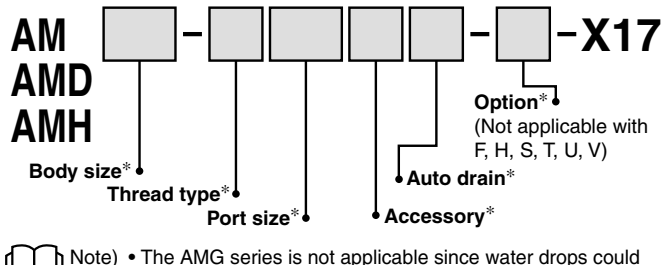


Specifications

Applicable model	AM450C, 550C, 650, 850, AMD450C, 550C, 650, 850, AMH450C, 550C, 650, 850

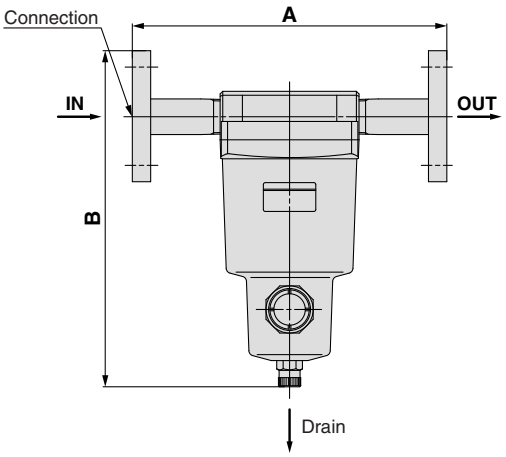
How to Order

∗ Refer to "How to Order" for standard specifications.



Note) • The AMG series is not applicable since water drops could ingress inside its differential pressure gauge, resulting in malfunction or damage to the product.

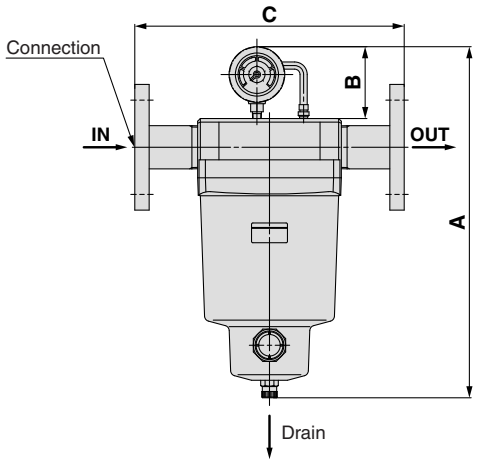
Dimensions



(mm)

AFF series Size	AM, AMD, AMG, AMH series Size	Connection	A	B
11C	450C	15(1/2B), 20(3/4B), 25(1B) JIS 10K FF flange	240	255
22C	550C	20(3/4B), 25(1B) JIS 10K FF flange	260	297
37B	650	25(1B), 40(1 ½B) JIS 10K FF flange	300	349
75B	850	40(1 ½B), 50(2B) JIS 10K FF flange	380	497

Dimensions



(mm)

AFF series Size	AM, AMD, AMH series Size	Connection	A	B	C
11C	450C	15(1/2B), 20(3/4B), 25(1B) JIS 10K FF flange	305	80	240
22C	550C	20(3/4B), 25(1B) JIS 10K FF flange	339		260
37B	650	25(1B), 40(1 ½B) JIS 10K FF flange	391		300
75B	850	40(1 ½B), 50(2B) JIS 10K FF flange	541		380

SMC

Made to Order 3

Made to Order

Please consult with SMC for detailed specifications, size and delivery.

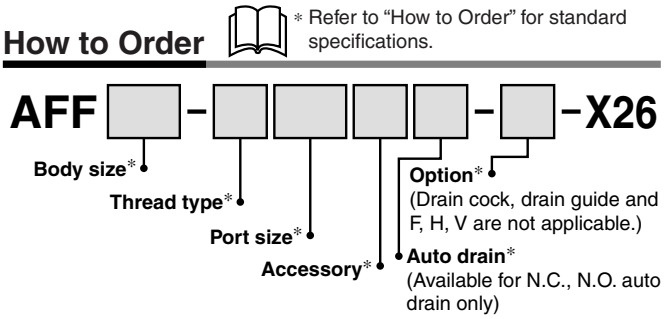
5. N.C., N.O. Auto Drain, Drain Piping Type

Drain piping type (drain guide specification) to the drain exhaust from N.C. auto drain and N.O. auto drain. N.C. type is not available for the AFF37B and AM□650.

Specifications

Applicable model	**AFF2C to 22C, 37B**

How to Order



∗ Refer to "How to Order" for standard specifications.

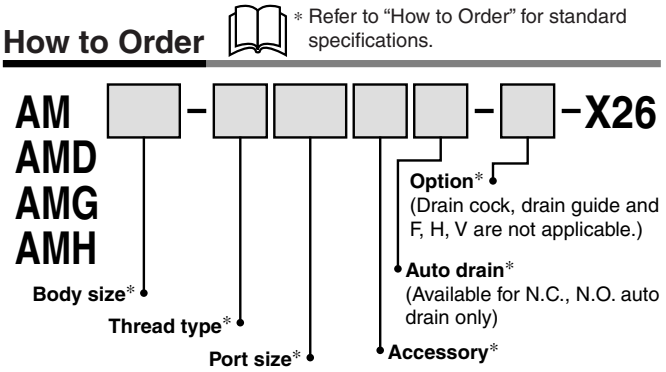
AFF □ – □ □ □ □ – □ **–X26**

- **Body size**∗
- **Thread type**∗
- **Port size**∗
- **Accessory**∗
- **Auto drain**∗ (Available for N.C., N.O. auto drain only)
- **Option**∗ (Drain cock, drain guide and F, H, V are not applicable.)

Specifications

Applicable model	**AM□150 to 650**

How to Order

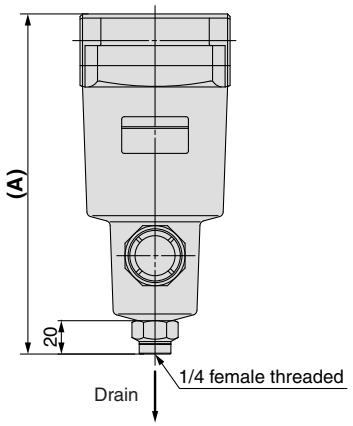


∗ Refer to "How to Order" for standard specifications.

AM
AMD
AMG
AMH
□ – □ □ □ □ – □ **–X26**

- **Body size**∗
- **Thread type**∗
- **Port size**∗
- **Accessory**∗
- **Auto drain**∗ (Available for N.C., N.O. auto drain only)
- **Option**∗ (Drain cock, drain guide and F, H, V are not applicable.)

Dimensions



(mm)

AFF series Size	AM, AMD, AMG, AMH series Size	Port size	A
2C	**150C**	1/8, 1/4	159
4C	**250C**	1/4, 3/8	172
8C	**350C**	3/8, 1/2	204
11C	**450C**	1/2, 3/4	225
22C	**550C**	3/4, 1	259
37B	**650**	1, 1½	311

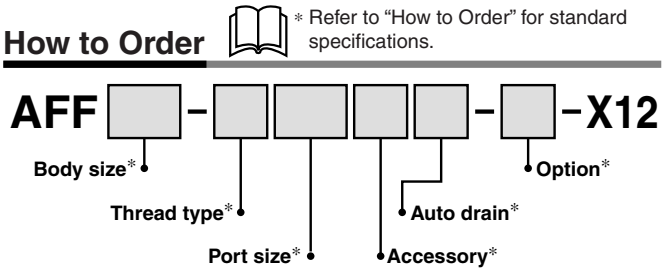
6. White Vaseline Specifications

Changed the grease for O-rings and gaskets as lubricant to white vaseline.

Specifications

Applicable model	**AFF37B, 75B**

How to Order



∗ Refer to "How to Order" for standard specifications.

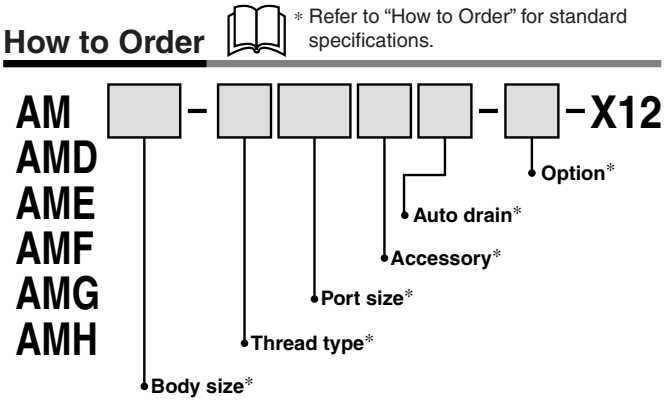
AFF □ – □ □ □ □ – □ **–X12**

- **Body size**∗
- **Thread type**∗
- **Port size**∗
- **Accessory**∗
- **Auto drain**∗
- **Option**∗

Specifications

Applicable model	**AM650, 850, AMD650, 850, AME650, 850, AMF650, 850, AMG650, 850, AMH650, 850**

How to Order



∗ Refer to "How to Order" for standard specifications.

AM
AMD
AME
AMF
AMG
AMH
□ – □ □ □ □ – □ **–X12**

- **Body size**∗
- **Thread type**∗
- **Port size**∗
- **Accessory**∗
- **Auto drain**∗
- **Option**∗

Made to Order 4

Please consult with SMC for detailed specifications, size and delivery.

7. Mist Separator for High Flow Rate (0.3 μm)

Use this product when the conventional mist separator (AM series) cannot dispose of a high flow rate. The specifications other than the nominal filtration rating are all equivalent to that of the AFF75A to 220A.

Specifications

Applicable model	**AFF75A to 220A**

How to Order

∗ Refer to "How to Order" for standard specifications.

AFF □ – □ □ X13

- **Standard size (Applicable compressor)**
- **Port size**
- **Accessory (Option)**

Compressed Air Cleaning Filter Series

Special Specifications

Please consult with SMC for detailed specifications, size and delivery.

Clean Series (10-Series)

Clean Series products are used in cleaner environments such as in clean rooms as compared to a general factory environment. For further details, refer to the Clean Series catalog.

Specifications

Applicable model	AFF2C to 22C, 37B, 75B

How to Order

∗ Refer to "How to Order" for standard specifications.

10−AFF □ − □ □ □ − J □

Body size∗ / Thread type∗ / Port size∗ / With drain guide Note 1) / Option Note 2) / Accessory Note)

Symbol	Description
Nil	—
B	Bracket

Option	
Nil	—
F	Rubber material: Fluororubber
H	For medium air pressure (1.6 MPa)
R	IN-OUT reversal direction
T	With element service indicator

Note 1) "10-" is not applicable to standard product (with drain cock) and with auto drain.

Note 2) Combination of FT is not available.
F and H are only applicable to the AFF2C to 22C.

Specifications

Applicable model	AM150C to 550C, 650, 850, AMD150C to 550C, 650, 850, AMH150C to 550C, 650, 850

10−AM / AMD / AMH □ − □ □ □ − J □

Body size∗ / Thread type∗ / Port size∗ / With drain guide Note 1) / Option Note 2) / Accessory Note)

Symbol	Description
Nil	—
B	Bracket

Option	
Nil	—
F	Rubber material: Fluororubber
H	For medium air pressure (1.6 MPa)
R	IN-OUT reversal direction
T	With element service indicator

Note 1) "10-" is not applicable to standard product (with drain cock) and with auto drain.

Note 2) Combination of FT is not available.
F and H are only applicable to the AM□150C to 550C.

Specifications

Applicable model	AME150C to 550C, 650, 850, AMF150C to 550C, 650, 850

10−AME / AMF □ − □ □ □ − □

Body size∗ / Thread type∗ / Port size∗ / Accessory / Option Note)

Symbol	Description
Nil	—
B	Bracket

Option	
Nil	—
F	Rubber material: Fluororubber
H	For medium air pressure (1.6 MPa)
R	IN-OUT reversal direction

Note) F and H are only applicable to the AME, AMF150C to 550C.

Copper-free, Fluorine-free (20-Series)

To eliminate effects on color CRTs, etc. by copper ion or fluorine resin, copper materials are electroless-nickel plated or changed to copper-free materials to prevent the generation of copper ions.
(It is not applicable to the AMD, AME, AMF and AMH series because those include fluorine resin in the filter material of the element.)

Specifications

Applicable model	AFF2C to 22C, 37B

How to Order

∗ Refer to "How to Order" for standard specifications.

20−AFF □ − □ □ □ C / D − □

Body size∗ / Thread type∗ / Port size∗ / Accessory / Note) / Option Note)

Symbol	Description
Nil	—
B	Bracket

Option	
Nil	—
R	IN-OUT reversal direction
T	With element service indicator

Note) "20-" is only applicable with N.C. auto drain (C) or N.O. auto drain (D). Drain cock and drain guide are copper-free, fluorine-free as standard.

Specifications

Applicable model	AFF75B

20−AFF75B− □ □ □ − □

Thread type∗ / Port size∗ / Accessory / Option

Symbol	Description
Nil	—
B	Bracket
D	N.O. auto drain

Option	
Nil	—
R	IN-OUT reversal direction
T	With element service indicator

Specifications

Applicable model	AM150C to 550C, 650, AMG150C to 550C, 650

20−AM / AMG □ − □ □ □ C / D − □

Body size∗ / Thread type∗ / Port size∗ / Accessory / Note) / Option Note)

Symbol	Description
Nil	—
B	Bracket

Option	
Nil	—
R	IN-OUT reversal direction
T	With element service indicator

Note) "20-" is only applicable with N.C. auto drain (C) or N.O. auto drain (D). Drain cock and drain guide are copper-free, fluorine-free as standard.

Specifications

Applicable model	AM850, AMG850

20−AM / AMG 850− □ □ □ − □

Thread type∗ / Port size∗ / Accessory / Option

Symbol	Description
Nil	—
B	Bracket
D	N.O. auto drain

Option	
Nil	—
R	IN-OUT reversal direction
T	With element service indicator

Related Products:
Auto Drain Valve
Series AD402/600

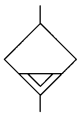
Drain is automatically discharged in a reliable manner, without requiring human operators.

Highly resistant to dust and corrosion, operates reliably, and a bowl guard is provided as standard equipment.

AD402

AD600

JIS Symbol



Model/Specifications

Model	AD402	AD600
Proof pressure	1.5 MPa	1.5 MPa
Max. operating pressure	1.0 MPa	1.0 MPa
Operating pressure range Note)	0.1 to 1.0 MPa	0.3 to 1.0 MPa
Ambient and fluid temperature	–5 to 60°C (No freezing)	–5 to 60°C (No freezing)
Port size	1/4, 3/8, 1/2	3/4, 1
Drain port size	3/8	3/4, 1
Mass (g)	620	2100

Note) 400 ℓ/min (ANR) or more

⚠ Specific Product Precautions

Be sure to read this before handling.
Refer to back pages 1 and 2 for Safety Instructions, "Precautions for Handling Pneumatic Devices" (M-03-E3A) for Common Precautions.

Selection

⚠Warning

Use the auto drain under the following operating conditions in order to prevent malfunction.

1) Operate the compressor above 3.7 kw {400 ℓ/min (ANR)}.
2) Use the AD402 at an operating pressure above 0.1 MPa and AD600 above 0.3 MPa.

Piping

⚠Warning

Piping should be done under the following conditions in order to prevent malfunction.
For drain piping, use a pipe whose I.D. is not less than ø10 and length not more than 5 m.
Avoid riser piping.

How to Order

AD402 – □ 03 – □

Thread type

Nil	Rc
N	NPT
F	G

Option

Nil	—
2	Metal bowl

Port size

Symbol	IN	OUT
02	1/4	3/8
03	3/8	3/8
04	1/2	3/8

AD600 – □ 06

Thread type

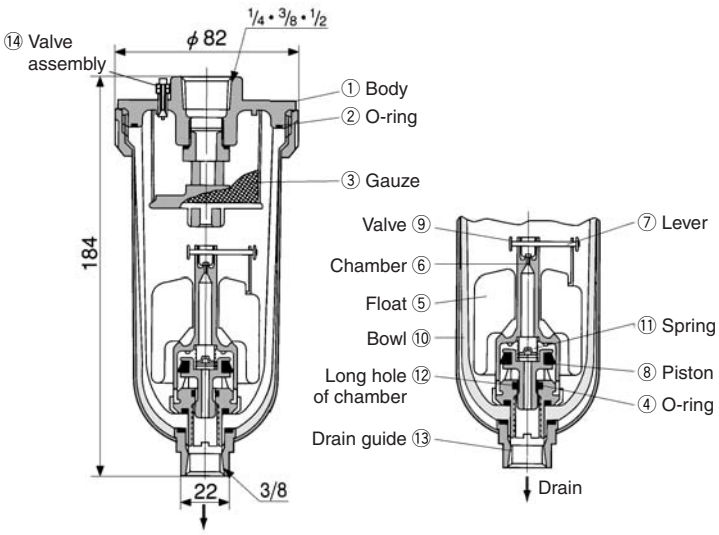
Nil	Rc
N	NPT
F	G

Port size

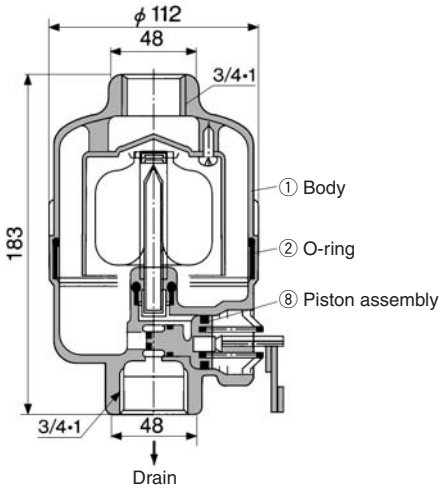
Symbol	IN	OUT
06	3/4	3/4
10	1	1

Construction/Dimensions

AD402



AD600



Working Principle (AD402)

- When no pressure is applied inside the bowl ⑩, float ⑤ descends of its own weight and valve ⑨ closes the chamber ⑥ hole. Piston ⑧ is pushed down by spring ⑪, and drain passes through the chamber's long hole ⑫ to enter the housing and is discharged.
- When pressure is applied inside the bowl:
  When pressure is 0.1 MPa or more, it overcomes the force of spring ⑪, allowing the piston ⑧ to ascend, and comes in contact with O-ring ④. Thus, the inside of the bowl ⑩ is isolated from the outside.
- When drain has accumulated:
  Float ⑤ ascends due to flotation and opens the chamber hole ⑥, allowing the pressure to enter the chamber ⑥. Piston ⑧ descends due to internal pressure and the force of spring ⑪, and the accumulated drain is discharged through drain guide ⑬.

Component Parts

No.	Description	Material
1	**Body**	Aluminum die-casted

Replacement Parts

No.	Description	Material	Model	
			AD402	**AD600**
2	**O-ring**	NBR	113136	JIS B2401G-100
3	**Gauze**	Stainless steel	20062	—
Note 1)	**Internal assembly**	—	AD34PA	—
8	**Piston assembly**	—	—	20025A

Note 1) Internal assembly: Assembly for parts ④ to ⑫ except ⑩.
Note 2) Part no. for bowl assembly: AD34
Note 3) Part no. for bowl ⑩: 201016

Related Products:
Motor Operated Auto Drain
Series ADM200

Reliably discharges even highly viscous drain
- **Highly resistant to dust and highly viscous drain, the valve opens and closes reliably to discharge the drain.**

High drain discharge capacity
- **With a large discharge port, a large amount of drain can be discharged in a single operation.**
- **Elimination of residual drain inside the tank and pipes prevents the generation of foreign matter such as dried rust or drain, which could adversely affect the equipment located on the outlet side.**

Low power consumption: 4 W
- **A long pipe can also be connected to the discharge port.**
- **Can be connected directly to a compressor.**

Model/Specifications

Model		ADM200-□□-□
	Fluid	Air
	Max. operating pressure	1.0 MPa
	Proof pressure	1.5 MPa
	Ambient and fluid temperature	–5 to 60°C (No freezing)
	Operating cycle*	1 time in a minute (Standard)
	Operating time	2 sec./time (Standard)
	Power source	100, 200 VAC 50/60 Hz, Other
	Power consumption	4 W
	Port size	IN: 3/8, 1/2
		OUT: 3/8
	Mass	550 g

* If the operating cycle is twice in a minute (operating time 2 sec. x 2) operating time is 4 sec. each minute.

⚠ Specific Product Precautions

Be sure to read before handling.
Refer to back pages 1 and 2 for Safety Instructions, "Precautions for Handling Pneumatic Devices" (M-03-E3A) for Common Precautions.

Mounting

⚠Warning

1. Install this product after discharging the drainage that has already accumulated in the tank. Otherwise, it could lead to malfunction.
2. Install this product, so that the drain port could face downwards. Otherwise, it could lead to malfunction.

⚠Caution

Provide a stop valve before the ADM200 to facilitate maintenance and inspection.

Piping

⚠Warning

Piping should be done under the following conditions in order to prevent malfunction.
For drain piping, use a pipe whose I.D. is not less than ø5 and length not more than 5 m. Avoid riser piping.

Maintenance

⚠Caution

If the valve becomes clogged with debris, press the manual button to flush out the debris. Otherwise, it could lead to malfunction.

How to Order

ADM200 – [ ] [03] [1] – [ ]

Thread type

Nil	Rc
N	NPT
F	G

Port size

Symbol	IN	OUT
03	3/8	3/8
04	1/2	3/8

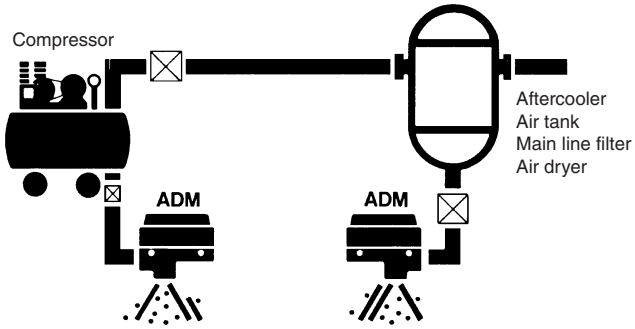
Voltage

1	100 VAC 50/60 Hz
2	200 VAC 50/60 Hz
3	240 VAC 50/60 Hz
4	110 VAC 50/60 Hz
5	220 VAC 50/60 Hz
6	24 VDC
7	12 VDC

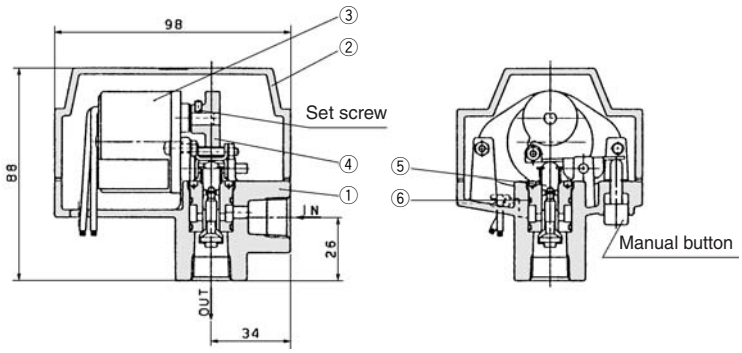
Operating time/Applicable compressor

Nil	2 sec/min (1 time/min) /3.7 to 37 kW
4	4 sec/min (2 times/min) /37 to 75 kW
6	6 sec/min (3 times/min) /75 to 110 kW
8	8 sec/min (4 times/min) /220 to 370 kW

Mounting Example



Construction/Dimensions



Component Parts

No.	Description	Material	Note
1	**Body**	Aluminum die-casted	Chrome treated
2	**Cap**	Aluminum die-casted	Chrome treated

Replacement Parts

No.	Description	Material	Part no.
3 Note)	**Motor**	—	812PG-voltage
4	**Cam**	Cast steel	Operating time 201324 (Nil) 201325 (4) 201326 (6) 201327 (8)
5	**Valve assembly**	Brass, NBR	20137-1A
6	**O-ring**	NBR	S-16

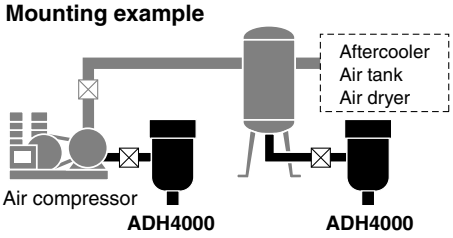
Note) Motor part no. in the case of 100 VAC: 812PG-AC100V

Related Products:
Heavy Duty Auto Drain
Series ADH4000

Easy maintenance
Can maintain without removing the existing piping.

No need for electric power and no waste of air.
Float type auto drain allows automatic drain discharge without electric power.

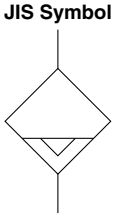
Mounting example



Ball valve piping set

Bracket set

JIS Symbol



Specifications

Auto drain type	Float type
Auto drain valve type	N.O. (Normally open: Open in the case of pressure loss)
Proof pressure	2.5 MPa
Max. operating pressure	1.6 MPa
Operating pressure range Note)	0.05 to 1.6 MPa
Fluid	Compressed air
Ambient and fluid temperature	5 to 60°C (With no condensation) <Corrosive gas, flammable gas and organic solvents are not allowed.>
Max. drain discharge	400 cc/min (Pressure 0.7 MPa, in the case of water)
Mass	1.2 kg (With bracket: 1.3 kg)
Paint color	White

Note) Use for an air compressor with flow more than 50 ℓ/min (ANR).

Accessory (Option)

Description	Part no.	Contents
Bracket set	BM58	Bracket ····· 1 pc. M6 x 10 ℓ (Hexagon socket head cap screw) ··· 2 pcs.
Ball valve piping set	ADH-C400	Ball valve/Rc 1/2 ····· 1 pc. Barrel nipple/R 1/2 ····· 2 pcs. Elbow/Rc 1/2 ····· 1 pc.

Note) Accessory (Option) is included, but not assembled.

How to Order

ADH 4000 – □ 04 □

Heavy duty auto drain

Standard size

Thread type

Nil	Rc
F	G
N	NPT

Thread type

04	1/2 (Female threaded)

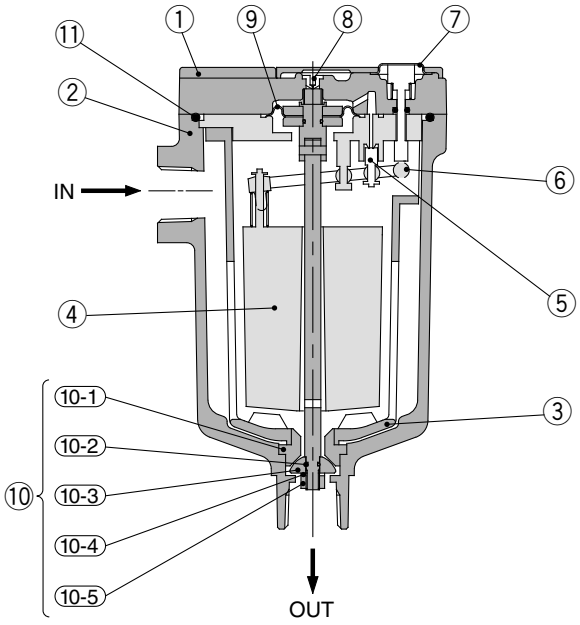
Accessory (Option)*

Symbol	Contents	Note
Nil	None (Standard)	—
B	Bracket set	—
C	Ball valve piping set	Not available for G/NPT threads.

* **Notes**

1) When more than one option is desired, enter in alphabetical order.
2) Accessory is not assembled.
3) Refer to each drawing of dimensions and mounting methods for details.

Construction



Component Parts

No.	Description	Material	Note
1	**Body**	Aluminum alloy	Baking finish
2	**Housing**	Aluminum alloy	Baking finish
3	**Drain guard**	Aluminum alloy	Baking finish
4	**Float**	Foam rubber	
5	**Pilot valve**	Stainless steel + Rubber	
6	**Lever**	Resin	
7	**Flushing button**	Brass	
8	**Orifice**		
9	**Diaphragm**	Rubber	

Replacement Parts

No.	Description	Part no.	Note
10	**Repair kit for main valve**	ADH-D400	Kit includes parts from (10-1) to (10-5)
11	**O-ring**	G85(B)	Material: NBR

Note) When changing parts, follow the operating manual.
Do not disassemble other parts.

⚠Specific Product Precautions

Be sure to read this before handling. Refer to back pages 1 and 2 for Safety Instructions, "Precautions for Handling Pneumatic Devices" (M-03-E3A) for Common Precautions.

Design

⚠Caution

1. **Use this product in an area where the air pressure does not exceed 1.6 MPa.**
   If exceeding 1.6 MPa, it could lead to an accident or malfunction.
2. **An air pressure of 0.05 MPa and an air compressor's discharge flow rates higher than 50 ℓ/min (ANR) are required.**
   Below these values, the air will be exhausted continuously from the drain exhaust port.
3. Keep the compressed air and the ambient temperature of the location where this product is installed within the range of 5 to 60°C. Exceeding this range could lead to a failure or malfunction.
4. **Avoid using this product in an area where corrosive gases, flammable gases or organic solvents are contained in the compressed air or in the surrounding air.**

Selection

⚠Caution

1. **The maximum dischargeable drainage rate is 400 cc/min.**
   If using this product in excess of this value, there could be causing the drain to flow over to the outlet side.

Piping

⚠Caution

1. **Use piping of 1/2B or larger for drain inlet and avoid riser piping.**
2. For drain piping, use a pipe whose I.D. is not less than 8 mm and length not more than 10 m. Do not make any upward angles in drain line. Be sure to secure exhaust port piping since drain is under pressure.

Mounting

⚠Caution

1. **Install with "out port" down in a vertical position.**
   Inclination from the vertical line should be less than 5°.
2. **Install with at least 200 mm of free space above the unit to allow for maintenance.**
3. To place this product near the air compressor, install in such a way that the vibrations will not be transmitted.
4. **Install a valve to drain inlet so that maintenance is possible.**
   Use a ball valve with a bore size of more than 15 mm. (Ball valve piping set is available as an accessory (option).)

Mounting

⚠Caution

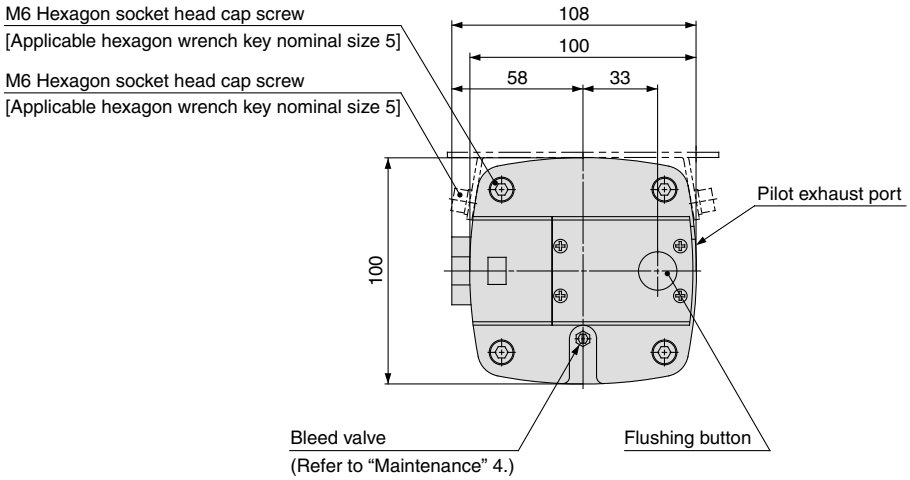
5. When not draining sufficiently, open the bleed valve so that drain could run through easily.

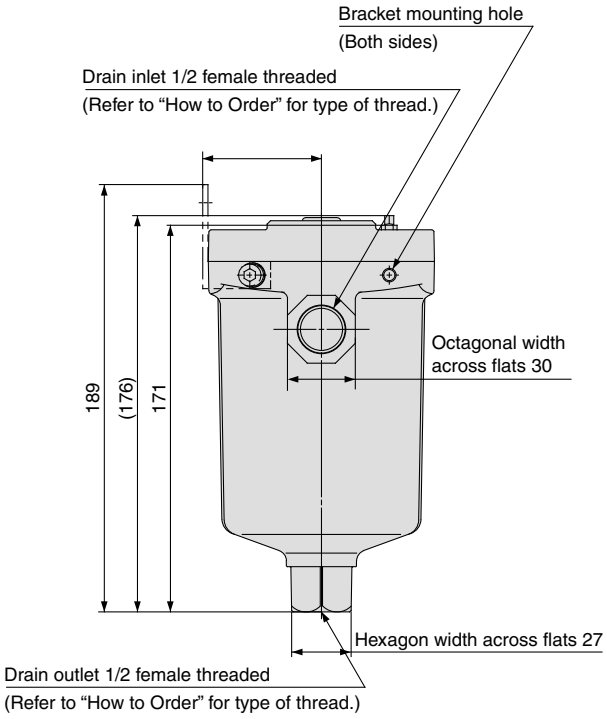
Maintenance

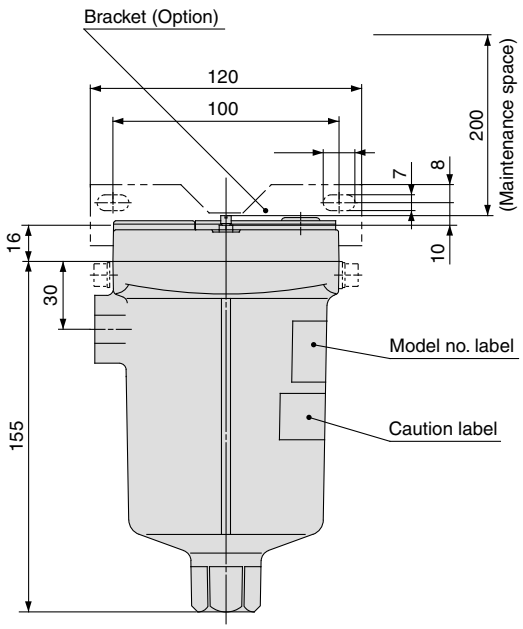
⚠Caution

1. **Check drain condition periodically (more than once a day).**
   Also, push the flushing button to open the exhaust valve.
2. Pilot air is exhausted from the exhaust port indicated in "Dimensions". **Do not cover this exhaust port.** Clean the exhaust port so that port is not blocked by dust, etc.
3. When solid foreign objects exceeding 1 mm come in, the main valve may become blocked. After recovering the internal pressure of this product to 0 MPa (atmospheric pressure), remove the hexagon socket head cap screw (M6) from the body part and wash inside with water to remove foreign solid objects blocking the main valve.
4. When using this product, drain may not easily enter the product. In such a case, adjust the open angle of its bleed valve to lower the pressure a bit inside the bowl so that drain could run through easily.

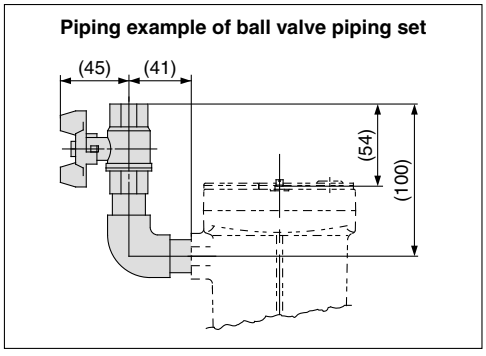
Dimensions







Option: Reference Figure of Assembly



Related Products:
Differential Pressure Gauge
Series GD40-2-01

The pressure differential at the inlet and the outlet of compressed air equipment can be viewed at a glance on the differential pressure gauge. It is ideal for the maintenance control of filters.

Compact and lightweight
Can be installed easily by merely providing a bypass circuit.
Provided with a protective cover to prevent hazards.

JIS Symbol

Model/Specifications

Model	GD40-2-01
Fluid	Compressed air
Max. operating pressure	1 MPa
Proof pressure	1.5 MPa
Ambient and fluid temperature	5 to 60°C
Port size Rc	1/8
Scale range	0 to 0.2 MPa
Accuracy	±0.006 MPa
Dial size	ø40
Mass (g)	300

Main Parts Material

Case	Zinc die-casted
Internal part	Brass, Phosphor bronze
Window	Polyester
Scale plate	Stainless steel

Accessory

Nylon tube	T0425 (0.5 m)
Male connector	H04-01 (1 pc.)
Male elbow	DL04-01 (1 pc.)

⚠ Specific Product Precautions

Be sure to read this before handling.
Refer to back pages 1 and 2 for Safety Instructions, "Precautions for Handling Pneumatic Devices" (M-03-E3A) for Common Precautions.

Design

⚠Caution

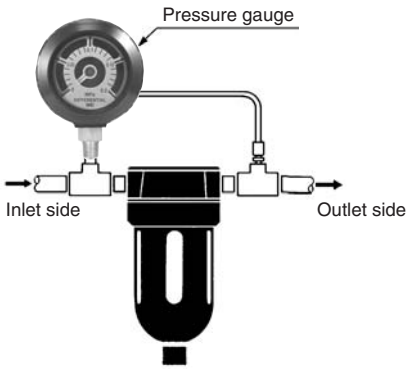
1. This product cannot be used in a location where pulsations could occur frequently.

Mounting

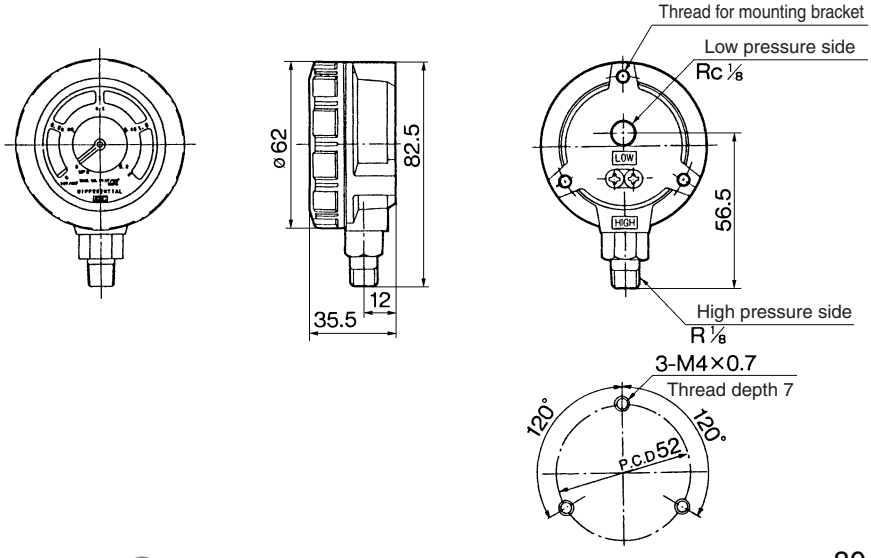
⚠Caution

1. Mounting
1) The HIGH and LOW marks on the back of the differential pressure gauge indicate the high pressure and low pressure sides respectively. Connect the HIGH side to the inlet side of the filter or other devices and the LOW side to their outlet side. Do not use a stop valve to prevent damage to the differential pressure gauge if the valve is inadvertently left open or closed.
2) Install the differential pressure gauge vertically.
3) The piping of the differential pressure gauge must be connected securely because it will break if it becomes detached.

Piping Example



Dimensions



Safety Instructions

These safety instructions are intended to prevent hazardous situations and/or equipment damage. These instructions indicate the level of potential hazard with the labels of **"Caution," "Warning"** or **"Danger."** They are all important notes for safety and must be followed in addition to International Standards (ISO/IEC), Japan Industrial Standards (JIS)*1) and other safety regulations*2).

* 1) ISO 4414: Pneumatic fluid power – General rules relating to systems.
ISO 4413: Hydraulic fluid power – General rules relating to systems.
IEC 60204-1: Safety of machinery – Electrical equipment of machines. (Part 1: General requirements)
ISO 10218-1992: Manipulating industrial robots -Safety.
JIS B 8370: General rules for pneumatic equipment.
JIS B 8361: General rules for hydraulic equipment.
JIS B 9960-1: Safety of machinery – Electrical equipment of machines. (Part 1: General requirements)
JIS B 8433-1993: Manipulating industrial robots - Safety.
etc.
* 2) Labor Safety and Sanitation Law, etc.

⚠ Caution: Operator error could result in injury or equipment damage.

⚠ Warning: Operator error could result in serious injury or loss of life.

⚠ Danger : In extreme conditions, there is a possibility of serious injury or loss of life.

⚠ Warning

1. The compatibility of the product is the responsibility of the person who designs the equipment or decides its specifications.

Since the product specified here is used under various operating conditions, its compatibility with specific equipment must be decided by the person who designs the equipment or decides its specifications based on necessary analysis and test results. The expected performance and safety assurance of the equipment will be the responsibility of the person who has determined its compatibility with the product. This person should also continuously review all specifications of the product referring to its latest catalog information, with a view to giving due consideration to any possibility of equipment failure when configuring the equipment.

2. Only personnel with appropriate training should operate machinery and equipment.

The product specified here may become unsafe if handled incorrectly. The assembly, operation and maintenance of machines or equipment including our products must be performed by an operator who is appropriately trained and experienced.

3. Do not service or attempt to remove product and machinery/equipment until safety is confirmed.

1. The inspection and maintenance of machinery/equipment should only be performed after measures to prevent falling or runaway of the driven objects have been confirmed.
2. When the product is to be removed, confirm that the safety measures as mentioned above are implemented and the power from any appropriate source is cut, and read and understand the specific product precautions of all relevant products carefully.
3. Before machinery/equipment is restarted, take measures to prevent unexpected operation and malfunction.

4. Contact SMC beforehand and take special consideration of safety measures if the product is to be used in any of the following conditions.

1. Conditions and environments outside of the given specifications, or use outdoors or in a place exposed to direct sunlight.
2. Installation on equipment in conjunction with atomic energy, railways, air navigation, space, shipping, vehicles, military, medical treatment, combustion and recreation, or equipment in contact with food and beverages, emergency stop circuits, clutch and brake circuits in press applications, safety equipment or other applications unsuitable for the standard specifications described in the product catalog.
3. An application which could have negative effects on people, property, or animals requiring special safety analysis.
4. Use in an interlock circuit, which requires the provision of double interlock for possible failure by using a mechanical protective function, and periodical checks to confirm proper operation.

Safety Instructions

⚠Caution

The product is provided for use in manufacturing industries.
The product herein described is basically provided for peaceful use in manufacturing industries.
If considering using the product in other industries, consult SMC beforehand and exchange specifications or a contract if necessary. If anything is unclear, contact your nearest sales branch.

Limited Warranty and Disclaimer/Compliance Requirements

The product used is subject to the following “Limited Warranty and Disclaimer” and “Compliance Requirements”. Read and accept them before using the product.

Limited Warranty and Disclaimer

1. **The warranty period of the product is 1 year in service or 1.5 years after the product is delivered.**＊**3)**
   Also, the product may have specified durability, running distance or replacement parts. Please consult your nearest sales branch.
2. **For any failure or damage reported within the warranty period which is clearly our responsibility, a replacement product or necessary parts will be provided.**
   This limited warranty applies only to our product independently, and not to any other damage incurred due to the failure of the product.
3. **Prior to using SMC products, please read and understand the warranty terms and disclaimers noted in the specified catalog for the particular products.**

＊ **3) Vacuum pads are excluded from this 1 year warranty.**
A vacuum pad is a consumable part, so it is warranted for a year after it is delivered.
Also, even within the warranty period, the wear of a product due to the use of the vacuum pad or failure due to the deterioration of rubber material are not covered by the limited warranty.

Compliance Requirements

When the product is exported, strictly follow the laws required by the Ministry of Economy, Trade and Industry (Foreign Exchange and Foreign Trade Control Law).

Series AM□/AFF
Specific Product Precautions 1

Be sure to read this before handling. Refer to back pages 1 and 2 for Safety Instructions, and "Precautions for Handling Pneumatic Devices" (M-03-E3A) for Common Precautions.

Design

⚠Caution

1. Design the layout so that the mist separator should be installed in an area that is less susceptible to pulsations.

The element could be damaged if a difference between the inlet pressure and the outlet pressure exceeds 0.1 MPa.

2. Be careful of dust generation by the pneumatic equipment mounted on the outlet side.

When installing pneumatic equipment on the outlet side of the AM□ series, dust particles may come off from outlet equipment, which will lower the cleanliness of compressed air. Consider this impact upon the cleanliness of compressed air when installing pneumatic equipment on the outlet side.

3. About when to use N.C. auto drain and N.O. auto drain.

When using the AFF2C to 22C, 37B, 75B, AM□150C to 550C, 650, 850 with normally open (N.O.) auto drain, air may ceaselessly blow out of the drain discharge area when an air compressor with a small air discharge volume is used since the valve does not close unless the air pressure is 0.1 MPa or higher. Therefore, when using a compressor for 3.7 kW or less, make sure to use the normally closed (N.C.) auto drain. The minimum operating pressure is 0.15 MPa even with N.C. auto drain.

4. Use a tubing with proper size and length for drain piping of auto drain.

When using the AFF2C to 22C, 37B, AM□150C to 550C, 650 with auto drain:

Normally closed (N.C.)
Normally open (N.O.) } Use tubing O.D. 10 mm and keep the whole length within 5 m.

When using the AFF75B and AM□850 with auto drain:

Normally open (N.O.): Use tubing I.D. 9 mm or more and keep the whole length within 2.8 m.

5. Provide a design that prevents back pressure and back flow.

Back pressure or back flow may damage an element.

6. Keep the certificate of Class 2 Pressure Vessel in a safe place.

Products below are subject to Class 2 Pressure Vessel Act. Certificate will be sent in 2 to 4 weeks later after the shipment of the product.

Main Line Filter ····· AFF220A

Micro Mist Separator····· AMD9□0/10□0/9□1

⚠Warning

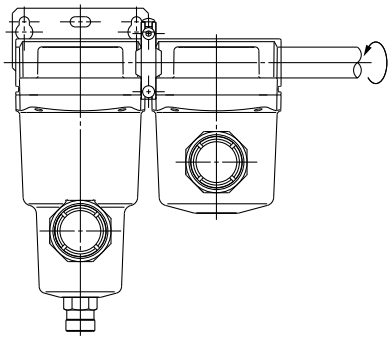
1. Hold the female thread side and tighten to the recommended torque when screwing in the piping material.

Insufficient tightening torque may cause loosening or defective sealing. Over-tightening torque may damage the thread etc. If it is tightened without holding the female thread side, excessive force will be directly applied to the piping bracket resulting in a product failure.

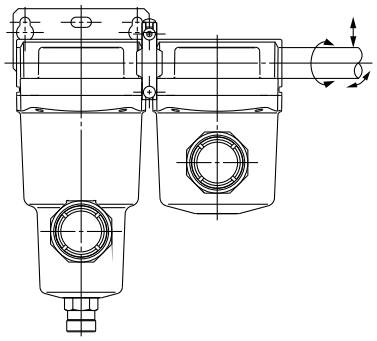
Recommended Torque Unit: N·m

Connection thread	1/8	1/4	3/8	1/2	3/4	1	1 1/2	2
Torque	1.5 to 2	7 to 9	12 to 14	28 to 30	28 to 30	36 to 38	48 to 50	48 to 50

∗ After tightening manually, tighten additionally by about 1/6 turn with a tightening tool.



2. Do not apply torsional moment or bending moment (except the product's own weight) to the bracket. It may damage the bracket. Support external piping separately.



3. Inflexible piping such as steel piping tends to be affected by spread of excessive moment load or vibration from the piping side. Lay flexible tubing between the steel pipe and the product to prevent such effects.

Series AM□/AFF
Specific Product Precautions 2

Be sure to read this before handling. Refer to back pages 1 and 2 for Safety Instructions, and "Precautions for Handling Pneumatic Devices" (M-03-E3A) for Common Precautions.

Selection

⚠Caution

1. About the system composition of purifying compressed air

Compressed air generally contains particulate contaminants as listed below, though there are some variations due to the compressor type and specifications. Determine the system configuration according to the desired cleanliness of compressed air and application, while referring to the "Air Preparation Equipment Selection Guide" for the AM□ series (Best Pneumatics).

[Particulate contaminants in compressed air]
- Water (drainage)
- Dust sucked from ambient air
- Degenerated oil from compressor
- Solid foreign matter such as rust inside piping and oil

2. Select according to the maximum flow consumption.

When compressed air is used for air blow, etc., find the maximum air consumption before selecting the size of the AM□ series. (If compressed air exceeding the maximum flow rate is supplied, it can result in decline of the cleanliness of compressed air or element damage.)

Mounting

⚠Caution

1. About the mounting orientation of the products

Make sure to install this product on horizontal piping. If it is installed diagonally, laterally, or upside down, the drain separated by the element will splash to the outlet side.

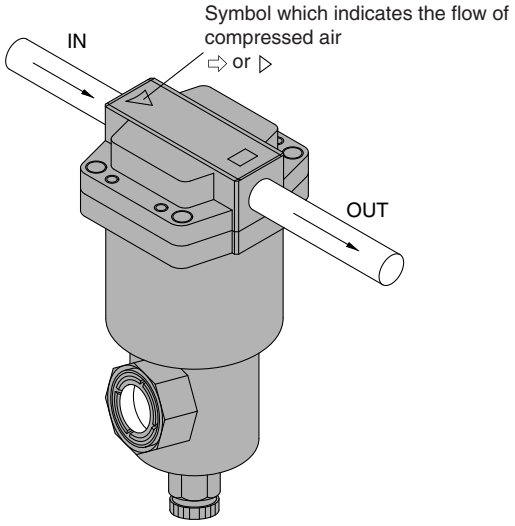
Piping

⚠Caution

1. Connect it with IN and OUT ports in proper location. It does not work with the connection reversed.

In the case of the AFF2C to 22C, 37B, 75B, AM□150C to 550C, 650, 850

Verify the direction of the flow of the compressed air and the "⇨" or "▷" mark that indicates the inlet of the product before connecting. It cannot be used if connected in the opposite direction.



In the case of the AFF75A to 220A, AMD801, 901, 800, 900, 1000

INLET and OUTLET of compressed air is labeled on the side of flange. Be sure to connect correctly.

2. Use an air blower to flush the piping before connecting the piping.

Use an air blower to thoroughly flush the piping, or wash the piping to remove any cutting chips, cutting oil, or debris from inside the piping before connecting them.

3. Wrapping of sealant tape

When screwing in the pipes or fittings, make sure to prevent cutting chips or the sealant material on the threaded portion of the pipe from entering the piping. If sealant tape is to be used, leave about 1.5 to 2 ridges of threads uncovered.

4. Modular connection

Mount the attached bracket on one side when connecting 2 sets. Mount the attached brackets on both sides when connecting 3 sets or more. As a guideline for the number of brackets, one bracket should be mounted for every 2 products.

Series AM□/AFF
Specific Product Precautions 3

Be sure to read this before handling. Refer to back pages 1 and 2 for Safety Instructions, and "Precautions for Handling Pneumatic Devices" (M-03-E3A) for Common Precautions.

Air Supply

⚠Caution

1. The mist separator is not applicable to gases other than compressed air.

The mist separator is not applicable to gases other than compressed air (example: oxygen, hydrogen, flammable gas, mixed gas).

2. Do not use compressed air that contains chemicals, organic solvents, salt, or corrosive gases.

Do not use compressed gas containing chemicals, organic solvents, salt or corrosive gas. This can cause rust, damage to rubber and resin parts, or malfunction.

3. Operate within the specified operating pressure range.

Damage, failure, or malfunction may occur if the mist separator is operated above the maximum operating pressure.
If the mist separator is used below the minimum operating pressure, increase in the air-flow resistance due to clogging will have such influence that the desired flow rate cannot be obtained.
If the mist separator is used under a low pressure such as for a blower, conduct sufficient tests by users to confirm the specifications and performances.

Operating Environment

⚠Caution

1. Do not use in the following environments, as this can cause failure.

1) In locations having corrosive gases, organic solvents, and chemical solutions, or in locations where these elements are likely to adhere to the equipment.
2) In locations where salt water, water, or water vapor could come in contact with the equipment.
3) In locations that is exposed to shocks and vibrations.

2. Be careful about the contamination of the workpieces due to entrainment of the ambient air.

If compressed air is used for air blow, compressed air blowing out from the blow nozzle may entrain foreign matter (solid particles and liquid particles) floating in the ambient air, blowing it against the workpieces and causing adhesion. Therefore, sufficient precautions must be taken about the ambient environment.

Maintenance

⚠Caution

1. Replace the element immediately when the time for its replacement has arrived.

To replace the element, replace the O-ring and the gasket, too. For the replacement procedure, refer to the operating manual. (For element dimensions, refer to back page 6.)

<Element replacement>

In the case of the AFF2C to 22C, 37B, 75B, AM□150C to 550C, 650, 850

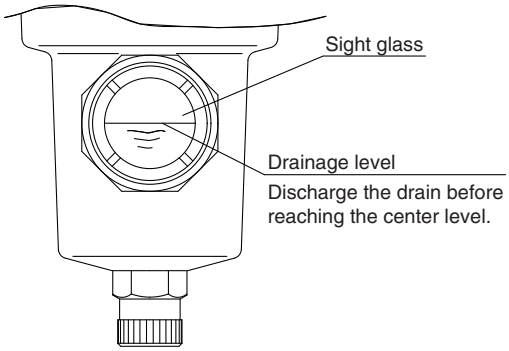
The replacement interval for the element is when the pressure drop reaches 0.1 MPa or after two years of operation, whichever comes first. A pressure drop can be verified with the element service indicator (-T) or with differential pressure gauge (Made to Order).

In the case of the AFF75A to 220A, AMD800 to 1000, AMD801, 901

The replacement interval for the element is when the pressure drop reaches 0.1 MPa or after one year of operation, whichever comes first. Confirm the pressure drop with a pressure gauge. (With pressure gauge: -G)

2. Be sure to exhaust the drain accumulated in the filter container.

Failure to discharge the drain will allow the accumulated drain to flow over to the outlet side.
When using the AFF2C to 22C, 37B, 75B, AM□150C to 550C, 650, 850 with drain cock, drain guide or ball valve, discharge the drain before the drainage level reaches the center of the sight glass. If the drain is not discharged properly, it will flow over to the outlet side.



Series AM□/AFF
Specific Product Precautions 4

Be sure to read this before handling. Refer to back pages 1 and 2 for Safety Instructions, and "Precautions for Handling Pneumatic Devices" (M-03-E3A) for Common Precautions.

Maintenance

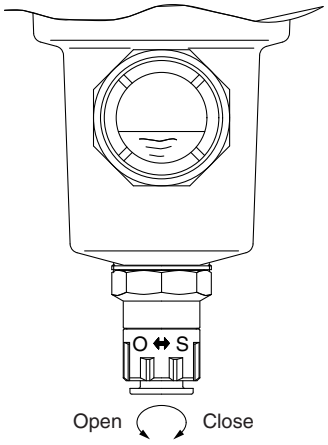
⚠Caution

3. In the case of a type with auto drain

- The auto drain operates when the drainage level reaches the top of the sight glass, and the drain will be discharged.
- When using the AFF2C to 22C, 37B, AM□150C to 550C, 650 with auto drain, the drain is automatically discharged with the knob tightened to the "S" side. Manual drain discharge, however, is also possible.

<Manual operation>

A manual knob attached to the auto drain end is tightened to the "S" side in normal operation. The drain can be discharged by loosening it to the "O" side. (Be careful, however, if pressure remains inside the filter when the drain is discharged, the drain will blow out from the drain port.)



4. The drain exhaust parts replacement method and necessary parts are different depending on when it was manufactured.

Description	Necessary parts		Applicable size
	Manufactured Dec. 2002 or before [Up to manufacturing lot No. GZ]	Manufactured Jan. 2003 onwards [Manufacturing lot No. HO onwards]	
Drain cock	AM-SA002		2C to 22C 2B to 37B 150C to 550C 150 to 650
Drain guide	AM-SA003		
N.O. auto drain	Auto drains cannot be replaced alone since those cannot be assembled without dedicated assembly tools. The entire bowl assembly must be replaced. (Refer to "How to Order Bowl Assembly" on page 63.)	AD43PA-D	
N.C. auto drain		AD53PA-D	2C to 22C 2B to 22B 150C to 550C 150 to 550
Ball valve set	AM-SA004		75B, 850
N.O. auto drain	AD34PA-D Note)		

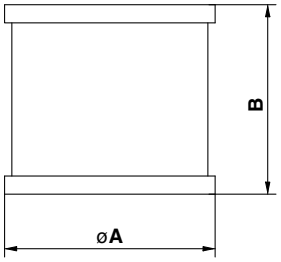
Note) Jig (AM-SA005) for replacing auto drain is necessary for the 75B or 850.

Others

⚠Caution

1. Element interchange

Following is the element dimensions for the AFF and AM□ series:
Since elements for the same body size has the same dimensions, they are interchangeable.
However, do not interchange them easily since it can cause various kinds of problems.
If interchanging the elements is unavoidable, replace the product model number label, too.



Element Dimensions

Model	Element dimensions (Reference value)	
	øA	B
AFF2C, AFF2B, AM150C, AM150 AMD150C, AMD150, AMH150C, AMH150	49	42
AFF4C, AFF4B, AM250C, AM250 AMD250C, AMD250, AMH250C, AMH250	58	52
AFF8C, AFF8B, AM350C, AM350 AMD350C, AMD350, AMH350C, AMH350	70	78
AFF11C, AFF11B, AM450C, AM450 AMD450C, AMD450, AMH450C, AMH450	82	88
AFF22C, AFF22B, AM550C, AM550 AMD550C, AMD550, AMH550C, AMH550	96	118
AFF37B, AM650 AMD650, AMH650	122	144
AFF75B, AM850 AMD850, AMH850	142	223

2. About oil-free products

The AFF and AM□ series includes parts (such as resin parts, rubber parts, and elements) that does not allow degreasing wash. Therefore, oil-free products with all parts degreasing washed is not available.

3. Degreasing wash

Certain parts such as the body and housing can be degreasing washed. Contact SMC after confirming the specifications. (available as Option or Made to Order)

4. Change of oil

On the AFF and AM□ series, no oil such as grease is applied to parts exposed to compressed air. However, for certain specifications, there are some parts to which oil is applied.
It is possible to change the type of applied oil (as Option or Made to Order).

Specific Product Precautions 5

Be sure to read this before handling. Refer to back pages 1 and 2 for Safety Instructions, and "Precautions for Handling Pneumatic Devices" (M-03-E3A) for Common Precautions.

Others

⚠Caution

5. Internal volume of filter container

The product can be used as a small capacity air tank by removing the element.
Following is the volume of filter containers of the AFF and AM□ series (when the element is removed).

Volume Inside Filter

Model	Volume inside filter (Reference value) (cm^3)
AFF2C, AFF2B, AM150C, AM150 AMD150C, AMD150, AMH150C, AMH150	250
AFF4C, AFF4B, AM250C, AM250 AMD250C, AMD250, AMH250C, AMH250	300
AFF8C, AFF8B, AM350C, AM350 AMD350C, AMD350, AMH350C, AMH350	600
AFF11C, AFF11B, AM450C, AM450 AMD450C, AMD450, AMH450C, AMH450	1000
AFF22C, AFF22B, AM550C, AM550 AMD550C, AMD550, AMH550C, AMH550	1500
AFF37B, AM650 AMD650, AMH650	3000
AFF75B, AM850 AMD850, AMH850	9000

Discontinued Model and Equivalent Model

The AFF and AM□ series were remodeled to products introduced in this catalog in 1988.
Along with the new models, old models were provided mainly for the purpose of maintenance. However, due to the aging of metal dies and extreme decline in the quantity, the procurement of parts and consequently the maintenance of the production system became difficult. For this reason, old models were discontinued in 1994, as detailed in the table below. Use the equivalent model listed there.

Discontinued Model and Equivalent Model

Product name	Production discontinuance				Equivalent model		
	Model	Period of production discontinuance for products	Period of production discontinuance for maintenance parts	External dimensions of product Width x Depth x Height	Model	External dimensions of product Width x Depth x Height	Page
Main Line Filter	AFF6	End of July '94	End of March '99	100 x 100 x 253	AFF4C	76 x 76 x 172	P.10
	AFF22			150 x 140 x 446	AFF22C	122 x 122 x 259	
	AFF37			200 x 170 x 526	AFF37B	160 x 160 x 311	
	AFF55			280 x 280 x 497	AFF75B	220 x 220 x 461	
Mist Separator	AM200			63 x 63 x 191	AM150C	63 x 63 x 158	P.18
	AM300			85 x 85 x 258	AM250C	76 x 76 x 172	
	AM400			120 x 120 x 236	AM350C	90 x 90 x 204	
	AM500			140 x 140 x 383	AM550C	122 x 122 x 259	
	AM600			180 x 170 x 465	AM650	160 x 160 x 311	
Micro Mist Separator	AMD100			63 x 63 x 136	AMD150C	63 x 63 x 158	P.26
	AMD200			80 x 82 x 170	AMD250C	76 x 76 x 172	
	AMD300			90 x 90 x 233	AMD350C	90 x 90 x 204	
	AMD400			140 x 140 x 380	AMD450C	106 x 106 x 225	
	AMD500			140 x 140 x 490	AMD550C	122 x 122 x 259	
	AMD600			140 x 140 x 590	AMD650	160 x 160 x 311	
Odor Removal Filter	AMF200			80 x 80 x 153	AMF250C	76 x 76 x 103	P.52
	AMF300			90 x 90 x 216	AMF350C	90 x 90 x 132	
	AMF400			140 x 140 x 250	AMF450C	106 x 106 x 151	
	AMF500			140 x 140 x 360	AMF550C	122 x 122 x 187	
	AMF600			140 x 140 x 460	AMF650	160 x 160 x 291	

Note) Some models have different heights depending on the port size. They are shown in parentheses.

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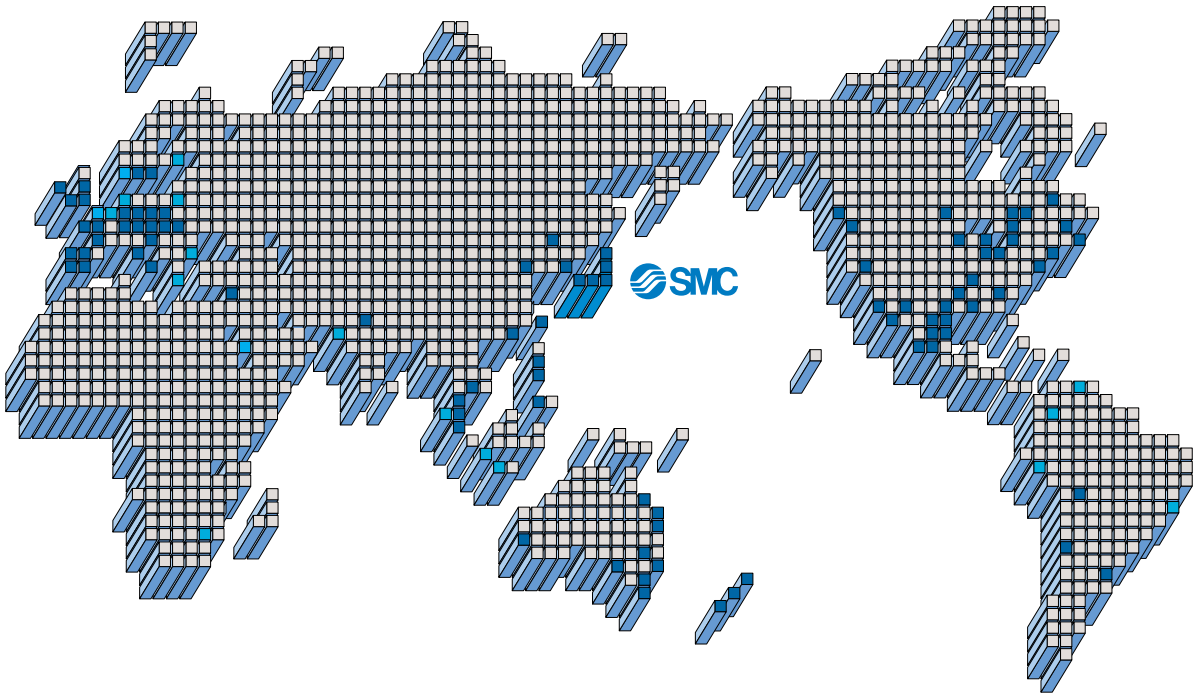

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⚠ Safety Instructions	Be sure to read “Precautions for Handling Pneumatic Devices” (M-03-E3A) before using.

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