

Series **AMP** Exhaust cleaner for clean room

How to Order

AMP **2** **2** **0** — **03** —

Body size

2	1/4 standard
3	3/8 standard
4	1/2 standard

Element structure

2	2 stage
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Thread type

Nil	Rc
N	NPT
F	G

Option

Nil	None
R	Flow direction: Right → Bottom
T	With element service indicator

Accessory (Option)

Nil	None
B	With bracket

Note) Bracket is not installed.

Port size

Symbol	Piping port size	Body size		
		2	3	4
02	1/4	●	—	—
03	3/8	●	●	—
04	1/2	—	●	●
06	3/4	—	—	●



Model

Model	AMP220	AMP320	AMP420
Maximum flow rate ℓ/min (ANR)	200	500	1000
Port size Rc	1/4, 3/8	3/8, 1/2	1/2, 3/4
Weight (kg)	0.43	0.68	1.15

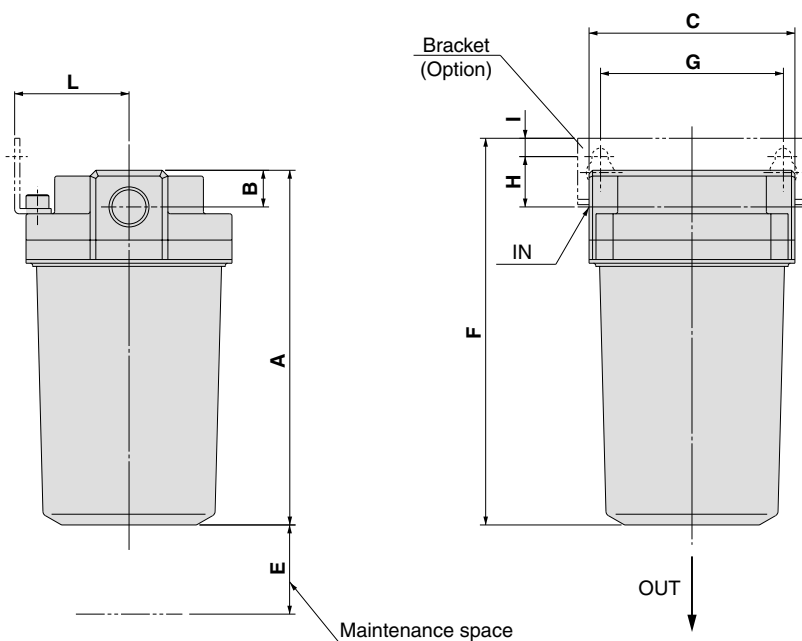
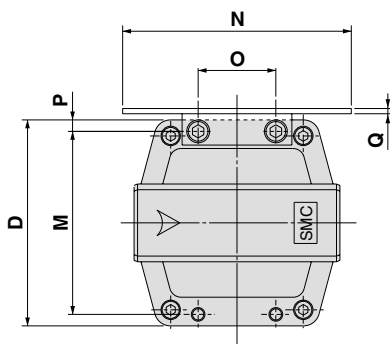
Specifications

Fluid	Compressed air
Element inlet side pressure	0.1 MPa or less
Ambient and fluid temperature	5 to 50°C
Nominal filtration rating	0.01 μm (95% particle size collection)
Oil mist removal rate	Less than 3.5 particles 0.3 μm or larger per liter of air (100 particles or less per cubic foot)
Element life	One year after the first use (or when the inlet pressure reaches 0.2 MPa even within 1 year from the first use).
Element life indication (At saturation of element oil)	Element color indication (Replace if red spots appear on the element surface, even within 1 year from the first use.)
Element construction	2 stage element
Noise reduction	40 dB (A) or more
Particle generation grade (Please refer to front matters 13 to 22 for details.)	Grade 3

Accessory (Option)

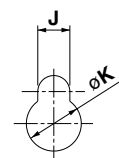
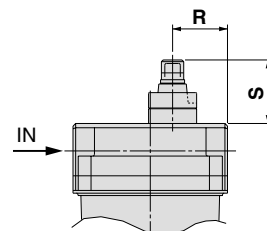
Applicable model	AMP220	AMP320	AMP420
Bracket assembly (With cap bolt With spring washer)	BM66	BM67	BM68

Dimensions



Option

T: With element service indicator



Bracket mounting hole

Model	Applicable bolt
AMP220	M5 hexagon socket head cap bolt
AMP320	M6 hexagon socket head cap bolt
AMP420	M8 hexagon socket head cap bolt

(mm)

Model	Piping port size (nominal size B)	A	B	C	D	E	Dimensions with mounting bracket												Element service indicator dimensions	
							F	G	H	I	J	K	L	M	N	O	P	Q	R	S
AMP220	1/4, 3/8	108	13	76	76	80	123	66	20	8	6	10	40	66	84	28	5	2	26	37
AMP320	3/8, 1/2	155	16	90	90	120	169	80	22	8	7	12	50	80	100	34	5	2.3	32	37
AMP420	1/2, 3/4	221	19	106	106	180	237	90	25	10	10	15	55	88	110	50	9	3.2	37	37



Series AMP Model selection

Selection

⚠ Caution

1. The selection method for an exhaust cleaner may differ between exhaust air from driving system such as actuator and that from the ejector. Please refer to the procedures described below.

(Exhaust flow rate which exceeds the specification of the model selected may cause a decline in exhaust air cleanliness, performance degradation of actuator or ejector, or damage to the element.)

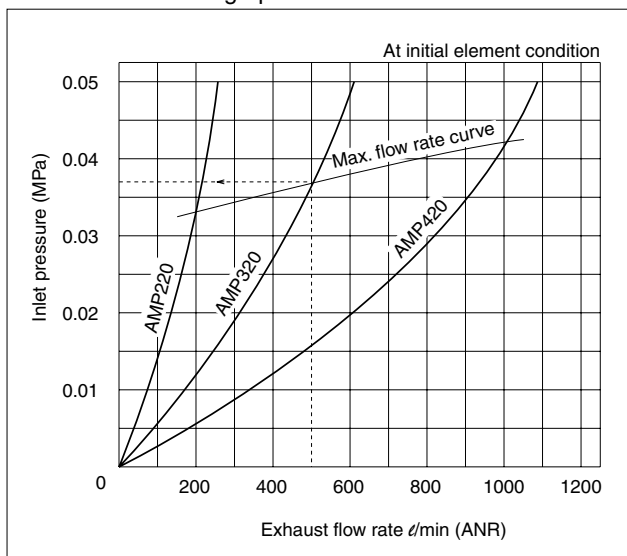
2. Exhaust from actuator

- 1) Obtain the air consumption of the actuator to be used. However, if an exhaust cleaner of the centralized piping system will be used, sum up the air consumption of the actuators that operate simultaneously.
- 2) Select a model that provides a maximum processing flow volume that does not exceed the maximum flow curve of the exhaust cleaner.

3. Exhaust from ejector

- 1) If the performance of the equipment is influenced by back pressure applied to the exhaust air, as in case of an ejector, please confirm the range of back pressure that will not have effect on the equipment.
- 2) In the case of ejectors, the exhaust flow rate is the total of the maximum suction flow rate and air consumption. Since the exhaust flow rate calculation method differs among equipment, check the catalog or instruction manual of the equipment to be used.
- 3) In the case of centralized piping system, sum up the air consumption of the equipment that operate simultaneously to obtain a maximum exhaust flow rate.
- 4) Calculate the inlet pressure based on the flow characteristic graph using the maximum exhaust flow rate obtained in 3) as the exhaust flow rate.

Flow characteristics graph



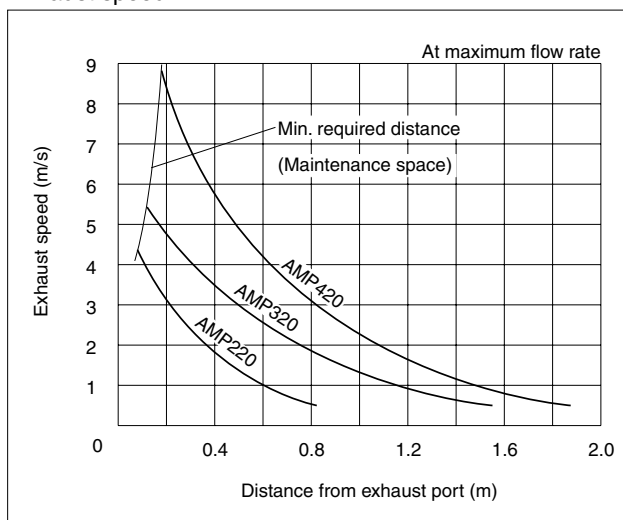
Example) When AMP320 is used at a flow rate of 500 l/min, the inlet pressure is 0.037 MPa.

⚠ Caution

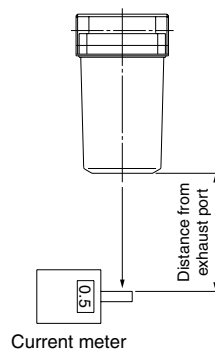
4. Exhaust speed characteristics are shown in the graph below.

- 1) When using the cleaner, consider the effects of dust, etc., that has accumulated on the floor or other areas.
- 2) If there is a concern about dusty atmosphere, install the cleaner in a place that is not subject to dust.

Exhaust speed



<Measuring method>





Specific Product Precautions

Be sure to read before handling.

Mounting

⚠ Caution

1. Air piping must be thoroughly flushed or cleaned before mounting.
2. When screwing in the pipes or fittings, be sure to prevent cutting chips or sealing material on the threaded portion of the pipe from entering the piping.
When a seal tape is used, leave 1.5 to 2 thread ridges exposed at the end of the threads.
3. Mount the unit vertically. Holding the resin case while screwing in the piping will damage the case. Instead, hold the die cast aluminum body with a wrench (or some other tool) to screw in the piping.
4. In the case of centralized piping, a reverse flow may occur due to switching of a solenoid valve, etc. In this situation, install a check valve on the inlet side.
5. Provide sufficient space required for maintenance and inspection. (Confirm the dimensions on the drawing.)

Environment

⚠ Warning

1. Do not use in an atmosphere or place which can damage the case or element service indicator (Option : T).
2. Because the case material is nylon, avoid use of chemicals such as alcohol, thinner, carbon tetrachloride, chloroform, aniline, cyclohexane, trichloroethylene, sulfuric acid, lactic acid, water soluble cutting lubricant (Alkaline) or avoid use in an atmosphere where any of these chemicals exists.
Use a neutral detergent to clean the case.
3. Do not use in an environment where static electric charge may cause a problem.
4. Block off the heat source in proximity.
If a heat source is located in proximity, the temperature of the product may rise and exceed the operating temperature range due to heat radiation. Block off the heat source with a cover, etc.

Supply air

⚠ Caution

1. The product cannot be used with air containing moisture.
2. Install a mist separator (Series 10-AM), micro mist separator (Series 10-AMD) or micro mist separator with pre-filter (Series 10-AMH) on the air supply side.
3. When using an ejector, prevent the product from sucking liquid such as water and oil with air

Maintenance

⚠ Caution

1. Replace the element after one year of use, or before the inlet pressure ^(Note) reaches 0.1 MPa even if one year has not elapsed.
If operation is continued without replacing the element, the cleanliness of the exhaust air will decline. When replacing the element, also replace the O-ring. (Element's clogging life can easily be managed by using an option (T: with an element service indicator).)
2. Red spots appear on the surface of the first element when it is saturated with oil. Check the element once a day and immediately replace it when red spots appear.
If operation is continued after red spots have appeared, the second element will also be saturated with oil, and oil mist imbued with red dye will be mixed with the exhaust air, contaminating the surrounding air.

Note) The inlet pressure here refers to the pressure on the inlet side of the element when air of a certain flow rate flows through the exhaust cleaner. The relation between the inlet pressure and the air flow rate can be confirmed in the flow characteristics graph on the previous page.

Operation in a clean room

⚠ Caution

1. Open the inside bag of a double sealed package in a clean room or clean atmosphere.
2. Mount the product in a down flow area with its exhaust port facing downward.
3. Avoid mounting in locations where exhaust air will blow directly to the work pieces.
4. Confirm the exhaust speed and consider the effect of dust, etc., in a clean room.