

Exhaust Cleaner for Clean Rooms

Series AMP

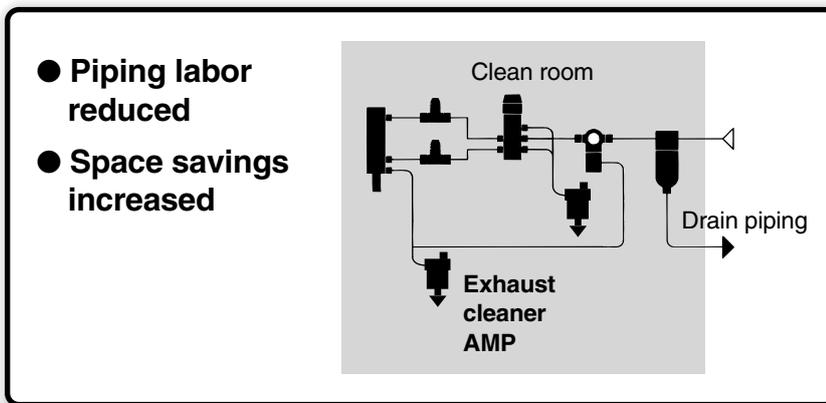
An exhaust cleaner
that can be used inside a clean room

Exhaust air cleanliness: Equivalent to Class 100

(Consult SMC in advance, as this will differ depending on the operating conditions.)

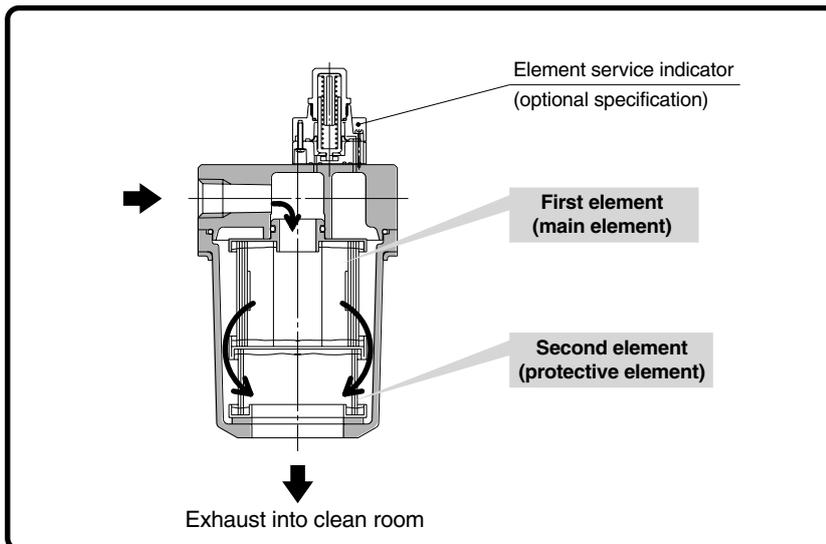
Particles of 0.3 μ m or larger are 3.5 particles/l or less

Since it is possible to release exhaust air from pneumatic equipment directly into a clean room, piping to exhaust ducts is unnecessary.



Worry free two stage element construction

After the first element is saturated with oil, the oil flowing into the secondary side is collected by the second element. This prevents discharge to the outside for a fixed time.



With indicator function

The element life (standard) can be visually confirmed.

Element service indicator

Element clogging is detected by a pressure differential, and indicated by a red symbol. (optional specification)

First element

Oil saturation of the element is indicated by red dots.

Series variations

Model	Thread type	Port size				Optional
		1/4	3/8	1/2	3/4	
AMP220	Rc	●	●			• Flow direction Right → Down • With element service indicator
AMP320	NPT		●	●		
AMP420	G			●	●	

Silencing effect:
40dB (A) or more

Double packaging

Shipped in double packaging using antistatic bags.

Exhaust Cleaner for Clean Rooms

Series AMP

How to Order



AMP **2** **2** **0** — **03** —

Body size

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

Element construction

2	2 stage
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Thread type

Nil	Rc
N	NPT
F	G

Optional specifications

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

Accessories (optional)

Nil	None
B	With bracket

Note) The bracket is not attached.

Port size

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

Models

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

Specifications

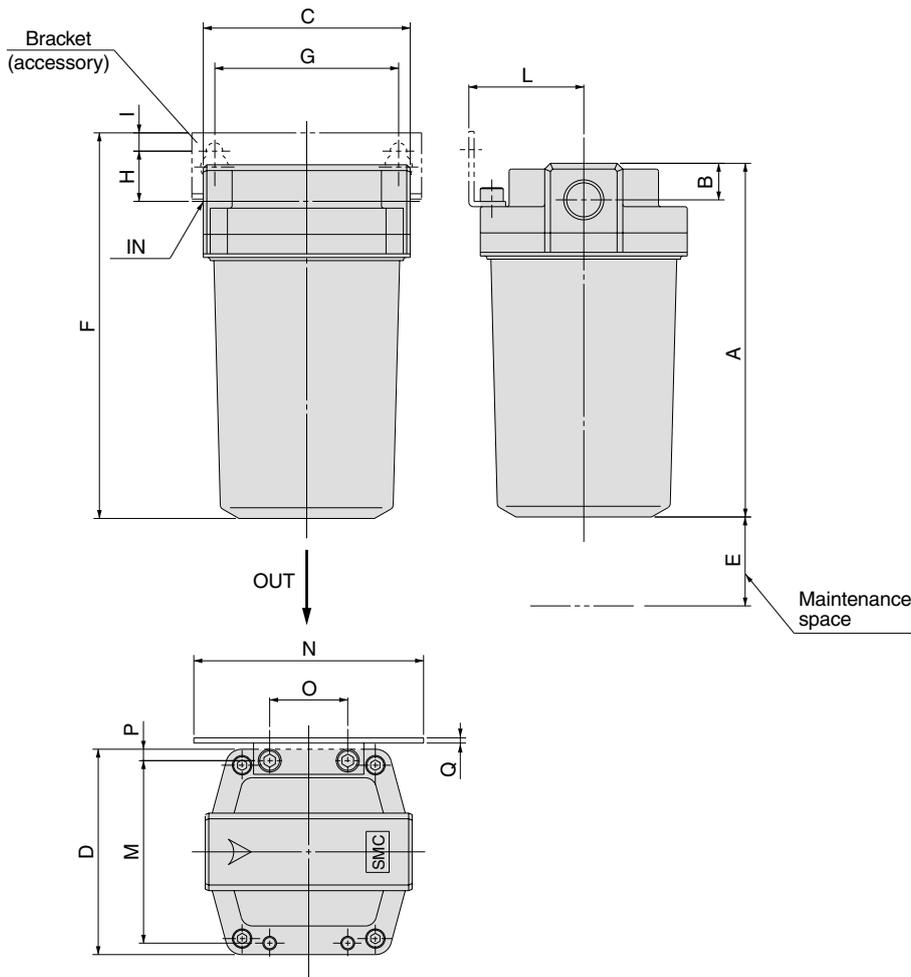
Fluid	Compressed air
Element upstream pressure	0.1MPa or less
Ambient and fluid temperature	5 to 50°C
Filtration degree	0.01μm (95% filtered particle size)
Downstream cleanliness	Particles of 0.3μm or larger are 3.5 particles/ℓ (ANR) or less (100 particles/ft ³ or less)
Element life	One year from first use (or when upstream pressure reaches 0.1MPa, even if less than one year from first use)
Element life indication (saturated with oil)	Element color indication (replace if red dots appear on the element surface, even if less than one year from first use)
Element construction	Two stage element
Silencing effect	40dB (A) or more

Accessories (Optional)

Applicable model	AMP220	AMP320	AMP420
Bracket assembly (with cap bolt with spring washers)	BM66	BM67	BM68

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Dimensions

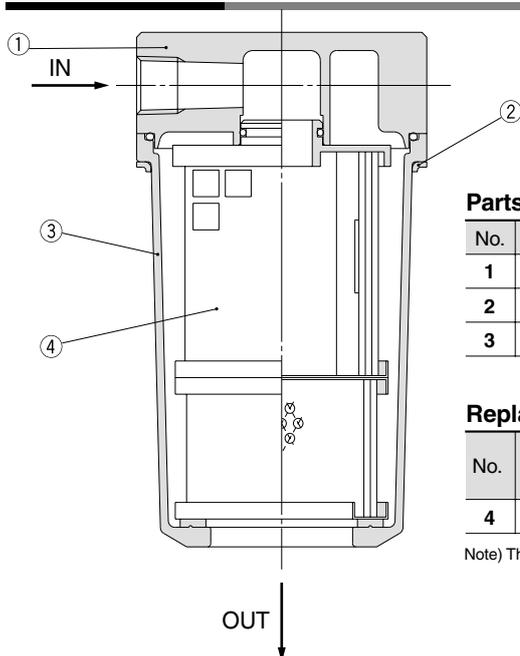


Model	Applicable screw
AMP220	M5 hexagon socket head cap screw
AMP320	M6 hexagon socket head cap screw
AMP420	M8 hexagon socket head cap screw

(mm)

Model	Port size (nominal size B)	A	B	C	D	E	Bracket related dimensions											Element service indicator related 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

Construction



Parts list

No.	Description	Material	Note
1	Body	Aluminum alloy	Chromated, Baking finish
2	Ring	Carbon steel	Electroless nickel plated
3	Case	Resin	

Replacement parts

No.	Description	Part number			Note
		AMP220	AMP320	AMP420	
4	Element assembly	AMP-EL220	AMP-EL320	AMP-EL420	With O-ring

Note) The first and second elements are integrated, and cannot be replaced separately.



Series AMP Model Selection

Selection

⚠ Caution

1. When selecting an exhaust cleaner, refer to the selection method shown below, as the selection method will differ for exhaust from actuator drive systems, etc., and exhaust from ejectors, etc.

(Take note that an exhaust flow rate exceeding that of the model selected can cause a drop in exhaust air cleanliness, reduced performance of drive equipment and ejectors, etc., and damage to the element.)

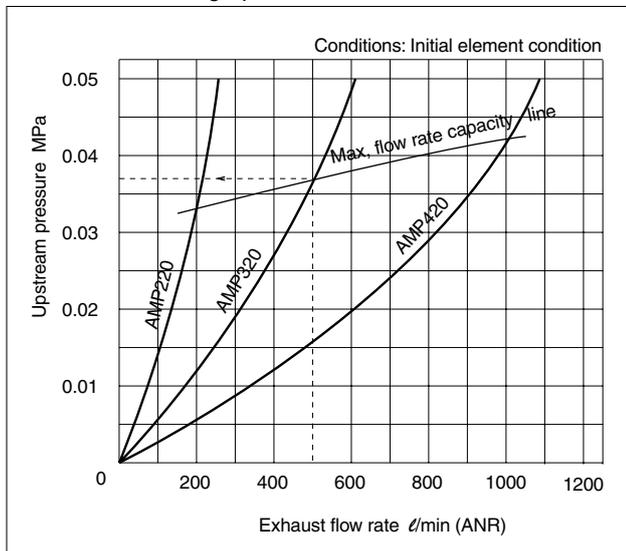
2. Exhaust from drive systems

1. Find the air flow required for the actuator to be used. When operating with common piping, add up the required air flow for all actuators that will be operated simultaneously and find the maximum air flow.
2. Select a model such that the maximum required air flow obtained in (1) does not exceed the maximum flow rate line of the exhaust cleaner.

3. Exhaust from ejectors, etc.

1. In case of ejectors or other equipment whose performance can be affected by back pressure on the exhaust air, confirm the range in which the equipment will not be affected by back pressure.
2. In the case of ejectors, the exhaust flow rate is the total of the maximum suction flow rate and the air consumption. Since the method of calculating the exhaust flow rate differs in this way depending on the equipment, confirm this in the catalog or instruction manual of the equipment to be used.
3. When operating with common piping, add up the exhaust flow rates for all equipment that will be exhausted simultaneously and find the maximum exhaust flow rate.
4. Find the upstream pressure in the flow characteristic graph, using the maximum exhaust flow rate obtained in (3) as the exhaust flow rate. Select a model such that the upstream pressure is lower than the back pressure generated when the exhaust flow rate is at a maximum.

Flow characteristic graph



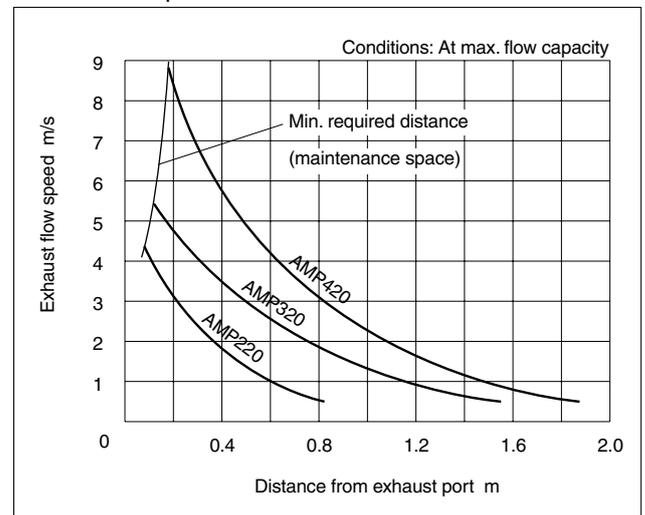
Viewing the graph: When using AMP320 at a flow rate of 500l/min, the upstream pressure is 0.037MPa.

⚠ Caution

4. Exhaust flow speed characteristics are shown in graph 2.

1. Operate giving consideration to the effects of turbulence on dust, etc., that has settled on the floor or other areas.
2. In cases where there is concern about the effect of turbulence on dust, install in a location where dust will not be affected.

Exhaust flow speed



<Measurement>

