Discontinue

Advanced energy-saving filter

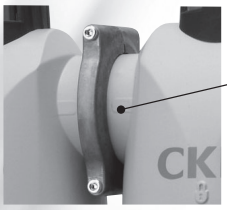
Lower pressure loss, longer life and a more compact size have been realized by adopting new materials and new structure.
Medium main line filter AF2000 Series helps reduce operation costs.

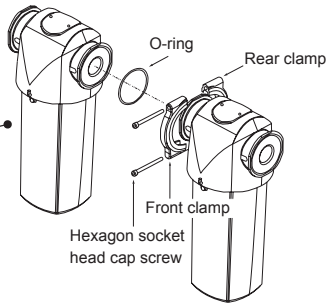
Differential pressure indicator

A differential pressure indicator required for checking the service life is provided as standard. (P/M types)

Module connections for further space saving

The filters can be connected with the module kit, enabling space-saving installation.
The reviewed filter connection structure has improved work efficiency.

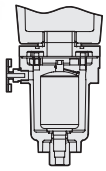




Easy element replacement

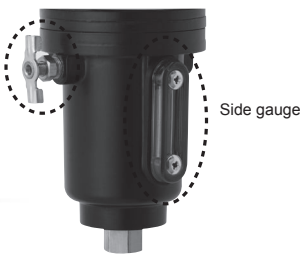
The element can be replaced without touching the dirty element surface.

Highly reliable automatic drain mounted as standard



Side gauge

The drain level can be visually confirmed.



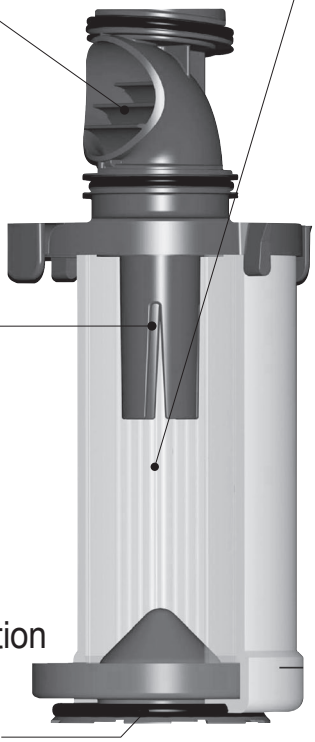
Shut-off valve

Residual air is released.

Internal filter structure

Efficiently separates air flow

The branched impeller blades efficiently guide the air flow into the element.



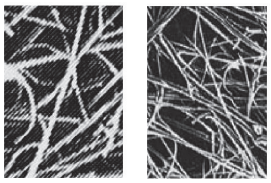
Minimizes pressure losses

The nano-fiber filter media * constantly separates oil and water, minimizing pressure losses.

· The filter media repels water and suppresses fluid absorption.

* Different density nano-fiber filter media

Media with different densities are used in stages to increase the filter service life.



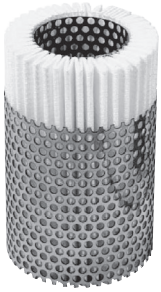
Equal air flow

The air flow is equally sent to the filter element by the air flow distributor.

Efficient air distribution

The conical air flow diffuser settles air flow disturbances and efficiently distributes the air flow.

New energy saving/ space saving structure



A pleated structure is used. With a large filtration area, the capacity for catching impurities is increased and the operation costs are reduced (long service life with low pressure loss).

This has also made the element even more compact.

AF2000 Series variation

Removing water drops Removal of oil content (oil mist) Removal of solids

Protects expensive pneumatic components

- Removal of particles 1 µm and over
- Secondary side oil concentration Removal of oil up to 0.6 mg/m³ (21°C)

P Type

Filter Highly efficient removal of oil contents (oil mist) and solids

For pneumatic pressure circuits which are susceptible to oil

- Removal of particles 0.01 µm and over
- Secondary side oil concentration Removal of oil up to 0.01 mg/m³ (21°C)

M Type

Removal of oil vapor and deodorization

For pneumatic pressure circuits which are susceptible to odors

- Suction by activated carbon fibers
- Secondary side oil concentration Removes oil vapor and odors up to 0.003 mg/m³ (21°C)

X Type

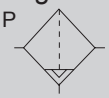
Discontinue

Main line filter

AF2000P/M/X Series

Ideal for solid particle removing, oil removing and deodorizing applications.

● Processing air flow rate: 3.7 to 25.8 m^3/min (ANR) (when at 0.7 MPa)

JIS symbol P  M  X 

RoHS CAD

Specifications

Descriptions		AF2004□-25	AF2007□-40	AF2010□-40	AF2013□-50	AF2020□-50	AF2026□-65
Processing air flow rate	m^3/min(ANR)	3.7	6.6	9.6	13.2	19.8	25.8
Working fluid		Compressed air					
Working pressure	MPa	0.1 to 1.0					
Proof pressure	MPa	1.5					
Port size	Rc	1	1 1/2		2		2 1/2
Weight X type is shown in ( )	kg	2.6(2.2)	3.0(2.6)	4.9(4.5)	5.6(5.25)	5.65(5.25)	11.1(10.7)
Differential pressure indicator		Standard (Excluding X type)					
Drain discharger		Integrated (NO: with exhaust when not pressurized. Excluding X type)					
Drain outlet bore size	Rc	1/8 (Excluding X type)					

□ indicates series name.

Descriptions		P type	M type	X type
Operating ambient temperature range	°C	5 to 60		5 to 30
Filtration rating	μm	1	0.01	Suction by activated carbon
Secondary side oil concentration	mg/m^3	0.6	0.01	0.003
Initial pressure drop	MPa	0.007	0.01	0.02
Regular pressure drop	MPa	0.014	0.02	-

*1: Processing air flow rate is the atmospheric pressure conversion value where the inlet pressure is 0.7MPa.
*2: ANR indicates conditions of 20°C atmospheric pressure and relative humidity 65%.
*3: The secondary side oil concentration is the value when the inlet air temperature is 21°C.
*4: The drain discharger is an NO. Air is purged with initial drainage until pressure reaches 0.1 MPa.
*5: The P/M type element must be replaced after one year or when the differential pressure indicator needle reaches the red range, whichever is faster.
*6: Replace the X type element after 650 hours (at 21°C) or when the deodorizing effect is lost.
*7: The X type has a ball valve (G1/2) at the discharge outlet.

How to order

AF2 | 004 | P | - | 25

Ⓐ Flow rate classification
Ⓑ Element
Ⓒ Bore size

Code	Content
Ⓐ Flow rate classification	
004	3.7 m^3/min(ANR)
007	6.6 m^3/min(ANR)
010	9.6 m^3/min(ANR)
013	13.2 m^3/min(ANR)
020	19.8 m^3/min(ANR)
026	25.8 m^3/min(ANR)
Ⓑ Element	
P	P type (solid/oil removing filter)
M	M type (high-performance solid/oil removing filter)
X	X type (odor removing filter)
Ⓒ Bore size	
25	Rc1
40	Rc1 1/2
50	Rc2
65	Rc2 1/2

Note on model No. selection

The required performance may not be attained if using at a level less than the selected pressure. Always select the model No. with the working pressure.

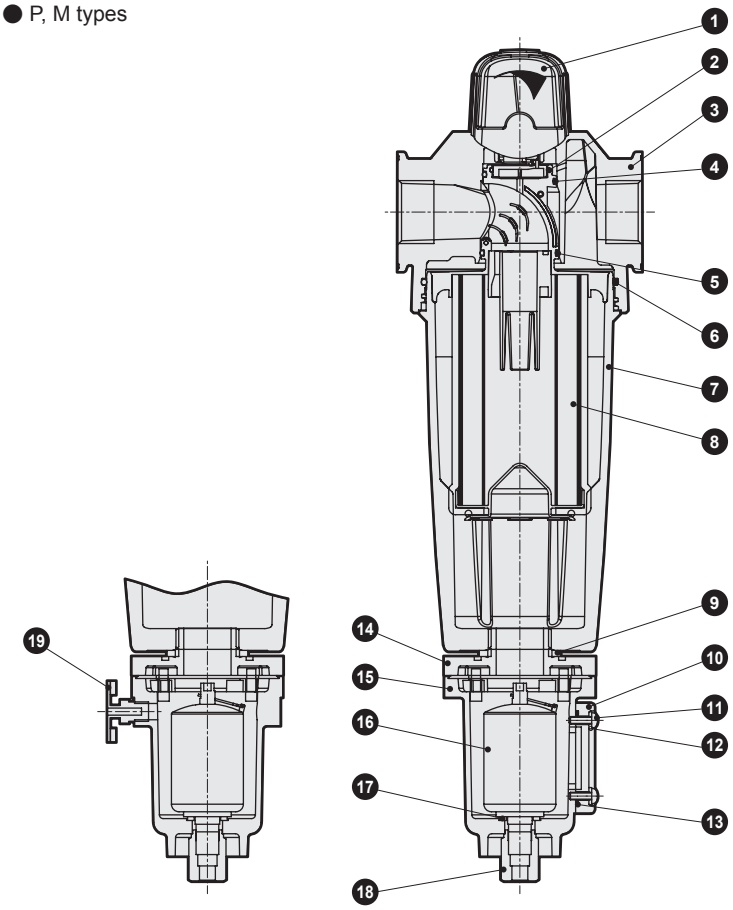
Flow rate compensation coefficient

Pressure (MPa)	Compensation coeff
0.1	0.38
0.2	0.53
0.3	0.65
0.4	0.76
0.5	0.85
0.6	0.93
0.7	1.0
0.8	1.07
0.9	1.13
1.0	1.18

If working pressure is other than 0.7 MPa, multiply processing air flow rate by the above coefficient.

Internal structure and parts list

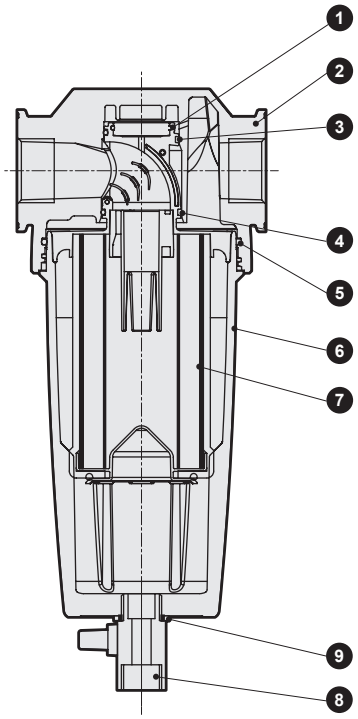
● P, M types



Parts list

No.	Part name	Material
1	Differential pressure indicator	
2	O-ring	NBR
3	Cover	Aluminum
4	O-ring	NBR
5	O-ring	NBR
6	O-ring	NBR
7	Bowl	Aluminum
8	Element	
9	Seal washer	Steel, NBR
10	Side gauge	Sulfone
11	Small machine screw	Steel
12	Washer	PA
13	Packing	NBR
14	Cap	Aluminum
15	Case	Aluminum
16	Auto-drain	
17	Packing	NBR
18	Adaptor nut	C3604
19	Valve	

● X type



Parts list

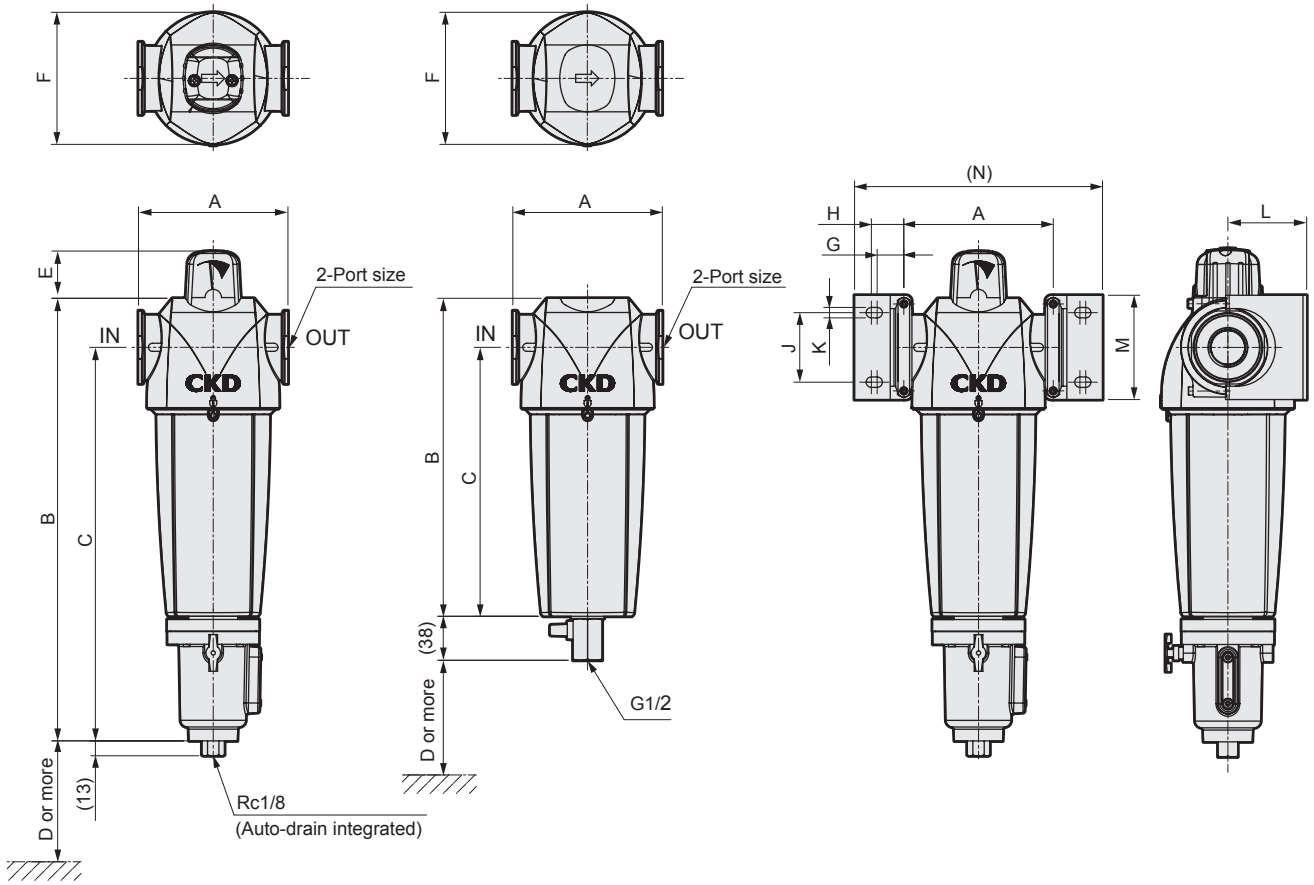
No.	Part name	Material
1	O-ring	NBR
2	Cover	Aluminum
3	O-ring	NBR
4	O-ring	NBR
5	O-ring	NBR
6	Bowl	Aluminum
7	Element	
8	Ball valve	
9	Seal washer	Steel, NBR

Discontinue

AF2000 Series

Dimensions CAD

● AF2004P/M to AF2026P/M ● AF2004X to AF2026X



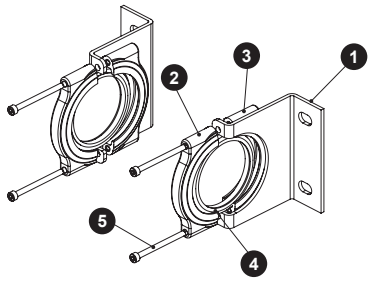
Model No.	Port size	A	B	C	D	E	F	G	H	J	K	L	M	N
AF2004P/M-25	Rc1	129	383	340	70	43	114	23	28	60	9	68	90	214
AF2004X-25	Rc1	129	274	232	70	-	114	23	28	60	9	68	90	214
AF2007P/M-40	Rc1 1/2	129	473	430	70	43	114	23	28	60	9	68	90	214
AF2007X-40	Rc1 1/2	129	364	322	70	-	114	23	28	60	9	68	90	214
AF2010P/M-40	Rc1 1/2	170	541	491	100	46	155	32	39	84	11	92	120	291
AF2010X-40	Rc1 1/2	170	433	383	100	-	155	32	39	84	11	92	120	291
AF2013P/M-50	Rc2	170	633	583	100	46	155	32	39	84	11	92	120	291
AF2013X-50	Rc2	170	525	475	100	-	155	32	39	84	11	92	120	291
AF2020P/M-50	Rc2	170	633	583	100	46	155	32	39	84	11	92	120	291
AF2020X-50	Rc2	170	525	475	100	-	155	32	39	84	11	92	120	291
AF2026P/M-65	Rc2 1/2	205	750	690	120	49	180	35.5	42.5	100	11	135	150	332
AF2026X-65	Rc2 1/2	205	642	582	120	-	180	35.5	42.5	100	11	135	150	332

The X type does not have a differential pressure indicator.
The D dimension shows the min. dimension required to remove the element. Allow for the auto-drain piping dimensions when actually laying the pipe.

Configurations table

Bracket kit

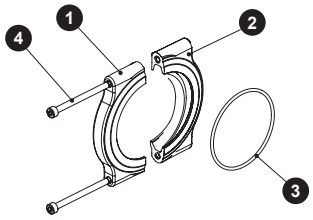
Model	Model No.
AF2004 to AF2007	AF2004-KD4-162775
AF2010 to AF2020	AF2010-KD4-162776
AF2026	AF2026-KD4-168281



No.	Part name	Quantity
1	Mounting bracket	2
2	Front clamp	2
3	Rear clamp	2
4	Mounting spacer	2
5	Hexagon socket head cap screw	4

Module kit

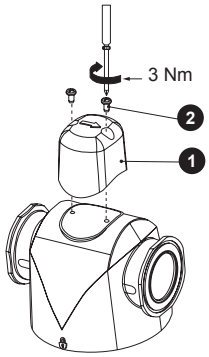
Model	Model No.
AF2004 to AF2007	AF2004-KD4-162773
AF2010 to AF2020	AF2010-KD4-162774
AF2026	AF2026-KD4-168280



No.	Part name	Quantity
1	Front clamp	1
2	Rear clamp	1
3	O-ring	1
4	Hexagon socket head cap screw	2

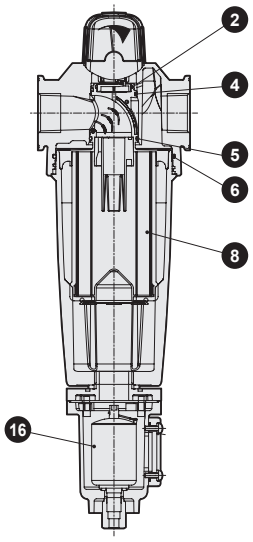
Differential pressure indicator

Model	Model No.
AF2004 to AF2026	AF2004-KD4-162778



No.	Part name	Quantity
1	Differential pressure indicator	1
2	Mounting screw	2

Repair parts list



Replacements / Model No.	O-ring ② ④ ⑤ ⑥	Auto-drain ⑯
AF2004*-25	AF2004-KD4-162779	AF2004-KFL-391722
AF2007*-40		
AF2010*-40	AF2010-KD4-162780	
AF2013*-50		
AF2020*-50		
AF2026*-65	AF2026-KD4-168282	

The P/M/X type name is indicated with *.
The O-ring kit consists of three O-rings for elements and one for the bowl.
The auto-drain kit consists of a float section, hexagon nut and packing.
The drain discharger cannot be mounted on the X type.

Element

Repair parts kit model No. / Model	P element	M element	X element
AF2004*-25	AF2004P-KD4-162758	AF2004M-KD4-162759	AF2004X-KD4-162760
AF2007*-40	AF2007P-KD4-162761	AF2007M-KD4-162762	AF2007X-KD4-162763
AF2010*-40	AF2010P-KD4-162764	AF2010M-KD4-162765	AF2010X-KD4-162766
AF2013*-50	AF2013P-KD4-162767	AF2013M-KD4-162768	AF2013X-KD4-162769
AF2020*-50	AF2020P-KD4-162770	AF2020M-KD4-162771	AF2020X-KD4-162772
AF2026*-65	AF2026P-KD4-168277	AF2026M-KD4-168278	AF2026X-KD4-168279

The P/M/X type name is indicated with *.
The element kit consists of O-rings (②④⑤⑥) and element (⑧).

Discontinue

Pneumatic components (F.R.L unit (large bore size filter))

Safety Precautions

Be sure to read this section before use.
Refer to Intro Page 3 for general precautions.

Series/Product-specific cautions: Medium main line filter AF2000 Series

Design/selection

⚠ WARNING

■ The manufacturer cannot be held liable in the following cases:
- In the case where there are serious errors in the operator's use.
- Inappropriate modifications or repairs using nonstandard parts, made by the user.

Design/selection

⚠ WARNING

■ Do not use for applications other than compressed air.

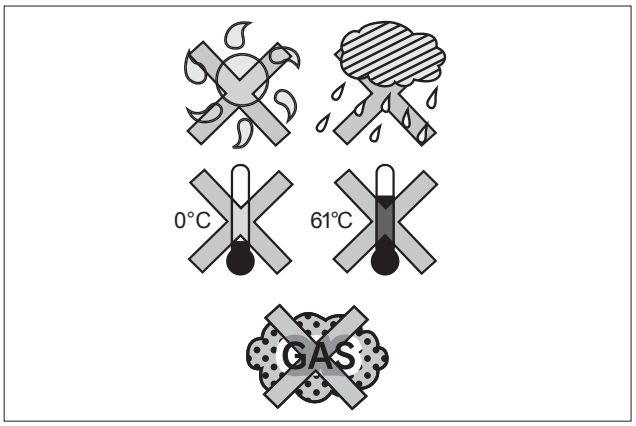
■ Do not use for caisson shields or medical devices such as breathing devices, or for direct air blow onto foodstuffs.
- There is a risk of personal injury.

■ Do not mount and use this device on transportation equipment such as vehicles or ships.
- The internal devices could be damaged by vibration, etc.

■ Avoid direct sunlight and rainwater.
The resin parts, etc., could deteriorate and break.

■ Do not use in locations with corrosive gases.

■ Use this product within the operating ambient temperature.



■ Do not use in locations at risk of freezing. The accumulated drainage could freeze and damage the product.

■ Do not use in hazardous locations (possibly explosive atmospheres, etc.).

■ We recommend keeping the inlet air temperature as low as possible. The oil removing rate will drop if the temperature is high.

■ Do not use this product in an ozone generating environment.

■ Avoid using this product where vibration and impact are present.

■ Do not use this product in areas containing dust, etc.

■ Do not use this product in an environment in which the compressed air contains the following gases.
- Sulfur dioxide/chlorine gas
- Aromatic hydrocarbon compounds
  (For example, benzene, toluene, phenol, cyclohexane, etc.)
- Chlorinated hydrocarbon compounds
  (For example, trichloroethylene, chloroform, etc.)
- Ketones (for example, acetone, etc.)
- Aldehydes
  (For example, formaldehyde or acetaldehyde, etc.)
- Amines (for example, ethylamine, methylamine, etc.)

■ Always set the air flow to within the working pressure range and the processing air rate.
- Failure to observe this may prevent proper removal of water, dust and oil.

■ Install indoors.

Mounting, installation and adjustment

⚠ CAUTION

■ Do not step onto the body.

■ When piping, remove cutting oil and rust preventing agent, etc.

■ Secure enough space for maintenance and inspection.

■ Do not mount directly after a valve which opens/closes suddenly. Do not install this filter in a system where a reverse flow could occur or where impact could be applied easily.

■ Flush the drain piping with air blow before mounting to the main body to remove any foreign matter inside.

■ Use a pipe with inner diameter φ5.7 to 6.0 that is 5 m or less in length for the P or M types drain discharger piping. Do not use vertical piping.

■ As drainage is discharged with pressure, securely fix the piping at the drain port so that drainage does not splatter.

Mounting, installation and adjustment

■ Mount the bowl vertically facing downward. Failure to do so could cause drainage discharge faults. Lay the drain pipe so that it is not pressurized. Laying several pipes together or attaching a check valve will create a pressurized state. Do not lay the pipes in this state.

■ Ensure that the product's weight can be sufficiently withstood when installing. Fix the inlet and outlet piping to the floor or ceiling with a holder or supporter, etc.

■ When connecting pipes, make sure that the front and back pipes are straight.

■ Do not apply excessive force on the connected pipes. Excessive force could deform or damage the connection port threads or the fitting.

■ Use a pipe with an inner diameter φ5.7 to 6.0 that is 5 m or less in length for the P or M types drain discharger piping. Do not use vertical piping.
The drain outlet is processed with female threads. Use that section when piping.
When connecting the pipe, fix the nut with a wrench, etc. Do not apply excessive force on the threads.

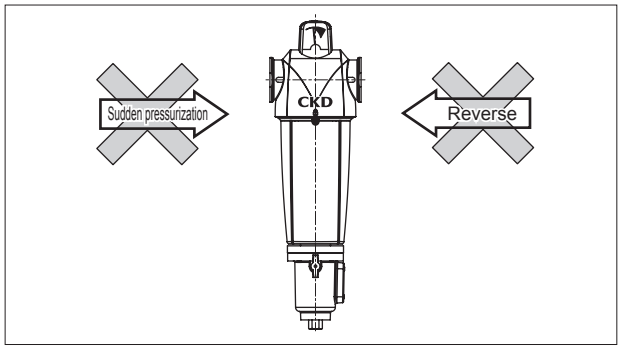
Use/maintenance

⚠ WARNING

■ Before removing the bowl, stop the compressed air, completely discharge the pressure in the bowl and confirm that there is no residual pressure.

⚠ CAUTION

■ Do not use reverse airflow. Do not pressurize suddenly.
Otherwise, the original performance may not be attained and there will be a risk of damage.



■ The drain discharger is an NO. The compatible compressor capacity is 0.75 kW or more (discharge flow rate 90 ℓ/min. or more).

■ The service life of the air filter is one year or when the differential pressure indicator needle reaches the red range, whichever comes first.
Replace the element with a new one at the end of its life.
(Note that the X type must be replaced after 650 hours (at 21°C) or when the deodorizing effect is lost.)

■ The drain discharger is air purged with the initially generated drainage until the pressure rises to 0.1 MPa.

■ Release the air in the filter before servicing the drain discharger for a drain fault, etc. Wash the drain unit with water, and then blow out all moisture with an air gun.

■ An air release valve is provided on the bottom of the filter, which can be used to release air.

● Chemical resistance of drain discharger plastic bowl

Types of chemicals	Categories of chemicals	Main products of chemicals	General applications	Polycarbonate	Nylon
Inorganic compound	Acids	Hydrochloric acid, sulfuric acid, fluorine, phosphoric acid, chromic acid, etc.	Acid washing of metals, acidic degreasing solutions, coating treatment solutions	×	×
	Alkalines	Caustic soda, caustic potash, calcium hydroxide, aqueous ammonia, sodium carbonate, etc.	Alkaline degreasing solution for metals	×	○
	Inorganic salts	Sodium sulfide, potassium nitrate, potassium bichromate, sodium sulfate, etc.		×	○
Organic compound	Aromatic hydrocarbons	Benzene, toluene, xylene, ethyl benzene, styrene, etc.	Contained in paint thinner (benzene, toluene, and xylene)	×	×
	Chlorinated aliphatic hydrocarbons	Methyl chloride, ethylene chloride, methylene chloride, acetylene chloride, chloroform, trichlene, perchlene, carbon tetrachloride	Organic solvent-based washing solution for metals (trichlene, perchlene, carbon tetrachloride, etc.)	×	○
	Chlorinated aromatic hydrocarbons	Chlorobenzene, dichlorobenzene, benzene hexachloride (B/H/C), etc.	Agricultural chemicals	×	○
	Petroleum components	Solvent, naphtha, gasoline		×	○
	Alcohols	Methyl alcohol, ethyl alcohol, cyclohexanol, benzyl alcohol	Used as antifreezing agent	×	×
	Phenol	Carbolic acid, cresol, naphthol, etc.	Disinfectant solution	×	×
	Ethers	Methyl ether, methyl ethyl ether, ethyl ether	Additive of brake oil	×	○
	Ketones	Acetone, methyl ethyl ketone, cyclohexanone, acetophenone, etc.		×	×
	Carboxylic acids	Formic acid, acetic acid, butyl acid, acrylic acid, oxalic acid, phthalic acid, etc.	Dyes/oxalic acid for aluminum processing, phthalic acid for paint base	×	×
	Phosphate ester	Dimethyl phthalate (DMP), diethyl phthalate (DEP), dibutyl phthalate (DBP), dioctyl phthalate (DOP)	Lubricant, synthetic coolant, rust preventing agent additive plasticizer for synthetic resin	×	○
	Oxyacids	Glycol acid, lactic acid, malic acid, citric acid, tartaric acid		×	×
	Nitro compounds	Nitromethane, nitroethane, nitroethylene, nitrobenzene, etc.		×	○
	Amines	Methylamine, dimethylamine, ethylamine, aniline, acetanilide, etc.	Additive of brake oil	×	×
	Nitriles	Acetonitrile, acrylonitrile, benzonitrile, acetoisonitrile, etc.	Raw material for nitrile rubber	×	○

○: Available ×: Not available