New Products

Air filter medium pressure type [FM3000, 4000, 6000, 8000 Series]
Oil mist filter medium pressure type [MM3000, 4000, 6000, 8000 Series]

Read the "safety precautions" in the introduction before starting use.

The maximum working pressure has been increased from that of conventional air filters, enabling use with medium-pressure specifications such as medium-pressure compressors.

Overview

Features

- Max. working pressure: 1.6MPa
- A great variety of series
- Developing filter and oil mist filter

⚠️ Read the “safety precautions” in the introduction before starting use.
Safety precautions
Always read this section before starting use.

When designing and manufacturing a device using CKD products, the manufacturer is obligated to check that device safety mechanical mechanism, pneumatic control circuit, or water control circuit and the system operated by electrical control that controls the devices is secured. It is important to select, use, handle, and maintain the product appropriately to ensure that the CKD product is used safely. Observe warnings and precautions to ensure device safety. Check that device safety is ensured, and manufacture a safe device.

**WARNING**

[1] This product is designed and manufactured as a general industrial machine part. It must be handled by an operator having sufficient knowledge and experience in handling.

Contact CKD when using the product outside the unique specifications range, when using it outdoors, and when using it under the conditions and environment below. Do not attempt to modify or additionally machine the product.
(1) Use for special applications requiring safety including nuclear energy, railroad, aviation, ship, vehicle, medical equipment, equipment or applications coming into contact with beverage or food, amusement equipment, emergency shutoff circuits, press machine, brake circuits, or for safeguard.
(2) Use for applications where life or assets could be adversely affected, and special safety measures are required.

[3] Observe corporate standards and regulations, etc., related to the safety of device design and control, etc.
IS04414, JIS B8370 (pneumatic system rules) JIS B8368 (pneumatic cylinder)
JPAS O05 (principles for pneumatic cylinder use and selection)
Including High Pressure Gas Maintenance Law, Occupational Safety and Sanitation Laws, other safety rule, and organization standards and regulations

[4] Do not handle, pipe, or remove devices before confirming safety.
(1) Inspect and service the machine and devices after confirming safety of the entire system related to this product.
(2) Note that there may be hot or charged sections even after operation is stopped.
(3) When inspecting or servicing the device, turn off the energy source (air supply or water supply), and turn off power to the facility. Discharge any compressed air from the system, and pay enough attention to possible water leakage and leakage of electricity.
(4) When starting or restarting a machine or device that incorporates pneumatic components, make sure that the system safety, such as pop-out prevention measures, is secured.


The safety cautions are ranked as "DANGER", "WARNING" and "CAUTION" in this section.

- **DANGER**: When a dangerous situation may occur if handling is mistaken leading to fatal or serious injuries, or when there is a high degree of emergency to a warning.
- **WARNING**: When a dangerous situation may occur if handling is mistaken leading to fatal or serious injuries.
- **CAUTION**: When a dangerous situation may occur if handling is mistaken leading to minor injuries or physical damage.

Note that some items described as "CAUTION" may lead to serious results depending on the situation. In any case, important information that must be observed is explained.
Pneumatic components (F.R.L unit (modular design))

Safety precautions
Always read this section before starting use.

**Design & Selection**

**WARNING**
- This product is for industrial use only. Do not use it for medical devices, life-support systems, or circuits.
- Piping load torque
  Do not apply piping load or torque onto the body and piping section.
  Use within the designated torque even when using a piping adapter.

<table>
<thead>
<tr>
<th>Series</th>
<th>3000</th>
<th>4000</th>
<th>6000</th>
<th>8000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max. torque N·m</td>
<td>50</td>
<td>50</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

- Avoid the following type of piping.
  Piping with a single support should not be used due to excessive force resulting in damage.

**CAUTION**
- When drainage levels are high
  Install an air dryer and a drain separator in front of the air filter.
  Use of hot humid air causes excessive drainage from the compressor and may shorten component life or cause corrosion.
- For compressor circuit of water lubrication method
  Take measures to prevent chlorine-based substances from entering the compressed air.
- Use the auto-drain with the following conditions. Failure to do so could result in malfunctions.
  NO type automatic drain (exhaust without pressurized): For “F”
    • Use a compressor at 0.75 kW (90l/min. (ANR)) or higher.
    • Use a working pressure of 0.1 MPa and over. (Purge pipes, including initial drainage, with air until the pressure rises to 0.1 MPa and over.)
  NC type automatic drain (no exhaust without pressurized): For “F1”
    • Working compressors can be used at 0.75 kW or less.
    • Use a working pressure of 0.15 MPa and over.

**Installation & Adjustment**

**CAUTION**
- To use F.R.L correctly.
  1. Check the arrow indicating the air inlet before connection. Reverse connection causes malfunctions.
  2. Install the air filter vertically with the case facing down. Otherwise draining may be incorrectly discharged.
  3. Use of the automatic drain where vibration is present could cause faults and malfunctions.
  4. Repeated sudden pressure increases and decreases or pressure fluctuations will shorten product life. Use a circuit to minimize pressure changes.
- Pipe automatic drain piping as follows:
  Not doing so could cause malfunctions.
  Use an inner diameter of 5.7 or more and piping of 5 m or less for the drainage section. Do not use vertical piping.
  Pipe so that no lateral load acts on the bowl.
  Fix the cock’s hexagonal side when screwing joints, etc., into Rc1/8 female threads.
- Piping screw-in torque
  Do not apply the excessive torque on the body and piping section when piping.

<table>
<thead>
<tr>
<th>Series</th>
<th>3000</th>
<th>4000</th>
<th>6000</th>
<th>8000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max. torque N·m</td>
<td>30</td>
<td>30</td>
<td>70</td>
<td>70</td>
</tr>
</tbody>
</table>

**CAUTION**
- Piping of pressure detection port
  Pressure detection port is available as an option for FM6000, MM6000, FM8000 and MM8000.
  Filter element or oil mist filter mantle assembly life is checked by inserting a differential pressure gauge, GA400-8-P02, into the pressure detection port.
  When using FM6000 and MM6000 options Q and X1 simultaneously and installing a differential pressure gauge, increase height by using piping material and install so that no interference occurs.

**During use & Maintenance**

**WARNING**
- Drain so that air filter drainage does not accumulate beyond the maximum.
  Components could malfunction if drainage flows into the secondary side.
- Removing the bowl
  Before removing the bowl, the compressed air, discharge pressure in the bowl completely, and confirm that no residual pressure remains.

**WARNING**
- Submicron 0.3µm element
  Washing cannot restore functions. If the pressure drops to 0.07 MPa, replace the element with a new part.
- Oil mist filter
  Mantle (element) life is one year (6000 hours) or until pressure drops to 0.1 MPa, except for the X type. When life is exceeded, replace the mantle with a new one. (Do not touch the urethane foam layer during replacement.)
**Specifications**

<table>
<thead>
<tr>
<th>Model No.</th>
<th>FM3000</th>
<th>FM4000</th>
<th>FM6000</th>
<th>FM8000</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Appearance</strong></td>
<td><img src="image1.png" alt="Image" /></td>
<td><img src="image2.png" alt="Image" /></td>
<td><img src="image3.png" alt="Image" /></td>
<td><img src="image4.png" alt="Image" /></td>
</tr>
<tr>
<td><strong>Working fluid</strong></td>
<td>Compressed air</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Max. working pressure MPa</td>
<td>1.6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Withstanding pressure MPa</td>
<td>2.4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ambient temperature °C</td>
<td>-5 to 60 (no freezing)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fluid temperature °C</td>
<td>5 to 60</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Filtration rating µm</td>
<td>5 or 0.3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drain capacity cm³</td>
<td>45</td>
<td>80</td>
<td>80</td>
<td>80 (Note 1)</td>
</tr>
<tr>
<td>Port size</td>
<td>1/4, 3/8</td>
<td>1/4, 3/8, 1/2</td>
<td>3/4, 1</td>
<td>3/4, 1</td>
</tr>
<tr>
<td>Product weight kg</td>
<td>0.35</td>
<td>0.55</td>
<td>1.0</td>
<td>1.26</td>
</tr>
</tbody>
</table>

Note 1: Drainage accumulates up to 170 cm³ only with the manual drain cock.
Flow characteristics

Air Filter Series

FM3000-8

- Pressure drop (MPa)
- Air flow rate (m³/min. (ANR))

FM4000-8

- Pressure drop (MPa)
- Air flow rate (m³/min. (ANR))

FM6000-20

- Pressure drop (MPa)
- Air flow rate (m³/min. (ANR))

FM8000-20

- Pressure drop (MPa)
- Air flow rate (m³/min. (ANR))

FM3000-10

- Pressure drop (MPa)
- Air flow rate (m³/min. (ANR))

FM4000-10

- Pressure drop (MPa)
- Air flow rate (m³/min. (ANR))

FM6000-25

- Pressure drop (MPa)
- Air flow rate (m³/min. (ANR))

FM8000-25

- Pressure drop (MPa)
- Air flow rate (m³/min. (ANR))

FM3000

- Flow characteristics

FM4000

- Flow characteristics

FM6000

- Flow characteristics

FM8000

- Flow characteristics

FM3000-15

- Pressure drop (MPa)
- Air flow rate (m³/min. (ANR))

FM8000-20

- Pressure drop (MPa)
- Air flow rate (m³/min. (ANR))

FM6000-15

- Pressure drop (MPa)
- Air flow rate (m³/min. (ANR))

FM8000-25

- Pressure drop (MPa)
- Air flow rate (m³/min. (ANR))

FM3000

- Maximum flow rate

FM4000

- Maximum flow rate

FM6000

- Maximum flow rate

FM8000

- Maximum flow rate

FM3000-15

- Maximum flow rate

FM8000-25

- Maximum flow rate

FM4000-15

- Maximum flow rate

FM6000-25

- Maximum flow rate

FM3000

- Maximum flow rate

FM4000

- Maximum flow rate

FM6000

- Maximum flow rate

FM8000

- Maximum flow rate
### How to order

**FM3000** • 8 • F • A8 • B

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Descriptions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>(B) Port size</strong></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>1/4</td>
</tr>
<tr>
<td>10</td>
<td>3/8</td>
</tr>
<tr>
<td>15</td>
<td>1/2</td>
</tr>
<tr>
<td>20</td>
<td>3/4</td>
</tr>
<tr>
<td>25</td>
<td>1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>(C) Port thread type</strong></th>
<th>Note 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blank</td>
<td>Rc thread</td>
</tr>
<tr>
<td>N</td>
<td>NPT thread</td>
</tr>
<tr>
<td>G</td>
<td>G thread</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>(D) Option</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Drainage</td>
<td></td>
</tr>
<tr>
<td>Blank</td>
<td>With manual drain cock</td>
</tr>
<tr>
<td>F</td>
<td>NO type automatic drain (exhaust without pressurized) (Drain port Rc1/8) Max. working pressure 1.5 MPa and max. working temperature 45°C</td>
</tr>
<tr>
<td>F1</td>
<td>NC type automatic drain (no exhaust without pressurized) (Drain port Rc1/8) Max. working pressure 1.5 MPa and max. working temperature 45°C</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>(E) Display unit</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Blank</td>
<td>MPa display and Rc thread</td>
</tr>
<tr>
<td>J1</td>
<td>MPa display, NPT and G thread</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>(F) Attachment (attached)</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Blank</td>
<td>Without attachment</td>
</tr>
<tr>
<td>A8</td>
<td>Rc1/4 piping adapter set</td>
</tr>
<tr>
<td>A10</td>
<td>Rc3/8 piping adapter set</td>
</tr>
<tr>
<td>A15</td>
<td>Rc1/2 piping adapter set</td>
</tr>
<tr>
<td>A20</td>
<td>Rc3/4 piping adapter set</td>
</tr>
<tr>
<td>A25</td>
<td>Rc1 piping adapter set</td>
</tr>
<tr>
<td>A32</td>
<td>Rc1 1/4 piping adapter set</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>(G) Bracket (attached)</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Blank</td>
<td>Without bracket</td>
</tr>
<tr>
<td>B</td>
<td>C type bracket</td>
</tr>
</tbody>
</table>

### Precautions for selecting model No.

**Note 1:** Selection options based on drainage, bowl material, element, and differential pressure detection. When selecting options for several items, list options in order from the top.

**Note 2:** When "F" is selected for drainage, the automatic drain’s minimum operation pressure is 0.1 MPa. For purge pipes, including initial drainage, with air until pressure rises to 0.1 MPa and over.

**Note 3:** When "F1" is selected for drainage, minimum automatic drain operating pressure is 0.15 MPa.

**Note 4:** The piping adapter set A00-** is included.

**Note 5:** The piping adapter set and C bracket cannot be used together.

**Note 6:** NPT or G thread applies to IN, OUT and drain ports when NPT or G thread is selected.

**Note 7:** The adapter port size can be selected from Rc, NPT or G. Blank: Rc thread, N: NPT thread and G: G thread.

(Example) A8G

**Note 8:** Large automatic drain is provided only if "F" or "F1" is selected for the FM8000 drainage.

**Note 9:** Refer to Intro 2 for conditions on using the automatic drain.
## Internal structure and parts list

### No.  FM3000, FM4000  FM6000  FM8000

<table>
<thead>
<tr>
<th>No.</th>
<th>Part name</th>
<th>Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Plate cover</td>
<td>ABS resin</td>
</tr>
<tr>
<td>2</td>
<td>Body</td>
<td>Aluminum alloy die-casting</td>
</tr>
<tr>
<td>3</td>
<td>O ring</td>
<td>Special nitrile rubber</td>
</tr>
<tr>
<td>4</td>
<td>Element (5µm)</td>
<td>Polypropylene</td>
</tr>
<tr>
<td>5</td>
<td>Element (0.3µm)</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Metal bowl assembly</td>
<td>Aluminum alloy die-casting, brass, glass, nitrile rubber, steel and stainless steel</td>
</tr>
</tbody>
</table>

Note 1: The repair part elements and the repair kits are common with F*000.
Refer to repair parts for F*000 in the catalog Pneumatic, Vacuum and Auxiliary Components No. CB-024SA.
**Air Filter Series**

**Dimensions**

- **FM3000**
  - Drain port
  - Maintenance dimensions
  - Attachment (Piping adapter set)
  - Port size:
    - Rc1/4 (8)
    - Rc3/8 (10)
  - Tube center

- **FM4000**
  - Drain port
  - Maintenance dimensions
  - Attachment (Piping adapter set)
  - Port size:
    - Rc1/4 (8)
    - Rc3/8 (10)
    - Rc1/2 (15)
  - Tube center

- **Attachment**
  - C type bracket (-B)
  - Part model No.: B320
  - Automatic drain (F and F1)

- **Option dimensions**
  - Automatic drain (F and F1)

---

**Dimensions**

- **FM3000**
  - IN OUT
  - Drain port
  - Maintenance dimensions
  - Port size:
    - Rc1/4 (8)
    - Rc3/8 (10)
  - Tube center

- **FM4000**
  - IN OUT
  - Drain port
  - Maintenance dimensions
  - Port size:
    - Rc1/4 (8)
    - Rc3/8 (10)
    - Rc1/2 (15)
  - Tube center
Dimensions

*FM6000*
- Option dimensions
  - With differential pressure detection port (Q)
- Secondary side pressure
  - Rc1/4
- Primary side pressure
  - Rc1/4

100
170
Rc1 1/4: 166
205
65
90
245
60
50
50
50
16
68
104
8

*FM8000*
- Option dimensions
  - With differential pressure detection port (Q)
- Secondary side pressure
  - Rc1/4
- Primary side pressure
  - Rc1/4

IN OUT
Attachment
(Piping adapter set)
Drain port
Maintenance dimensions

IN OUT
Attachment
(Piping adapter set)
Drain port
Maintenance dimensions

IN OUT
Attachment
(Piping adapter set)
Drain port
Maintenance dimensions
## Specifications

<table>
<thead>
<tr>
<th>Model No.</th>
<th>MM3000</th>
<th>MM4000</th>
<th>MM6000</th>
<th>MM8000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td><img src="https://example.com/image1.png" alt="Image" /></td>
<td><img src="https://example.com/image2.png" alt="Image" /></td>
<td><img src="https://example.com/image3.png" alt="Image" /></td>
<td><img src="https://example.com/image4.png" alt="Image" /></td>
</tr>
<tr>
<td>Working fluid</td>
<td>Compressed air</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Max. working pressure MPa</td>
<td>0.1 to 1.6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Withstanding pressure MPa</td>
<td>2.4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drain capacity cm³</td>
<td>45</td>
<td>80</td>
<td>80</td>
<td>80</td>
</tr>
<tr>
<td>Port size</td>
<td>1/4, 3/8</td>
<td>1/4, 3/8, 1/2</td>
<td>3/4, 1</td>
<td>3/4, 1</td>
</tr>
<tr>
<td>Product weight kg</td>
<td>0.35</td>
<td>0.55</td>
<td>1.0</td>
<td>1.48</td>
</tr>
<tr>
<td><strong>Mantle option name</strong></td>
<td>Blank (M type)</td>
<td>S (S type)</td>
<td></td>
<td>X (X type)</td>
</tr>
<tr>
<td>Treating flow rate L/min. (ANR)</td>
<td>490</td>
<td>610</td>
<td>610</td>
<td></td>
</tr>
<tr>
<td>L/min. (ANR)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary side pressure 1.4MPa</td>
<td>1130</td>
<td>1370</td>
<td>1370</td>
<td></td>
</tr>
<tr>
<td>Pressure drop 0.01MPa</td>
<td>1740</td>
<td>1920</td>
<td>1920</td>
<td></td>
</tr>
<tr>
<td>MM6000-*</td>
<td>MM4000-*</td>
<td>MM8000-*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ambient temperature °C</td>
<td>-5 to 60 (no freezing)</td>
<td>-5 to 30 (no freezing)</td>
<td>-5 to 30 (no freezing)</td>
<td></td>
</tr>
<tr>
<td>Fluid temperature °C</td>
<td>5 to 60</td>
<td>5 to 30</td>
<td>5 to 30</td>
<td></td>
</tr>
<tr>
<td>Filtration rating µm</td>
<td>0.01 (nominal)</td>
<td>0.3</td>
<td>Absorption by activated charcoal Note 4</td>
<td></td>
</tr>
<tr>
<td>Secondary side oil concentration mg/m³</td>
<td>0.01 or less</td>
<td>0.5 or less</td>
<td>0.003 or less</td>
<td></td>
</tr>
<tr>
<td>Mantle (element) change</td>
<td>One year (6000 hours) or pressure drop 0.1MPa</td>
<td>-</td>
<td>-</td>
<td>Note 6</td>
</tr>
</tbody>
</table>

**Note 1:** Use within the maximum processing flow rate. If flow exceeding this rate occurs or if installation is in a place with high fluctuations, the mantle could be damaged or oil and drainage spill onto the secondary side and cause terminal faults.

**Note 2:** At primary side oil concentration 30mg/m³, inlet air temperature 21°C.

**Note 3:** Install an S oil mist filter as a pre-filter on the preliminary side to prevent early clogging.

**Note 4:** Install an F Series air filter or M Series oil mist filter on the secondary side to prevent active carbon particles from reaching the secondary side.

**Note 5:** When oil mist filter (M type of M series) is installed on the primary side.

**Note 6:** X mantle (element) replacement is determined by odor concentration in compressed air, and cannot be clearly indicated.

The primary air temperature must be 30°C or less. Deodorizing decreases if the temperature is high, so provide measures to dissipate heat.
Flow characteristics (maximum flow rate)

- **MM*00-M**
  - MM8000-M
  - MM6000-M
  - MM4000-M
  - MM3000-M

- **MM*00-S**
  - MM8000-S
  - MM6000-S
  - MM4000-S
  - MM3000-S

- **MM*00-X**
  - MM8000-X
  - MM6000-X
  - MM4000-X
  - MM3000-X

**Oil mist filter: Using the optional mantle**

**Major recommended circuit**
- **S type**
  - F
  - S
  - M

- **M type**
  - F
  - S
  - M

- **X type**
  - F
  - S
  - M
  - X

**Applications**
- General industrial air
  - Air tool
  - Air drill and air screw driver
  - Air grinder
  - Labor saving device and components
  - Pneumatic jigs and tools
  - Air chuck
  - Air vice
  - Precision part cleaning air blow
- Oil free air
  - Instrumentation
  - Measurement
  - Logic control
  - Movable element and pure fluid element
  - Luxury painting
  - Precise industry
  - Deodorization air
  - Food industry
  - Pharmaceutical industry
  - Agitation
  - Transportation
  - Dry
  - Packaging
  - Air for brewing

**Option symbol of mantle and shape**

**Option symbol**
- Blank (M type)
- S (S type)
- X (X type)

**Appearance**
- End plate
  - Black
  - Green
  - Plastic form
  - Red
  - Punching metal

Caution: Changes to product upgrades may be made without prior notice. When placing an order, confirm the option symbol for the part model given here.
### Oil Mist Filter Series

#### How to order

**Model No.**
- **MM3000-B8-F1-A8-B**

**Port size**
- **8**
- **10**
- **15**
- **20**
- **25**

**Port thread type**
- **8**
- **10**
- **15**
- **20**
- **25**

**Option**
- **Note 1**
- **Note 2**
- **Note 3**
- **Note 9**

**Display unit**
- **Blank**
- **MPa display and Rc thread**
- **MPa display, NPT and G thread**

**Attachment (attached)**
- **Blank**
- **Without attachment**
- **A8**
- **Rc1/4 piping adapter set**
- **A10**
- **Rc3/8 piping adapter set**
- **A15**
- **Rc1/2 piping adapter set**
- **A20**
- **Rc3/4 piping adapter set**
- **A25**
- **Rc1 piping adapter set**
- **A32**
- **Rc1 1/4 piping adapter set**

**Adaptor screw type**
- **Blank**
- **Rc thread**
- **N**
- **NPT thread**
- **G**
- **G thread**

**Bracket (attached)**
- **Blank**
- **Without bracket**
- **B**
- **C type bracket**

---

**Precautions for selecting model No.**

- **Note 1:** Select options based on drainage, bowl material, element, and differential pressure detection. When selecting options for several items, list options in order from the top.
- **Note 2:** NC type automatic drain cannot be selected. Minimum automatic drain pressure is 0.15 MPa.
- **Note 3:** When "F1" is selected for drainage, minimum automatic drain operating pressure is 0.15 MPa.
- **Note 4:** The piping adapter set A00-**" is included.
- **Note 5:** The piping adapter set and G bracket cannot be used together.
- **Note 6:** A combination with option F1 cannot be selected.
- **Note 7:** IN, OUT and drain port are subject to NPT or G thread when NPT thread or G thread is selected.
- **Note 8:** Port size of the adaptor can be selected from Rc, NPT or G. Blank: Rc thread, N: NPT thread and G: G thread.
- **Note 9:** Refer to intro 2 for conditions on using the automatic drain.
Internal structure and parts list

<table>
<thead>
<tr>
<th>No.</th>
<th>Part name</th>
<th>Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1)</td>
<td>Plate cover</td>
<td>ABS resin</td>
</tr>
<tr>
<td>(2)</td>
<td>Body</td>
<td>Aluminum alloy die-casting</td>
</tr>
<tr>
<td>(3)</td>
<td>O ring</td>
<td>Special nitrile rubber</td>
</tr>
<tr>
<td>(4)</td>
<td>Mantle assembly</td>
<td>-</td>
</tr>
<tr>
<td>(5)</td>
<td>Metal bowl assembly</td>
<td>Aluminum alloy die-casting, brass, glass, nitrile rubber, steel and stainless steel</td>
</tr>
</tbody>
</table>

Note 1: The mantle of repair parts and the repair kits are common with M*000.
Refer to repair parts of M*000 in the catalog; Pneumatic, Vacuum and Auxiliary Components No. CB-024SA.
Oil Mist Filter Series

Dimensions

**MM3000**

- Attachment
  - C type bracket (-B)
  - Part model No.: B320

- Option dimensions
  - Automatic drain (F1)

**MM4000**

- Attachment
  - C type bracket (-B)
  - Part model No.: B420

- Option dimensions
  - Automatic drain (F1)
The goods and their replicas, or the technology and software in this catalog are subject to complementary export regulations by Foreign Exchange and Foreign Trade Law of Japan. If the goods and their replicas, or the technology and software in this catalog are to be exported, laws require the exporter to make sure they will never be used for the development or the manufacture of weapons for mass destruction.

Specifications are subject to change without notice.