Magnetic Separator

FHM Series

These magnetic separators protect machinery from malfunctions, reduced precision, and burnout by adsorbing and eliminating contaminants in the fluid by means of magnetism. This helps extend the service life of hydraulic equipment.

Zero running cost
Since there are no consumable parts, the running cost is basically zero and the magnetic separator can be used semi-permanently.

Extends service life of hydraulic fluid
By adsorbing and eliminating contaminants, the magnetic separator retards deterioration of the hydraulic fluid and makes it possible to extend the fluid replacement time.

Reduced maintenance costs
The magnetic separator prevents mechanical problems caused by contaminants such as abrasive particles and greatly reduces maintenance costs.

Specifications

<table>
<thead>
<tr>
<th>Fluid</th>
<th>FHMN</th>
<th>FHM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating temperature</td>
<td>Max. 80°C</td>
<td>Max. 150°C</td>
</tr>
<tr>
<td>Fluid speed</td>
<td>3 m/min or less</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Model</th>
<th>Applicable fluid storage volume (L/unit)</th>
<th>Dimension (mm)</th>
<th>Weight (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>FHMN-055</td>
<td>20</td>
<td>55 x 120</td>
<td>0.2</td>
</tr>
<tr>
<td>FHM-100</td>
<td>100</td>
<td>100 x 130</td>
<td>0.9</td>
</tr>
<tr>
<td>FHM-200</td>
<td>200</td>
<td>200 x 140 x 140</td>
<td>2.5</td>
</tr>
</tbody>
</table>

Note) For example, three FHM100 magnetic separator units would be sufficient for a 300-liter fluid storage tank.

Contaminant density of 200 ppm
Separator after contaminant adsorption

Fluid after cleaning with magnetic separator (5 ppm)

Magnetic Separator Installation Examples

1. U-turn flow type
2. Underflow type
3. Overflow type
**FHM Series**

**How to Order**

<table>
<thead>
<tr>
<th>Model</th>
<th>Main unit representative dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>FHMN-055</td>
<td>55 x 120</td>
</tr>
<tr>
<td>FHM-100</td>
<td>100 x 190</td>
</tr>
<tr>
<td>FHM-200</td>
<td>200 x 140 x 140</td>
</tr>
</tbody>
</table>

**Fluid Iron Content Elimination Performance by Iron Particle Concentration**

<table>
<thead>
<tr>
<th>Fluid: Hydraulic fluid</th>
<th>Elimination ratio (%)</th>
<th>Flow-back count</th>
</tr>
</thead>
<tbody>
<tr>
<td>FHMN-055</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FHM-100</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FHM-200</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Explanation of graph**

Example: Elimination ratio and concentration after using the FHM-100 for one hour under the following conditions.

- **Conditions**
  1. Volume of fluid in tank: 200 L
  2. Pump-out volume: 100 L/min
  3. Contaminant concentration of used fluid: 500 ppm (initial concentration, percentage by volume)
  4. Number of separators: 2 pcs. (applicable fluid storage volume of 100 L/unit)

- **Calculation**
  
  \[
  \text{N} = \frac{\text{Pump-out volume} \times \text{Operation time}}{\text{Volume of fluid in tank}} = \frac{100 \times 60}{200} = 30
  \]

- **Based on the elimination ratio data for the FHM-100 and the point where the 500 ppm line and flow-back count 30 line intersect (one hour after starting operation), the result is 75%.

**Construction**

- **FHMN-055**
  - Magnet
  - Rubber case
  - Adsorption surface

- **FHM-100**
  - Magnet
  - Cover
  - Adsorption surface
  - Hexagon socket head cap screw
  - Base plate

- **FHM-200**
  - Magnet
  - Cover
  - Adsorption surface
  - Hexagon socket head cap screw
  - Base plate
### Magnetic Separator FHM Series

#### Dimensions

**FHMN-055**

- 55 mm x 55 mm

**FHM-100**

- 115 mm x 115 mm

**FHM-200**

- 215 mm x 140 mm x 70 mm

- Hexagon socket head cap screw (M6 x 10) 2 pcs.

- Hexagon socket head cap screw (M6 x 10) 4 pcs.

#### Handling Precautions

**Mounting**

1. The flat portion of the stainless steel cover functions as the contaminant adsorption surface. However, for FHM-055, the flat portion of the magnetic material functions as the contaminant adsorption surface.
2. Mount the magnetic separator in a location where fluid is constantly flowing by laminar flow.
3. Avoid locations such as near the suction pipe or return pipe, places where there is turbulence, and locations where the flow speed is 3 m/min or greater.

**Maintenance**

1. Clean the separator regularly. Make sure to clean it once the accumulation of contaminants reaches a thickness of 20 mm or so.
2. Clean the adsorption surface of the separator by wiping away the accumulated contaminants using a soft rag or the like.

**Handling**

1. Do not bring the top surface of the separator near magnetically attractive objects such as iron plates.
2. Handle the separators individually and do not bring them into close proximity with each other.
3. Be careful not to get your fingers caught between the product and iron plate, etc., when installing the separator.
4. Do not bring objects that are affected by magnetism (electronic equipment, magnetic cards, watches, etc.) close to the separator.
5. If necessary, fix the separator in place. If frequent cleaning will be necessary, it can be suspended from the top panel of the tank.
6. If a fluid switch (built-in lead switch) or the like is used, it should be installed in a location where it will not be affected by magnetism from the separator. (Refer to the technical data sheet (FGX-TD-T011) for information on magnetic fields.)

**Example of handle equipped type**

**Example of cover/handle equipped type**

**Example of tank fixed type**

**Example of tank fixed type**