Damper Hinges

### Part Number

- **HHPR**
  - 1A
  - 1B
  - 2A
  - 2B

### How to adjust torque

Torque can be easily adjusted with a flat-blade screwdriver. The lid is reversible.

### Bracket Position Change

Bracket mounting position can be adjusted.

### Table of Selection Guide

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Shaft Rotating Direction</th>
<th>Max. Reverse Torque (N·m)</th>
<th>Material</th>
<th>Surface Treatment</th>
<th>Max. Number of Holes</th>
<th>Operating Temp. Range (°C)</th>
<th>Max. Mass (g)</th>
</tr>
</thead>
<tbody>
<tr>
<td>HHPR</td>
<td></td>
<td></td>
<td>Stainless Steel</td>
<td>304 Stainless Steel</td>
<td>4-Ø3.2 Countersink</td>
<td>-20 to 80</td>
<td>20</td>
</tr>
</tbody>
</table>

### Basic Principle

The rotation of the vane compresses the oil and generates control (brake) force to act against work force.

### How to Select a Damper Hinge

The lid is in a horizontal position. Maximum torque as shown on the left. Calculate maximum torque according to the following formula before selecting a damper that satisfies the specifications.

**Formula**

- Max. Torque \( T = \frac{1}{2} L \times \frac{1}{2} m \times g \) (N·m) \( m \) (Newton): Example: \( L = 0.4 \text{ m}, m = 5 \text{ kg} \), Max. Torque \( T = 0.4 \times 0.5 \times 9.8 = 1.96 \text{ N·m} \)

- Select MSDDH

### Stainless Steel

**Detachable Hinges**

- **SHHPSR** Left Door Type
- **SHHPSLR** Right Door Type

**Application Example**

1. Remove the panel from the frame, insert the lower hinge into the frame, and then insert the upper hinge, and then position is set first by the frame.

2. When selecting the panel into the frame, set the lower hinge first as the right side of the upper hinge in the above drawings.

3. Installing and removing the space in a long period of time by the upper hinge, and then insert the lower hinge.

### Part Number Alterations

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Number of Holes on one Side</th>
</tr>
</thead>
<tbody>
<tr>
<td>SHHPSL</td>
<td>3</td>
</tr>
<tr>
<td>SHHPSR</td>
<td>7</td>
</tr>
</tbody>
</table>

### Table of Alterations

<table>
<thead>
<tr>
<th>Alterations</th>
<th>Code</th>
<th>Spec.</th>
<th>Screw</th>
<th>Nut Set</th>
</tr>
</thead>
<tbody>
<tr>
<td>SST</td>
<td>6L</td>
<td>10</td>
<td>4-CR</td>
<td>A</td>
</tr>
<tr>
<td>SST</td>
<td>6F</td>
<td>10</td>
<td>4-CR</td>
<td>A</td>
</tr>
</tbody>
</table>

### Hinges

- **HNSL** Left Door Type
- **HNSLR** Right Door Type

**Part Number Example**

- **HNS3R** Right Door Type
  - HNS3R 3
  - HNS3R 4-CR 6-L SST

Note: The selection made by the calculation above is for reference only. The friction conditions and gear of the turning moment of the damper were not taken into consideration in the example above. The accuracy of the selection of the damper depends on the temperature of the operating environment. Generally, the damping characteristics decrease with rising temperature, whereas it increases with lowering temperature.

*Theultimate load is the value when two pieces are used.*