Compact Accumulator

Model JSY007

Reduce pressure fluctuation caused by temperature change to a fixture circuit disconnected from a pressure source.

Maintenance-Free Spring Type Accumulator

What is an accumulator?

When fixture (closed circuit) is disconnected from the hydraulic pressure source, with the change in volume of the hydraulic fluid due to temperature changes, pressure will increase or decrease. Accumulator avoids damage or deformation of machine and workpiece caused by pressure increase, and falling of workpiece caused by pressure decrease.

<table>
<thead>
<tr>
<th>Temperature Change</th>
<th>With accumulator</th>
<th>Without accumulator</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydraulic temperature goes up</td>
<td>Pressure increases as hydraulic temperature goes up. The piston is pushed up by spring to absorb increased pressure. (Absorbs volume of oil expanded)</td>
<td>Pressure increases as hydraulic temperature goes up. Abnormal high pressure may damage the machine and deform the workpiece.</td>
</tr>
<tr>
<td>Hydraulic temperature goes down</td>
<td>Pressure decreases as hydraulic temperature goes down. The piston rod is pushed up by spring to absorb decreased pressure. (Discharges volume of oil reduced)</td>
<td>Pressure decreases as hydraulic temperature goes down. Due to a decline of clamping force, machining quality will decrease and workpiece will fail off.</td>
</tr>
</tbody>
</table>

Much More Compact than Comparison Model

The compact accumulator JSY007 is installed to NC table more easily than the comparison model. It is most suitable for equipment that has small circuit capacity. (If circuit capacity is large, it is recommended to use multiple number of JSS or JSY007.)

http://www.kosmek.co.jp
Compact Accumulator

**model JSY007**

### External Dimensions

![Diagram of Compact Accumulator]

- **Indicator**
- Maximum dimensions:
  - Width: 44mm
  - Depth: 36mm
  - Height: 25mm

- **Hydraulic Port**: O ring : 1BP8 (Included)
- **2-M4 x 0.7 x 25 Bolt** (Included)

### Caution

Do not disassemble it. Internal spring or parts may pop out.

### Specifications

<table>
<thead>
<tr>
<th>Model No.</th>
<th>JSY0070-2</th>
<th>JSY0070-3</th>
<th>JSY0070-4</th>
<th>JSY0070-5</th>
<th>JSY0070-6</th>
<th>JSY0070-7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard Operating Pressure MPa</td>
<td>2.0</td>
<td>3.0</td>
<td>4.0</td>
<td>5.0</td>
<td>6.0</td>
<td>7.0</td>
</tr>
<tr>
<td>Withstanding Pressure MPa</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>14.0</td>
</tr>
<tr>
<td>Discharge Oil Capacity cm³</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.5</td>
</tr>
<tr>
<td>Absorbing Capacity cm³</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.1</td>
</tr>
<tr>
<td>Compression Factor [β] MPa/cm³</td>
<td></td>
<td>1.48</td>
<td>1.48</td>
<td>3.13</td>
<td>3.13</td>
<td>6.41</td>
</tr>
<tr>
<td>Operating Temperature °C</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0~70</td>
</tr>
<tr>
<td>Usable Fluid</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>General Hydraulic Oil Equivalent to ISO-VG-32</td>
</tr>
<tr>
<td>Mass kg</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.3</td>
</tr>
</tbody>
</table>

**Notes**

1. Indicator extends according to pressure. Be sure not to interfere with other devices when designing.
2. Roughness of mounting surface (O-ring seal surface) should be 6.35 or better.
3. Do not disassemble it. Parts may pop out due to the built-in spring.
4. Only mounting in horizontal direction with manifold option is available. For other mounting methods, please use model JSS.

### Characteristic Graph

![Characteristic Graph]

**How to read the characteristic graph**

1. **Requirements (Reference Example)**
   - **Cylinder Capacity** In case of 7.0cm³
   - **Piping Capacity** Inside Diameter 6 x 0.5m (Pipe capacity per 1m : 28.3cm³)
   - **Valve Capacity** 20cm³
   - **Temperature change : ∆T** -10°C
   - **Operating Pressure : P** 4.0MPa
   - **Thermal Expansion Coefficient : α** 8 x 10⁻⁴

2. **Selection Method**
   1. Calculate Fixture Circuit Capacity (V)
      - Clamp Capacity + Pipe Capacity + Valve Capacity
      - \( V = (7.0 \times 1) + (28.3 \times 0.5m) + 20 = 41.15 \text{cm}^3 \)
   2. Calculate Change in Capacity (ΔV)
      - \( \text{Fixture Circuit Capacity (V)} \times \text{Thermal Expansion Coefficient (α)} \times \text{Amount of Temperature Change (ΔT)} \)
      - \( \Delta V = 41.15 \times (8 \times 10^{-6}) \times (-10) = -0.33 \text{cm}^3 \)
   3. Select Accumulator Type
      - Operating pressure (P) = 4.0MPa Select JSY0070-4. (If required discharge + absorbs oil capacity is greater than change in capacity, select JS and use multiple number of JSY007.)
   4. Check the accumulator characteristics (Graph on the left)
      - Pressure after temperature change (-10°C) : 2.96MPa
      - Residual oil discharge margin : 0.17cm³

**Notes**

1. When selecting, calculate tolerance for the oil capacity taking the spring force deviation into consideration.
2. Please contact us for larger amount of absorb oil.

● IF THERE IS ANY UNEAR POINT IN THIS LEAFLET, PLEASE CONTACT US.
● SPECIFICATIONS IN THIS LEAFLET ARE SUBJECT TO CHANGE WITHOUT NOTICE.

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