Flowserve Mechanical Seal Storage

1  Storage of 3 to 24 Months

There are no known storage problems with complete Flowserve mechanical seal assemblies or components for up to 2 years.

For a complete Flowserve mechanical seal:

1.1 Install the Flowserve mechanical seal in accordance with the installation instructions. Use the lubricant provided on all O-rings and gaskets, except PSS drive pads and O-rings in CRO seal assemblies.

Follow plant safety regulations:
• lock out motor and valves
• wear designated personal safety equipment
• relieve any pressure in the system
• consult plant MSDS files for hazardous material regulations

1.2 Complete equipment tests. Drain all product and flush fluid from the equipment and seal chamber. Dry equipment and seal chamber with compressed air.

1.3 Cover all equipment openings including pump suction, discharge connections, flush taps, etc.

1.4 Plug all openings in the seal chamber and gland.

1.5 Mask or cover the clearance between the seal gland and the shaft to prevent dirt and debris from entering the seal cavity.

1.6 Turn the shaft one to two revolutions by hand every three months.

2  Storage Periods Longer than 24 Months

For storage periods longer than 2 years, environmental conditions may influence the flatness of rotating and stationary seal faces and cause deterioration of some O-ring and gasket materials.

For complete Flowserve mechanical seal assemblies follow steps 1- 5.

Follow steps 3 - 4 for components.

2.1 Install the Flowserve mechanical seal in accordance with the installation instructions. Use the lubricant provided on all secondary seals, except PSS drive pads and O-rings in CRO seal assemblies.

Follow plant safety regulations:
• lock out motor and valves
• wear designated personal safety equipment
• relieve any pressure in the system
• consult plant MSDS files for hazardous material regulations

2.2 Complete equipment tests. Drain all product and flush fluid from the equipment and seal chamber. Remove, disassemble, and thoroughly clean and decontaminate the Flowserve mechanical seal. Dry all parts, package, and store as individual components in a cool, clean environment.

2.3 The resistance of elastomeric secondary seal materials such as O-rings, V-rings, and gaskets, to deterioration during normal storage conditions varies with the type of elastomer. SAE ARP5316 lists the maximum recommended storage life for elastomeric seals. The specification also lists recommended storage practices. The maximum storage life of the elastomers listed in Table 1 and the following storage conditions are taken from this specification.
Maximum life can be achieved by using the following storage conditions:

- Ambient temperature not exceeding 100° F (38° C)
- Exclusion of air and oxygen
- Exclusion of contamination and radiation
- Exclusion of light, particularly sunlight
- Exclusion of ozone generating electrical devices

Generally, storage in polyethylene bags more than 0.075 mm thick and ultraviolet (UV) resistant or polyethylene lined kraft paper bags ensures optimum storage life.

Before reinstalling the Flowserve mechanical seal, inspect all O-rings, V-rings, gaskets, etc., for deterioration, cracks, or unusual hardness.

2.4 The wear faces of seal rings and inserts should be tested for flatness using a helium lamp and an optical flat, prior to reinstallation. In general, sealing faces should be flat to within 2 light bands. Contact Flowserve for exact requirements if necessary.

2.5 Reassemble and install the Flowserve mechanical seal in accordance with installation instructions.

The expected storage life of secondary seal materials is shown in Table 1:

<table>
<thead>
<tr>
<th>Material</th>
<th>Storage Life</th>
</tr>
</thead>
<tbody>
<tr>
<td>TFE/P, TFE propylene</td>
<td>Unlimited</td>
</tr>
<tr>
<td>Durafite¹, Flexible Graphite</td>
<td></td>
</tr>
<tr>
<td>Silicone</td>
<td></td>
</tr>
<tr>
<td>FKM², Fluoroelastomer</td>
<td></td>
</tr>
<tr>
<td>Perfluoroelastomer, Chemraz⁴, FFKM, Kalrez³</td>
<td></td>
</tr>
<tr>
<td>Duraflon⁵, PTFE</td>
<td></td>
</tr>
<tr>
<td>Glass Filled Duraflon¹, Glass Filled PTFE</td>
<td></td>
</tr>
<tr>
<td>DMC 500, Composite</td>
<td></td>
</tr>
<tr>
<td>Graphite Filled Duraflon¹, Carbon Filled PTFE</td>
<td></td>
</tr>
<tr>
<td>DMC 600</td>
<td></td>
</tr>
<tr>
<td>Neoprene</td>
<td>15 years</td>
</tr>
<tr>
<td>Buna N, Nitrile</td>
<td></td>
</tr>
<tr>
<td>EPR/EPT, EPM, EPDM, ethylene propylene</td>
<td></td>
</tr>
<tr>
<td>DMC 340</td>
<td>3 to 5 years</td>
</tr>
<tr>
<td>DMC 400</td>
<td></td>
</tr>
</tbody>
</table>

¹ Registered trademark of Flowserve Corporation
² A typical FKM is Viton⁶
³ Registered trademark of E. I. du Pont de Nemours and Co. (Inc.).
⁴ Registered trademark of Green Tweed and Company
⁵ Registered trademark of Duraflon

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