Rotary Shaft Seals

Often called oil seals, grease, fluid or dirt seals, rotary shaft seals close spaces between stationary and moving components in mechanical equipment, helping prevent lubricant escape.

Rotary shaft seals are used to seal fluids on rotating shafts at various speeds. Rotary shaft seals are available with either a single or double sealing lip. In most cases the function of the secondary sealing lip on double lipped seals is used as an excluder to keep contaminants from entering the system. Common rotary seal applications include: gear boxes, electric motors and pumps.

Rotary shaft seals are produced by vulcanising an elastomer, most commonly Nitrile, to a metal ring which acts as a stiffener and utilises a metal tensioning spring behind the sealing lip.

Rotary shaft seals for use on external rotation applications are available upon request.

We also offer a range of large diameter seals (available in imperial and metric sizes) for heavy duty applications such as equipment used in steel mills, pulp / paper plants and turbines. See overleaf for more information.

Common Rotary Seal Profiles

<table>
<thead>
<tr>
<th>ELASTOMER MATERIALS</th>
<th>TEMP RANGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Viton®/Fluorocarbon</td>
<td>-20°C to +220°C</td>
</tr>
<tr>
<td>Nitrile</td>
<td>-30°C to +100°C</td>
</tr>
<tr>
<td>HNBR</td>
<td>-40°C to +150°C</td>
</tr>
</tbody>
</table>

Sealing can be affected by the following and must always be taken into consideration when selecting the correct profile and material for optimum performance:
- Shaft rotational speed / direction
- Operating temperature
- Application hardware details
- Medium being sealed both internally and externally
- Pressure seen within sealed unit

Rotary shaft seals conform to DIN 3760 and are available in many different designs to suit a range of applications.

ELASTOMER MATERIALS

- Viton®/Fluorocarbon: -20°C to +220°C
- Nitrile: -30°C to +100°C
- HNBR: -40°C to +150°C
Large Diameter Seals

UK Seals offer a range of heavy duty and large diameter seals of up to 3000 mm in high end rubber and plastic materials in endless (one piece) for any industry.

Large Diameter Seals are available in metric or imperial sizes, and are utilised for many applications including:

- Mild Steel
- Oil and Water Hydraulic Presses
- Forging Presses
- Wind Turbines
- Heavy Duty Presses
- Steel Mills
- Pulp and Paper Plants
- Automotive Stamping Presses
- Cement Plant
- Ship Hydraulics
- Shears

Common Large Diameter Profiles

**AFP**
Internal fabric shaft seal similar to the AFA profile but produced without a garter spring. Due to its construction, it can be used to control grease, light and dust. The seal lip is flexible, and the outside body is made from fabric to minimise damage during installation.

**AFA**
Highly successful general purpose standard design seal. It is suitable for the majority of bearing protection duties and other radial lip seal applications across all industry sectors. The lip profile minimises heat generation and shaft wear.

**AFJ**
This is a widely used seal and offers a robust profile with a pressure-resistant lip that prevents the ingress of liquid or solid contaminants in aggressive industrial environments. It’s flexible yet robust lip maintains sealing contact on slightly misaligned or eccentric shafts.

**AIG**
A full rubber seal combined with a flexible steel band. This seal does not require a retainer ring, and can be assembled easily in open housing.

**TYPICAL APPLICATIONS**
- Suitable for ships, stabilisers, blow thrusters, as well as numerous process plant and transmission system duties.