The Expert in Lubrication Solutions

perma lubrication systems for

Power Generation

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The exit from nuclear energy is demanding more flexibility from conventional power plant operators. Maintenance departments are constantly faced with new challenges like frequent load changes and longer shutdowns. Individual automatic lubrication systems meet these challenges and can increase the economic efficiency of the plant.

**Lubrication points**

<table>
<thead>
<tr>
<th>Material transport</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Transport</strong></td>
<td>Portal scraper, belt conveyor</td>
<td>✓</td>
</tr>
<tr>
<td><strong>Loading</strong></td>
<td>Ship unloader, crane</td>
<td>✓</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Processing</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Crushing</strong></td>
<td>Impact hammer, coal mill</td>
<td>✓</td>
</tr>
<tr>
<td><strong>Dust removal</strong></td>
<td>Fans, electric motors</td>
<td>✓</td>
</tr>
<tr>
<td><strong>Transport</strong></td>
<td>Conveyor systems</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Post processing</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dust extracting</strong></td>
<td>Fans, electric motors</td>
<td>✓</td>
</tr>
</tbody>
</table>

**Challenges**

- Frequent load changes
- Longer shutdowns
- High maintenance costs
- Insufficient staff
- Spread out equipment with many different lubrication points
- Increased risk of workplace accidents at hard-to-reach lubrication points and due to high temperatures
Advantages of automatic lubrication

- **Continuous relubrication** at short intervals reduces wear and seals lubrication points even during longer shutdowns.
- **Reliable lubrication** for frequent load changes.
- **Scheduled exchanges** of lubrication systems while machines are running reduces staff- and material costs and increases economic efficiency.
- **Quick and easy installation** and exchange of lubrication systems outside of dangerous areas increases workplace safety.

Solutions

**Direct mounting on lubrication point: e.g. perma CLASSIC / FUTURA / FLEX / NOVA**

- Easy, quick mounting
- For lube-points with little vibration / shocks
- For easy-to-access and safe lubrication points

**Remote mounting to lubrication point: e.g. perma STAR VARIO**

- For lube-points with strong vibration / shocks (isolation of lubrication system)
- When workers’ safety is at risk: Mounting in safe areas
- For hard-to-access lubrication points

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- Detailed product information in our perma catalog
- Visit our website www.permausa.com
Applications

Lubrication of flange bearing on support rollers
Lubrication of flange bearing on a bucket conveyor
Lubrication of pillow block bearing on a conveyor

Lubrication of pillow block bearing on a drive shaft
Lubrication of pillow block bearing on a fan
Lubrication of drive shaft on a fan

Lubrication of pillow block on fan
Lubrication of electric motor
Lubrication of electric motor and shaft on a secondary air fan.

Individual solutions

perma Product portfolio
Solutions for all types of applications

perma Lubricants
Large selection of high quality lubricants to meet the requirements of your equipment

perma Accessories
Extensive range of accessories and connecting parts for your equipment

perma SERVICE
Project planning, installation and maintenance

perma SOFTWARE
Calculation of lubricant amount: perma SELECT
Maintenance Lubrication Program: perma MLP