

perma lubrication systems for

Power Generation

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The Expert in Lubrication Solutions

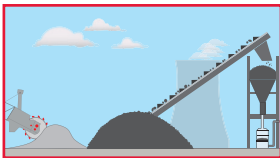
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perma lubrication systems for
Power Generation

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

1 Roller bearings



Material transport

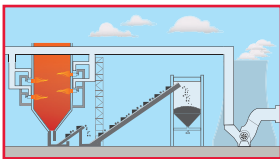
→ **Transport**

Portal scraper, belt conveyor



→ **Loading**

Ship unloader, crane



Processing

→ **Crushing**

Impact hammer, coal mill



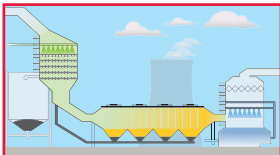
→ **Dust removal**

Fans, electric motors



→ **Transport**

Conveyor systems



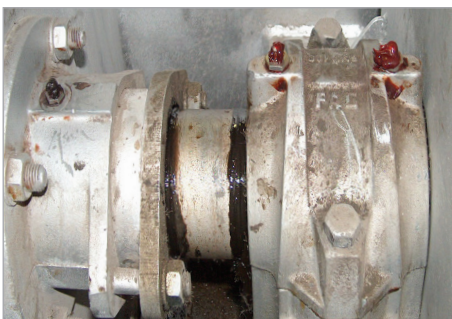
Post processing

→ **Dust extracting**

Fans, electric motors



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**.

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Solutions

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

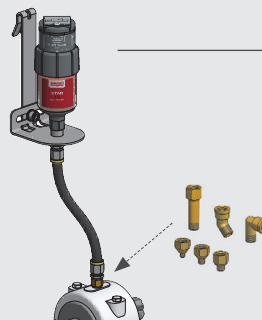
- Easy, quick mounting
- For lube-points with little vibration / shocks
- For easy-to-access and safe lubrication points



Direct Mounting Solution
Use extensions, angles & reducers depending on the installation situation

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



**perma STAR VARIO
with LC 120**

Remote Mounting Solution
Use extensions, angles & reducers depending on the installation situation

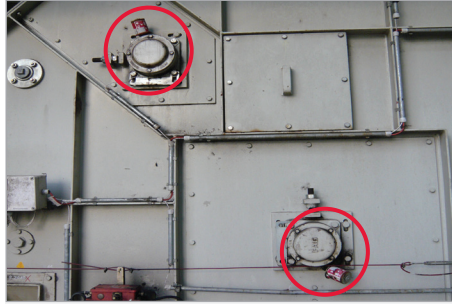
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- Visit our website **www.permausa.com**

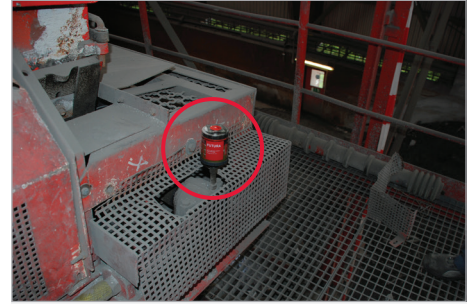
Applications



Lubrication of flange bearing on support rollers



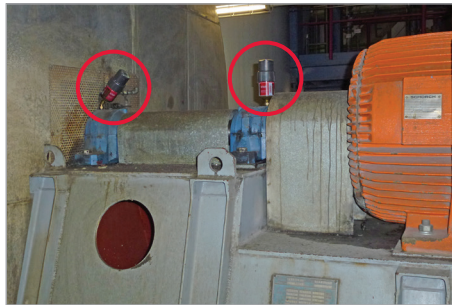
Lubrication of flange bearing on a bucket conveyor



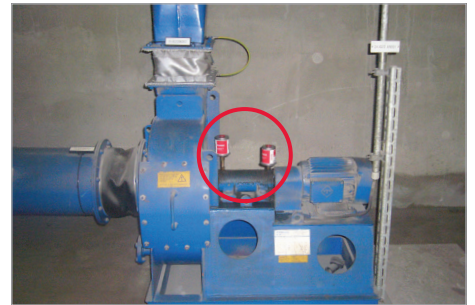
Lubrication of pillow block bearing on a conveyor



Lubrication of pillow block bearing on a drive shaft



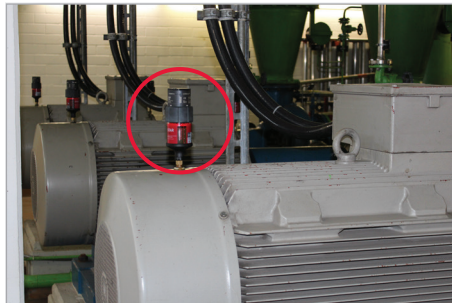
Lubrication of pillow block bearing on a fan



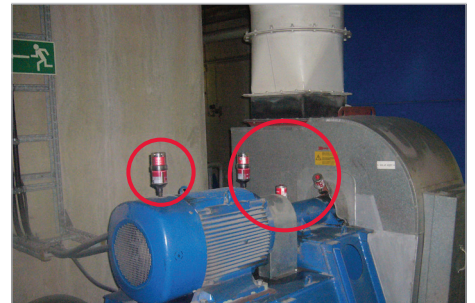
Lubrication of drive shaft on a fan



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