

# ELECTRIC MOTORS

perma lubrication systems in operation



Electric motors are used in many different applications. An electric motor is designed to convert electrical into mechanical energy. Efficient lubrication and maintenance are essential for reliable operation of electric motors. Still, many of them are lubricated at irregular intervals as they are located in areas which are difficult to reach or dangerous. Failure to adhere to manufacturer specifications frequently leads to damage and breakdowns caused by bearing over-lubrication or lubrication starvation.

## Challenges

During manual lubrication, the grease is applied in uneven amounts. A large quantity of lubricant is introduced at one time. This leads to a temporary over-lubrication of bearings. Ignoring the recommended relubrication intervals leads to lubrication starvation.

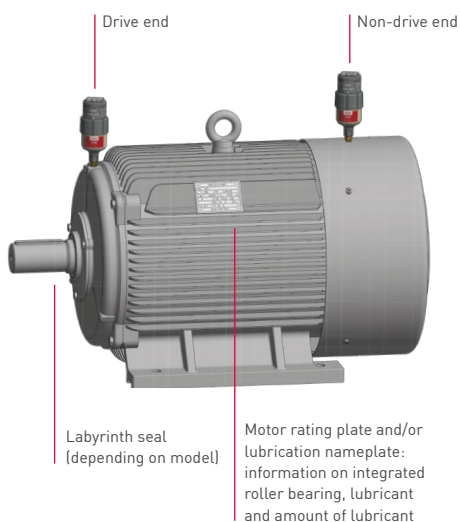
- Bearing heating and possible fire hazard since it takes hours to distribute excess grease
- Possible shut-off with temperature monitoring
- Bearing damage due to lubrication starvation results in unscheduled machine downtimes and higher production costs
- Increasing maintenance costs caused by premature wear

Relubrication during running operations (manufacturer recommendations) jeopardises maintenance staff. The risk of accidents increases when people spend time in dangerous or hard-to-reach areas.

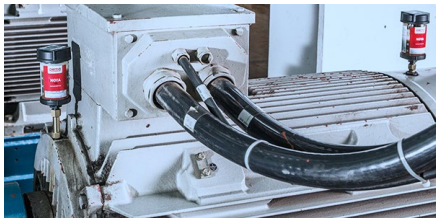
- High accident risk
- Motor shut-down when entering secured areas



## Lubrication points



Lubrication points are located on the drive and non-drive end of electric motors. When relubricating, you must ensure that excess grease is discharged through the discharge openings, grease relief ports or grease traps. Bearings will overheat if grease cannot escape and | or if grease traps are filled up with used grease.



## Industries



Quarrying industry



Recycling



Cement, Gypsum, Lime



Power Generation



Food & Beverage



Mining & Minerals Processing



Pulp & Paper



Automotive



Chemical & Pharmaceutical

## Solutions

The development of perfect lubrication solutions requires the consideration of various factors, such as application type, speed and load of the machine as well as ambient temperature.

perma has risen to this challenge, focusing on the development and production of automatic lubrication systems for use across a variety of industries. These solutions have been created in close cooperation with maintenance professionals from various global sectors, addressing the unique demands of each application. In adherence to the highest quality standards, premium-grade raw materials and lubricants are used in the manufacturing process. This ensures that perma products consistently deliver reliable lubrication across all applications, thereby increasing the equipment service life while at the same time minimising costs and operational effort.

### Direct mounting | e.g. with perma FLEX

- Easy, quick mounting
- For lubrication points with little vibration | shocks
- For easy-to-reach and safe lubrication points

### Remote mounting | e.g. with perma STAR VARIO

- For lubrication points with strong vibration | shocks (isolation of lubrication system)
- When workers' safety is at risk: Mounting in safe areas
- For hard-to-reach lubrication points

