

Safer process.  
Safer profit.



rhenus lubricating greases

Supreme performance in rail transport

# rhenus special lubricating greases — for rails and vehicles

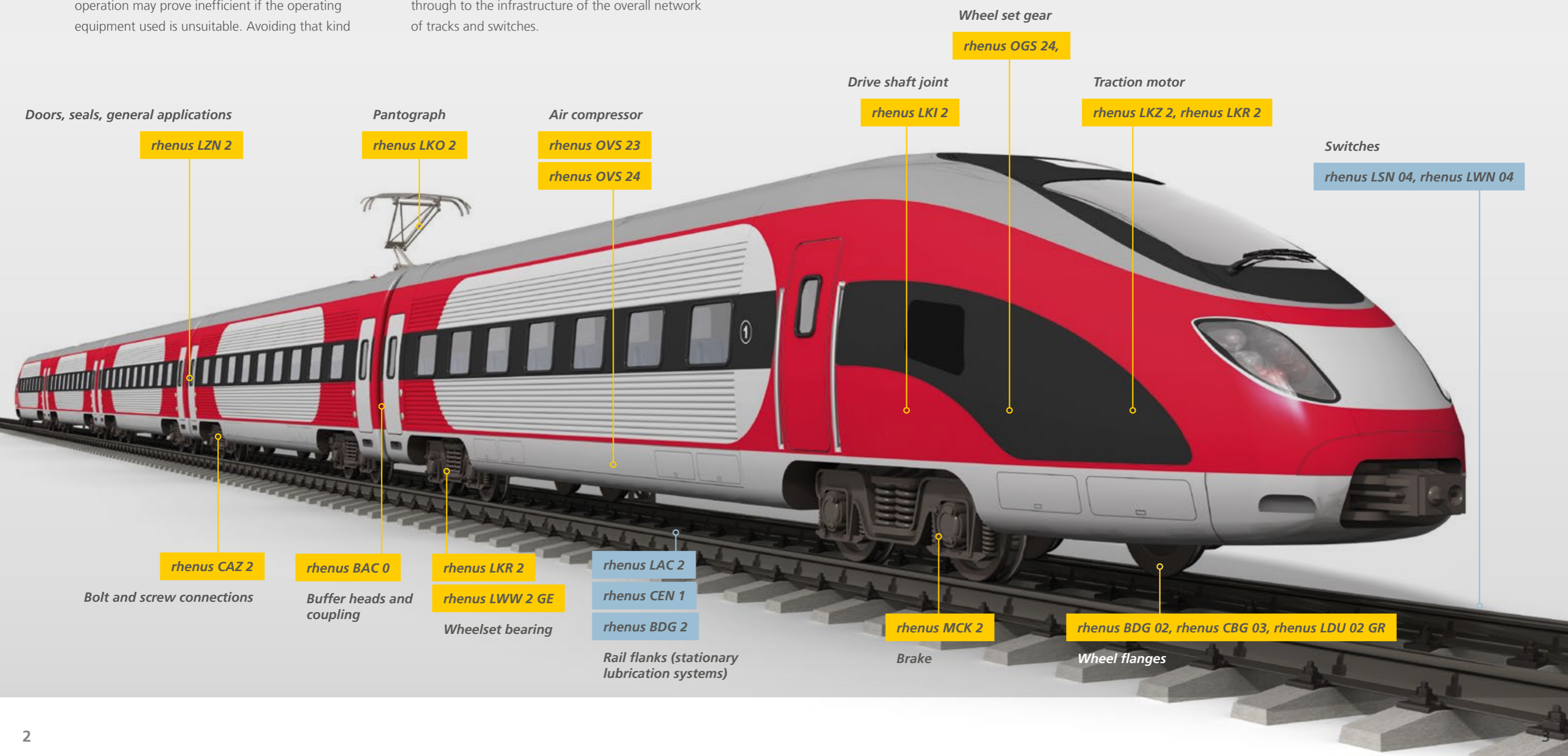
Rail transport for people and goods are areas that are particularly demanding yet equally sensitive. When it comes to rail transport, efficiency and reliability are crucial parameters for ensuring transport is convenient and punctual. If something is not working, this can quickly cause far-reaching problems. There is also a constant drive to reduce operating costs across the maintenance cycle as a whole. In practice, an expensive investment during operation may prove inefficient if the operating equipment used is unsuitable. Avoiding that kind

of situation requires attention to detail — especially in terms of lubricant.

The special lubricants from Rhenus Lub make it easier for you to achieve your strategic maintenance and servicing objectives. Reliability is top of the list here, but it goes without saying that efficiency cannot be ignored — and that applies to every area: from the chassis and the construction of the train through to the infrastructure of the overall network of tracks and switches.

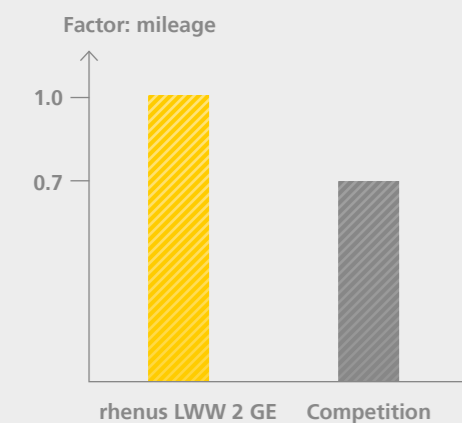
Legend:

- Rail
- Railway vehicle



## Safety in operation

- Optimum results thanks to lubricating greases developed for specific applications within the rail industry
- References and approvals from the most important rail operators in Europe
- Constant quality and 100% product control
- Reliable access worldwide thanks to a tightly-woven distribution network
- Compliance with legal norms and standards such as DIN 12081 for rail applications — wheelset bearings — lubricating greases



*rhenus LWW 2 GE performed impressively in a practical test, with a significantly lower friction coefficient. In terms of the mileage, the wheelset bearings covered around 30% more mileage with rhenus LWW 2 GE than with a comparable grease from a competitor.\**

\*According to customer statement from Head of Technology

## Reduced costs

- High mechanical stability guarantees a long service life
- Lower wear thanks to raw materials that are precisely tailored to each other
- Extended maintenance intervals save personnel costs and material costs



*In a verified customer trial, the re-lubrication intervals when using rhenus LSN 04 on switches were 50% longer\*.*

\*According to customer statement from Head of Maintenance

## rhenus lubricating greases for rails

Main application	Product	Temperature	Additional information
Rail flank lubrication (stationary systems)	rhenus LAC 2	-45 to 120°C	Wide temperature range, used in southern Europe
	rhenus CEN 1	-20 to 100°C	Biodegradable, used in Denmark and Norway, for example, conveys well
	rhenus BDG 2	-30 to 100°C	New development, biodegradable, contains graphite, very good adhesion
Switch	rhenus LSN 04	-40 to 120°C	Biodegradable, used by Deutsche Bahn and private rail companies in Germany, Austrian Federal Railways and rail operators in Norway
	rhenus LWN 04	-40 to 120°C	Biodegradable, better adhesion, can also be used in high-speed trains, approval: SNCF, Finland
Rail fastenings	rhenus CAZ 2	-30 to 110°C	Protects against corrosion, makes it easier to unscrew fittings, water-repellent, very adherent

## rhenus lubricating greases for track vehicles

Main application	Product	Temperature	Additional information
Wheelset bearing	rhenus LKR 2	-30 to 150°C	Very mechanically stable, used by the Dutch railway
	rhenus LWW 2 GE	-40 to 140°C	Very low friction coefficient, extended operating times, can be used in very cold and hot regions, e.g. Russia
Wheel flange lubrication (mobile)	rhenus BDG 02	-30 to 100°C	Biodegradable, contains graphite, no spinning off from the wheel flange at speeds up to 250 km/h
	rhenus CBG 03	-30 to 80°C	Contains graphite, Rebs approved
	rhenus LDU 02 GR	-40 to 120°C	Approvals from SKF, Lincoln, Baier & Köppel, Delimon, Rebs
Buffer heads and couplings	rhenus BAC 0	-50 to 100°C	Biodegradable, approved by Deutsche Bahn
<b>Locomotives</b>			
Traction motor bearings	rhenus LKZ 2	-40 to 140°C	ABB approved
	rhenus LKR 2	-30 to 150°C	Used by the Dutch railway
Brakes	rhenus MCK 2	-30 to 180°C	Non-drip, very good adhesion
Wheel set gear	rhenus OGS 24	Pour point: -55°C	CLP gear oils according to DIN 51 517
Drive shaft joints	rhenus LKI 2	-35 to 140°C	Low friction characteristics, minimal abrasion
<b>Bogie</b>			
Bolt and screw connections	rhenus CAZ 2	-35 to 110°C	Assembly paste also for bearings that come into contact with water
Wheel flanges	rhenus BDG 02	-30 to 100°C	Biodegradable, no spinning off from the wheel flange
<b>Other applications</b>			
Doors, seals etc.	rhenus LZN 2	-30 to 130°C	Universal grease for standard applications
Air compressor	rhenus OVS 23 rhenus OVS 24	Pour point: -55°C	Long re-lubrication intervals
Pantograph	rhenus LKO 2	-45 to 150°C	High-performance grease, extremely low friction coefficient
Trackside signals, service equipment	rhenus CAZ 2	-35 to 110°C	Protects against corrosion, makes it easier to unscrew fittings, water-repellent, very adherent

# The **Top 7** requirements for lubricating greases in the rail industry — from tracks and switches to trains and bogies

## 1 A lubricating grease must always do its job

Whether it is used in the cold with snow and ice or in an environment with impacts and vibrations, a lubricating grease must always be reliable and fulfil its purpose, even under extraordinary loads. Lubricating greases from Rhenus Lub ensure your operations are always as secure as possible — whatever the external circumstances.

## 2 Reducing operating costs

How can a lubricating grease reduce your operating costs? As well as purchase costs, operating costs also have a significant effect on your total costs. A lubricating grease with a long service life ensures long maintenance intervals and low consumption. Pay careful attention when choosing your lubricating grease and remember to feed this into your calculations when you determine your total costs.

## 3 A lubricating grease that is tailored to its intended place of use

Universal solutions are inadequate for special applications in rail traffic. Instead, you must use the correct lubricating grease for your precise application — this is the only way to achieve optimum results. We can develop this lubricating grease just for you.

## 4 For the environment — biodegradable!

The environment doesn't make compromises, so neither should you! For outdoor applications around tracks and switches, you should always ensure that your lubricating grease is biodegradable. By doing this you stay a step ahead when it comes to environmental issues and don't have to worry about legal regulations. The crucial factor here is that your lubricating grease must biodegrade quickly and its effects must be just as efficient as with a conventional alternative. Not many are up to the job, so you can rely on Rhenus Lub here as well.



## 5 Reducing wear, protecting against corrosion

One of the basic characteristics of rail lubricating greases is that they effectively reduce wear on components and protect them against rust. This is done by using high-quality raw materials, developing a good composition and using a top-quality manufacturing process. Achieving the ideal combination of these three parameters is the only way to ultimately get the result you want: less effort required for maintenance.

## 6 Approvals and references

First and foremost, a lubricating grease impresses by performing well. If this is also backed up by approvals and references, then it offers the maximum level of security for users. After all, if something has been tried out and approved, then this creates reliability and trust. Lubricating greases from Rhenus Lub are used or have been approved by major rail operators and OEM (e.g.: Deutsche Bahn, SNCF, ÖBB, NedTrain, GMH Gruppe, Delimon, Rebs, Vogel Centralised Lubrication).

## 7 Lubricating grease as working material and construction element

A lubricating grease must meet the requirements for a reliable and cost-effective working material. Equally, the grease that is used is often a high-quality construction element and has to be modified with special characteristics in a new development process.

As we have our own research and development department, we are a strong partner to have at your side. During the development process, we regularly bring together all the involved partners, such as developers, users and system suppliers to ensure an efficient and results-oriented development process for your ideal lubricating grease.

## References and approvals





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