REBS Zentralschmiertechnik GmbH

Duisburger Straße 115
D-40885 Ratingen
Phone +49 (0) 21 02/93 06-0
FAX +49 (0) 21 02/93 06-40
Internet: www.rebs.de
e-mail: info@rebs.de

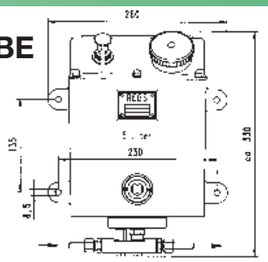
We are represented in the following countries:

Europe Belgium, Denmark, Finland, France, UK, Netherlands, Italy, Norway, Austria, Sweden, Switzerland, Turkey

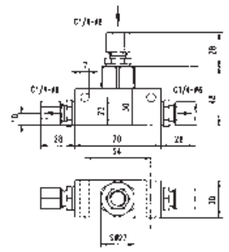
Overseas Canada, USA, Australia, China, Japan, Korea, Taiwan

Addresses on request.

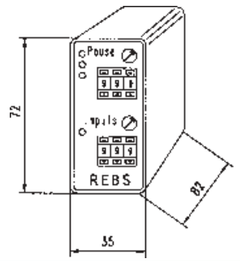
SP-PIO/BE
Air operated Pump with 5 or 10 liter tank



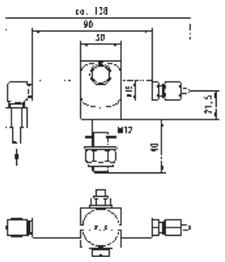
TL-T2
TURBOLUB distributor



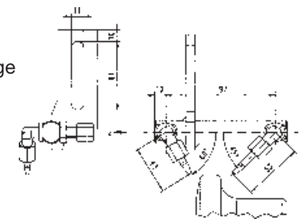
QZMU
Digital pulse generator



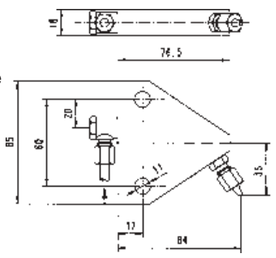
DSP-1
Nozzle for wheel flange lubrication



DSP-2
Nozzle for wheel flange lubrication

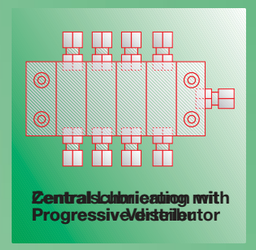


DSP-3
Nozzle for wheel flange lubrication

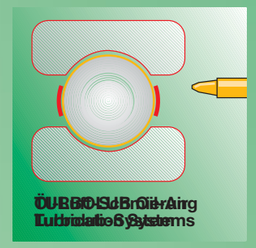


REBS

Central Lubrication Systems

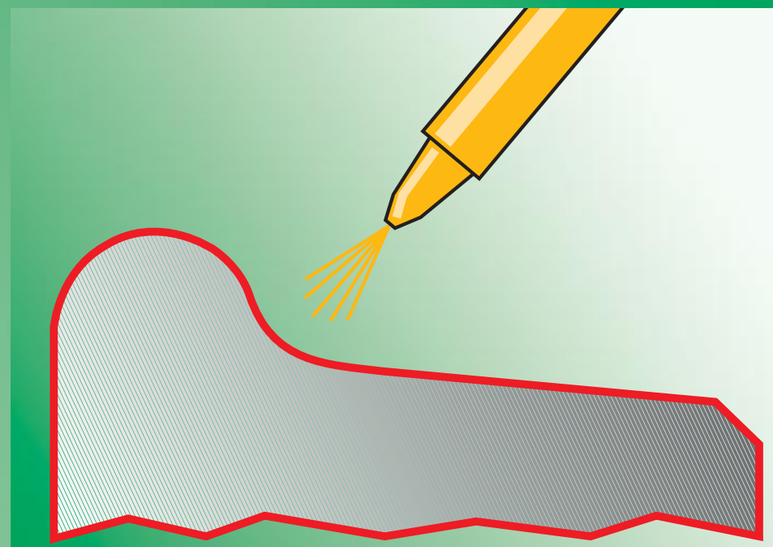


Central lubrication with Progressive distributor



TURBOLUB Oil-Air Lubrication Systems

Automatic Chain Lubrication Systems



Wheel Flange Lubrication for Rail Vehicles

REBS Zentralschmiertechnik GmbH was founded as early as 1948

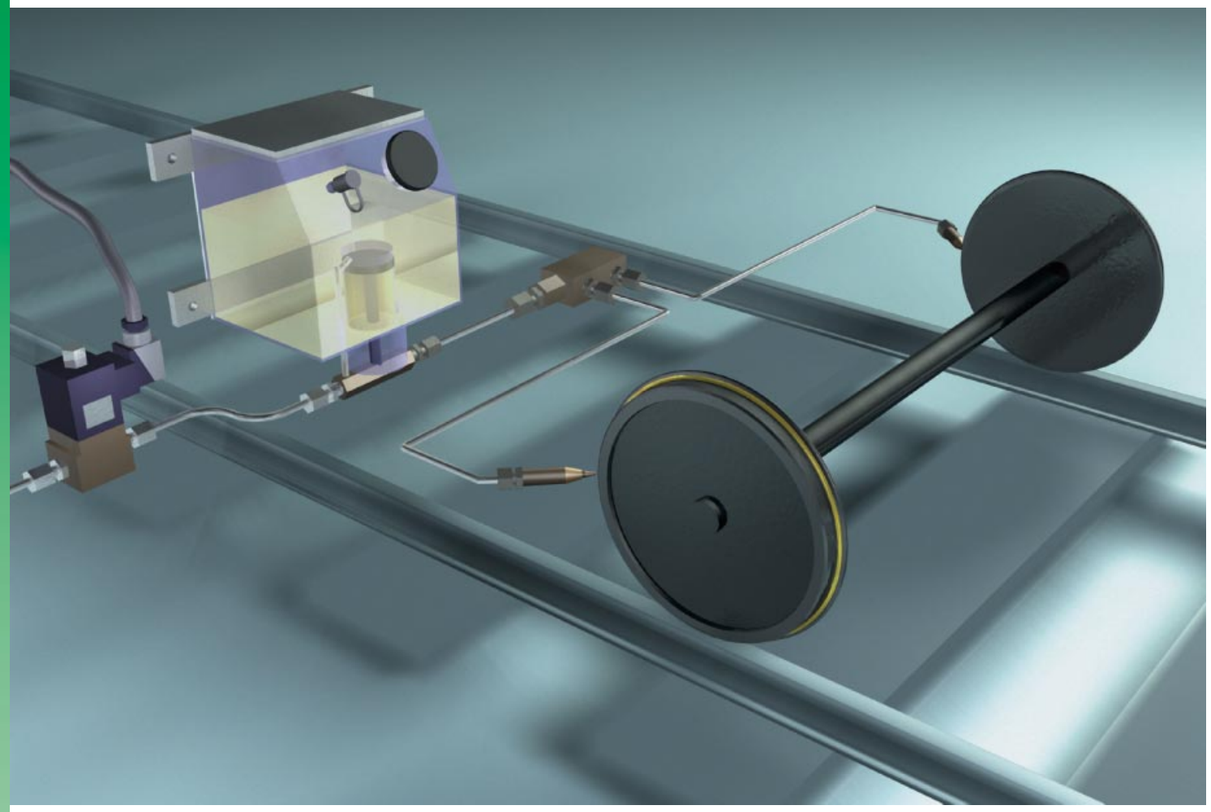
Alexander Rebs, our founder, created his worldwide reputation by his invention of the progressive distributor.

Today our family owned enterprise is working in the third generation, and we have at present approximately 60 employees.

Since the very beginning we are constantly expanding, and our company is always up-to-date concerning both development and application technology.

REBS

Wheel Flange Lubrication for Rail Vehicles



Wheel flange lubrication of trains, trams and underground trains: ecologically, reducing wear and noise.

The compressed air available aboard the vehicle is used for the lubrication system. If compressed air is not available, a small compressor can be supplied.

Problem

Wear of wheels and rails as well as noise, particularly in curves, on rail vehicles of any kind.

Lubrication System Requirements

- Ecological lubricants, also those with dry additives
- Exact application of the lubricant to avoid depositing on running and braking surfaces
- Low air consumption
- Easy maintenance due to simple construction
- High savings by significant reduction of wear

Solution

The patented REBS wheel flange lubrication system

A suitable lubricant, preferably biologically degradable, is applied without any frictional contact onto the flanges of the wheels on the leading axles by spraying.

The small quantity of 50 mm^3 is distributed on two or four wheel flanges during a period of at least 6 seconds in the form of a fine spray. During this time the wheels complete a number of revolutions. The air consumption per nozzle is approximately one litre per second.

The system was designed for the use of modern wheel flange lubricants with a high content of dry components. There are no moving parts, neither in the TURBOLUB dividers nor in the nozzles that could be blocked by the dry components of the lubricant.

Development

It is now 25 years since REBS designed a wheel flange lubrication system with a common line for both lubricant and air. This offers a number of advantages over earlier systems having separate lines, one for the lubricant and one for the air. Following the worldwide success of the system REBS determined the direction for the development of modern wheel flange lubrication systems backed by decades of experience.

The further development and the continuous improvement of the components result in cost effective systems with short amortization periods.

Principle description

An air operated piston pump feeds the lubricant from a non-pressurized tank into a mixing block. From there it is conveyed by the turbulent air as a film spiralling around and adhering to the inner wall of the tube to a TURBOLUB distributor where it is split equally into two or more lines.

At the end of each line there is a nozzle accelerating the oil/air flow thus separating the lubricant from the tube wall and generating small droplets that impinge on the wheel flange. The REBS single channel nozzle builds up a very thin film of lubricant on the flange that is not thrown off by wheel rotation. The nozzles are assembled in holders fixed to the bogie. When the lubricated wheel flange touches the rail edge lubricant is transferred to the rail flange where it lubricates the following wheel flanges.

Bearing in mind the limited capacity of the vehicles` compressed air supply, spraying is cyclic, either depending on the distance travelled or in adjustable time intervals. Even curve dependant control is possible. The electronic REMATIC device was designed by REBS for the different control programs.

The simple control by a pulse generator is strongly recommended. On straight tracks the travelling speeds are generally higher than in curved sections. Therefore more lubricant per distance travelled is dispensed in curves than in the straight sections. For retrofitting wheel flange lubrication on vehicles already in service the pulse generator offers a simple and effective solution.

Advantages of the REBS system

The very fine spray provided by the patented REBS TURBOLUB system together with the single channel nozzles results in extremely thin lubricant films on the wheel flanges that do not tend to fly off. This results in a low lubricant consumption.

Installing a separate solenoid valve to actuate the pump allows regulation of the lubricant quantity per spray by adjusting one pump stroke per 2 to 10 sprays, or vice versa to have several pump strokes during an extended spray time e.g. in long curves.

There are no moving parts in the distributors or in the spray nozzles considerably reducing maintenance work. The nozzles do not drip after spraying.

The REBS systems do not require a pressurized tank. The air operated pump is equipped with an agitator working the lubricant in the tank.

The sytem is suitable for oils, up to high viscosity semi-fluids NLGI grade 000 and for lubricants containing up to 25% dry components. With high contact pressures between wheel flanges and rails a lubricant having a high content of dry components is indispensable for the best wear reduction.