



Press Release

For immediate release

Trelleborg Follows the Changes in eMobility with Safe and Efficient Solutions

Trelleborg Sealing Solutions supports the eMobility industry in the development of electric vehicles that achieve longer ranges with lower energy consumption.

Stuttgart, February 13, 2020: Electric mobility is booming. A mega-factory for large-scale production of electric vehicles will soon be set up in Brandenburg. Trelleborg Sealing Solutions supports the industry as a competent development and manufacturing partner with robust and powerful products and solutions - not only in the field of electrically powered vehicles, but also for e-bikes, electrically powered land vehicles, e-skateboards, e-scooters and even commercial aircraft and helicopters.

In continuous cooperation with customers, the sealing specialist develops solutions that are specially engineered for eMobility applications. These range from high-performance compounds and components for the battery, to advanced rotary seals and customized safety solutions for the e-motor.

To keep pace with the dynamics of the industry, original equipment manufacturers (OEMs) depend on reliable and competent suppliers. They need partners who can react quickly to changing needs - from product development and prototype construction to series production.

Prof. Dr. Konrad Saur, Vice President - Innovation & Technology at Trelleborg Sealing Solutions, knows the complex requirements of eMobility. "The market is very fast-moving and is developing at high speed. This is a challenge for OEMs and their suppliers, as customers often have neither clearly defined standards nor established solutions. The innovation rate in the industry is therefore extremely high, with severe pressure to bring the right products to market quickly."

Developing products as fast as the market changes

In the development of high-performance seals for eMobility, Trelleborg combines an efficient R&D organization with the latest digital processes, to keep the time required to provide the first functional prototypes as quickly as possible. Finite Element Analysis (FEA) and other simulation programs used in the design process, enable development in the virtual world, allowing problems to be identified and avoided early on if necessary. In this way, customers' tight schedules can be met.



What has proven itself in other industries can often be transferred to eMobility. For example, the company uses its existing test systems and facilities, some of which are very complex, to quickly arrive at solutions here as well. Examples include the aerospace fire test laboratory in Northborough, Massachusetts, in the US and the rotary test stands for applications in Stuttgart, Germany, Ft. Wayne, Indiana in the US, Bridgwater, England and Turin, Italy.

High-performance seals make eMobility more efficient

Saur continues: "The various electrically driven vehicle classes require very similar sealing solutions. In all of them, for example, the battery must be protected from the environment and vibration. One particular challenge is that the chemical composition of the battery fluid in a charged battery differs from that in a discharged battery."

And with regard to rotary seals, he adds: "In electrically powered vehicles, the requirements for seals arranged on the e-axle are generally higher than for internal combustion engines. This is mainly due to the significantly higher operating speeds of electric motors and the associated significantly higher temperatures in the area of rotary seals. Moreover, depending on the tribological situation, such components must be able to do without lubrication altogether or be compatible with the possibly chemically aggressive lubricant."

Less friction leads to a longer range: HiSpin seals advance eMobility

The HiSpin® PDR RT and HiSpin® HS40 rotary seals are specifically designed for applications in the E-axle and are designed to operate effectively at the high speeds required for efficient E-axle operation. In this way they make an important contribution to making electric vehicles suitable for mass adoption.

Trelleborg's HiSpin® PDR RT and HiSpin® HS40 combine the sealing requirements that exist at high rotational speeds with low coefficients of friction - even with low lubrication - and help to increase the range of a vehicle or aircraft powered by electricity.

Conductive or conducting: new possibilities for seals and housings

On the materials side, Turcon® MC1 and Turcon® MC2 are the first electrically conductive compounds based on polytetrafluoroethylene (PTFE) for use in spring and elastomer pre-stressed seals. They enable properties such as insulation, electrical and thermal conductivity and electromagnetic shielding to be ensured.



These materials optimally meet the requirements for materials used to manufacture seals for the battery of the electric motor. They withstand both the high temperatures that typically occur in electric motors and the aggressive fluids in the battery.

For the battery, Trelleborg also develops and manufactures customized sealing solutions for the cover. As the battery is adapted to the shape of the vehicle, the battery housing and its seal must also be tailored to meet additional functional requirements. Not only do they protect the battery against moisture, but also provide protection against pressurized water, a requirement for all battery manufacturers to achieve IP66 rating.

Moving forward: Trelleborg solutions help shape the future

Saur is convinced that Trelleborg Sealing Solutions is making a significant contribution to eMobility. He concludes, "In relation to the complex overall system of an electric vehicle, Trelleborg's components seem rather insignificant. In reality, however, they are decisive for the further development of electric vehicles.

Together with our customers, we have already developed forward-looking solutions for eMobility. We will continue to listen to them and cooperate closely with them. It fills us with pride to be a key player in this booming future market. We will continue to help shape developments with our innovations and contribute to making electrically powered vehicles, increasingly efficient in the future, thereby achieving higher power density and greater range".

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About Trelleborg Sealing Solutions and Trelleborg Group

***Trelleborg Sealing Solutions** is one of the world's leading developers, manufacturers and suppliers of precision seals, bearings and custom-molded polymer components. It focuses on meeting the most demanding needs of aerospace, automotive and general industrial customers, including those from the pharmaceutical industry, with innovative solutions. Its network extends to over 25 production facilities and more than 50 marketing companies globally. The business area accelerates the progress of its customers through outstanding local support, an unrivalled product range including patented products and proprietary materials, a portfolio of established brands, unique process offerings, its ServicePLUS value chain solution and 'Ease of Doing Business' philosophy. www.tss.trelleborg.com*

***Trelleborg** is a world leader in engineered polymer solutions that seal, damp and protect critical applications in demanding environments. Its innovative solutions accelerate performance for customers in a sustainable way. The Trelleborg Group has annual sales of about SEK 37 billion (EUR 3.46 billion,*



USD 3.87 billion) and operations in about 50 countries. The Group comprises three business areas: Trelleborg Industrial Solutions, Trelleborg Sealing Solutions and Trelleborg Wheel Systems, and a reporting segment, Businesses Under Development. The Trelleborg share has been listed on the Stock Exchange since 1964 and is listed on Nasdaq Stockholm, Large Cap. www.trelleborg.com.