

Press Release

Schaeffler at the Hannover Messe 2019 (Hall 22, Booth D43)

## **Optimum lubrication at all times: Longer machine operating times and lower maintenance costs with minimal outlay**

**Schaeffler offers the smart, automated, and requirement-based Schaeffler DuraSense relubrication system for linear recirculating roller bearing and ball bearing and guideway assemblies. An integrated sensor monitors the linear unit's lubrication conditions. Anybody can now parameterize the system and put it into operation using configuration software. Whoever takes a closer look will realize that the benefits extend far beyond the relubricating function itself.**

HANOVER/HOMBURG, *January 24, 2019.* Certain auxiliary equipment is prone to being forgotten once initial operation has been completed – including lubrication systems. If no unexpected failures occur, the lubrication intervals and lubricant quantities that were initially defined generally go unquestioned. In this context, a requirement and load-based lubricant supply – which can be achieved with Schaeffler DuraSense – offers enormous potential for extending machines' operating times and reducing maintenance costs. The innovative system comprises a guide carriage with sensors that have been specifically developed for this application and an electronic evaluation unit that allows up to seven sensors to be connected for monitoring the guide carriage's lubrication conditions. During a defined reference run during operation, the lubrication conditions for each guide carriage are continuously recorded from the vibration energy that is emitted, and these conditions are checked against a limit value known as the "lubrication indicator". If this limit value is exceeded, relubrication takes place.

### **Three relubrication options**

Schaeffler DuraSense provides three different ways of carrying out relubrication. In its basic development stage, the system can be used to monitor, assess, and if necessary optimize manual relubrication or interval lubrication systems. The Schaeffler DuraSense sensors and the relubrication system are independent of each other in this case.

In the automatic variation, the Schaeffler DuraSense sensors and the lubrication system are linked together in a single control loop. Fixed lubrication intervals are omitted and the lubrication system is activated only according to the lubrication indicator. Suitable lubrication systems include both Schaeffler products such as the Concept2 and Concept8 automatic lubricators and central lubrication systems, for example.

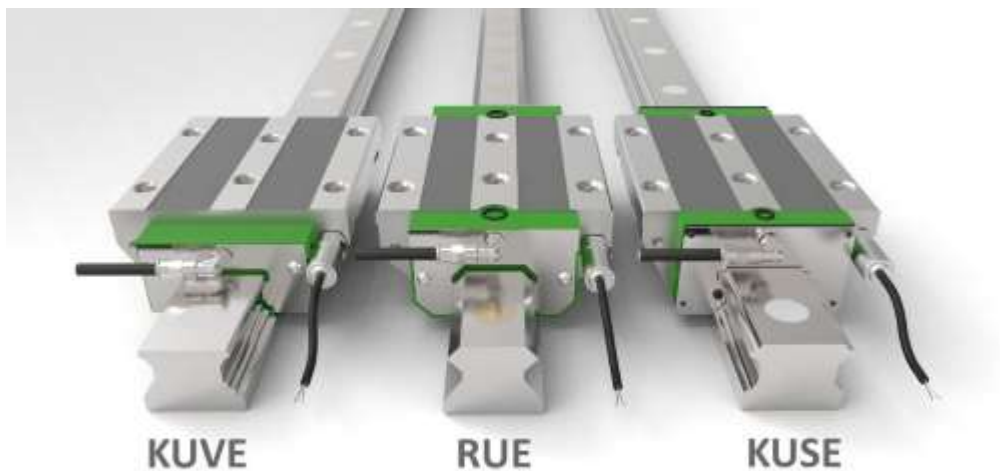
There are two ways in which lubricating impulses can be triggered. The first is for the evaluation unit to deliver 24V trigger signals for each of the seven channels. The 24V outputs can be connected to both the relubrication units and the machine control system. The second option allows the lubrication indicator value to be emitted as a 4-20mA signal for each of the seven channels as an alternative to the 24V signals. Using this variant makes it possible for lubrication conditions to be continuously monitored, the relubrication function to be adjusted with even greater flexibility, and the signal used for further analyses such as future remaining useful life calculations. In addition to the two analog outputs, Schaeffler DuraSense will also feature field bus protocols from the second half of the year onwards. Anybody can then configure the selection of the outputs as well as the type and number of carriages using a new software program.

### **Manifold benefits with a simple system design**

With Schaeffler DuraSense, both insufficient lubrication and overgreasing are reliably prevented, a lubricant saving of up to 30% achieved at optimum load, and the number of failures caused by contamination reduced. The latter is due to the fact that, if foreign bodies enter the carriage due to contamination or the carriage is contaminated by a liquid medium, lubrication impulses are triggered for as long as it takes for the contamination to be flushed from the carriage. Without this control loop, the linear guidance system would remain in operation with contamination in the rolling contact until the next planned lubricating interval – and would thus suffer corresponding initial damage, perhaps even severe damage.

Schaeffler DuraSense also reliably detects relubrication system failures, e.g. due to defective lubrication units, leaking hoses, or blocked lubricating nipples, by correlating the relubricating impulses and the subsequent vibration signals. Complex monitoring using pressure sensors such as those used in centralized lubricating systems is not required. The new system thus optimally protects even heavily interconnected systems against very costly downtimes.

Pictures: Schaeffler



Schaeffler's complete DuraSense range for the requirement-based automated relubrication of monorail guideway assemblies (KUVE four-row linear recirculating ball bearing and guideway assemblies, RUE linear recirculating roller bearing and guideway assemblies, and KUSE six-row linear recirculating ball bearing and guideway assemblies).



The electronic evaluation system allows up to seven sensors to be connected in order to optimally monitor lubrication conditions in INA monorail guideway assemblies.

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**About Schaeffler**

The Schaeffler Group is a global automotive and industrial supplier. Top quality, outstanding technology, and exceptionally innovative spirit form the basis for the continued success of the company. By delivering high-precision components and systems in engine, transmission, and chassis applications, as well as rolling and plain bearing solutions

for a large number of industrial applications, the Schaeffler Group is already shaping “Mobility for tomorrow” to a significant degree. The technology company generated sales of approximately EUR 14 billion in 2017. With more than 92,000 employees, Schaeffler is one of the world’s largest family companies and, with approximately 170 locations in over 50 countries, has a worldwide network of manufacturing locations, research and development facilities, and sales companies.

The Industrial division supplies components and systems for around 60 industrial sectors via its worldwide organization with market proximity and its application support service. The range includes miniature bearings only a few millimeters wide through to large-size bearings with an outside diameter of several meters.



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