Pastes

Lubrication of shaft sealing rings

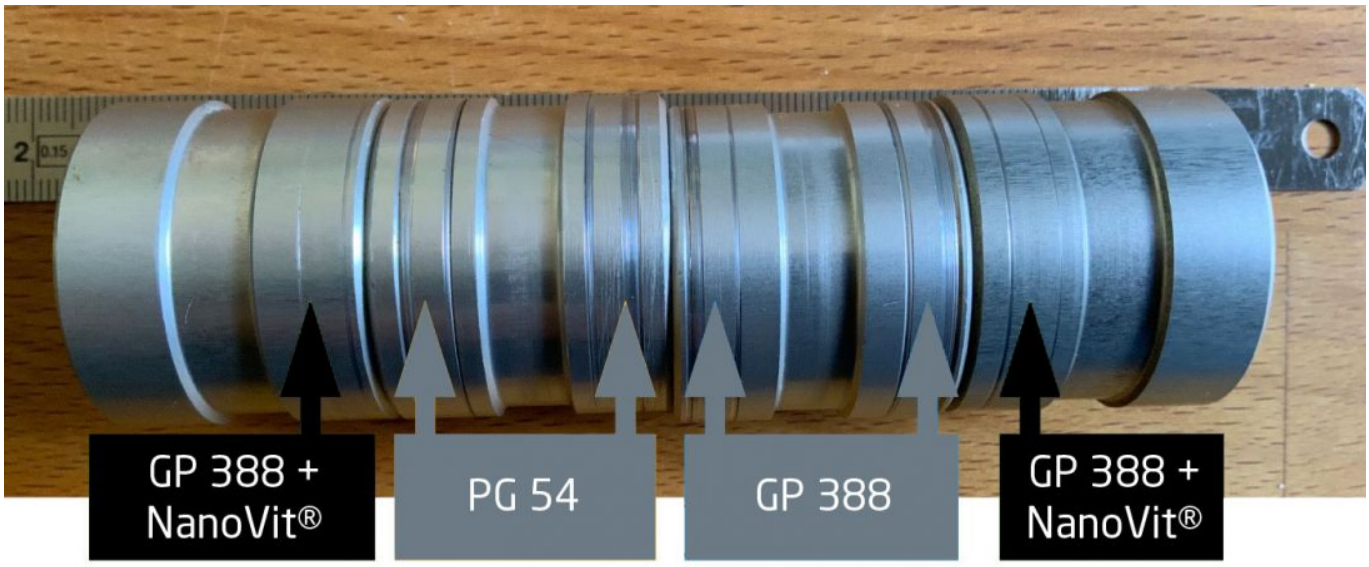
To protect the wheel bearings, sealing rings are installed on the outside of the wheel bearings to prevent the ingress of water and dirt. The sealing grooves slide on an aluminium bush. The sealing surfaces are normally lubricated with grease – this improves the sliding properties, reduces wear in the seal and bush and acts as an additional seal. Normal bearing greases (mineral oil/lithium soap) are mostly used here. However, they are not ideal for the elastomer/metal pairing – silicone-based greases, e.g. PG 54 or special greases based on synthetic oils, e.g. GP 388 – are better here.

The sliding speed between bearing bush and sealing ring varies depending on the speed of travel. Approx. 4 m/s can be assumed as a mean value; a maximum of 13 m/s is reached.

After about 8000 km the sealing ring and bearing bush are cleaned and inspected. As a rule, the seal seat leaves a relatively pronounced wear track on the bush and the seal also wears (the seal seat becomes wider and rubber is abraded). The seals usually have to be replaced after 15,000 km at the latest.

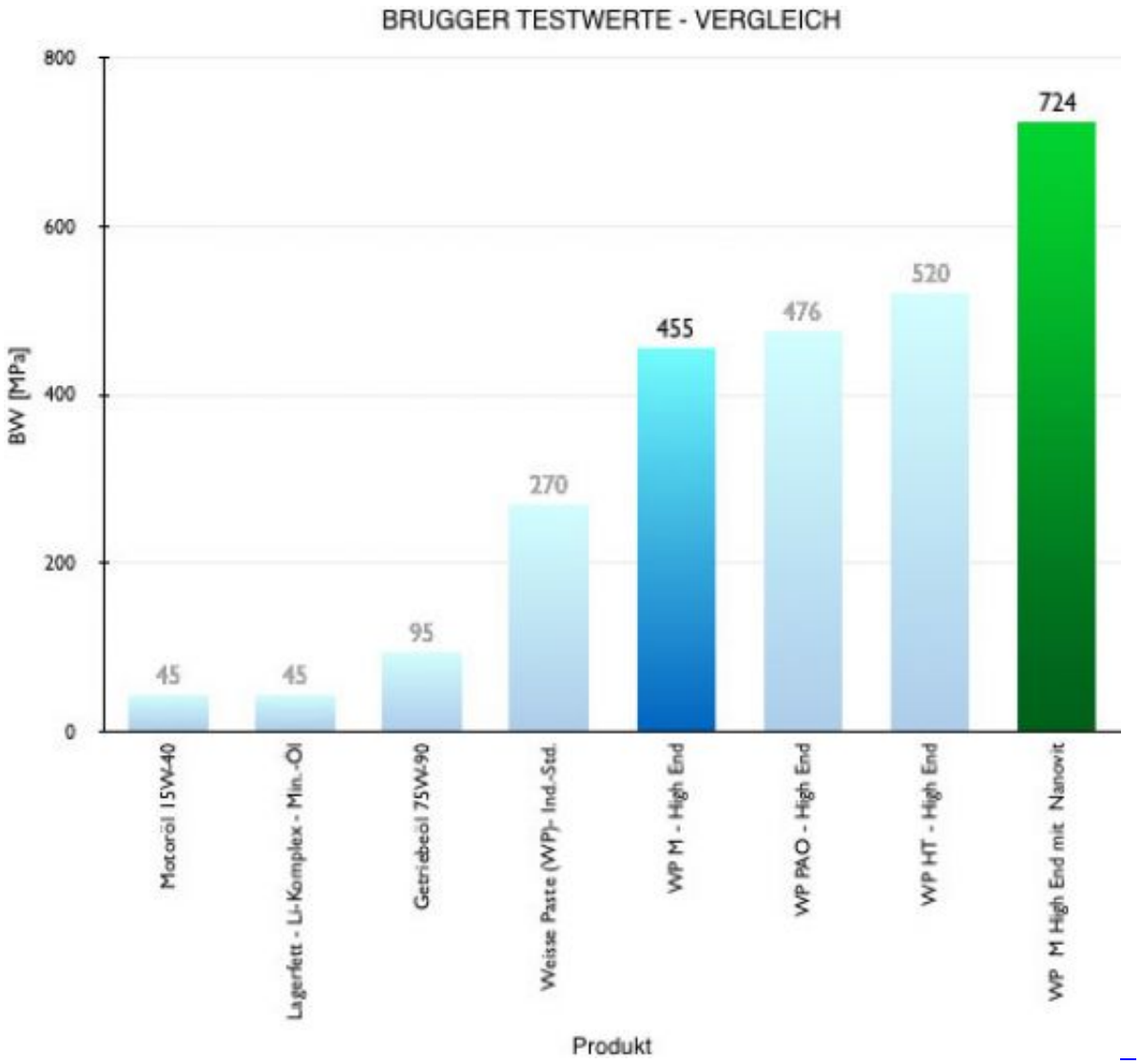
Fig. 1 - bearing bush and sealing ring

Fig. 2 - grease depot in the seal seat



Comparison of wear – PG 54 / GP 388 with and without NanoVit

The addition of a small quantity of NanoVit powder to the grease (GP 388) significantly improves the wear situation – after a comparable driving distance under comparable conditions, the wear tracks are considerably less pronounced.



Loadability test of lubricants in the limit area and mixed friction area in Newtons/mm^2.