Spring strut support bearings

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Function

Spring strut support bearings (also known as tower bearings) are part of the spring damping system, acting as the interface between spring strut and car body. As an important construction element of the axle suspension, they contribute to optimum contact between tyres and road surface and increase comfort by isolating tyre noise and road noise from the car body. They must also facilitate precision low-friction rotation of the spring struts on the front axle about the longitudinal axis. This provides the basis for accurate and smooth steering and/or resetting of the wheels.

Where areas of application are concerned, a distinction is made between spring strut support bearings for the front axle and those for the rear axle. As the requirements of these areas of application are not the same, spring strut support bearings for the front axle are designed and built differently to those for the rear axle.

Spring strut support bearings for the front and rear axle

Spring strut support bearings for the front axle

Modern cars overwhelmingly use McPherson spring struts. They are supported on the car body by spring strut support bearings which contain a ball bearing. The ball bearing is able to absorb high forces yet allows the spring strut to rotate smoothly. Over time, the design of the spring strut support bearing has been adapted to meet market requirements.

Spring strut support bearings for the rear axle

Spring strut support bearings for the rear axle do not contain a ball bearing, as spring struts for the rear axle are usually mounted rigidly. In most cases, a rubber/metal design is used. Spring strut support bearings for the rear axle can usually be replaced without special tools.

Safety

The wheel suspension is of particular significance where passenger safety is concerned. During driving, the components of the wheel suspension are exposed to extreme ambient conditions including vibration and soiling caused by spray water, road salt, sand and chippings. The length of time taken for this to result in wear to the spring strut support bearings varies depending on the prevailing operating conditions. The consequences are:

- Accelerated wear of shock absorbers,
- increased noise transmission from the axles and a
- decline in roadholding and ride comfort.

Worn spring strut support bearings should always be replaced by axle (i.e. on both sides of an axle at the same time). This prevents premature wear and reductions in safety and comfort. Well-known parts manufacturers are constantly analysing the causes of spring strut support bearing failure, using their findings to adapt the parts to meet the specific requirements of the prevailing application.

Environmental protection

Replacing worn spring strut support bearings ensures more precise and softer steering, as forces are reduced. Even vibration on poor road surfaces is reduced by up to 25%. Furthermore, both the steering behaviour and the road grip of the wheels improve. This results in more economic driving with less fuel consumed and energy distribution optimised.

Depreciation

Spring strut support bearings should be checked as part of regular maintenance and service work. This should ensure that mechanical damage and excess wear are detected and rectified in good time. Suspension components are getting more reliable all the time. However, they have a limited service life. Depending on the vehicle and operating conditions, the components must be replaced after between 75,000 and 100,000 km.

Bilder

Hersteller

KYB UK

NTN SNR

SKF_EN

TRW KFZ Ausrüstung GmbH_EN

CORTECO_EN

Herth+Buss

DRiV

Magneti Marelli_EN

Quelle:
http://www.my-cardictionary.comhttps://www.my-cardictionary.com/cardictionary/electric/products/spring-strut-support-bearings.html