

Strut top mount replacement

Often overlooked, until it's obviously worn out, the strut top mount has an effect on many other parts and overall safety. Here febi explains some problems that can be avoided by changing them in time.

The strut top mounting contributes to a car's suspension system and its ability to absorb shocks and road vibration. As the strut's upper centre of rotation, it links the shock absorber with the chassis, and affects the front axle settings for camber and castor.

Rotation and Shock Absorbing under Continuous Load

As a rebound stop, the strut top mounting limits the shock absorber's rebound path and must absorb substantial forces over a short distance. These parts wear until they fail completely due to the constantly changing stresses (Fig. 1) which increase due to poor road conditions. A strut top mounting should be checked every 12,000 miles and replaced every 60,000 miles.

Construction and material

In modern production vehicles, the strut top mounting consists of a rubber-metal element that is very sturdy. The Shore hardness determines the quality of the rubber: If it is too hard, the vehicle is no longer comfortable to drive; if it is too soft, it wears faster. febi strut top mountings adhere strictly to the OE specifications in their construction and material. The ball bearing, also part of the strut top mounting, allows the strut to rotate in relation to the chassis. febi carries both components - rubber-metal mounts and ball bearings separately and as repair kits.



Fig 1. Tension and compression movements have an impact on the strut top mounting

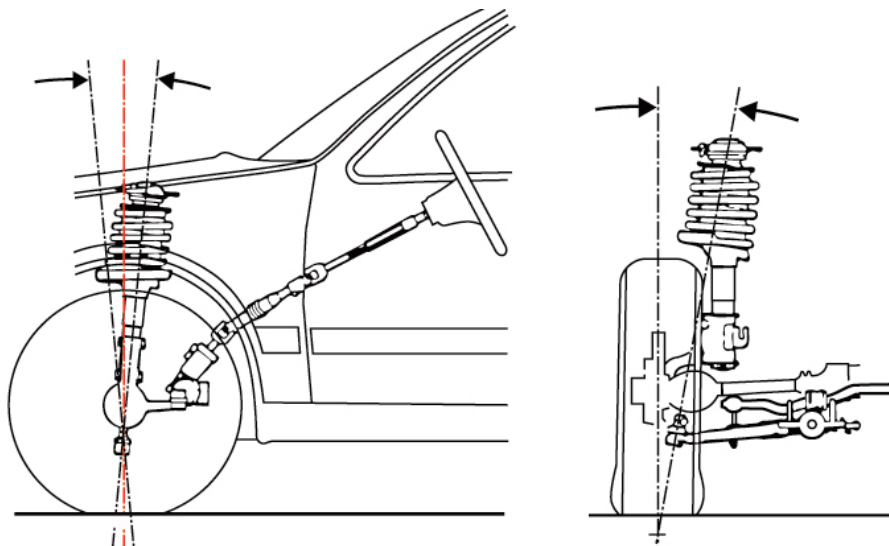


Fig 2. The effect of the strut top mounting on axle geometry

Age and Wear are Safety Risks

When rubber-metal parts age, the material becomes brittle and cracks are formed. Fluctuating temperatures and contamination due to oil intensify this effect. The rubber parts of the strut top mounting wear, causing loss of rebound even if the shock absorber is still intact. The consequences can be anything from steering wheel vibration and knocking noises to rolling on bends and tyre damage. Worn bearings also impair the axle geometry and the necessary front axle settings for camber, castor and steering-axis inclination (Fig. 2). Continuous steering corrections may be necessary to keep the vehicle on track when a strut top mount is worn. This is because a worn strut mounting causes friction; the steering power required may increase by up to 20%.

The service life of these parts is also shortened by a worn strut top mount:

- Shock absorbers
- Tyres
- Springs
- Connecting rods and steering rods
- Tie rod ends

No Half Measures

Strut top mountings should always be checked during an inspection, and replaced if necessary, because of the safety aspects mentioned. The strut top mountings should always be renewed in pairs, particularly when replacing the shock absorbers. As the steps required are largely the

same as those for changing the shock absorbers, it seems obvious to replace the strut top mounting at the same time at no extra cost for labour.

Small Parts with a Big Impact

Dust caps, buffers and rubber blocks are hidden chassis components and their importance is often underestimated. Everything that can be said of strut top mountings also applies to what we refer to as protection kits: Their wear has similar adverse effects on driving safety. Every pothole, every bump and every kerb strike places stress on the microcellular foam of the buffer, which becomes increasingly softer and shorter. The function of rubber blocks is to absorb vibrations from the road surface. As the rubber eventually becomes less elastic, the vibrations are increasingly transmitted to the car's interior. Protection kits should also be checked during an inspection and should be replaced whenever the shock absorbers are replaced or no later than every 60,000 miles. febi supplies kits to fit most common European car makes in OE quality.

More information on febi's range of chassis components, and an online parts search, can be found at www.febilive.com. You can also contact the febi Technical helpline on +44 1977 691105 or at enquiries@febiuk.co.uk.

