



ZF Aftermarket: Switchable engine mounts made for greater ride comfort

- **Engine mounts with a switchable characteristic curve ensure perfect vibration damping in all driving situations**
- **OE-quality spare parts available for many Audi and Mercedes-Benz models**

Under its Lemförder brand, ZF Aftermarket is now offering switchable engine mounts as OE-quality spare parts. These intelligent components are mainly used in luxury models, where they ensure the lowest possible vibration and noise both in idling mode and in operation due to their switchable characteristic curve. This is not possible with conventional suspension mounts.

Engine mounts function as the connecting element between the engine or the transmission and the vehicle body. A simple solid screw connection cannot be used in this instance because it would transmit vibrations, noises and movement from the drivetrain to the vehicle. That's why automobile manufacturers use rubber-metal parts or hydraulically dampened engine mounts to improve ride comfort. Yet even this approach does not offer ideal vibration damping under all conditions as its design is riddled with conflicting objectives. In order to counteract this problem, switchable engine mounts were developed so that one component would meet the demand for both a high level of comfort in idling mode and driving dynamics. An integrated air spring offers a possible variant here.

If the engine is in idling mode, an air spring in the engine mount is activated via a switch. This air spring absorbs the low-frequency engine movements while the vehicle is at a standstill. During driving operation, the mount switches over to a hydraulic mechanism depending on vehicle speed and rotational speed. Doing so makes the mount considerably harder, simultaneously creating greater freedom of movement for the connected components.



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ZF has therefore developed electronically switchable engine mounts that can actuate two different characteristic curves depending on vehicle speed and rotational speed.

Noises and vibrations can signify damages

Engine mounts are prone to wear, which is not very easy to diagnose. Ultimately, engine mounts are usually installed under cover and are hidden behind cladding. The following are a few problems that could indicate a defect:

- Fluid leaks or signs of rubber deterioration
- Stronger vibration transmission to the vehicle body
- Noticeable engine movements (reverberation) when switching off the engine
- Clicking noises during load changes

To once more offer customers increased ride comfort in cases such as these, auto repair shops should therefore use OE-quality spare parts, which should have exactly the same design of the OE part originally installed in the vehicle. Because even if the engine mount model fits into a different engine geometrically, like a gasoline engine instead of a diesel, there could be major differences in the engine mount design, for example in terms of rigidity.

ZF Aftermarket also recommends that all engine mounts always be replaced during repairs, not only the defective part. Otherwise, there is a risk that the new component will have to absorb higher forces and vibrations because the remaining mounts are already heavily worn. This may accelerate subsequent damage. ZF Aftermarket offers switchable engine mounts for several Audi and Mercedes-Benz vehicle models. These include:

- Audi A4, A5, A6, Q5, Q7
- Mercedes C and E Class, GLK, GLC



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Caption:

Under its product brand Lemförder, ZF Aftermarket offers switchable engine mounts for several vehicle models.

Photo: ZF

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ZF Friedrichshafen AG

ZF is a global technology company and supplies systems for passenger cars, commercial vehicles and industrial technology, enabling the next generation of mobility. With its comprehensive technology portfolio, the company offers integrated solutions for established vehicle manufacturers, mobility providers and start-up companies in the fields of transportation and mobility. Digital networking and automation are focal points of ZF system development. ZF allows vehicles to see, think and act.

In 2018, ZF achieved sales of €36.9 billion. The company has a global workforce of 149,000 with approximately 230 locations in 40 countries. ZF invests over six percent of its sales in research and development annually.

With integrated solutions and the entire ZF product portfolio, the ZF Aftermarket Division of ZF Friedrichshafen AG guarantees the performance and efficiency of vehicles throughout their life cycle. Its combination of established product brands, digital innovations, customized products and services and a worldwide service network has made ZF a sought-after partner and number two in the global automotive aftermarket.

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