



Communications Model Series, Innovation and Technology

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Looking ahead to the new Audi A8: Fully active suspension offers tailor-made flexibility

- Fully active suspension for maximum comfort and dynamism
- 48-volt main electrical system powers electromechanical suspension system
- Dynamic all-wheel steering resolves the conflict of aims between agility and stability
- Global first: Raising the body during a side impact improves passive safety

Ingolstadt, June 22, 2017 – The new Audi A8 proves itself a versatile performer on the road. Thanks to its active suspension, it provides comfort-oriented customers with a chauffeur-driven sedan offering a stylishly smooth ride. The enthusiastic owner-driver can relish the characteristics of a sports car. This flexibility is made possible thanks to the new active suspension based on the 48-volt electrical system, which is used for the first time as the main electrical system. The new Audi A8 makes its world debut at the Audi Summit in Barcelona on July 11.

The all-new active suspension on the Audi A8 is a fully active, electromechanical suspension system, which drives each wheel individually and adapts to the prevailing road conditions. Each wheel has an electric motor which is powered by the 48-volt main electrical system. Additional components include gears, a rotary tube together with internal titanium torsion bar and a lever which exerts up to 1,100 Nm (*811.3 lb-ft*) on the suspension via a coupling rod.

Thanks to the front camera, the luxury sedan detects bumps in the road early on and predictively adjusts the active suspension. Even before the car reaches a bump in the road, the preview function developed by Audi transmits the right amount of travel to the actuators and actively controls the suspension. In this way the suspension reacts precisely at the right time, virtually completely eliminating any vibrations and jolts. This complex process takes just a few milliseconds, with the camera generating information about the road surface condition 18 times a second. The electronic chassis platform (ECP) processes the road surface information and precisely controls all suspension components almost in real time. In conjunction with the air suspension fine-tuned for the A8, the innovative suspension concept delivers an entirely new driving experience in this way. Irrespective of the high level of comfort, the new luxury sedan sits close to the road even with a dynamic driving style.



The active suspension specifically influences and minimizes rolling movements when cornering, and pitching movements when braking or accelerating, for instance. The customer can drive dynamically while keeping the vehicle under control or work undisturbed in the rear.

The innovative combination of dynamic and rear axle steering resolves the conflict of aims between agility and stability in the shape of dynamic all-wheel steering: The steering characteristics are sporty and direct while ensuring a high level of handling stability; the steering feel encompasses a wide spread from comfortable through to intense feedback. The turning circle of the A8 is smaller than that of an A4.

In conjunction with the Audi pre sense 360° safety system, the active suspension on the new Audi A8 takes passive safety to a new level. The system uses the sensors networked in the central driver assistance controller (zFAS) to detect risks of a collision around the car. In the event of an imminent side impact at more than 25 km/h (*15.5 mph*) the suspension actuators raise the body on the exposed side by up to 80 millimeters (*3.1 in*) within half a second. As a result, the collision is directed to the even stronger areas of the luxury sedan, such as side sills and floor structure. Hence the load on the occupants is reduced by up to 50 percent compared with a side impact where the body is not raised.

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The Audi Group, with its brands Audi, Ducati and Lamborghini, is one of the most successful manufacturers of automobiles and motorcycles in the premium segment. It is present in more than 100 markets worldwide and produces at 16 locations in 12 countries. 100 percent subsidiaries of AUDI AG include Audi Sport GmbH (Neckarsulm), Automobili Lamborghini S.p.A. (Sant'Agata Bolognese, Italy) and Ducati Motor Holding S.p.A. (Bologna, Italy).

In 2016, the Audi Group delivered to customers about 1.868 million automobiles of the Audi brand, 3,457 sports cars of the Lamborghini brand and 55,451 motorcycles of the Ducati brand. In the 2016 fiscal year, AUDI AG achieved total revenue of €59.3 billion and an operating profit of €3.1 billion. At present, approximately 88,000 people work for the company all over the world, more than 60,000 of them in Germany. Audi focuses on sustainable products and technologies for the future of mobility.