



Audi A8 – Dynamic all-wheel steering

Boundaries pushed: dynamic all-wheel steering

There is another world first in the suspension of the new A8: dynamic all-wheel steering. It, too, is controlled by the electronic suspension platform (ESP). The new steering system approaches the steer angle and directional stability as separate issues, once again probing the boundaries of the physically possible. At low speeds and on tight bends, the luxury sedan significantly reduces steering effort. But this is never allowed to unsettle it. The A8 is even unruffled by an abrupt lane change at high speed. The driver always feels intensive, finely differentiated feedback from the road.

The optional dynamic all-wheel steering combines two distinct high-tech steering systems. The dynamic steering on the front axle incorporates what is known as strain wave gearing where the ratio changes as a function of speed. The rear wheels are turned by a spindle drive and two track rods – at low speeds by up to five degrees against the direction of steering, to facilitate maneuvering and reduce the turning circle by about one meter to 11.4 meters (37.4 ft) on the A8 or 11.8 meters (38.7 ft) on the A8 L. At medium and high speeds, the wheels are turned by up to two degrees in the direction of steering, for increased stability. Dynamic all-wheel steering matches the steering ratio optimally to the driving situation, adjusting the ratio across a range of 9.5 to 17. At the limits of driving dynamics or on surfaces that are slippery under one side of the car, dynamic all-wheel steering again stabilizes the new A8 by manipulating the steering at the front and rear axles.

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