Audi Q5 – adaptive air suspensiopn with damper control

For engine models with quattro: suspension with damper control

An especially attractive solution is the suspension with damper control, which is available for all engine versions with a quattro drive. Its design is based on the CDC principle (CDC: continuous damping control): Electromagnetically actuated valves in the damper piston alter the through-flow cross-sectional area for the hydraulic fluid as necessary.

Management of the CDC dampers is incorporated into the electronic chassis platform – the newly designed control unit for the different chassis systems replaces the separate processors of the previous model. The electronic chassis platform processes a lot of information to generate a precise image of the current driving situation and the friction value of the road surface.

This lets it manage the individual systems with high precision, and its computing cycle is just milliseconds. In damper control, the spread between comfortable and dynamic driving is even greater and can be experienced much more than in the previous model. Operating speed has increased by around 50 percent, and energy consumption has been reduced.

Many driving modes: Audi drive select

Drivers of the new Audi Q5 can fine tune the work of damper control according to their own preferences. Just as for dynamic steering and the sport differential (options for the 3.0 TDI*), it is subject to control by the Audi drive select handling system. This system is a standard feature of all new Q5 versions, and it makes the driving experience even more well-rounded.

In the basic configuration, Audi drive select intervenes in the operation of the throttle, automatic transmission, steering and automatic air conditioning. The driver can select the comfort, auto, dynamic, efficiency and offroad modes at the touch of a button. In conjunction with an MMI navigation system, there is also an individual mode that is largely user-configurable.

If the optional air suspension with damper control and adaptive air suspension with adaptive damping are installed, the allroad mode is added and the offroad mode becomes lift/offroad. This lets the new Q5 achieve maximum offroad capability.

Always the ideal setup: adaptive air suspension

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The air suspension with damper control also enables ride height control. The system is another new development for the Audi Q5. In the front suspension struts, air springs enclose the shock absorbers; these two components are implemented separately in the rear suspension. The compressor is located between the rear wheels. It fills a pressure reservoir, which is a low-profile tank located under the driver’s seat. In most situations, the pressure reservoir feeds the air spring bellows – it does this much faster than the compressor and its operation is nearly silent.

Overall, the adaptive air suspension lowers the body 22 mm (0.9 in) compared to the steel suspension. The system sets the ideal body position for every driving situation. In the lift/offroad mode of Audi drive select (up to 35 km/h (21.7 mph) speed), the body is 45 mm (1.8 in) higher than the normal level; in allroad mode (up to 80 km/h (49.7 mph)) it is still 25 mm (1.0 in) higher.

In the dynamic mode, the body is lowered 15 mm (0.6 in). In the other modes, this lowering automatically begins at a driving speed of around 120 km/h (74.6 mph). This increases driving stability and improves aerodynamics. For comfortable loading, the rear body can be lowered 55 mm (2.2 in) by pushing a button in the luggage compartment.

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