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Summary

More composed than ever – the new Audi A8

Excellent comfort, superb craftsmanship, strict lightweight construction and a broad portfolio of high-end technologies: Audi has exhaustively updated its A8 flagship. New assistance systems and the innovative Matrix LED headlights make for even more superior driving. The engines are more powerful and more efficient.

The A8 makes Audi one of the innovation leaders in the luxury segment. An outstanding strength of the sedan is its lightweight construction. The standard-wheelbase A8 3.0 TDI quattro has a kerb weight of 1,880 kilograms– one of the only vehicles in its class with all-wheel drive. The decisive factor here is the body. An Audi Space Frame (ASF) made almost entirely of aluminium, it weighs just 231 kilograms.

The new Audi A8 is the largest sedan in its competitive segment. It is 5.14 metres long, has a wheelbase of 2.99 metres, is 1.95 metres wide and 1.46 metres tall. The A8 L gains an additional 13 centimetres in both length and wheelbase. The 520-litre boot in both variants has been reconfigured to be even easier to load. Thanks to new noise damping measures, the already low interior noise level has been reduced even further.

The dynamic design of the Audi A8 is now more expressive. The engine hood, the Singleframe grille and the front bumper have more pronounced contours, and the headlights have become flatter. With these headlights, the high-beam comprises 25 small, individual light-emitting diodes per unit that can be switched on and off or dimmed individually as needed. This enables the headlight system to react to oncoming or preceding vehicles and blank out light with great precision while continuing to fully illuminate the rest of the road.

The LED lights at the rear of the car have been revised. In all versions except the S8, the exhaust system terminates in two large, trapezoidal tailpipe tips on each side of the rear end. Fine chrome strips and high-gloss black window frames round out the revised design. There is a choice of 12 exterior colours, including five new ones.

Interior: Plenty of room and fine materials

In the interior of the Audi flagship, the elegant lines and generous spaciousness stand out. Both the A8 and the A8 L can be equipped with two individual rear power seats.

All components exhibit uncompromisingly precise workmanship. Every detail demonstrates the hand-built character of the new Audi A8. New additions among the inlays are the veneers fine grain poplar brown silver and fine grain ash natural gold brown, which are adorned with silver and gold, respectively.

Particularly discerning customers will find solutions for freely customising their automobile in the Audi exclusive range.

Despite the abundance of functions, the new Audi A8 features an exemplarily clear operating concept. This includes the MMI control unit with the large rotary pushbutton. The driver can enter characters via the MMI touch to control numerous navigation and multimedia functions.

The technology module Audi connect including car phone complements MMI navigation plus and connects the sedan to the Internet. Passengers can surf and e-mail freely on their mobile devices using the Wi-Fi hotspot, while the driver can benefit from Audi connect services delivered to the car. Optional components such as the Bang & Olufsen Advanced Sound System and rear seat entertainment round out the range.

The assistance systems provide the driver with even greater control on the road. The adaptive cruise control with stop&go function is coupled with an expanded version of the standard Audi pre sense basic safety system. The same applies to Audi side assist. New in the A8 are Audi active lane assist, which makes slight steering adjustments when necessary, the park assist system with 360° display, which steers the sedan autonomously when parking, and the head-up display. The night vision assistant now recognises larger animals in addition to pedestrians.

The engine lineup: two TDI units and a high-performance TFSI unit

The new Audi A8 will be offered in Australia with two diesel engines. These are the highly efficient 3.0 TDI with 190 kW and the 4.2 TDI, which produces 283 kW and 850 Nm of torque.

With 382 kW, the S8 is the big sports sedan. Its sonorous 4.0 TFSI accelerates the

S8 from 0 to 100 km/h in 4.1 seconds. Yet it consumes on average just 9.6 litres of fuel per 100 kilometres (225 grams CO₂ per kilometre). The Cylinder on Demand (COD) system also plays an important role here. Active Noise Cancellation (ANC) broadcasts a precise antiphase sound to eliminate intrusive noise while operating on four cylinders on low load.

The chassis and many body details reflect the special positioning of the S8 in the A8 portfolio.

The new Audi A8 is equipped with a fast and smooth-shifting, eight-speed tiptronic. The electronically controlled automatic transmission is paired with quattro permanent all-wheel drive. Audi complements this with the optional sport differential, which distributes the power between the rear wheels as needed. It is standard with the A8 4.2 TDI clean diesel quattro and the S8.

The chassis: sporty character

The sedan owes its sporty character in large part to the chassis. The Audi drive select system, which varies the function of various technology components, is standard. It also controls the adaptive air suspension including the adaptive dampers. Audi offers the air suspension with a sporty setup upon request. The power steering now has an efficient electromechanical drive. Dynamic steering, which varies boost as a function of the speed driven, is available as standard on some models.

At a glance

The new Audi A8

Drive

- Two TDI engines, output of 190 kW to 283 kW
- Audi A8 4.2 TDI gains 25 kW; output now 283 kW
- Audi S8 with 382 kW and sportily tuned suspension
-
- All engines certified in accordance with Euro 6, emissions reduced by up to 10 percent
- Cylinder on demand (COD) and Active Noise Cancellation (ANC) system for cylinder deactivation under part load with the 4.0 TFSI V8
- Eight-speed tiptronic and quattro drive system standard, sport differential standard in the A8 4.2 TDI clean diesel quattro and the S8

Chassis

- Adaptive air suspension with electronically controlled damping, Audi drive select
- Optional carbon fibre ceramic brakes S8
- Power steering with electromechanical drive; alternatively dynamic steering

Body and design

- Aluminium Audi Space Frame (ASF) body, weighs just 231 kilograms
- Two body variants with lengths of 5.14 or 5.27 metres
- Headlights with revolutionary Matrix LED technology, with highly precise electronic control and dynamic turn signals

Interior and controls

- Numerous seat variants including ventilation and massage
- Spacious, exclusive interior, superb craftsmanship
- New colours, inlays and grades of leather in the interior along with three Audi design selections
- State-of-the-art driver assistance systems and head-up display
- Optional Bang & Olufsen Advanced Sound System and rear seat entertainment
- MMI navigation plus and Audi connect

Full version

The sportiest premium sedan in the full-size class – The new Audi A8

A multitude of high-end technologies, systematic lightweight construction and excellent comfort: Audi presents a thoroughly revised version of its successful A8 flagship. Its engines have become even more powerful and efficient; new assistance systems and the innovative Matrix LED headlights make for even more superior driving.

Body

Amazingly light: Weighing just 231 kilograms (241 kilograms for the A8 L) the ASF body of the A8 sets standards in the luxury class. With its standard quattro drive system, the A8 3.0 TDI quattro has a kerb weight of just 1,880 kilograms.

The Audi Space Frame (ASF), which the brand debuted 20 years ago, is roughly 40 percent lighter than a corresponding steel body. Its layout follows bionic principles: Like the bones in a skeleton, all of the parts combine optimal function with low weight. Aluminium extruded sections and die-castings form a frame to which the aluminium sheets are joined by friction connections. Audi always uses the material in a tailored configuration. The ASF of the A8 combines 13 different grades of aluminium.

Castings are used anywhere high local forces are introduced and versatility and design freedom are particularly important. The multifunctional A-pillar node, for example, connects the longitudinal member, the windshield crossmember, the roof frame, the strut mount, and the omega bracket in front of the footwell. Most of the 25 castings in the A8 are manufactured using the vacuum casting process.

The extruded sections are also characterised by design flexibility, with each one optimised precisely for its intended purpose. The roof arch, for example, is hydroformed under very high water pressure. Its cross-section changes multiple times over its length, with smooth transitions.

The A8's B-pillars are an exception in the ASF: They are made of hot-shaped steel. The blanks are heated in a furnace to over 1,000 degrees Celsius and shaped immediately thereafter at around 200 degrees Celsius in a water-cooled pressing die. This abrupt change in temperature creates an iron-carbon structure of maximum tensile strength. This measures 1,500 Newtons per square millimetre in the upper section of the pillars; somewhat lower in the lower section because this is where most of the energy is dissipated in the event of a side impact collision.

Thanks to their low wall thickness, the hot-shaped B-pillars are relatively lightweight, accounting for eight percent of the A8 body's weight. The aluminium sheets and castings account for 35 percent, and the extruded sections 22 percent. The distribution is similar in the A8 L.

Joining the wrought components and individual parts is a high-tech process. 1,847 punch rivets, 632 self-tapping screws and 202 weld points help keep things tightly together. A structural adhesive is used at the bolted connections of the B-pillars to enhance strength. It also serves as a separating layer that prevents contact corrosion. All together, the bonded seams measure 44 metres long.

The invisible roof seam: The epitome of Audi precision

Another Audi domain is laser welding. The particularly strong and rigid seams it produces makes it possible to attach large sheet metal parts to the structure. The 1.8-meter aluminium invisible seam between the roof and the side of the car is produced via this method. It epitomises the precision of Audi. The maximum tolerance for the outer skin is just 0.1 millimetres. The development engineers have also trimmed every unnecessary gram of weight from the add-on components. The lower crossmember of the front end, for instance, is a matrix of fibre-reinforced polymer with three embedded aluminium panels.

The ASF body is extremely light, very stiff and offers a high degree of vibrational comfort. For example, the front axle subframe directs the impulses it receives from the wheels into a multi-element structure consisting of beams and sections. All A8 models include two vibration dampers mounted on the front suspension.

Considerable attention was also paid to the sound radiation of the large sheet metal panels and body cavities during the A8 update. Acoustic bulkheads, absorbers, insulation and layers of foam prevent them from vibrating. Fine-seamed seals block out airborne sound. The cabin has also been carefully insulated, such as in the area of the front carpeting. The quiet in the cabin - the typical Audi feeling - is now even more impressive.

With a coefficient of drag of just 0.26 for the 3.0 TDI quattro, the A8 slips through the wind quietly and easily. Low lift coefficients at the front and rear axles guarantee outstanding stability even at high speeds. The flow of air along the underbody and through the engine compartment also had a prominent place in the requirements specification. Advances with the radiator package and the efficiency gains with the air conditioning system reduce fuel consumption by several grams CO₂ per kilometre.

The underbody panel, which exposes only the exhaust system and the rear axle, offers additional advantages beyond its aerodynamic effects. It protects the sheet metal and engine against salt and stone impacts, and also serves as noise insulation. A NACA vent directs the slip stream to the transmission oil cooler. At the rear of the car, a cover plate and the mufflers form an upwardly angled diffuser surface.

Quiet cabin: Excellent wind noise comfort

The Audi A8 L is also at the head of its class in wind noise comfort. To further improve exterior noise insulation, Audi offers two optional glazings. The first is double/acoustic glazing. Composite safety glazing includes an acoustically insulating film in between. The second option is insulating acoustic glass. It uses a metal vapour coating to reflect the infrared component of sunlight. Audi offers darkened side rear windows of double acoustic glass in the rear.

The body of the Audi A8 protects passengers in any type of collision. In a frontal collision, four load paths on each side of the vehicle absorb the forces. Two of these are located in the upper portions of the fenders, the others in the longitudinal members and the buffers in front of the subframe for the engine and the front axle.

A crossmember comprising a double box section bent into the shape of an omega provides additional protection for the passenger cell. Positioned at the level of the footwells, it directs the forces into the floor and the A-pillars. The longitudinal members in the floor panel come together in the shape of an arrow below the rear seat bench. Together with the centre tunnel they constitute the body's strong backbone. In the back, large members protect the passenger cell.

The adaptive restraint system stands guard in the cabin of the Audi A8. It protects passengers of different sizes particularly effectively by intelligently managing the collaboration between the airbags and the belt force limiters. In a rear-end collision, the integral head restraint system averts the danger of whiplash injuries. In a side-impact collision, four side airbags and the head airbag system protect the occupants. Automatic three-point seat belts with adaptive force limiters complete the restraint system.

The boot of the new Audi A8 has a capacity of 520 litres. Loading is comfortable thanks to its low loading lip and the revised layout. There is plenty of space for four golf bags. The boot lid swings upward when unlocked. Pull the lid down and the self-closing boot does the rest. A load-through hatch is also available as an option.

The top-of-the-line solution is the power-closing boot. There are two buttons on the inside of the boot lid. One starts the closing process, the other locks the entire car.

Exterior design

The new Audi A8 is longer (5,135 millimetres), wider (1,949 millimetres), but is not as tall as them (1,460 millimetres). The proportions express the car's sporty character.

The sporty harmony is evident in the dynamic design of the Audi A8. Elegance characterises the interplay between every surface, line and volume. The exterior skin is homogenous; the coupé-like roofline lets the silhouette flow. The surfaces exude composure and prestige, and contrast with the sharp lines. The proportions are also perfectly balanced in the A8 L, which is 130 millimetres longer than the standard version in total length and wheelbase.

The front is more strongly contoured; the hexagonal Singleframe grille more sculptured and richer in detail. Its horizontal double bars underscore the width of the Audi A8 while generous chrome applications emphasise its elegance. The engine hood has four creases. They run to the upper edges of the Singleframe grille and the inside corners of the headlights.

The air inlets in the redesigned front apron now extend all the way across the width of the front and are framed in chrome clasps. The headlights have become flatter and wider. A set of daytime running lights lines the upper and lower edges of the headlights.

Matrix LED headlights: The light of tomorrow

Making their debut in the updated A8 are the Audi Matrix LED headlights. Audi is launching a new chapter in automotive lighting with this high-end solution. They produce a light that always provides excellent illumination of the road without blinding other road users. The high beam is broken up into 25 small light-emitting diodes per headlight. Groups of five shine through a common reflector.

When the light switch is set to Automatic and the high beams are on, the system is switched on outside of urban areas at speeds of 30 km/h and above. As soon as the camera in the A8 detects another vehicle, the new headlights switch off or dim individual LEDs in the blink of an eye.

This function is extremely precise. Oncoming and preceding vehicles are excluded from the light pattern and are not blinded, while all other areas between and adjacent to them continues to be fully illuminated. After the oncoming traffic has passed, the high beam once gain illuminates the previously excluded sectors with full power. The Audi Matrix LED headlights are purely electrical and extremely flexible. Their light has a specific crystal-like shine.

One additional function of the Matrix LED technology is the so-called marking light, which is coupled with the optional night vision assistant. When this system detects a person in the critical area in front of the car, individual LEDs blink three times in quick succession. This clearly highlights the person against the background, warning both them and the driver. The night vision assistant now also detects and marks larger wild animals. To avoid scaring them, the lights do not blink on the animals.

The LEDs in Audi Matrix LED headlights also assume the function of cornering lights, shifting the focal point of the light along the curve by selectively brightening or dimming. They do this shortly before the wheel is turned based on predictive route data provided by the MMI navigation plus. Other functions are the dynamic turn signals that aid safety. The LEDs in the turn signals light up successively in blocks every 150 milliseconds, moving in the direction in which the driver wishes to turn.

The side view: Taut and athletic

Viewed from the side, the new Audi A8 is taut and athletic. Typical of the Audi line, the body accounts for two-thirds of the vehicle's overall height, the greenhouse for the remaining third. The tornado line below the windows – another Audi feature – runs tightly above the wheel arches to give the A8 a powerful road stance.

The surfaces below the tornado line interpret the interplay of light and shadow. Proceeding downwards, the surfaces are framed by the gently rising dynamic line running above the sills. Large wheels underscore the impression of energy and power. New chrome strips in the lower region of the body, fine strips embedded in the door handles and high-gloss black window frames imbue the side view with even more finesse and quality.

The rear end of the car also interprets the subject of the sporty luxury sedan. A redesigned spoiler lip extends it visually. The rear end appears more homogenous. A chrome strip visually connects the somewhat flatter rear lights and extends into them. The lights have a new markedly horizontal tail light contour and use all LED technology, with 94 individual diodes per unit. In all versions except the S8, the exhaust system terminates in two large, trapezoidal tailpipe tips on both sides of the back end.

Audi delivers its new flagship in twelve colours – two solid shades and ten metallic, pearl-effect or crystal-effect shades. Five of these are new. The finishes are called Argus brown, Brilliant black, Cuvée silver, Florette silver, Glacier white, Havana black, Oolong grey and Phantom black. The shade Daytona grey is reserved exclusively for the S8. Even more exclusive are the custom finishes that Audi mixes specially at the request of the customer.

Interior

The interior of the new Audi A8 and the Audi A8 L is characterised by an elegant design, authenticity and superb craftsmanship.

The exterior design carries over into the clean lines of the cabin. Its salient element is the “wrap-around” – a wide arch spanning the cabin. It encircles a slim, low instrument panel, reinforcing the impression of expanse and freedom. The front of the instrument panel is a gentle wave, and the horizontal lines underscore the width.

The interior lighting, which is produced by white light-emitting diodes, works its magic in the dark. The ambient lighting comes across as even more artistic, a staging comprising LEDs, light guides, light strips and the indirect illumination of the centre console. The driver can choose between the colour schemes Ivory, Polar, or Ruby/Polar, and adjust the brightness in four zones via the MMI.

The clear operating concept: Typical Audi

With its logical, easy-to-understand structure, the operating concept of the new A8 is typical of Audi. The large dial instruments with their classic, clear graphics, the black faces and red needles (S8: grey faces, white needles) are easy to read. The colour display of the driver information system has a diagonal of seven inches. The efficiency program and rest recommendation function are standard. It is operated via the multifunction steering wheel.

Also included as standard equipment are a power-adjustable steering wheel and shift paddles (aluminium in the S8) for the tiptronic.

The front section of the console is visually separated from the instrument panel. Wide and slightly sloped, it serves as the control panel for the four-zone deluxe automatic air conditioning that is standard on all models. It has a separate rear air conditioner and controls 25 servo motors.

Below the keypad for the air conditioning system is the terminal for the MMI operating and multimedia system. At its centre is the large rotary pushbutton with the soft and hard keys for navigation within the menus. The panel to the right is for the audio system. The panel on the left has either six radio station buttons or the touchpad of the MMI navigation plus.

The monitor of the MMI system is retracted into the instrument panel when not in use. It slides upward electrically when the system is started. The monitor with its eight-inch diagonal, the piano finish of the housing and the high resolution underscore its feeling of quality. The monitor renders all images in elegant, three-dimensional graphics.

New in the Audi A8: The head-up display

Audi offers the head-up display, which is recessed in the instrument panel. It projects the displays the driver wants to see as coloured symbols and numbers in his or her primary field of vision on the windshield. They appear to float in a 26 x 9 centimetre window roughly 2.5 metres in front of the windshield.

The driver can grasp the images of the head-up display very quickly because his or her eyes, accustomed to distance vision, do not have to adjust. The preferred information for the head-up display can be selected via the MMI. The driver can also adjust the height and brightness of the image.

A liquid crystal display generates the image, and two aspheric corrective mirrors enlarge and redirect it. Their highly precise calibration compensates for the inevitable minor distortions arising from the geometry of the windshield. To avoid ghost images, the windshield and the sound-insulating safety film embedded in it have a special shape.

The front seats in the new Audi A8 offer excellent hold and guidance. The offset upper section of the seat back supports the shoulders. The 22-way deluxe seats offer even more luxury, and include pneumatic functions for the lumbar support and side bolster adjustments. The Audi S8 comes standard with technically identical deluxe seats with taller bolsters and perforated, diamond-patterned seat covers.

Besides heating, the deluxe seats and deluxe sport seats are also available with a three-stage ventilation system. Four small fans draw air through the perforated seat covers. Also available is a massage function, with which ten pneumatic pillows run through five programs (pulse, wave, stretch, lumbar, shoulders) in a choice of five intensities.

All primary adjustments for the seats are made using classic buttons on the console. For secondary functions such as massage, Audi offers a multifunction switch with a rotary ring and four pushbuttons on the side of the seat. The MMI monitor displays the individual operations.

Luxuriously spacious: The rear of the new Audi A8

The rear of the new Audi A8 spoils passengers with luxurious spaciousness, particularly in the long-wheelbase model. The rear doors are 13 centimetres longer so that even entry is extremely comfortable. The Audi A8 L comes standard with a glass sunroof and electric sun shades for the rear side windows and rear window.

Both body variants come standard with a classic three-position rear seat. Audi offers the individual seat rear seat package as an option. This is a rear seat with two individual, power-adjustable and heated seats. The package includes deluxe head restraints, a front passenger seat that can be adjusted from the rear and four-zone automatic air conditioning.

Assistance systems

The new Audi A8 offers a broad portfolio of assistance systems that make driving even more relaxing and composed. The large sedan's electrical system includes seven bus systems and, depending on the equipment, roughly 100 control units. The particularly high-performance FlexRay bus system networks many driver assistance and suspension control units. It provides for fast and reliable data transfer between the controllers.

High-performance: adaptive cruise control with stop&go function

The central driver assistance system in the new Audi A8 is the adaptive cruise control (ACC) with stop&go function and Audi pre sense front. The radar cruise control system regulates the speed and the distance to the vehicle ahead by accelerating and braking in a speed range from 0 to 250 km/h, and brakes automatically within certain limits. The driver uses the MMI operating system to determine how comfortable or sporty travel should be – four levels and four distance stages are available.

ACC stop&go analyses the data from up to 27 other systems on board the A8. The most important information of all is provided by its two radar sensors. Located in the lower part of the front end, they operate in the frequency range between 76 and 77 GHz and cover an area approx. 250 metres in length with an angle of

aperture of 40 degrees. A video camera mounted on the rearview mirror looks some 60 metres ahead, also with an aperture angle of 40 degrees.

The active range of ACC stop&go also includes rolling at low speed. In a traffic jam, for instance, the system slows the new A8 to a complete stop. If the stop is brief, the sedan automatically resumes moving again; after a longer stop the driver must lightly touch the accelerator or tap the cruise control lever.

The system also uses the signals supplied by the ultrasound sensors of the Audi parking system located in the front bumper when automatically starting off again.

Complex safety system: Audi pre sense

The Audi pre sense safety system is available in a number of different versions in the new A8. In the standard version, Audi pre sense basic, it intervenes upon detecting an unstable driving situation via the sensors of the ESC electronic stabilisation control system. In this case, Audi pre sense makes sure that the front seat belts are tensioned by small electric motors and that the sunroof and the windows are closed down to a small gap. The hazard lights warn the traffic behind.

Audi pre sense front is available in combination with ACC stop&go. Above 30 km, it helps the driver avoid imminent accidents or at least mitigate any damage. Audi braking guard is activated in critical situations. It first warns the driver via acoustic and visual signals. It prefills the brake system at the same time and also tautens the pneumatic springs and dampers.

If the driver still does not react, then the system briefly brakes the vehicle – a jolt which serves as the second warning. The seat belts are slightly tensioned at the same time. If the driver depresses the pedal now, the hydraulic brake assist increases braking power as appropriate for the situation. Should the driver ignore the warning jolt, autonomous partial braking occurs, which decelerates the A8 at 3 m/s^2 . This assumes that the preceding vehicle is moving. Windows and the sunroof are closed, the hazard warning lights are activated and the seat belts are tensioned strongly.

Yet another Audi pre sense subfunction, Audi pre sense rear, is coupled with Audi side assist. If the system detects an imminent rear-end collision, it uses the adaptive brake light to warn the traffic behind. If the situation becomes critical, it closes the windows and sunroof and tensions the seat belts. Depending on the

configuration installed, the seats may also become active. The top of the back rest and the front head restraints move forward and upward; the side bolsters are filled with air.

The A8 is equipped with the full version of Audi pre sense – the assistance package including Audi pre sense plus – a third and a fourth stage then follow in the event of an emergency. The system now increases deceleration to 5 m/s² and tightens the belts completely. The last braking phase – the autonomous full brake application – occurs roughly half a second before an inevitable collision. The collision and its consequences are greatly mitigated, for by the time the impact occurs the sedan can reduce its speed by as much as 40 km/h.

At speeds below 30 km/h, the new Audi A8 brakes autonomously with full force in an emergency – regardless of whether the car in front is driving or standing still. Below 20 km/h, this full braking in many cases prevents the accident altogether. In other cases, it greatly reduces the impact speed, thus reducing the severity of the accident.

Another innovative system becomes active in the event of a collision. The secondary collision brake assist applies the brakes again without any action on the part of the driver to prevent the A8 from rolling further in an uncontrolled manner.

Radar has your back covered: Audi side assist

The lane change assistant Audi side assist is active at speeds of 30 km/h and above. Two radar sensors at the rear of the sedan monitor events to a distance of around 70 metres. If they consider a detected vehicle to be critical to a lane change because it is in the blind spot or approaching quickly, a yellow LED indicator lights up in the exterior mirror housing.

If the driver nevertheless activates the turn signal to change lanes, the LED lights flashes brightly multiple times – a signal that can hardly be overlooked. The visual signal is designed so that in practice it is only visible to the driver. Its brightness varies with the ambient light and can be adjusted via the MMI operating system as well as deactivated via a button in the A-pillar.

Stay between the lines: Audi active lane assist

Audi active lane assist warns the driver if he or she is about to leave the lane inadvertently. The system is active at speeds of 65 km/h and above.

A camera in front of the interior mirror monitors the road to a distance of 60 metres and with an angle of roughly 40 degrees. Software processes its images and detects the lane markings and the course the new A8 is following between them.

If the sedan approaches a line without the turn signal being activated, the system helps the driver to steer back into the lane by subtly intervening in the electromechanical steering. The driver uses the MMI to determine how soon the intervention should occur and whether it should be accompanied by a steering wheel vibration and a warning tone. If the driver selects early intervention, the system helps to keep the A8 in the centre of the lane.

Audi active lane assist also intervenes if the car is in danger of skidding. It supports proper countersteering by briefly boosting or reducing the degree of power assistance. Together with Audi side assist, the system is also activated in the event of an impending collision with a vehicle in a parallel lane.

Long-range vision in the dark: The night vision assistant

Another high-end system in the new Audi A8 is the night vision assistant, which detects and highlights pedestrians and larger wild animals. Its far infrared (FIR) camera located in the Singleframe grille detects heat emitted by objects. A computer converts the information from the camera into black and white images and shows them on the driver information system's seven-inch display.

While the cooler surroundings appear dark, people and larger wild animals appear strikingly bright. The image-processing software detects them up to 130 metres away and highlights them with yellow markings on the display.

If the computer detects a hazardous situation, the object is marked red and a warning gong sounds. A warning also appears in the head-up display. In addition, the LED or Matrix LED headlights flash briefly three times to illuminate the object (if it is a person). The brake system is pre-filled at the same time.

With its 24 degree horizontal angle of aperture (vertical angle 18 degrees), the far infrared camera can look ahead up to 300 metres, far beyond the high beam range. A protective window prevents stones from damaging the camera, which is heated in cold weather and, if dirty, cleaned together with the headlights.

Convenient: Park assist systems

Audi offers a number of park assist systems in the new A8. The parking system plus uses eight ultrasonic sensors to indicate the distance to the front and rear

acoustically and graphically. This can be complemented with the optional reversing camera and 360° cameras. Four small cameras record the car's immediate surroundings and generate a virtual top-down view. The driver can call up various other camera angles on the MMI monitor.

New in the Audi A8 is the park assist with 360° display. It uses 12 ultrasonic sensors to locate and measure parking spaces along a road when the vehicle is being driven at a moderate speed. As soon as the system finds a large enough space, a corresponding notification appears on the driver information system display. Once the driver puts the car in reverse, the system takes over the work of steering – the driver only has to accelerate, change gears and brake. The 360° display warns the driver of any obstacles to the side of the vehicle.

Parking spots can be either parallel or perpendicular to the road. The system will manoeuvre forward and backward multiple times while parking, if necessary. It provides similar support when pulling out of parallel parking spaces. During this process, the vehicle moves no faster than seven km/h).

Infotainment systems

The new Audi A8 is also far ahead of the competition when it comes to infotainment. The MMI navigation plus makes its data available to other technology modules. Its clear operating concept with the MMI touch touchpad is another pioneering solution.

MMI navigation plus with MMI touch consists of two blocks. The radio unit combines the functions of tuner and sound system. The main unit contains additional components, including a DVD drive, two card readers and a 60 GB hard drive with the navigation data. A third of its capacity is reserved as memory for telephone and music data. The Audi music interface and Bluetooth interface make it easy to connect mobile devices and cell phones.

A powerful graphics processor generates top-quality, three-dimensional images. The map displays a detail-rich 3D terrain model, and the driver can choose between the classic arrow graphics or an animated representation during navigation. The power-retractable MMI monitor measures 8.0 inches diagonally and delivers truly crisp images in brilliant colours, thanks to its high resolution of 800 x 480 pixels.

The driver uses the MMI touch to enter a navigation destination or a telephone number by drawing the letters and numbers on the control panel with a finger. The driver's hand can rest comfortably on the tiptronic's gear selector lever during input. The system provides acoustic feedback after every character. The MMI touch also can be used to shift the map and scroll through lists. Thanks to black panel technology, the touchpad also serves as the control panel for six radio stations.

MMI navigation plus: Close networking

The new A8 is equipped with the Bose surround sound system. A digital amplifier with over 600 watts drives 14 speakers including a subwoofer. The system can also play stereo recordings in five-channel surround sound. Also included is the DVD drive, two SD card readers, digital radio (DAB+) and digital TV tuner is available.

At the top of the line is the Bang & Olufsen Advanced Sound System. It uses a special algorithm to generate sound reflections like those that occur in a concert hall so that the music resounds from a large virtual stage. The heart of this top unit are two amplifiers with over 1,400 watts of total output. Their digital output stages, which have been systematically designed for energy efficiency, drive 19 speakers (including subwoofer) via 19 channels. The tweeters are recessed into the instrument panel on the left and the right and rise up out of the dashboard when the system is started. The speaker grilles are made of polished aluminium. Acoustic encapsulation prevents the noise from escaping to the outside.

Rear seat entertainment is available for all engine and body variants. Two 10.2-inch displays are mounted on the backrests of the driver and front-passenger seats. The angle of the screens is adjustable, and they can each display different content.

The rear seat entertainment system includes its own DVD drive, a hard drive jukebox, two slots for SD memory cards and a separate Audi music interface for connecting mobile players. At the same time, it also offers full access to the sound system, the TV tuner and MMI navigation plus. It is controlled via a separate MMI control panel in the rear centre armrest. Sound is supplied via the car's speakers or two sets of either wired or Bluetooth headphones.

Audi connect

The ideal complement to MMI navigation plus is the Audi connect module, a data transmission module that provides the connection to the Internet. In the A8 this is a UMTS module. In areas where no UMTS connection is possible, Audi connect steps down to an available EDGE connection.

Passengers in the new A8 can surf the web and e-mail with up to eight mobile devices via the WLAN hotspot that is included with Audi connect. The system delivers the tailored services of Audi connect to the driver – from navigation with Google Earth and Google Street View to traffic information

Audi connect uses the car's antenna, which ensures optimal reception. A digital voice processor delivers excellent hands-free call quality, with voice signals transmitted via the sound system. Encryption according to the WPA2 standard makes data transmission secure.

To use Audi connect, the driver simply has to insert a data-capable SIM card. The connection can also be established using the SIM Access Profile of a compatible cell phone.

Engines

Powerful, efficient and highly cultivated – Audi is launching the new A8 in the Australian market with a choice of two TDI engines and a high-performance TFSI unit. All engines satisfy the requirements of the Euro 6 emissions standard. The start-stop system is standard. Fuel consumption has been reduced by as much as 10 percent.

The 3.0 TDI: The efficiency diesel

155 grams CO₂ per kilometre, corresponding to 5.9 litres of fuel per 100 kilometres: the 3.0 TDI is a highly efficient engine. The 2,967 cc V6 diesel produces 190 kW, 6 kW more than before and generates 580 Nm of torque between 1,750 and 2,500 rpm. The standard sprint takes 5.9 seconds with the A8 and two-tenths of a second longer with the A8 L. Fuel consumption is 5.9 litres per 100 kilometres, corresponding to 155 grams CO₂ per kilometre. The same figures for the A8 L are 6.0 litres and 158 grams.

Special technical features of the six-cylinder unit, which underwent a series of modifications, include the low weight of less than 200 kilograms and the particularly sophisticated thermal management. The crankcase and cylinder heads have separate coolant loops. Coolant is not circulated in the block during the warmup phase. The 3.0 TDI complies with the exhaust limits of the American ULEV 2 BIN5 specification and also the second stage of the Euro 6 standard.

The 4.2 TDI: Immense torque

The 4.2 TDI tops all of the engines when it comes to torque. The V8 displaces 4,134 cc and produces 850 Nm of torque between 2,000 and 2,750 rpm. Its output has increased by a 25 kW to 283 kW. The power diesel provides for impressive performance. The sprint from 0 to 100 km/h takes just 4.7 seconds. The new Audi A8 4.2 TDI gets by on just 7.4 litres/100 kilometres, corresponding to CO₂ emissions of 194 g/km.

The technical update undergone by the 4.2 TDI included changes to the valve drive, the pistons and the turbocharger. The engineers were able to dramatically reduce the engine speed of the V8 diesel to 800 rpm for improved fuel efficiency. Another aspect in common is the SCR emissions control system (SCR = selective catalytic reduction), in which the additive AdBlue breaks down the nitrogen oxides.

A metering pump injects small amounts of this additive from two tanks with a combined volume of 27 litres into the special DeNo_x catalytic converter at the end of the exhaust system. This measure enables the 4.2 TDI to meet the EU 6 emissions standard.

Power transmission

The A8 engine variants roll off the assembly line with an eight-speed tiptronic. The lower gears of the classic torque converter transmission are tightly spaced for sporty performance, while their high overall gear ratio of 7.0:1 reduces fuel consumption. All gear changes are fast, very flexible and smooth. The highly efficient oil pump and the heating of the transmission by the engine coolant during the warmup phase contribute to the high efficiency of the eight-speed tiptronic. A hydraulic accumulator enables the start-stop function.

The Dynamic Shift Program DSP is responsible for controlling the transmission and features the automatic operating modes D and S. It is networked with the route data provided by the MMI navigation plus. The driver operates the eight-speed tiptronic purely electronically, either with the standard shift paddles behind the steering wheel or via the elegant lever on the centre tunnel console. A brief tap initiates gear changes.

The standard quattro permanent all-wheel drive moves the new A8 to the front of the luxury segment. Its asymmetric and dynamic setup harmonises perfectly with the sporty and stable handling. During normal driving, the self-locking centre differential sends 60 percent of the power to the rear axle and 40 percent to the front. If one axle slips, the majority of the power goes to the other axle. The rear axle differential in the quattro drivetrain helps to balance the distribution of axle loads.

Customers seeking even more dynamic handling can order the optional sport differential for the rear axle. It is standard in the A8 4.2 TDI and the S8. It uses two superposition gears to steplessly vary the distribution of the power between the wheels. In fast curves, the sport differential literally pushes the sedan into the radius. The driver can vary the function of the Audi drive select system in five steps (auto, dynamic, comfort, individual and efficiency).

Chassis

Great precision, supreme stability, sporty character and excellent ride comfort: The chassis of the new Audi A8 combines many strengths. The adaptive air suspension and Audi drive select are standard, with dynamic steering available as an option (standard on S8).

With a track of 1,644 millimetres the front axle comprises five links – two transverse links, the support link and the control arm plus the track rod. All wheel control arms and many other parts, such as the bearing mount and the pivot bearing, are made of aluminium. The five-link design can handle longitudinal and lateral forces separately. Its bearings are sportily stiff in the lateral direction and supple and soft in the longitudinal direction.

The subframe for the suspension and the engine is made of high-strength steel and reinforced with X-shaped braces. Because it is rigidly bolted to the front end of the car, it becomes an integral component of the body. The high rigidity ensures that steering forces develop without delay. A diecast aluminium strut brace further enhances the rigidity of the front of the car.

Among the additions to the Audi A8 is the electromechanical rack-and-pinion steering. Unlike a hydraulic unit, it requires energy only while turning, thus reducing fuel consumption. The steering gear ratio of 16.1:1 is sporty and direct, and steering boost varies as a function of vehicle speed. The assistance systems Audi active lane assist and park assist would not be possible without the steering system's electromechanical drive.

The electromechanical steering provides finely differentiated feedback from the road, responds spontaneously and is very precise. The steering gear is mounted very low, on a level with the centre of the wheel. The track rod forces are applied directly. The steering rack and the servo drive are arranged in concentric circles for a very compact layout.

The rear axle of the new A8 has a track width of 1,635 millimetres and is a track-controlled trapezoidal link construction that ensures supreme handling and comfort. The two trapezoidal links are warm-hardened aluminium castings; the transverse links and track rods are aluminium forgings.

The struts act directly on the wheel carriers, which are chill-cast aluminium. This solution allows a high damping ratio and thus sensitive response. The rear axle subframe comprises steel longitudinal and transverse tubes. Four hydraulic

bearings connecting the subframe to the body also greatly contribute to the ride comfort.

The adaptive air suspension: Sensitive suspension

All versions of the new Audi A8 come standard with the adaptive air suspension regardless of the engine. The air supply unit is located in the rear of the car, where the compressor fills a pressure accumulator with a volume of 5.8 litres. The pneumatic struts enclose adjustable, two-tube shock absorbers whose performance can be adjusted by the millisecond via the control current for the electromagnetic damper valves. Supplied with data from a complex system of sensors, the damper management system detects the road conditions, the driver's style and the mode specified in Audi drive select.

The five modes the driver can select their for the adaptive air suspension influence body's ride height. In auto mode, the superstructure is lowered 20 millimetres when the A8 drives for longer than 30 seconds at over 120 km/h. The body is not lowered in comfort mode. In dynamic mode, on the other hand, the body is lowered 10 millimetres from the outset, and is lowered another 10 millimetres when the 120 km/h threshold is reached. In efficiency mode, numerous systems work with particularly little energy, and the fifth mode, individual, gives the driver the opportunity to adapt the system within certain limits to his or her preferences. Another special feature is the lift function, which increases ground clearance by 25 millimetres. The optional adaptive air suspension sport (standard on S8) lowers the standard ride height by 10 millimetres.

Audi drive select opens up a wide range of possibilities for the driving experience in the new Audi A8. In the standard version, it integrates the adaptive air suspension, the eight-speed tiptronic, the electromechanical power steering, Audi pre sense basic, the engine control unit and the air conditioning. The driver can vary the function of these components between the modes comfort, auto, dynamic, efficiency and individual.

The optional sport differential (standard in the A8 4.2 TDI and the S8), ACC stop&go, dynamic steering and the accelerator characteristic can also be controlled via Audi drive select.

At the heart of the dynamic steering system is a superposition gear that varies the steering ratio by nearly 100 percent as a function of driving speed and the setting in Audi drive select. When manoeuvring and in city traffic, the system is very direct. On the highway, an indirect steering ratio and less boost promote straight-

line stability. At the vehicle's cornering limits, dynamic steering minimises oversteer and understeer by making subtle, lightning fast adjustments, if necessary. It also counteracts the car's pulling to one side when braking on surfaces with different coefficients of friction.

The brake system: Lightweight construction and high performance

The brake system of the new Audi A8 is powerful and robust, yet lightweight. Stainless steel pins connect the cast iron friction rings to the aluminium brake caps. This concept prevents the transmission of temperature peaks, reduces the risk of fade and cuts up to four kilograms. The very high rate of ventilation made possible by the turbine design of the cooling channels between the discs enhances braking performance.

Disc diameter varies depending on the engine, measuring 365, 380 or 400 millimetres up front and either 330 or 356 millimetres on the rear axle. The brake caps and callipers, which have two pistons each up front and one in the rear, are painted black. For the S8, Audi optionally supplies large brake discs made of carbon fibre ceramic. They are even lighter than the steel discs and are extremely durable.

The ESC electronic stabilisation control system includes a sport mode, which the driver can select in the MMI. Engine intervention is largely deactivated in this case, and braking interventions are weakened somewhat, enabling skilled drivers to move the sedan particularly dynamically. The electromechanical parking brake in the new Audi A8, which acts on the rear wheels, also serves as the emergency brake. Audi hold assist makes it easier to start out on uphill and downhill slopes.

Uncompromising: The quality

Quality knows no compromise, and this philosophy was also applied to the interior design of the new A8 and A8 L. The combination of premium materials, their appearance and their feel are responsible for the handcrafted atmosphere on board the large sedan.

One special feature in the Audi A8 is the start-stop button on the centre tunnel console. It is illuminated red from within, and the letters have been machined with extreme precision from the aluminium surface. The backs of the deluxe seats have inlays of fine wood. The edges of all the veneers are reworked by hand following machine milling.

All the veneer elements for one car are generally made from one root or one boot so that the individual pieces have a uniform appearance with respect to shade and grain.

The selector lever of the eight-speed tiptronic is covered with either leather, wood veneer or carbon. An illuminated display for the driving program is embedded in the surface. All of the switches in the new Audi A8 move easily without play. The operating forces, sounds and travel have been precisely defined.

Many of the controls have a high-gloss black finish. Heavily used components are coated with a UV-cured topcoat that makes them extremely resistant to scratching. A coat of Cerapaint protects the aluminium sill strips against damage. The strips bear illuminated model-specific logos in the S8. With all other variants, they are illuminated in combination with the ambient lighting.

Equipment

The new A8, the Audi flagship, rolls off the assembly line with a comprehensive array of standard equipment. Numerous high-end features are available on request. In addition, the Audi exclusive range offers virtually unlimited opportunities for customising the sedan to the buyer's own personal style.

The new Audi A8 occupies a special position in the luxury class with respect to the drivetrain and chassis. The eight-speed tiptronic and quattro permanent all-wheel drive are standard with all model variants. The A8 4.2 TDI and the S8 also come standard with the sport differential. The Audi drive select system, which is also standard in the A8, controls such features as the adaptive air suspension including active damper control.

Numerous active and passive safety systems are on board. The LED rear lights, Audi pre sense basic and the anti-theft alarm system also serve safety and security. The adaptive restraint system, eight airbags, tire pressure monitoring display, Isofix anchor points for mounting child safety seats and Audi pre sense basic round out the safety package. Helping after a rear-end collision is the secondary collision brake assist, which prevents the car from skidding uncontrollably.

The standard range of comfort and convenience figures is equally impressive. These include such body features as the sliding/tilting glass sunroof (in the A8 L),

the power-closing boot, and heated and power folding side mirrors.

Its comfortable ergonomics concept includes the power front seats with lumbar support and leather upholstery, power steering column, electromechanical parking brake, start-stop button, the MMI operating system with the eight-inch monitor, and the driver information system with seven-inch monitor and rest recommendation, which is controlled via the multifunction steering wheel.

22-way adjustment: The comfort seats

The comfort seats for the driver and front seat passenger and the comfort sport seats (standard in the S8) offer 22-way adjustment.

A three-element seating system with two power-adjustable and heated individual seats is available for the rear of the Audi A8.

Audi has developed a broad program of interior colours, upholsteries and inlays for the luxury sedan's customers. The two Audi design selections impress with particularly exclusive combinations..

The assistance systems adaptive cruise control with stop&go function, Audi side assist, Audi active lane assist, the park assist systems, the night vision assistant and the head-up display support the driver. The first two systems are combined with versions of the Audi pre sense safety system. Audi includes the full version with the name Audi pre sense plus in the assistance package.

The range of navigation and infotainment systems is also extremely attractive. MMI navigation plus has the data on the road ahead and forwards these to the control units for the tiptronic and the headlights. MMI touch is available for entering destinations, and Audi connect links the A8 to the Internet. Two sound systems, including the top-end system from Bang & Olufsen, spoil the ears with premium sound.

The most important sales market for the new Audi A8 is China, where the brand's sales figures have been rising sharply for many years. Europe and North America also play important roles. The Asian customers, in particular, prefer the long-wheelbase A8.

The Audi S8

The S8, which Audi offers with the standard wheelbase, is the most powerful and sportiest model in the new A8 lineup. The 4.0 TFSI produces 382 kW and develops

650 Nm of torque between 1,700 and 5,500 rpm. The sprint from 0 to 100 km/h only takes 4.1 seconds; its acceleration ends at a top speed of 250 km/h. The V8 biturbo, whose sound is now even more sonorous, consumes on average 9.6 litres of fuel per 100 kilometres, a CO₂ equivalent of 225 grams per kilometre.

Behind these top figures is the entire range of Audi's technological expertise, from the layout of the cylinder heads with the hot side on the inside to the twin-scroll turbochargers to the cylinder on demand (COD) system, which shuts down four of the eight cylinders when operating under part load. The Active Noise Cancellation (ANC) system and the active engine mounts suppress undesired noise components and vibrations during these phases by producing precise antiphase vibrations.

The eight-speed tiptronic in the S8 also unites sportiness and efficiency. That keeps engine speed low, yet kicks down quickly and comfortably when prompted by the driver. The tiptronic delivers the power to a quattro drivetrain supplemented with the sport differential at the rear axle. Among the chassis highlights are the adaptive air suspension sport and dynamic steering. The differential, air suspension and dynamic steering receive S-specific tuning.

The standard 21-inch alloy wheels of the new Audi S8 house internally vented disc brakes that have a diameter of 400 millimetres up front and 365 in the back. S8 logos adorn the black, six-piston callipers up front. Audi also mounts optional carbon fibre ceramic discs with anthracite grey brake callipers.

Distinctive design details visualise the sporty character of the Audi S8. Its Singleframe grille is painted platinum grey and the horizontal double bars are finished in chrome. The three air inlets are separate from one another. The two large inlets on the outside are filled with honeycomb grilles and structured with thick chrome bars. The lower section of the front apron is a splitter shifted to the front.

On the flanks, body colour trim strips on the sills and polished aluminium-look mirror housings catch the eye. The diffuser insert at the back is platinum grey and includes a two-layer blade in an aluminium-look finish. The exhaust system ends in twin oval tailpipes on each side of the car. S8 or V8 T badges can be found in the front, on the back and on the sides. The finish Daytona grey, pearl effect is reserved exclusively for the sporty top-of-the-line model.

Interior: Fine materials for sporty elegance

S-model interiors are characterised by the grey dials of the analog clock and the dial instruments with white needles. The inlays are Carbon Atlas and brushed aluminium, the door trim panels in Alcantara and the selector lever for the tiptronic is in carbon. The pedals and footrest shine in an aluminium-look finish. A red ring adorns the start-stop button; an S8 badge the steering wheel. There is a choice of four colours for the interior and seven colours for the upholstery. The standard comfort sport seats are covered in perforated Valcona leather and feature diamond-quilted centre sections.

The sportiest model of the A8 family offers a very generous list of standard equipment, including Matrix LED headlights, ambient lighting, convenience key, four-zone automatic air conditioning, Bose surround sound system and MMI navigation plus with S8-specific welcome screen. An exclusive option for the S8 is the Audi design selection black/Vermont brown. The inlays here are called Carbon twill copper – a copper thread matching the colour of the seat coverings runs through the carbon fabric.