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The new Audi Q5 – successful SUV is even more multifaceted and efficient

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The drivetrains, equipment and features outlined in this material differ from model-to-model. This information should be read in conjunction with the latest Audi customer specification guide, for clarity on exactly which drivetrains, features and equipment are either, standard, optional and/or available in the Australian market.

At a glance

The new Audi Q5

Exterior design and body

- Length 4663mm, width 1893mm, height 1659mm
- Singleframe grille with strong frame, large air intakes, LED and Matrix LED headlights, with dynamic turn lights
- New equipment lines concept with clear differentiating exterior features
- Lightweight design with high-end steels and aluminium, lightest body in its class
- Cd figure is just 0.30, making it the new benchmark in the segment

Interior and luggage compartment

- Elegant, horizontally oriented design, large trim strips, new colours and materials, new lines, numerous personalisation options
- Generous space, standard rear seat back has three-way split, optional horizontal and seat back angle adjustment for rear bench
- Luggage compartment has 550/610 to 1550 litres of volume
- Power tailgate with sensor control

Controls and displays

- Audi virtual cockpit with high-resolution 12.3-inch display
- Newly conceptualised MMI control, with touchpad (MMI touch or MMI all-in-touch), free-text search and natural language voice control, can also be operated from steering wheel
- Head-up display for quickly acquiring key information
- Automatic air conditioning with new user interface and high-efficiency technology

Infotainment and Audi connect

- Modular infotainment platform, second generation (MIB2)
- MMI navigation plus with MMI touch and 8.3-inch MMI monitor, Audi connect, LTE module and Wi-Fi hotspot.
- Audi phone box light with inductive charging
- Audi smartphone interface
- High-end option: Bang & Olufsen Sound System with 3D sound

Driver assistance systems

- adaptive cruise control with Stop&Go and distance warning
- Predictive efficiency assistant for even better fuel economy
- Hill descent assist and Audi side assist
- New: park assist, cross traffic assist rear, exit warning and turn assist
- New safety systems: Audi pre sense city, basic, front and rear

Engines

- A TFSI and TDI engine, with 185 and 140 kW respectively, both engines extensively re-engineered
- Up to 16kW more power with significantly reduced fuel consumption compared to previous model, new start-stop system
- 2.0 TDI with 140kW and 400Nm
- 2.0 TFSI with 185kW and 370Nm

Drivetrain

- New seven-speed S tronic dual-clutch transmission
- Freewheel function and shift-by-wire control
- quattro drivetrain with new, efficient ultra technology for both engines, further advanced wheel-selective torque control

Suspension

- New lightweight five-link suspension, front and rear, delivering significant progress in sportiness and comfort, lower centre of gravity
- Newly developed electromechanical power steering
- Audi drive select dynamic handling system, new offroad and allroad modes
- adaptive air suspension with damper control
- Wheels from 18 to 20 inches in diameter

Full version

The new Audi Q5: new edition of the best-seller

A best-selling car from Audi has been made even more powerful and sporty – the new Q5 sets the bar a notch higher. The most significant new features are the quattro drive with ultra technology, highly efficient engines, adaptive air suspension and an array of infotainment and assistance systems.

Exterior design

The Audi Q5 has spent some serious time in the gym – and it has returned, lean and taut and athletic. It has grown slightly in its exterior dimensions. The new SUV with the four rings is 4663 mm long, 34mm longer than the previous model. Its width is unchanged at 1893mm, its height is 1659mm (six mm taller), and its wheelbase has been extended to 2819mm (12mm longer).

Its masculine-sporty character is striking at first glance. The front of the Q5 is relatively low and marked by horizontal lines; the Singleframe also has a horizontal structure. A powerful frame in aluminium-look runs up to the headlights and emphasises the dominance of the Singleframe grille.

The contours that give structure to the bonnet begin at the upper corners of the Singleframe; the two outer contours run up to the A-pillars. The bonnet wraps over the upper edges of the fenders. Under the radiator grille are the air intakes; the outer ones are structured by unobtrusive cross bars. Detailing of the air intakes differs by equipment line – sport and design, or S line exterior package. In the sport line, the bumper is painted in the body colour, while in the design line, it is finished in an offsetting grey colour. In the S line exterior package, it has a unique design in the body colour.

According to choice: three headlight technologies available

The headlights of the new Audi Q5 have a low-profile and slightly wedge-shaped form. Xenon plus units, LED headlights and Matrix LED headlights with dynamic turn signals are all offered. Both of these options come with a light/rain sensor and special lighting functions – for turning, for the expressway and for adverse weather. The dynamic, powerful lines of the

light signature generate the brand-typical sporty and focused look of the Audi Q5. A special satin finish gives it a sculptural 'ice block' look. The upper light conductor also serves as the turn signal.

The very bright and homogeneous high-beam light of the Matrix LED headlights is produced by 16 individual LEDs on each side. After passing through primary lenses, they radiate their light from three specially formed reflectors. The control unit communicates with a camera in the rear view mirror and individually switches them on or off or dims them over 64 steps according to the situation. As a result, the Matrix LED headlights always illuminate the road perfectly, without causing glare to other road users.

The Matrix LED headlights come with additional functions. To avoid causing glare from light reflecting back from highly reflective traffic signs, it reduces lighting power in the zone of specific sign. The cornering light of the headlights is produced by shifting the light focus – in co-operation with the MMI navigation plus system, just before steering into curves. The intersection light function, which is also navigation based, helps to detect hazards or obstacles in intersection or turning zones. The dynamic turn signal light is generated by lighting LEDs sequentially. It runs from inside to out, communicating the action very clearly to the environment.

Coupé-like look: the side view

In a side view, the flow of lines makes the sporty character of the new Audi Q5 very clear. The roofline is crowned by flat roof rails, and it descends early towards the rear, while the lower window edge curves upward shortly before the C-pillar. The low greenhouse tapers inward towards the rear, and the D-pillars are angled like on a coupé.

The greenhouse is supported by a muscular body, and a distinctive, sharply undercut shoulder line gives it structure. It begins as the bonnet seam at the corners of the headlights and sweeps back in an elegant curve towards the rear, where it runs out into the upper edge of the tail lights. On the flanks, various surfaces create an interplay of light and shadow.

Significantly flared wheel arches are a reference to the quattro drive and Audi DNA. In the design line, the inner segments of the wheel panels are offset in structured grey. In the lower areas of the doors and side sills, trim

strips in aluminium-look set accents. The angular exterior mirrors are mounted on the door shoulders and underscore the sporty look of the new Audi SUV.

Horizontal lines: the rear body

Horizontal lines also emphasise the car's width at the rear. A roof edge spoiler – which takes on a special design in the S line exterior package – casts a shadow over the low-angled rear window. The tailgate wraps around the D-pillars – a typical design feature of the Q models from Audi. The tail lights are located fully in the upper widely drawn-out area of the tailgate, and this enables a homogeneous design without breaks. When the tailgate is open, additional lights in the bumper assume the lighting functions of the upper lights.

The rear lights of the new Audi Q5 are wedge shaped. The cover glass flows around the sculpturally formed tail light elements and embeds the light into the rear architecture in three dimensions. The line beneath the tail light serves as a turn signal or a dynamically swiping turn light (from LED headlights). The rear lights consist entirely of LEDs as a standard feature.

Like its counterpart at the front, the rear bumper differs according to the equipment line. In the lower area, it integrates the two tailpipe trims of the exhaust system, which are shaped as low-profile trapezoids. In the S line exterior package, they are joined to one another by a trim piece in aluminium look, and there is an insert with a honeycomb screen.

The range of paint choices for the new Audi Q5 consists of 14 colours. The solid colours are brilliant black and ibis white. The metallic and pearl effect hues have these names: Azores green, florett silver, Java brown, Manhattan grey, matador red, moonlight blue, monsoon grey, mythos black, Navarra blue and utopia blue. In the customised paint finishes from the Audi exclusive range, customers are entirely free to choose their preferred colour shade.

At the launch of the new Q5, Audi will be adding a special equipment package known as Audi Q5 S line black. The exterior paint is quantum grey, and the lower zones of the body are offset subtly in Manhattan grey. At the front and on the side windows, the titanium black styling package from the

Audi exclusive range adds accents such as black exterior mirrors. The equipment package, which will only be available for a limited period, will include 20-inch wheels.

Body

The new Audi Q5 with a 2.0 TFSI engine weighs just 1720 kg unladen (without driver). The body creates the basis for this low weight figure – it is the lightest in the segment. Despite larger dimensions, the occupant cell alone has shed around 20kg compared to the previous model. The car as a whole has lost up to 90kg, in the case of the 2.0 TDI.

The key factors here are new solutions in geometric lightweight construction and an intelligent material mix, in which aluminium plays a large role. The front cross-member is an extruded profile of this lightweight metal. Profiles and sheet aluminium are combined to form the module cross member under the instrument panel. Highly integrated cast aluminium parts form the front strut tower domes in the new Audi Q5. Their construction is light and very stiff. This lets them join the upper links of the front axle to the body with high precision – for a plus in driving dynamics.

The bonnet of the new SUV and the tailgate are also made of aluminium. In deep-drawing the tailgate in the press, what is known as an intelligent tool is in play, a development by Audi. Laser sensors measure how the sheet behaves during forming, and if necessary, electrically actuated drawing aids make fine adjustments to the pressure. This results in precision in the range of thousandths of a millimetre.

High-strength backbone: the occupant cell

Hot-formed parts form the high-strength, crash-safe backbone of the occupant cell. They reinforce the transition from the front body to the interior, the front zone of the roof frame, the B-pillars, side sills and parts of the floor. The proportion of these parts in the body structure is 20 percent. In hot-forming, the sheet metal blank is first heated to a temperature above the material's recrystallisation temperature in an oven, then it is formed in a water-cooled press tool. In this process, the sheet metal is removed from the heat as quickly as possible. This results in a material structure with extremely high tensile strength.

What are known as tailored rolled blanks are used for many of the hot-formed body parts in the Audi Q5. These blanks can be rolled to the appropriate thickness where necessary, which leads to a weight savings of 4.6kg. In the B-pillars Audi is using another high-end technology: partial heat treatment. Individual zones can be cooled at different rates within the tool, which affects their strengths. In a side crash, the B-pillar deforms in the lower zone to absorb impact energy. On the other hand, the pillar hardly deforms at all in the upper zone – at head height.

Along with low weight, the body of the new Audi Q5 exhibits other strengths – high torsional rigidity and excellent vibration behaviour. When idling, the switchable engine mounts reduce vibration and noise even more. The new SUV also gets top grades in crash safety. In the interior, the adaptive restraint system adjusts the task of the front airbags and the seat belt force limiters to the seating position of the driver and front passenger as well as to the type of frontal collision.

Cd 0.30: top figures in aerodynamics

In terms of its aerodynamics, the new Audi Q5 is at the top of its class. All four-cylinder versions attain a Cd figure of 0.30. This top result is based on the aerodynamic basic vehicle body and meticulous fine tuning of many details. It begins at the front apron, where the air intake screens on the sides were designed such that they did not increase the cd figure.

The decorative screen was optimised to ensure that the partially detaching airflow would reattach on the side of the bumper shortly before reaching the front wheels. To further reduce aerodynamic drag, a controllable cooling air intake is used in the Q5 2.0 TFSI which generally closes the upper air intake. It is only necessary to open the controllable cooling air intake in the few situations in which cooling demand is elevated. This technology has a noticeable effect on CO2 emissions.

The aerodynamic concept of the new Q5 also includes the exterior mirrors and the wheels. At the rear, the long roof spoiler and louvres optimise detachment of the airflow. Even the tail lights have small separation edges.

The underbody of the new SUV also guides the airflow by means of wheel spoilers and large plastic covers. The engine compartment is encapsulated,

and panels cover the sheet metal under the passenger cell. Between the transmission cross beam and the rear axle, there is a special capsule that is designed differently according to the specific engine and exhaust combination. The transverse links of the rear suspension are also covered, which keeps lift low and also provides protection from stone impact.

The new Audi Q5 also sets the bar at a new level when it comes to aero-acoustics. Its interior is as quiet as vehicles in the next higher class. Key factors here include the exterior mirrors, double door seals and aero-acoustically optimised water drain channels. An acoustic windshield and thick standard glazing are also standard equipment. For even greater comfort inside the vehicle, Audi also offers optional acoustic windows for the front doors.

Interior

The interior of the new Audi Q5 is like a comfortable lounge, with generous space. It surpasses the previous model in most dimensions. Shoulder width at the front and rear seats, headroom front and rear and maximum knee room and elbow room at the rear have all grown. The new SUV distances itself from all of its rivals in the premium segment in important criteria – shoulder width and elbow room.

Progressive and elegant: interior design

The interior lines reinforce an impression of airy expansiveness. It focuses on horizontal elements, which follows its exterior design. The interior of the new Q5 has a progressive and elegant feel; its clear forms and intuitive functions harmonise ideally with one another – which is typical Audi.

The ‘wrap-around’ develops from the door panels and runs across the front of the instrument panel – it encloses the interior and creates a feeling of spaciousness. A clear focus on the driver results in a partitioning of the driver and front passenger zones.

The upper zone of the front cockpit contains the air vents, and a distinctive trim strip in aluminium-look frames them. Beneath this trim strip is a sculpturally formed trim panel that is rich in facets. It runs across the full width of the instrument panel and thereby reinforces the feeling of

generous space. With its distinct edges, the panel conveys the image of strength and ruggedness.

The recesses for the door handles are embedded directly in the handles – another expression of cool elegance and formal integration. The interior door release handles and door pockets, on the other hand, are designed very sculpturally – which is also typical of an Audi SUV.

The steering wheel has been redesigned – the extremely small folded size of the driver's airbag makes a small impact absorber possible. All of the steering wheels have a leather-trimmed rim, three spokes and multifunction buttons, but their design details vary widely. All are of the multifunction style, with 14 buttons, as well as with sporty contours and a flat bottomed rim.

Intelligent operation: automatic air conditioning

The control panel for the deluxe automatic air conditioning also has a clearer layout, in which the temperature indicators are integrated into the rotary knobs. When the user's finger approaches one of the capacitive rocker switches, its function is shown enlarged on the LCD display and is preselected. With the deluxe automatic air conditioning, the interior of the new Audi Q5 can be partitioned into three climate zones; the rear passengers can use their own control panel.

The deluxe automatic air conditioning has been re-designed from the ground up. Energy usage is kept low by efficient solutions in the blower motor and in the coolant loop as well as by intelligent control. Air quality inside the new Audi Q5 is excellent – a combination activated charcoal filter captures the finest of dust particulates, and it chemically binds gases and unpleasant odours. The low noise level rounds out the refinement of the air conditioning.

Completely redeveloped: the seats

The seats in the new Audi Q5 have been redesigned from the ground up – based on the principles of strict lightweight design. High-strength steels in the underbody reduce weight, and magnesium components and a light wire frame are used for the rear bench. The sport seats have a smart, cubist look with their sharply contoured side bolsters and shoulder section that is

made up of three segments. A removable seat cushion and a power lumbar support feature is also available.

The customisation program for the front seats is highly varied. It includes heating –for the rear seats too – power adjustments for the driver’s seat or both front seats, a memory function and ventilation that is adjustable over three stages.

A central armrest in front, large door pockets and two cup holders are standard in the new Audi Q5. The storage and luggage compartment package is also standard, containing a movable compartment on the console over the transmission tunnel, a rear centre armrest with two cup holders and a folding compartment.

The rear seat system, which has a standard 40:20:40 split, offers a comfortable, upright seat position. It offers longitudinal adjustment of up to 12 centimetres, split into two segments. In addition, the rear passengers can adjust the angles of their seat backs in three stages.

Uncompromising: the quality of craftsmanship

In the interior of the new Q5, all materials have been selected and engineered with the greatest care – as is always the case at Audi. The chrome trip strips and trim panels are fitted with zero play. All seams are extremely narrow and parallel to one another, the rotary/pushbutton control of the MMI system has highly precise click steps – its quiet clicking is the sound of Audi perfection.

The ambient light package with white LEDs is standard across the new Q5 range and the multicoloured ambient light package (standard in the design selection line). In the top version, narrow LED light conductor strips above the trim strips in the door and on the instrument panel create impressive illumination effects. The door trim panels are also illuminated. Under the centre console, the surface lighting creates a hovering effect. The lighting zones can be controlled from the MMI, and their colour can be individually selected from 30 different hues. As an alternative, the colour profile can be set to follow the driving mode selected in the Audi drive select system.

High degree of customisation: colours and materials

The colours and materials for the interior have been reconfigured; the broad range of choices ensures a lot of freedom for personalisation. For the instrument panel, the colours black and granite grey are available.

The range of upholstery materials and colours is just as broad. The seat upholstery can be ordered in black, rock grey, granite grey, rotor grey, atlas beige or nougat brown. As an alternative to the standard leather and artificial leather are the pure leather upholstery options – here is the grade Milano. The extra leather package incorporates the arm rests in the doors and knee pads on the centre console.

Spacious and flexible: the luggage compartment

The new Audi Q5 offers up a large luggage capacity – with 550 litres of volume in the base configuration, it surpasses the previous model by 10 litres. In conjunction with the sliding rear seats, the luggage compartment grows up to 610 litres, depending on the positions of the rear bench and seat backs. Thanks to the flat side walls and low load sill, which can be lowered even more with the adaptive air suspension, the luggage room offers excellent usability. A stainless steel guard protects the loading sill. A partition net and luggage compartment cover are standard, supplemented by four lashing points.

The optional rail system with a load-securing kit adds even more flexibility here. The standard storage and luggage compartment package includes tensioning straps, nets, bag hooks and a 12-volt socket. Only two hand motions are needed to expand the luggage compartment to its maximum volume of 1550 litres. Latches in the side walls are used to release the springs, and the rear seat backs fold down onto the seat cushions on their own. When the lever is used while the seat backs are down, they then lift back to an angle of around 45 degrees. The extended luggage compartment offers 113cm of load width and 105cm of full-length load width.

The wrap-around tailgate of the new Audi Q5 opens high – with a power drive that also handles closing. Customers can individually adjust the opening angle here to match the roof height of their garage. With the convenience key, owners can trigger power opening and closing with a foot gesture that is detected by a sensor.

The new Audi Q5 can pull a trailer weighing up to 2000kg (braked, eight percent grade).

Controls and displays

Audi has set a new standard in the automotive industry with the fully digital virtual cockpit and the new MMI operating concept.

The instrument cluster and the Audi virtual cockpit

The standard instrument cluster in the Audi Q5 has analog scales. The driver information system display is located between the large round instruments, in full colour and measuring seven-inch diagonally. Even more attractive is the optional Audi virtual cockpit – a TFT display with a 12.3-inch diagonal and 1440 x 540 pixel resolution. It shows intricately rendered graphics.

The driver can switch between two views by pressing the ‘View’ button on the multifunction steering wheel. In Infotainment mode, a central window dominates the view – it provides a lot of space for the navigation map or lists from the Phone, Radio and Media areas. The tachometer and speedometer are displayed as small round instruments on the right and left. In a second, classic view, they appear about as large as analog instruments, and the middle window is smaller.

The Audi virtual cockpit is operated from the multifunction steering wheel plus. Using switches on the left steering wheel spoke, the driver pages through the menus for the on-board computer, audio system, and – depending on the installed features – for the phone and navigation. Located on the right side of the steering wheel are the volume roller, the voice control button, express phone controls and the skip function for quickly changing the radio station or song.

Versatile, intuitive, intelligent: the MMI operating system

The MMI control element is located on the centre console of the new Audi Q5. Its design and position vary according to the specific infotainment system that is installed. It is integrated with the automatic transmission: the low position of the selector lever offers comfortable support for the wrist.

There is a large touchpad, MMI all-in-touch, which has a nearly rectangular operating screen that is 110 x 80mm in size. The driver can enter characters or perform multi-finger gestures here, to zoom in on the map, for example. Each input is confirmed by acoustic and tactile feedback – with a click that is also felt on the finger.

The innovative MMI search makes it easy to find music titles, phone contacts or navigation destinations. All it takes is a few letters to have the first hits shown in the results list. Here, the system considers the current location of the Q5 and recent activities in the MMI.

All other functions can be controlled with the rotary push-button control which enables scrolling, clicking and moving. Two rocker switches in the MMI terminal call up the main functions directly; with MMI all-in-touch there are also eight user-programmable buttons. MMI operation is completed by a functional menu and an options menu. For example, in the radio menu the driver can select the frequency band, or call up traffic information in the map menu. Under Navigation, the driver can be directed to an input destination and have parking places in the vicinity displayed.

Another highlight is the intensively further developed, user-friendly and intuitive voice control feature. The driver no longer has to be constrained to rigidly defined voice commands – in many languages the system understands expressions from everyday speech. In the Phone menu, for example, the driver can call a contact just by saying “I want to call Peter Miller.” or “Connect me with Peter Miller.”

The MMI display takes a central position on the instrument panel. It looks like a high-end tablet computer with its black display glass that is rounded at the corners. In the top version with MMI navigation plus, the display has a silver-coloured frame made of magnesium. Supplementing voice control and the MMI terminal in the new Audi Q5 is the multifunction steering wheel plus – a third user interface.

Everything important within view: the head-up display

Audi can deliver a newly developed head-up display as an option. It projects relevant information onto the windshield – including from driver assistance systems – as symbols and numbers that can be perceived quickly. A TFT

screen generates the colour image while two mirrors enlarge it and redirect it. The system compensates for distortions that would otherwise be produced by the glass geometry.

The information appears to hover around two metres in front of the driver within a window area measuring 200 x 80mm. The human eye registers the information very quickly – there's no need to switch from the accustomed long-range vision. The driver can use the MMI system to specify which information should be shown on the screen; the height and brightness of the display can also be set.

Infotainment and Audi connect

MMI navigation, MMI navigation plus, Bang & Olufsen Sound System – the line-up of infotainment modules for the new Audi Q5 is wide-ranging and very attractive. The same applies to the online services of Audi connect.

The second generation modular infotainment platform (MIB 2) serves as the basis here. Its scalable approach lets Audi update the hardware over short time cycles in development. As a result, the brand can react quicker and more flexibly to innovations in consumer electronics that arrive on the market in quick succession, and it can optimally exploit the potentials of new generations of chips.

Generously equipped: MMI radio plus and MMI navigation

MMI navigation offers a CD player, two SDXC card readers, a Bluetooth interface, aux-in port, phone voice control and voice dialog system, which processes entire sentences and MMI search. Additionally, it offers a USB socket with charging function to ensure well-rounded comfort and entertainment. It also offers a high-resolution seven-inch monitor which shows the navigation map as a 3D terrestrial model.

The Audi connect module is a LTE/UMTS module that Audi is using to bring the Audi Q5 online with up to 100 MBit/s download speed. Passengers can freely surf, stream and mail with their mobile devices via the integrated Wi-Fi hotspot. The services of Audi connect such as Google Earth and Street View are also available.

Top infotainment system: MMI navigation plus with MMI touch

MMI navigation plus with MMI touch or MMI all-in-touch is the top infotainment line-up. It adds an 8.3-inch monitor with 1024 x 480 pixel resolution; in this case, the driver information system monitor has a seven-inch diagonal. MMI touch serves as an intuitive input instrument, and a DVD drive, a 10GB flash memory and natural voice control round out the equipment.

High-tech hardware: the other infotainment modules

There are also attractive individual hardware modules available in the new Audi Q5, like a tuner for digital radio. With the Audi phone box light, if the phone is equipped for inductive charging, this can be done based on the Qi standard.

In the Audi sound system, a six-channel amplifier drives 10 loudspeakers at 180 watts of audio power. For discerning hi-fi fans, the Bang & Olufsen Sound System with 3D sound is available in the new Audi Q5. An algorithm computes information for the third dimension from conventional stereo or 5.1 recordings. Four additional loudspeakers in the front doors and the A-pillars play back the signals – the music sounds airy and open on a large virtual stage. The 16-channel amplifier supplies 755 watts of power to 19 loudspeakers. On the door loudspeakers, narrow light pipes illuminate the aluminium accents in the loudspeaker covers.

The Audi smartphone interface brings Apple Car Play and Android Auto into the car. When a customer connects an iOS or Android cell phone (iOS 7.1 or higher, Android 5.0 Lollipop or higher) to the USB port, smartphone content such as Navigation, Phone, Music and select third-party apps are made available. They can be conveniently operated by MMI or voice control.

Audi has designed both applications especially for use in the car. The core content here is online music with access to the entire range of music from Google Play Music and iTunes. There are also navigation and notification functions as well as schedule reminders. New third-party apps like Pandora, Spotify and WhatsApp will further expand the range of features.

Driver assistance systems

The new Audi Q5 raises the bar to a new level in its segment. This also applies to its broad selection of driver assistance systems. Compared to the previous model, they are either almost completely new or have been extensively further developed.

Greater safety: the standard systems

The standard safety system Audi pre sense city monitors the road in front of the new Audi Q5 for vehicles and pedestrians over a speed range up to 85km/h. For monitoring, it uses a camera in the windshield which can monitor events up to around 100 metres ahead. If it detects an impending collision, the driver receives a series of warnings, and if necessary the system initiates maximum braking.

Within the system's limits, and at speeds up to 40km/h, Audi pre sense city can avoid an accident in many cases; at speeds up to 85km/h it can reduce the speed at impact and thereby reduce accident severity significantly. If necessary, the system can also activate the protective measures of Audi pre sense basic, front and rear: The front seat belts are pretensioned electrically, and the windows and sunroof close. In case of a crash, the also standard brake assist supports the driver by making specific brake interventions during the accident – with the goal of preventing skidding movements that could lead to secondary collisions.

Attention assist is another feature in the new Audi Q5. It is part of the driver information system. It analyses driving behaviour and warns drivers if it finds any indications that they are starting to lose concentration. The adjustable speed limiter, also standard, limits the vehicle's speed to the speed set by the driver. It is active from a speed of 30km/h.

Distance to the next car: adaptive cruise control

Adaptive cruise control (ACC) keeps the new Audi Q5 at a specified distance to the vehicle ahead. The driver can control this distance over five stages. Using Audi drive select, the driver can also adjust the control dynamics.

ACC primarily uses the signals of the two front radar sensors and the camera. In interplay with the S tronic and tiptronic, it covers the entire speed range from 0 to 250km/h. With a manual transmission, it starts at

30km/h. Its Stop&Go function (only with automatic transmission) brakes the new Audi Q5 to a full stop, and – if the driver wishes – it has the car start off again automatically. When the system is deactivated, the distance indicator shows the distance to the car ahead and warns drivers when they are too close.

Warning of front-end collision: Audi pre sense front

The safety system Audi pre sense front extends the collision warning system and automatic braking function of Audi pre sense city for vehicles driving ahead to the entire driving speed range up to 250km/h. The system utilises the two radar sensors and front camera and has the task of either avoiding front-end collisions or reducing their effects at higher speeds. In a dangerous situation, it prompts the driver to apply the brakes according to a complex warning concept – with visual and acoustic signals as well as a braking jolt.

If the driver does not react to the warning signals, the system first initiates autonomous partial braking while simultaneously closing the side windows and sunroof. The last step is maximum braking, assuming that the vehicle ahead is moving; at the same time the seat belts are tensioned. Audi pre sense front remains functional even when ACC is deactivated.

For economic driving: the predictive efficiency assistant

When adaptive cruise control is activated, the predictive efficiency assistant adapts the driving speed to the situation, the topography of the route, speed limits and road users driving ahead. On highways it can improve fuel economy by up to ten percent in this way.

Even if navigation is inactive, the predictive efficiency assistant uses the route data to alert the driver about situations in which it is advisable to slow down. The system detects curves, traffic circles and intersections, inclines and descents, town limits and speed limit signs before they become visible. A related message is displayed in the instrument cluster or the Audi virtual cockpit.

If the driver wishes, the system itself will control the freewheel function of the tiptronic within certain boundary conditions so that the new Audi Q5 will roll at idle speed towards the slow-driving zone. Once coasting ends, the

SUV automatically accelerates back to the selected speed set by the driver, provided that ACC is enabled.

Other driver assistance systems

Another innovation in the Audi Q5 is turn assist, which monitors oncoming traffic when turning left at driving speeds between two and 10km/h. In a critical situation, it brakes the new SUV in a suitable driving lane to a standstill. The system is active in the background as soon as the driver activates the turn signal to turn across the carriageway.

With the lane-changing assistant Audi side assist, at speeds from 15km/h, it uses the two rear radar sensors with a scanning range of some 70 metres to assist drivers when changing lanes. If a vehicle approaches rapidly or is located in the blind spot, a warning LED in the housing of the respective exterior mirror lights up. If the driver still operates the turn signal, the LED flashes brightly several times in succession.

The Audi side assist works together with Audi pre sense rear, which initiates preventive protective measures like those of Audi pre sense basic in case of an impending rear-end collision. It remains active in the background – at every speed – even if Audi side assist is turned off, unless a trailer is being towed. Audi pre sense rear also has the functionality of Audi pre sense basic, which detects unstable driving states via the sensors of stabilisation control.

While slowly backing up, cross traffic assist rear warns the driver of vehicles whose approach it deems critical, such as when pulling out of a perpendicular parking spot. The data from the rear radar sensor serve as the basis. The system is enabled when the parking system is activated. There are different levels of warning: visual, acoustic and finally a short jolt of the brakes.

Exit warning, which also utilises the rear radar sensors, comes into play after the car has stopped. If other vehicles or bicycles are approaching from behind, it warns the driver and passengers not to open the doors by having a warning LED flash bright in all four door handles. The system remains in readiness for about three minutes after the ignition is switched off.

Park assist plus is both acoustic and visual, and activates independently whenever an obstacle is detected while manoeuvring. The reversing camera even has a cleaning system.

Helpful in everyday driving: the Park assist package

The Park assist package includes such features as park assist, which can also be ordered separately. At moderate driving speeds, the system is able to detect parallel and perpendicular parking spaces along the side of the road. As soon as the driver presses the park button, the new Audi Q5 steers into the space, assisted by 12 ultrasonic sensors, even if it involves multiple manoeuvres. The driver only needs to set the right gear, accelerate and brake. The driver can also have park assist steer out of parallel parking spaces.

The surroundings cameras, the second part of the package, were designed for complex manoeuvring situations. They display different views of the car's immediate surroundings on the MMI monitor, including a virtual bird's eye view and 180-degree images of the front and rear. Guide lines are shown on the display to simplify manoeuvring in reverse.

Engines

At the sales kick-off of the new Q5, Audi is offering two engines: a TDI and a TFSI. They produce 140 kW and 185 respectively – up to 9 percent more than in the previous model. At the same time, fuel economy has been significantly improved.

Both engines in the new Audi Q5 conform to Euro 6 emission limits. There is a 24-litre tank for the additive AdBlue (for the TDI). The further advanced start-stop system can already deactivate the engine at driving speeds below seven km/h while coasting to a stop.

Excellent efficiency: the 2.0 TDI

The 2.0 TDI delivers many technology features. It has two balancer shafts, a cylinder pressure sensor and a common rail injection system that builds pressure up to 2000 bar. Internal friction is low, and the oil and water pumps operate with demand-based control. High and low-pressure exhaust gas recirculation and sophisticated emissions control including an SCR system (SCR: selective catalytic reduction) keep hazardous emissions low.

The four-cylinder TDI has a displacement of 1968cc and outputs 140kW of power and 400Nm of torque, the latter between 1750 and 3000rpm. Its ADR fuel consumption is as little as 5.2 litres of diesel per 100km – which equates to CO₂ emissions of 136 grams per kilometre. It has a top speed of 218 km/h.

High-tech petrol engine: the 2.0 TFSI

The re-engineered 2.0 TFSI with its 1984cc of displacement is a high-tech engine. Highlights of the four-cylinder engine are integration of the exhaust manifold into the cylinder head, the rotating core module for the thermal management system, the Audi valvelift system (AVS) for the exhaust valves, the turbocharger's electric waste gate and dual injection, in which indirect multipoint injection supplements FSI direct injection at partial load. These components increase power, lower fuel consumption and emissions and improve throttle response.

The 2.0 TFSI produces 185kW and delivers 370Nm of torque between 1600 and 4500 rpm. It accelerates the new Audi Q5 from 0 to 100km/h in 6.3 seconds, and up to a top speed of 237km/h. ADR fuel consumption is just 7.3 litres per 100km, which equates to 169 grams CO₂ per km.

Drivetrain

The new Audi Q5 is launching with the best technology in power transmission .

The seven-speed S tronic has undergone intensive redevelopment. The dual-clutch transmission impresses with a high level of efficiency. Its compact multiplate clutches are arranged axially in series, instead of radially, over one another as in the previous unit. This reduces drag torque. The reduced friction, considerably reduced weight, highly efficient oil supply and centrifugal pendulum on the dual-mass flywheel also contribute towards improving fuel economy. The centrifugal pendulum enables very low engine idling speeds.

Both clutches of the seven-speed S tronic operate two independent sub-transmissions, whose construction is similar to that of manual gearboxes. Both are continuously active, but only one is connected to the engine at any

given time. Gear changes are performed within a few hundredths of a second and with no interruption in the power flow by changing the clutches. From the output shaft, torques flow via a spur gear stage to the front differential.

The S tronic demonstrates the latest state-of-the-art technology. Its lower gears feature short, sporty ratios, while the upper gears are long to reduce revs and fuel consumption. The automatic transmissions are integrated into the engine's thermal management and designed for start-stop operation. Drivers can choose between the modes D, S and E, and shift gears manually at any time using either the elegant selector lever or the standard shift paddles on the steering wheel. All commands are transmitted by wire, i.e. electrically, to the transmission.

In interplay with the new cruise control system, the S tronic offers a powerful efficiency function: if the driver releases the accelerator pedal between 55 and 160km/h in the D or E mode, the transmission switches to freewheeling, provided that this enables fuel savings. If the optional predictive efficiency assistant and adaptive cruise control with Stop&Go are installed, the coasting function has very good predictive control.

Next-generation all-wheel drive: quattro with ultra technology

Both Q5 drivetrains are equipped with the completely new quattro with ultra technology. It offers maximum efficiency and does not perceptibly differ from permanent systems in terms of traction and driving dynamics.

Control of the new quattro drivetrain operates predictively. Networked throughout the vehicle, it acquires and evaluates data – in 10 millisecond cycles – such as the steering angle, transverse and longitudinal acceleration and engine torque.

As long as the new Audi Q5 is driving with a moderate type of gear and there is no risk of tyre slip, the quattro with ultra technology benefits from all of the advantages of a front-wheel drive. If all-wheel drive is needed, it is immediately available. It is engaged in two stages – predictive and reactive.

On the predictive level, the focus is on data supplied by the networked systems. From this data the control unit computes, for instance, the point at

which the front tyre on the inside of the curve will reach its grip limit during fast cornering; it computes this around one-half second in advance. If the wheel approaches the grip limit at a defined threshold value, the all-wheel drive system is activated.

The control unit's decision on whether to predictively engage the all-wheel drive is primarily based on the driver's style of driving, the status of the Electronic Stabilisation Control (ESC) and the mode selected in the Audi drive select system. In reactive engagement, the system reacts to sudden changes in friction, and it engages the quattro drive. These changes might occur, for example, when the wheels go from dry asphalt to a sheet of ice.

Networking of the quattro drive with Audi drive select means that drivers of the new Audi Q5 can adjust the properties of the quattro drive according to their personal preferences. The auto mode represents maximum traction and balanced handling properties. In the dynamic mode, the torque is redirected to the rear axle earlier and at higher levels – this increases dynamic performance, especially when pavement friction values are low.

The crucial efficiency gains compared to the competition are rooted in the concept of the two clutches in the drivetrain. When the system changes to front-wheel drive, the front clutch – a multi-plate clutch at the transmission outlet – disconnects the propshaft. An integrated decoupling clutch also opens in the rear differential. It shuts down those components that cause the most drag losses here, such as the large crown wheel running in the oil bath. Despite the new parts, the quattro with ultra technology is nearly four kilograms lighter than the previous system.

Chassis

The chassis harmonises ideally with the character of the new Audi Q5 – it is sporty, comfortable and efficient. It was redeveloped in many areas, and it shows further weight saving compared to the previous model. The five-link constructions, which serve as the front and rear suspensions, are able to handle lateral and longitudinal forces separately.

The new SUV from Audi can continue to drive where the asphalt ends. Its axles enable good axle articulation, and its ground clearance (with the normal chassis) measures 208mm. The vehicle's approach angle is 25

degrees and its departure angle is 27 degrees, while its ramp angle measures 17 degrees.

The front suspension has a track width of 1616mm. Its suspension links and pivot bearings are made of forged aluminium. The damper knuckles are made in a new type of process. It combines casting and forging and enables complex geometries of high strength. The friction-optimised wheel hub, made of forged steel, and the subframe made of aluminium and sheet steel also exhibit very lightweight designs.

Highly efficient: electromechanical power steering

The new power steering system, which cooperates closely with some of the driver assistance systems, has also been weight-optimised. It saves 0.7kg and above all a lot of energy, because its electromechanical drive operates much more efficiently than a hydraulic system in which oil is continually circulating. Its steering gear is placed at the level of the wheel centre, and it transfers forces directly to the wheels.

Steering in the new Audi Q5 conveys precise road contact, and it responds directly and offers high precision. Its power assist is reduced as the driving speed increases. Dynamic steering is also available by special order. Using a superposition gear, it varies its gear ratio primarily according to the driving speed and steering angle: more direct at slower speeds and for large steering angle inputs, and more indirect for expressway driving and small adjustments at the steering wheel. At cornering limits, the system counter steers with tiny pulses, which further boosts dynamics and driving safety.

At the rear of the new Audi Q5, a five-link suspension replaces the trapezoidal-link suspension of the previous model. Its weight-optimised and yet rugged wheel suspensions are made of steel or aluminium. The wheel suspensions are made of aluminium and the subframe of high-strength steel; elastomeric mounts with precisely defined damping properties join it to the body. As in the front suspension, the lightweight anti-roll bar is formed as a tube. The rear track width is 1608 mm.

Maximum comfort: suspension with damper control

An especially attractive solution is the suspension with damper control. 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, as 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

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 22mm 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 35km/h), the body is 45mm higher than the normal level; in allroad mode (up to 80km/h) it is still 25mm higher.

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

On sure footing: the wheels and brakes

The base model of the new Audi Q5 has 18-inch alloy wheels which are especially light. Various design options are also available. The options program from Audi and Audi sport covers numerous versions with 18-, 19- and 20-inch diameters.

Rigorous lightweight design can also be seen in the wheel brakes. In all engine versions of the Audi Q5, the front wheels are braked by very lightweight aluminium fixed calliper brakes, either 16 or 17 inches in diameter, and depending on the version with either four or six pistons.

The front wheels are equipped with internally-vented discs up to 350mm in diameter. The electromechanical parking brake is integrated into the rear axle and features new holding and drive-off functions. Many aspects of Electronic Stabilisation Control (ESC) have been extensively updated; it is now even more precise and sensitive than in the previous model. Activating sport mode will largely deactivate engine intervention and somewhat minimise braking intervention.

While the new Audi Q5 offroad is being driven, the system allows more slip during braking and acceleration to improve traction. Another ESC function is

hill descent control – when driving down a descent in an offroad situation, the system controls vehicle speed according to the driver’s desired speed over a range between four and 30km/h. In conjunction with MMI navigation, a tilt angle indicator is installed when either the adaptive air suspension or damper control is ordered. The indicator shows the vehicle’s pitch and roll angles on the large MMI monitor. Supplemental screens show other offroad information.

Production of the Audi Q5

The Audi Q5 will roll off the assembly line at the recently constructed production site at San José Chiapa, Mexico. Over the 460 hectare plant area (including the Just-In-Sequence park), a state-of-the-art production site has been created for the company – and it is the plant located at the highest elevation within the Audi production network at 2400 metres. AUDI AG invested more than one billion euros in its facilities and infrastructure. Part of this sum went into building the most eco-friendly paint shop on the American continents.

The new plant, located around 200km east of Mexico City, has been designed for an annual capacity of 150,000 cars. Audi has selected around 180 suppliers. At the production launch, Audi México will procure more than 65 percent of its supplies from local value creation, and the localisation level will be further extended over the mid-term.

Audi México relies on smart logistics. The plant is equipped with RFID (Radio Frequency Identification) antennas, which enable flexible co-ordination of production and supplier chains. San José Chiapa is the first production site in the Volkswagen Group to use this technology for all of its material and container flows.

The new plant was built according to applicable Audi standards, and this also applies to sustainability and environmental protection. These areas were key focal points in planning. The production site is wastewater-neutral thanks to its mechanical, chemical and biological process water treatment facility. The same principle applies to CO2 emissions from production (CO2 neutrality). In the neighbouring community of San José Ozumba, the

company has already planted more than 100,000 trees over 100 hectares of land, thereby contributing to replenishment of groundwater reserves.

Corporate responsibility is a fixed component of the Audi strategy. The new Audi plant in Mexico, the world's most advanced plant, promotes environmental, societal and economic sustainability and is actively shaping the future of the region.

By the end of 2016, around 4200 people will be employed at the San José Chiapa site – a development from which the economy of the entire region will benefit. In addition, there are 320 apprentices, and 80 apprenticeship positions are planned per year.

Environmental balance

The environmental balance of the new Audi Q5 is very good. Thanks to weight reduction and more efficient engines, the Q5 yields good results in the life-cycle assessment – from procuring its raw materials to the production process and 200,000 kilometres of driving until it is recycled. Compared to the previous model, savings of six percent have been achieved in greenhouse emissions. Thanks to intelligent material selection, greenhouse emissions in the production phase are already lower than for the previous model. This environmental advantage is further reinforced over every kilometre during the product use phase.

Audi Q5 – the success story

The new Audi Q5 is making its appearance to continue a story of success. Its predecessor model was the world's best-selling SUV in the premium mid-size segment for six years. From its production launch in 2008, Audi has sold around 1.6 million units.

The first generation Q5 celebrated its debut in April 2008 at the Auto China show in Beijing, and it was introduced on the market just a few months later. The SUV with the four rings appealed with its sporty-versatile character and state-of-the-art technology. The three turbocharged engines that were offered had power outputs from 125kW and 176kW, and a newly

developed seven-speed S tronic could transfer engine forces to an optional quattro drivetrain.

In subsequent years, Audi progressively extended its engine line-up – with power-enhanced evolutionary stages, new four-cylinder engines and powerful V6 gasoline engines. In the model changeover of 2012, which included many new solutions in infotainment and assistance systems, two entirely new variants were added to the line-up: the Q5 hybrid quattro, which could drive all-electrically for short distances, and the SQ5 TDI, the first S model from Audi to have a diesel engine. Its sonorous biturbo V6 had a power output of 230kW, and in the final evolutionary stage in 2015 it even output 250kW and 700Nm of torque.

The Audi SQ5 TDI became a top-selling vehicle – like the entire model series. From 2009 to 2015, the Q5 established itself as the world's most successful SUV in its class, winning over an above-average share of new customers for Audi. In its last full sales year, it still dominated in markets of all key sales regions – especially in China where it had a 65 percent share in its segment. Production sites in Changchun, China and Aurangabad, India supplemented production at the main plant in Ingolstadt.

The new Audi Q5, which is produced in Mexico, is launching into an SUV market that continues to grow worldwide with great dynamism.