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The Audi Q5 – new power for a winner

Summary	2
At a glance	6
Full version – exterior design	7
Body	9
Interior and luggage compartment	10
Engines	13
Drivetrain	16
Chassis	17
Driver assistance systems	20
Infotainment systems	21
Equipment and trim	31

Summary

A winner gets even better – Audi updates the Q5

Sporty, attractive and versatile – the Audi Q5 performance SUV is the most successful mid-class premium SUV in Australia. Now it is even better – adding many new solutions in design, infotainment, assistance systems and engines.

The sporty design of the Q5 with its flat roof arch is now appearing in a meticulously revised and sharpened form. The single-frame grille has chamfered top corners; its vertical chrome struts and Audi rings have a sculptural look. The bumpers, air inlets and front fog lights are also new.

The xenon plus headlights have a continuous strip of LED daytime running lights around the edge, similar to the tail lights at the rear. The sporty S line exterior package and distinctive offroad styling package are options that strongly accentuate the looks of the Q5. The wrap-around tailgate – a typical design element of the Audi Q models – and the engine hood are made of aluminium. In the passenger cell, advanced form-hardened steels reduce weight.

More power, less fuel consumption: engines

In revising the Audi Q5, fuel economy was improved by up to 15 percent, despite power increases for most engines. The two TDI engines and the two TFSI engines combine direct fuel injection with turbocharging, and a start-stop system is standard throughout the engine lineup.

The 2.0 TDI develops 130 kW, has a combined fuel consumption of just 6.1 litres of diesel per 100 km. The thoroughly overhauled 3.0 TDI produces 180 kW of power and 580 Nm of torque. It accelerates the Q5 from zero to 100 km/h in 6.5 seconds.

Another highlight of the engine lineup is the all new 2.0-litre TFSI. This petrol engine introduces innovative solutions – in the control of valves and their stroke, in its innovative thermal management, turbocharger, integration of the exhaust manifold in the cylinder head and the common rail system that integrates additional fuel injection into the induction manifold.

The 2.0 TFSI produces 165 kW, yet it has a combined fuel consumption of just 7.9 litres per 100 km with the tiptronic transmission. Offering even more performance is the new 3.0 TFSI – this supercharged V6 increases power output to 200 kW with 400 Nm of torque. It completes the sprint to freeway speed in 5.9 seconds.

For each engine, Audi supplies a transmission that matches its output. The sporty seven-speed S tronic is standard for the TDI engines, while the smooth-shifting eight-speed tiptronic is standard for the TFSI engines.

In the four-cylinder versions, the transmissions are integrated into the engine's thermal management system, which significantly shortens the warm-up phase. The quattro permanent four-wheel drive with torque vectoring is standard.

Advanced efficiency: electromechanical power steering

The new electromechanical power steering system represents another advance in efficiency – in straight-line driving, the Q5 no longer needs any energy for steering. Audi has also tuned the springs, shock absorbers and stabilisers for an even more balanced chassis. All models are delivered with 18-inch aluminium wheels as standard, but sizes up to 20 inches in diameter are available.

Electronic Stabilisation Control (ESC) detects the composition of the road and adjusts its interventions accordingly; hill descent assist is standard.

The Audi drive select system introduces more versatility to the performance profile of the Q5. It lets the driver control the accelerator pedal characteristic, automatic transmission shift points, amount of steering assist and operation of the automatic air conditioning over four different modes, including an efficiency mode. If MMI navigation plus is installed, the user-programmable "individual" mode is added.

Optional high-end components can be integrated into the Audi drive select control system as well. They include a radar-based adaptive cruise control system, chassis with damping control and dynamic steering. The latter adjusts the steering gear ratio according to vehicle speed and improves stability in sharp curves.

Versatile: driver assistance systems

The revised Audi Q5 also sets benchmarks in its class with its driver assistance systems. The new driver information system with rest recommendation is standard. If it detects that the driver's concentration is waning, it recommends a break from driving.

The most innovative of the optional assistance systems is the further developed adaptive cruise control.

This radar-based cruise control system regulates the distance between the Q5 and the vehicle ahead; at speeds below 30 km/h it initiates hard braking if it detects an impending front-end collision. Audi active lane assist supports the driver with slight steering corrections to stay in lane, while Audi side assist monitors the space behind the vehicle, making lane changes more relaxed. Rounding out the driver assistance system lineup are three systems that make parking easier.

In the infotainment area, Audi offers the sophisticated MMI navigation plus system. This large media center has been improved in many aspects, including its voice control functionality.

A work of art: interior

The workmanship quality of the Audi Q5 is top notch, and the interior has been further refined. Many of its controls have slender chrome rings, and the panels on the centre console are styled in high-gloss black. All steering wheel versions have been redesigned. MMI navigation plus now only requires four control keys, and its volume dial has a skip function. Other changes relate to seat heating operation, the Audi drive select dynamic handling system and multifunction steering wheel.

In the revised Audi Q5, customers can choose from three new interior colours and three leather qualities; decorative inlays include three wood veneers and an aluminium version. With the S line sport package, the interior is immersed in black; sport seats and subtle trims make it even more exclusive. The Audi exclusive program and Audi exclusive line offer further attractive recommendations.

The Audi Q5 exhibits great talents for everyday driving and recreation. Its

long wheelbase of 2.81 metres creates ample space for five passengers. The angle of the rear seatbacks is adjustable; when they are folded down cargo capacity grows from 540 to 1,560 litres. The trailer load is up to 2.4 tonnes.

Specification

Audi offers a wide selection of options so that customers can tailor their vehicle to their own desired specification. Please see the Audi Q5 specification guide for further details, available from the Audi customer website at www.audi.com.au .

At a glance

Audi Q5

Styling and body

- Sporty SUV body with flat roof line and wrap-around tailgate, new accents at front and rear
- Xenon plus headlights with LED daytime running lights and LED rear lights are optional on 2.0 models, standard on 3.0 models
- Engine hood and tailgate are made of aluminium

Engines

- Two TDI and two TFSI engines, all with direct fuel injection and charging
- Power from 130 kW to 200 kW
- Thoroughly overhauled 2.0 TFSI and 3.0 TDI
- Fuel economy improved by up to 15 percent, 2.0 TDI consumes just 6.1 litres per 100 km

Power transmission

- S tronic or tiptronic, depending on engine
- quattro permanent four-wheel drive with torque vectoring for nearly all engines

Chassis

- Refined tuning, new electromechanical power steering
- Optional Audi drive select dynamic handling system, dynamic steering and chassis with damper control
- Large wheels from 18 to 20 inches

Interior

- Many refinements in interior design and controls
- New colours, materials, leather qualities and trim panels
- Spacious interior, cargo space can hold up to 1,560 litres

Equipment

- Wide-range of standard equipment, plus many options
- Highly advanced driver assistance systems available, including adaptive cruise control, Audi active lane assist and Audi side assist
- Eight airbags in total to protect the driver and passengers

A sharpened profile – the Audi Q5

The Audi Q5 combines the sports appeal of a sedan with versatile interior space and many practical solutions for recreation and everyday driving. Audi has further sharpened the profile of its performance SUV in this facelift – in its styling, infotainment systems, assistance systems and engines.

Exterior design

The Audi Q5 is characterised by its sporty proportions; its body has flowing lines and athletically sculpted surfaces and looks as though it were carved from a single block. The tornado line running below the side windows cuts sharp edges above the wheels. The tailgate wraps around the body – a typical design element of all Audi Q models.

The roof line runs in a coupe-like arch that descends early; the A and C pillars are swept back significantly. Around the windows, the standard high-gloss package accentuates the vehicle's styling, and a spoiler visually extends the roof line. The roof rails in anodized aluminium – or the optional black – and a crossbar are standard. The facelift has hardly changed the vehicle's dimensions: the Q5 is 4,629 mm long, 1,898 mm wide and 1,627 mm tall. Its wheelbase measures 2,812 mm and its overhangs are short.

However, the vehicle's styling has become more distinctive in many aspects; the front end appears lower and wider. The high-gloss black single-frame grille now has six corners, and its vertical chrome bars and the Audi rings have a sculptural look. The bumper is also new; it integrates large air inlets with high-gloss black inserts. The standard fog lights have chrome ring surrounds.

The new headlights give the Audi Q5 a resolute look. With the xenon plus lights, the highly efficient LED daytime running lights form a slender, visually uniform ring that almost follows the entire outer contour of the headlight unit. As an option, Audi can equip the Q5 with adaptive headlights, which integrates a dynamic cornering light and a static turning light.

The lights at the rear are undivided; wrap-around LED strips make their appearance in interplay with the xenon plus headlights. Because the tail

lights cannot be seen when the tailgate is opened, lights have been added to the bumper on the Q5.

The diffuser insert has also been redesigned. The tailpipes of the exhaust system have chromes trim and are flattened at the bottom. The 2.0-litre TDI has one tailpipe on the left, while all other engines have tailpipes on both sides.

Solutions for individualists: colours and add-on parts

Audi offers the updated Q5 in 15 exterior colours, four of which are new. The solid colours are Brilliant Black and Ibis White. The metallic paints are Arctic Silver, Cuvee Silver, Ice Silver, Glacier White, Maya Brown, Moonlight Blue, Monsoon Gray, Scuba Blue, Teak Brown and Volcano Red. The pearl effect colours Lava Gray, Phantom Black and Daytona Gray (for the S line sport package) round out the colour palette. As an option, Audi can paint the SUV in any colour that the customer wishes as part of the Audi exclusive customisation program.

Customers can choose from three colour versions for exterior add-on parts such as the lower sections of the bumpers and the door trim strips. The standard selection is black, or they can be painted in a contrasting colour or the exterior colour as an option. Another sporty alternative is the black Audi exclusive styling package.

Audi has configured the S line exterior package for those who like a dynamic look. It adds sporty touches to the bumpers, air inlet screens and the platinum grey diffuser insert.

The door trim strips are in the exterior colour, and the roof spoiler has been lengthened. S line badges appear on the fenders and door sill trims, and the loading-sill protector at the rear glistens in stainless steel.

The optional offroad styling package from the Audi exclusive program gives the Q5 an exceptionally rugged look. Modifications here relate to the bumpers, air inlet screens, door trim strips, door sill trims and the loading-sill protector. Plastic add-ons extend the wheel housings, and stainless steel panels protect the underbody at the front and rear. The offroad styling package is available in conjunction with large wheels from the Audi exclusive

program.

Body

The kerb weight of the Audi Q5 2.0 TFSI developing 165 kW without driver is 1,755 kg. When it was launched on the market four years ago, the body won the European Car Body Award – the world's most prestigious award in car design.

The Audi Q5 body consists of an intelligent mix of materials. The tailgate and engine hood are made from aluminium panels; the tailgate alone weighs 8.1 kg less than an equivalent steel part. The front cross member and its crash boxes are made of aluminium profiles; together they weigh less than 5.0 kg.

The occupant cell integrates form-hardened steels in many areas; these steels attain extreme levels of tensile strength due to a drastic temperature change during forming. They are able to perform with low wall thicknesses that make them extremely lightweight. In total, they weigh 44 kg, some 15 kg less than conventional parts. Tailored rolled blanks – metal sheets of varying thickness – in the rear floor area reduce the weight by 1.9 kg.

In the body-in-white of the Q5 – without doors, lids or sheet metal skin –, form-hardened steels make up 9.1 percent of the total weight. 3.3 percent comprises ultra-high-strength steels, 12.3 percent advanced high-strength grades, 44.5 percent high-strength steels and 30.8 percent deep-drawn steels.

Precise to tenths of a millimetre: body structure

In assembling the body, Audi ensures high precision to tenths of a millimetre. In many areas, specially engineered adhesives reinforce joints, and laser welding is used for sills and doors. High-tech brazing methods are used to join components in the visual area of the rain channel at the rear and the side panels and roof – the zero joint that reflects the brand's quality thinking.

The body's high level of rigidity forms the basis for a quiet atmosphere in the passenger compartment, a comfortable ride and precise sporty handling. The occupant protection system is also top notch. In the event of a front-end

collision, the front cross member distributes forces to the upper and lower side members. The aluminium subframe for the front axle and engine redirects forces into the floor and tunnel structure. In the event of a rear-end crash, the side members, rear wheels and side sills absorb the impact energy along defined paths. In a side-on crash, the B-pillars, side sills and two cross members in the floor perform a majority of the deformation work.

The restraint systems of the Q5 are precisely tuned to the body's deformation properties. In a front-end crash, they consider – based on input from sensors – the seating positions of the driver and front passenger in their triggering actions; this enables very good protection of persons of any size. In collisions involving pedestrians, the Audi Q5 fulfills all key regulations thanks to its large deformation spaces and a foamed zone behind the bumper. The aluminium crash boxes in front of the side members ensure that the body structure remains undamaged in collisions up to a speed of about 15 km/h.

The Audi Q5 makes a clear statement in its drag coefficient or c_D value of 0.32 or 0.33 – which is made possible by intensive design refinements to the outer skin, underbody and engine compartment. Its frontal area measures 2.65 m². Elaborate aero-acoustic modifications ensure low noise levels, even at high speed. Such details as three-fold door seals, rain channels at the A pillars and the exterior mirror design have a significant effect here.

Interior and luggage compartment

The interior of the Audi Q5 has a sporty look, its styling is elegant and light, and its controls – already intuitive and simple – have been further improved. The steering wheels have been redesigned – with four or three spokes in the Q design. A flat-bottomed steering wheel with a new multifunction key layout and shift paddles is available as an option with the S line sports package. In controlling the automatic transmission from the gear selection lever, it is now easier to switch to the S program; this just requires a single action.

The new, highly-efficient automatic air conditioning system also exhibits improvements. The optional seat heating and ventilation features can be adjusted over three levels directly from control keys. The displays on the centre console are illuminated in white, the instrument needles have been upgraded, and the steering wheel stalks and ignition key have been

redesigned.

The optional MMI navigation plus now performs its tasks with just four fixed keys for the Navigation, Telephone, Radio and Media areas. The volume dial has a skip function for advancing through song titles. Only one button is now needed to operate the Audi drive select dynamic handling system.

The front seats – both with height adjustment – offer excellent body motion control and support. An adjustable centre armrest with a storage compartment and drink holders is standard. Audi supplies electrically adjustable seats (with a memory function on the driver's side for 3.0 models), and four-way electric lumbar support. Seat heating is an option for the outer rear seats.

The soft upholstered climate-controlled comfort seats with their perforated leather covers are an especially luxurious option. They can be ventilated over six stages by small fans. If the system detects that excessive cooling is occurring, seat heating is automatically activated. Sport seats with lumbar support and removable seat cushions are available as an alternative in the S line sport package, the Audi exclusive line and in some design packages.

All Q5 passengers enjoy plenty of space for head, arm, legs and feet, and vehicle entry is also very comfortable. The seatback angles of the rear bench seat can be adjusted over a range of 24 to 30 degrees, and the L-shaped head restraints hardly affect visibility in the interior mirror. Other options that make life in the vehicle more convenient are temperature-controlled drinks holders and a versatile luggage restraint package.

Material selection and usage reflect uncompromising quality thinking at Audi; the Q5 interior has been further refined. The panel on the instrument cluster is grey, and the insert on the centre console around the automatic air conditioning panel and radio is high-gloss black. Controls for air conditioning and infotainment, the window lift buttons, air nozzles and mirror adjustment switches have elegant chrome rings.

Standard inlays in the Audi Q5 are aluminium satellite. Three qualities of wood are available: walnut burl balsamico brown, ash grain brown naturelle and the sophisticated wood veneer oak beaufort. Piano finish black, carbon-fibre reinforced plastic (CFRP) and six qualities of fine wood

from the Audi exclusive program round out the available options.

Elegant: new interior colours

The interior colour schemes are elegantly mixed – all of the colour hues are new except black. Many elements of the seats, instrument panel and door trim are available in black, chestnut brown, titanium grey, pistachio beige or truffle beige. The carpet is black, steel gray or beige, the headlining is silver, beige or black.

A combination of natural and man-made leather upholstery is used in the seats on the 2.0 models, while Milano leather is used on the 3.0 models. Audi also offers optional leather qualities Fine Nappa as well as an Alcantara/leather combination. A wide variety of leather packages and combinations from the Audi exclusive program complete the lineup. For the headlining, Alcantara is available in two colours.

In the Audi exclusive program, there are other recommended customised interiors, including the Audi exclusive line. Its basic colour is black, and the sport seats are upholstered in two-tone Fine Nappa leather. The centre panels are alabaster white, cognac and cloudy grey.

The S line sport package immerses the interior in black. Seat cover choices are an Alcantara/leather combination or Fine Nappa leather; the seatbacks display embossed S line logos. Grey contrasting seams (not for Fine Nappa) provide visual highlights. Other fine details are found on the steering wheel, gear shift or gear selection lever and floor mats. Inlays are in matt brushed aluminium or piano finish black. The S line sport package is rounded out by sport seats, S line sport suspension, 19- or 20-inch wheels, badges on the car body and door sill trims as well as a stainless steel loading-sill protector.

Spacious: luggage compartment

The luggage compartment of the Audi Q5 offers a basic capacity of 540 litres ;its load sill height is only 69 cm, and as a result closes almost flush with the cargo floor. The maximum load width measures 105 cm, and the maximum load length is 93 cm. It is easy to stow four golf bags in this space. The vehicle's maximum payload is 580 kg. Luggage nets, a 12-Volt power socket, folding bag hooks and four lashing points are standard features.

The size of the luggage compartment can be conveniently increased by latches in the side walls. When they are pulled, the split rear bench seatbacks – which are pretensioned by springs – automatically drop onto the seat cushions. If the levers are actuated while the seatbacks are down, they are lifted back up by about 45 degrees. The extended cargo space offers 1,560 litres of capacity and a maximum load length of 170 cm.

The rear bench seat offers up to 100 mm longitudinal adjustment, and it comes with a load-through hatch for cargo; it can be supplemented by an optional bag for skis and snowboards.

The accessories program offers many different racks for transporting bikes, kayaks, surfboards and skis. Depending on the engine, the Audi Q5 can tow trailers up to 2.4 metric tonnes in weight (on a 12 percent gradient).

Engines

The engine lineup for the Q5 showcases the bundled technological know-how of Audi. Fuel economy was improved by up to 15 percent in the two TDI and two TFSI engines, and all units gain power and torque. All engines are turbocharged direct-injection units with high torque. The start-stop system – which also operates at low temperatures thanks to a powerful battery – is standard with all engines; even the cooling fan was optimised for maximum efficiency.

The modified 2.0 TDI has a displacement of 1,968 cc. Its technical finesses are its low internal friction, turbocharger with adjustable guide vanes and centrifugal pendulum in the dual-mass flywheel. This makes the engine run even more quietly at low speeds, and it enables earlier upshifting and therefore more efficient driving.

The 2.0-litre engine delivers 130 kW of power and torque to 380 Nm, between engine speeds of 1,750 to 2,500 rpm. Mated to the seven-speed dual-clutch S tronic transmission, the sprint to highway speed is completed in 9.0 seconds, and it reaches its top speed at 200 km/h. The powerful 2.0 TDI has a combined fuel consumption of 6.1 litres of fuel per 100 km with CO₂ emissions of 159 grams per km.

The top engine of the TDI lineup is the completely redesigned 3.0 TDI, which

has 2,967 cc of displacement. Its key properties are its low weight of slightly over 190 kg, an energy-saving chain drive, low internal friction, demand-regulated oil pump and complex thermal management system: the crankcase and cylinder heads have separate cooling circuits that are interconnected by control valves.

The V6 diesel produces 180 kW of power and 580 Nm of torque between 1,750 and 2,750 rpm. It accelerates the Q5 from zero to 100 km/h in 6.5 seconds and to a top speed of 225 km/h. It has a combined fuel consumption of just 6.4 litres of fuel per 100 km, which is equivalent to 169 grams CO₂ per km.

Completely new: 2.0 TFSI

The petrol engines also combine strong performance with astonishing efficiency. The 2.0 TFSI (1,984 cc) appears as an entirely new development with innovative solutions in many technical areas. It is the successor to the engine that was selected “Engine of the Year” five years in a row.

The new four-cylinder engine exhibits a torque curve like a TDI – it attains its maximum torque of 350 Nm at a low 1,500 rpm and maintains it at a constant value up to 4,500 rpm. It outputs its full 165 kW of power at an accessible 4,500 rpm. With the eight-speed tiptronic transmission, the 2.0 TFSI accelerates the Audi Q5 from zero to 100 km/h in 7.1 seconds and to a top speed of 222 km/h.

Its combined fuel consumption is only 7.9 litres of fuel per 100 km – equivalent to CO₂ emissions of 176 grams per km.

One innovation in the 2.0 TFSI is the addition of indirect fuel injection. This supplements FSI direct petrol injection under part-load conditions, improving fuel economy and reducing particulate emissions. FSI injection, which operates at up to 200 bar pressure, is utilised at engine start and higher loads. In terms of filling the combustion chambers, engineers have implemented new degrees of freedom: both camshafts can be adjusted as necessary; on the exhaust side, the Audi valvelift system varies valve stroke over two stages as well.

In the innovative thermal management system, two rotary vanes incorporated in one module regulate the flow of coolant. They ensure that the engine oil heats quickly to its operating temperature after an engine

start, and they regulate coolant temperature between 85 and 107 degrees Celsius depending on the driving situation. This achieves an optimal relationship between minimal friction and high thermodynamic efficiency under all load and engine speed conditions.

The exhaust manifold of the four-cylinder engine is integrated in the cylinder head where coolant circulates around it. This solution reduces the temperature of the exhaust gas, which improves fuel efficiency during a sporty mode of driving, because it avoids full-throttle enrichment. A newly developed turbocharger also makes its appearance here. Its key improvement is an electric wastegate adjuster, which regulates charge pressure extremely fast and precisely – making engine response even more spontaneous.

Internal friction has been significantly reduced as well – by a new type of coating on the piston skirts and a low-friction bearing on the two balancer shafts for very smooth engine running. The regulated oil pump consumes very little energy.

Top petrol engine: the 3.0 TFSI with supercharger

The most powerful petrol engine in the Q5 is the new 3.0 TFSI, which replaces the naturally aspirated 3.2-litre engine. Its supercharger, which is belt-driven by the crankshaft, is mounted in the 90-degree V of the cylinder banks. Inside this unit, two rotary pistons turn at a speed of over 20,000 rpm; the air gap between them measures just a few thousandths of a millimetre. The mechanical charger compresses the induction air to up to 0.8 bar; two intercoolers then cool it.

The supercharger is located after the throttle valve, which improves its efficiency. Short gas pathways downstream result in an early and steep rise in the torque curve. Various actions have been taken to acoustically isolate supercharger noise; a balancer shaft in the engine's lightweight alloy crankcase improves smooth running properties. Adjustable intake camshafts and flaps in the induction channels assure optimal filling of the combustion chambers.

The 3.0 TFSI, which produces its power from 2,995 cc engine displacement, is a powerful and resonant-sounding engine. It outputs 200 kW and produces 400 Nm of torque between 2,150 and 4,780 rpm. The standard sprint to 100 km/h is completed in 5.9 seconds, and its acceleration ends at

234 km/h. The engine's fuel consumption is rated at just 8.5 litres per 100 km – with CO₂ emissions of 199 grams per km.

Drivetrain

Each version of the Q5 is factory-equipped with an automatic transmission tailored for it – a sporty seven-speed S tronic for the diesel engines or the smooth-shifting eight-speed tiptronic for the petrol variants. Both transmissions are characterised by a high level of efficiency, precise operation and wide selection of gear ratios: the lower gears have close, sporty ratios, while the upper gears have wide ratios to reduce engine revs. The differential is located in front of the clutch and the torque converter, which shifts the front axle to a far forward position. This results in a longer wheelbase and a well-balanced distribution of axle loads.

The eight-speed tiptronic, standard in the 2.0 TFSI and 3.0 TFSI, is new to the Q5 model series. One factor contributing to the high efficiency of the fast and very comfortably shifting torque-converter transmission is a highly efficient oil pump. Another is heating of the transmission fluid within the thermal management system. A hydraulic reservoir supports start-stop functionality: when the engine is restarted, stored fluid is pressed into the system – and the tiptronic is ready to start within a very short time.

The seven-speed S tronic is standard in both the 2.0 TDI and 3.0 TDI. It consists of two sub-transmissions served by two clutches. Sequential shifting is performed by switching over the clutches; this takes just a few hundredths of a second and occurs nearly imperceptibly. As in the eight-speed tiptronic, the S tronic controller offers a fully automatic mode with the D (Drive) mode and S (Sport) mode; as an alternative, the driver can shift gears manually.

The quattro permanent four-wheel drive is standard for all engine versions. The central component in the drivetrain is the limited-slip center differential. In normal driving, it distributes 40 percent of engine power to the front wheels and 60 percent to the rear wheels. If wheel slip occurs, most of the power is shifted to the other axle – up to 70 percent can be shifted to the front and up to 85 percent to the rear.

Wheel-selective torque control is an ideal supplement to the quattro drive system. In fast curve driving, the intelligent software solution detects when one of the wheels on the inside of the curve is about to lose its grip. Just

before slip occurs, it brakes the wheel with a very slight, nearly imperceptible intervention – this improves handling and makes driving even safer.

Chassis

The Audi Q5 is the most sporty SUV in its class thanks to its dynamic chassis. It now appears with new tuning and better balance of the spring, shock absorber and stabiliser characteristics.

The five-link front suspension, which has a track width of 1,617 mm, can handle longitudinal and transverse forces independently. In the transverse direction, its bearing supports are tuned for rigidity and thus for sporty precision, while they are comfortably soft in the longitudinal direction.

Many front suspension components are made of aluminium to reduce unsprung weight. This involves the integral load frame for the engine and axle, which is firmly bolted to the front end to increase rigidity, around the bearing block, and which joins the upper suspension link to the body, around the pivot bearing and around the five links per wheel. The tubular stabilizer also saves on weight.

The new electromechanical power steering system does not consume any energy in straight-line driving, which reduces fuel consumption by up to 0.3 litres per 100 km. Its electric motor is integrated in the steering gear in a space and weight-saving design. The new steering system, which adapts its power assist to vehicle speed, has direct gearing with a gear ratio of 15.9:1; its feedback is spontaneous and precise. The turning circle of the Audi Q5 measures about 11.6 metres in diameter.

The car has a self-tracking trapezoidal-link rear suspension, which combines low space requirements with superior driving properties. A steel cross member forms the high-strength backbone; it is joined to the body with large rubber mounts.

The trapezoidal link, wheel carriers, overhead transverse links and tie rods all consist of aluminium. As in the front suspension, tubular stabilizers have been weight-optimized here too.

The springs are supported directly on the wheel carriers and are mounted independent of the compressed gas shock absorbers, so that they can

respond with high sensitivity.

Five cars in one: Audi drive select

Every car has a character – the Audi Q5 has no less than five in one car with the Audi drive select system. In its basic version, it gives the driver access to the accelerator pedal characteristic, automatic transmission shift points and amount of power steering assist. The driver can choose from four operating modes – comfort, auto, dynamic and efficiency. In the latter, the control modules for the air conditioning unit and cruise control are operated for optimal fuel efficiency. If MMI navigation plus is installed, the individual mode is available as well; drivers can program this mode themselves within certain limits.

Other components can be incorporated in the system as options, including a chassis with damping control. Its CDC shock absorbers (CDC: continuous damping control) utilise electromagnetically controlled valves to regulate the flow of the hydraulic fluid between the damper tubes. The control module individually computes the current required for each damper in cycles of just milliseconds; it also considers the condition of the road, the driver's shifting style and the Audi drive select mode.

Another optional module that is subject to management by Audi drive select is dynamic steering. The centerpiece of this high-end system, which now also operates electromechanically, is a superimposition gearbox in the steering column, which is driven by an electric motor. This so-called shaft gearbox can vary the steering ratio by nearly 100 percent.

In city traffic, the dynamic steering system gives the driver a very direct feel for the road, while at high speeds, i.e. on expressways, it is intentionally indirect. At the performance limits of curve driving, it can minimize understeer and oversteer due to load alteration effects; its lightning-fast interventions make it unnecessary to use a lot of braking pulses. When braking on surfaces with split friction values, the system counteracts pulling to one side.

From 18 to 20 inches: wheels

The Q5 rides on large alloy wheels. For all engines, 18-inch wheels with 235/60 tyres are standard. As options, Audi and quattro GmbH can deliver wheels up to 20 inches in diameter and tyres up to 255/45. There are some

very attractive designs here – anthracite colours, semi-polished and in titanium look. A space-saving spare wheel with a folding tire is standard.

The brakes of the Audi Q5 have large dimensions. Four-cylinder engines have 320 mm front discs and 300 mm rear discs. In the internally ventilated front brakes, hundreds of small metal cubes join the two halves of the brake discs; these cubes can dissipate a lot of hot air in a very short time. As an option, Audi can add a hold assist function to the standard electromechanical parking brake.

On the Q5 3.0 TDI and the 3.0 TFSI, all four discs – 345 mm front discs and 330 mm rear discs – are internally ventilated. The fixed calipers, produced as aluminium composites, are distinguished by their low weight and high strength.

In components with stringent requirements, high-strength ductile cast iron is used; the aluminium brake piston housing conducts heat away very well.

Electronic Stabilisation Control (ESC) in the Q5 is a highly advanced system. In conjunction with the electromechanical steering system, it supports the driver in braking and countersteering on roadways that are slippery on one side.

The system uses a sensor to detect whether roof racks are mounted, since this shifts the centre of gravity of the Q5 upwards, and it adapts its control work accordingly.

Another feature integrated in ESC is offroad detection, which detects the composition of the road and is activated by a pushbutton. During acceleration, the system improves forward propulsion on loose substrates by tolerating more slip. On a steep descent, hill descent assist, which is also standard, maintains a constant vehicle speed over a range between 9 and 30 km/h.

The Audi Q5 with a quattro drive system cuts a good figure offroad as well. Its axles permit a diagonal offset of up to 160 mm, and its climbing ability is very high at 31 degrees. Short overhangs enable approach and departure angles of 25 degrees each. The SUV's ramp angle is 17.6 degrees, and its maximum side gradient is 25 degrees. Ground clearance is 200 mm, and it has a fording depth of up to 500 mm.

Driver assistance systems

The updated Audi Q5 also drives with assistance systems that are at the top of its class. The first system is the standard driver information system with driving break recommendation, which is activated from a speed of 65 km/h. It monitors steering movements and other parameters; if it recognises waning concentration of the driver, it recommends a stop to take a break from driving.

The most complex of the optional systems is adaptive cruise control. Over a speed range from 30 to 200 km/h, ACC maintains a desired distance to the vehicle in front of the Audi Q5 by monitoring the gap with radar and autonomously accelerating and braking within certain limits. The driver can set the distance and the control dynamics over multiple stages.

If ACC detects an impending front-end collision with a moving vehicle, the pre sense front system supports the driver and warns him or her over several stages. The first stage utilises a gong and a red signal light; the braking system hydraulics are prepared, and the brake pads contact the discs. When the driver presses the brake pedal now, braking occurs practically instantaneously. If the driver does nothing, the second stage is initiated with a warning jolt and a brief braking action. If the driver now brakes but presses the pedal with insufficient force, brake assist increases the braking force to a level appropriate to the situation.

If the driver still does not react, the system autonomously initiates a partial braking action – it brakes the Q5 at a deceleration rate of about 3 m/s^2 , which is approximately one-third of the possible rate. At speeds below 30 km/h, the Q5 can autonomously brake with full braking force in an emergency – regardless of whether the vehicle ahead is moving or stationary. At speeds below 20 km/h, this hard braking can often prevent an accident altogether, and in other cases it significantly reduces the speed at impact and therefore the accident severity.

Looking back with radar: Audi side assist

Audi side assist makes lane changes more relaxed. From a speed of 30 km/h, radar sensors at the rear monitor traffic behind the Q5. If another vehicle is driving in the blind spot or quickly approaching from the rear, a yellow LED illuminates in the door mirror housing. If the driver still sets the turn signal

to change lanes, the indicator LED becomes bright and flashes at a high frequency – a highly distinctive warning signal.

Audi active lane assist, which is activated from 65 km/h, detects lane lines on the road via a small camera mounted to the interior mirror. If the Q5 approaches a line without the turn signal activated, the system helps the driver to steer back into the lane by a slight intervention in the electromechanical steering system. The driver can decide independently when the intervention should occur and whether it should be combined with a vibration in the steering wheel. If the driver chooses early correction, the system helps to keep the Q5 in the center of the given lane.

Three solutions are offered for making parking easier. The top system is park assist plus with a reversing camera. It monitors the area behind the vehicle with a fish-eye lens that is integrated in the tailgate. The images are enhanced and displayed on the MMI monitor; auxiliary lines and surfaces are shown which help the driver to steer.

Infotainment systems

The basic system is the concert radio system, with a CD and the Audi Sound System in which a 180-Watt six-channel amplifier drives ten loudspeakers, including a subwoofer and a centre speaker. The system, which follows the Audi MMI user interface concept, is connected to a colour 6.5-inch monitor. It also has Audi Music Interface, and a SDHC card reader.

High-end unit: MMI navigation plus

The top system in the lineup is MMI navigation plus, the large central media unit from Audi. Along with a DVD drive for entertainment, it contains a 60 GB hard drive for navigation, telephone and music data. A graphic processor from Audi joint venture partner Nvidia generates three-dimensional images in top quality.

The 7.0-inch monitor of the MMI navigation plus system impresses with a high resolution of 800 x 480 pixels – it displays remarkably sharp images in brilliant colours. The system's voice control function lets the driver input city and street via voice commands and control telephone and music playback as well. The system can connect to cell phones and mobile players via a Bluetooth interface – so it can also play back their music data.

The infotainment lineup includes yet other components, including a TV tuner, CD changer in the glove box and the Audi music interface to connect to a mobile player or an iPhone. The Bluetooth interface and Bluetooth cell phone preparation with a hands-free unit and voice control make telephoning very convenient.

The Bang & Olufsen Sound System offers even more great sound. Its ten-channel amplifier outputs 505 Watt and drives 14 high-performance loudspeakers whose grilles sport aluminium accents. In conjunction with MMI navigation plus, the system can play back DVDs in 5.1 surround sound.

Equipment and trim

The revised Audi Q5 offers a wide variety of standard features. Along with the technology, comfort and convenience features already mentioned, it also offers a full package of restraint systems. These comprise full-size airbags, side airbags in front and a head airbag system; the front three-point seatbelts are equipped with tensioners and force limiters. There are eight airbags in total. The integral head restraint system supports the driver's upper body and head in case of a rear-end collision. Isofix anchor points for child seats in the rear seating area are also standard.

Audi offers a wide selection of options so that customers can tailor their vehicle to their own desired specification. Please see the Audi Q5 specification guide for further details, available from the Audi customer website at www.audi.com.au.