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**The Audi A1**

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## **Summary**

### **An Audi unlike any other**

Audi is entering a new vehicle class. The compact A1 condenses all of the virtues of the four-ring brand – a progressive design, uncompromising quality and groundbreaking efficiency – within a space of less than four meters in length. The latest model to bear the four rings is dynamic and high-quality, emotion-packed and individual. Its muscular engines and the agile chassis make it the sportiest car in the segment.

The A1 is an Audi unlike any other. As the newcomer in the compact class, it appeals to a modern customer group – urban, lifestyle-oriented, and seeking a premium driving experience. The A1 is both a modern city car and a sporty all-rounder for an active lifestyle. It is the first premium car in the subcompact segment – a true, fully-fledged Audi.

Its agile chassis and the muscular engines immediately move the A1 to the head of its class, and the A1's character is evident from the very first glance. Its highly modern design perfectly integrates the A1 into the Audi family. The front end with the large single-frame grille, the side line with the distinctive roof arch, the coupe-like C-pillars and the large wheel arches are among its defining style elements. The bonnet and rear hatch encompass the body; the tail lights are three-dimensionally moulded and are unmistakable by day or by night.

### **The interior: spacious and sophisticated**

The interior of the A1 is modern, spacious, bright and airy. The instrument panel resembles an airplane wing; its four round air-vents are reminiscent of jet engines. The clean, clear control layout is just as much a classic Audi strength as the high level of fit and finish. The attention lavished on numerous details underscores the premium character of the A1. In addition to the Attraction and Ambition trim lines, Audi also offers a media style package focused on infotainment and interior design.

Innovative materials and modern colours emphasise the youthful character of the A1. Whether coloured air vents, LED interior lights or seat covers in expressive colours – customisation is the key. The equipment program offers countless opportunities for matching the A1 to the driver's own personal style.

There are even a variety of paint finishes from which to choose for the roof arch. Customers can also order many features after the initial sale to follow a trend or a personal style.

The available infotainment and multimedia systems come directly from the luxury class. The top of the line is MMI navigation plus, a media centre that sets new standards in the compact segment. It borrows from the system used in Audi's new A8 flagship, including the monitor that folds out from the instrument panel and the control unit, which uses MMI logic.

The 465 watt Bose surround sound system is just one example of the high-end modules available.

### **A bundle of fun: the sportiest car in its class**

The agile chassis elevates the A1 to the head of its class. Whether in the city, through corners or on the expressway – the latest Audi is always great fun to drive thanks to its sporty setup, favourable weight distribution and direct steering. The ESP stabilisation program with electronic limited slip differential – which comes standard on all models – makes the handling even more precise while also enhancing driving safety.

The new A1 also sets new efficiency standards with its 1.4 litre TFSI petrol engine. This engine embodies Audi's downsizing principle: substituting turbocharging for displacement and utilising direct fuel injection units. This 90 kW TFSI engine combines strong performance with excellent efficiency.

In the second half of 2011 the ultra-efficient 66 kW 1.6 TDI will join the A1 range. Paired with a manual transmission, it emits just 99 grams CO<sub>2</sub> per kilometre. A start-stop system and a recuperation system, which recovers energy during braking, is standard on the manual transmission-equipped 1.6 TDI 66kW and helps to ensure levels of fuel efficiency that will make the A1 a class leader.

### **High-tech and efficiency: the seven-speed S tronic**

At Audi, efficiency means high-tech. The A1 is available with the seven-speed S tronic dual-clutch transmission, which shifts extremely quickly, comfortably and with no perceptible interruption to the flow of power. It can be operated as a full automatic transmission or can be shifted manually, with paddles on the steering wheel available as an option. The seven-speed S tronic provides for tremendously fun driving and also further reduces fuel consumption – typical Audi features.

## **At a glance**

### **Design and body**

- Distinctive, progressive, coupe-like design, encompassing shoulder line, large wheel arches, distinctive roof arch optionally available in contrasting colour
- Headlights with characteristic appearance, optional xenon plus with LED daytime running lights, three-dimensionally styled tail lights
- High-strength body with excellent crash characteristics

### **Interior and equipment**

- Dynamic, modern interior design
- Innovative materials and modern colours, premium fit-and-finish
- Two trim lines and media style package, many customisation options, numerous comfortable and sporty features available
- On-board computer with efficiency program standard with the Ambition trim line

### **Infotainment**

- Modern, sophisticated and class-first infotainment technologies, fold-out display screen is standard on all Australian A1 models.
- High-performance navigation system with MMI operating concept
- Interfaces for mobile phone and mobile music storage media
- Bose surround system with 14 speakers and high-end sound

### **Drivetrain**

- 90 kW 1.4 TFSI petrol engine, turbocharged with direct fuel injection for strong power and high efficiency
- 1.4 TFSI available with recuperation and start-stop system
- 1.6 TDI with 66 kW and manual transmission at 99 grams CO<sub>2</sub>/km
- Seven-speed S tronic dual-clutch transmission optionally available

### **Chassis**

- Sporty chassis with wide track and direct steering ratio
- Balanced axle load distribution and low total weight
- ESP stabilisation system with electronic front limited slip differential to bolster agile handling and provide outstanding roadholding

### **Safety**

- 6 airbags
- Electronic stability control
- 5 star EuroNCAP rating

## **Full version**

### **The Audi A1 – a strong and sophisticated character**

Full of character, intelligent and sporty – The Next Big Audi is here. The A1 condenses all of the premium virtues of the four-ring brand to within a space of less than four metres. A progressive design, uncompromising quality and class-leading efficiency technologies combined with an agile chassis and powerful engines to make the A1 the sportiest car in the segment.

### **Exterior design**

The Audi brand represents a passion for automobiles. The A1 is a typical, fully-fledged and formed Audi. It has a confident road stance – powerful and distinctive. Its dimensions also document the dynamic lines: It is 3,954 millimetres long and 1,740 millimetres wide, but only 1,416 millimetres high. Its wheelbase measures 2,469 millimetres; the overhangs are correspondingly short for a muscular stance.

The roof arch, the distinctive, encompassing shoulder line and the sharply sloped C-pillars give this three-door model a characteristic silhouette. All body details have a high-quality feel and are cleanly executed. Audi is known for transferring many ideas and innovations from its show cars to production vehicles. The A1 borrows many styling cues from the 2007 A1 project quattro show car. Its design is tightly integrated into the brand's design language: emotion-packed, bold and progressive.

The front end bears an unmistakable Audi family resemblance, but the details feature unique accents. The single-frame grille, for example, takes an evolutionary step. Its angular upper corners were first seen on the A8 luxury sedan. The crossbars appear to float. The large air inlets with the three-dimensional edges and the horizontal slats play a major role in the sporty appearance of the A1, with fog lights integrated into their outside corners (standard on Ambition models, optional on Attraction).

The Audi A1 fixes the road with a determined and concentrated gaze, like a sprinter in the split-second before the starting gun fires. The lower edges of its headlights form a wave; a contour known as the wing, which differs in shape depending on the lighting technology used, structures the interior of the headlights. As with every Audi, high-efficiency daytime running lights are standard. With the optional xenon plus headlights, the daytime running lights are

implemented as two ten-watt light-emitting diodes per headlight, whose light is radiated via a light guide. They appear to be a continuous band that traces the wing. The turn signals are below.

The headlights can be paired with the optional high-beam assistant – another first in the compact class. The system uses a small camera integrated into the rearview mirror to detect oncoming vehicles and automatically switches between the high and low beams.

### **Unmistakeable characteristic: the roof arch**

The dynamic flow of the roof arch is a characteristic element when the A1 is viewed from the side. Audi will paint it in one of four colours that provide a vibrant contrast to the body colour upon request. The arch terminates with the C-pillar, which is even flatter than on many coupes. This gives the rear end a dynamic outline that is further emphasised by the roof spoiler.

The rising line visually lengthens and accelerates the A1. The upper edge of the hood extends below the side windows to the rear end. As with the Audi TT sports car, the point where the wrap-around hood meets the front fenders is the point of origin for a typical Audi design element – the tornado line. It extends through the door and the rear side section, running tightly above the wheel arches, giving the A1 a powerful road stance.

The heavy shaded edge beneath the tornado line, the athletically arched sheet metal surfaces on the flanks and the rising dynamic line above the sills are additional elements from the brand's design language. The same applies to the ratio of sheet metal surfaces to the greenhouse, which is two-thirds to one-third. The side mirrors are mounted on the doors like the TT and R8; the door handles are distinctly bow-shaped. The pronounced wheel arches house wheels up to 18 inches in diameter.

The wrap-around hatch emphasises the wide of the rear end – a solution new to the compact segment. The hatch is distinctively shaped, forming a spoiler lip above the license plate. Below the edge are the undivided tail lights. They have a wedge shape similar to the front headlights and are sculpturally integrated into the design.

On the Attraction model, the light pattern of the tail lights is unusually wide and well resolved. With the optional xenon plus, each of the tail lights are equipped with 54 LEDs, which all together consume only 3.5 watts of power. The

SuperRed LEDs emit an intensive, deep red colour and produce a three-dimensional light sculpture in the shape of two flowing arcs.

Two chrome bezels give the brake lights, which are amplified with reflectors, a ring-shaped appearance. The rear fog light is integrated into the brake light and uses its variably activated LEDs. Because the tail lights cannot be seen when the hatch is open, the A1 has additional LEDs on the C-pillars – another example of Audi's attention to detail and enthusiasm for technology.

A sporty black diffuser in the skirt forms the bottom of the tail end and visually anchors the A1 on the road. On the left side, the exhaust system terminates in two tailpipes, which feature elegant trims in the Ambition trim line. The entire exhaust system is very light in weight. High-grade stainless steels permit low wall thicknesses in the pipes and the mufflers.

Audi offers the A1 in ten exterior colours. The solid finishes are Amalfi White, Cumulus Blue and Brilliant Black; the metallic pearl-effect colours are Ice Silver, Phantom Black, Teak Brown, Shiraz Red, Scuba Blue, Misano Red and Sphere Blue.

### **An A1 for every taste: the exterior configurations**

Audi has served up a wide range of customisation options that go beyond the paint. There are more than 800 possible exterior configurations, including adhesive films for the roof arch. The side mirror housings can be painted in the arch colour or the body colour. The Competition Kit comprises a lip for the front spoiler, redesigned side sills, a rear diffuser and chrome-plated sport tailpipe trims.

Additional sporty options such as tinted rear windows are available from quattro GmbH. With the black styling package, the frames of the single-frame grille and of the fog lights, the license plate frame and the grille are either glossy or matt black.

### **Body**

A core Audi truism applies to the A1: the body establishes the foundation for the quality, for the precise, sporty handling, and for a quiet cabin and excellent safety.

High-strength and ultra high-strength steels of different strength classes make up two-thirds of the A1 superstructure. The strongest of these are the hot-shaped steels. The blanks are heated in a furnace to high temperatures then immediately shaped in a water-cooled pressing die. This rapid change in temperature imparts them with very high tensile strength.

Hot-shaped steels make up 11 percent of the body. They are used in the areas of the passenger cell, the rear sections of the longitudinal members, the roof arch and in the A-pillars and B-pillars – all the places where ultra high-strength combined with low weight is particularly important. The high-strength and ultra high-strength steels are a significant factor for the low body weight of only 221 kilograms. The combination of high torsional rigidity, strong body structure and low weight is the perfect platform for the A1.

Another factor that increases rigidity is the joining method used for the body at the newly equipped Audi plant in Brussels. 66 metres of structural adhesive are used per car, with optical systems monitoring its application in many areas. The adhesive provides for strong and tight connections, often eliminating the need for additional sealing measures and thus saving weight.

The high body rigidity also plays a major role in the excellent acoustics and refinement of the A1, which is free of annoying resonances. The Audi development engineers devoted considerable attention to the sound radiation of the large sheet metal panels and their rigidities. All regions at which forces are induced during driving were specially reinforced. A lightweight insulation package provides a premium-level of quietness inside the vehicle.

The A1 is also at the top of its class with respect to occupant protection. In the event of an offset frontal collision, the energy imparted is directed to the side facing away from the collision to keep loads on the occupants to a low level. The B-pillars, the wall in front of the footwell and the rear longitudinal members offer a particularly high degree of protection thanks to their extreme strength. Four sensors that react to acceleration and an increase in air pressure provide the airbag controller with detailed information in any type of crash.

The A1 comes standard with a total of six airbags: two front airbags, thorax-pelvis side airbags in the backrests of the front seats and curtain head airbags. Belt tensioners and belt force limiters plus the integral Audi headrest system, which mitigates the consequences of a rear-impact collision, round out the package. The belt status for front occupants is displayed in the instrument cluster.



The new A1 goes well beyond legal requirements when it comes to pedestrian protection. The front bumper, the crossbeam behind it and the bonnet satisfy all of the key criteria. The bonnet is secured to the body by two releases, allowing a construction that makes it very rigid and yet low in weight.

Low-speed collisions result in no major damage. The damaged elements in the bumper can be replaced individually. The front crossbeam and the bolted-on crumple boxes in front of the longitudinal members are made of aluminium. They form a structure that provides effective protection for expensive components such as the radiator and air conditioners as well as the welded body structure.

The Audi A1's safety credentials have been proven with a 5-star EuroNCAP crash safety rating.

### **Extremely sophisticated: the aerodynamics**

With a drag coefficient of 0.32 for the base model, the Audi A1 is one of the best cars in its class. Its frontal area measures 2.04 m<sup>2</sup>. The sophisticated aerodynamics are the result of extensive fine-tuning in the Wind Tunnel Centre at the Ingolstadt plant. 0.08 was shaved from the drag coefficient during the course of the vehicle's development, reducing fuel consumption by as much as 0.6 litres per 100 kilometres.

The body has been extensively optimised in every detail, from the wheels to the spoiler lips at the tail lights to the small corners that connect the roof spoiler to the body. Visually understated, they improve separation of the air flow and thus increase aerodynamic stability.

A plastic liner covers most of the underbody, protecting it against salt and stone chipping and providing for a more aerodynamic flow of air. The developers also paid very close attention to the smallest details here – the spoilers are integrated in front of the wheels and even at the spare wheel well. The aerodynamic trim panel lowers the  $c_D$  value by roughly ten percent.

In the A1, the single-frame grille and the surrounding area are completely sealed so that the inflowing air reaches the radiator with virtually no losses, rather inducing turbulence. A stepless radiator fan contributes to this efficiency package.

The A1 glides quietly through the wind thanks to the extensive development work done in the acoustics wind tunnel. The seals, the windows and many

details of the body geometry all play a role here. The side mirrors also serve an additional function: their grooves and deflector edges reduce fouling of the side windows and the mirror glass on wet roads.

## **Interior**

Sportiness, precision and youthful freshness – these properties characterise the interior of the Audi A1. The designers drew inspiration from aeronautical engineering and the associated field of lightweight construction in many areas.

The elegantly curved instrument panel is reminiscent of an aircraft wing. With its horizontal stepping, it maintains the perfect balance between airiness and solidity. Four circular, protruding air vents are located on the dividing line on the instrument panel's front face. They resemble the turbines of a jet and can be adjusted using a sophisticated ball mechanism.

The centre console tunnel is shaped like the stern of a yacht. It appears to float above the tunnel, separated from the dashboard. The upright centre console is inclined slightly toward the driver. Located on its lower end is a strip with secondary switches and the control unit for the air conditioning.

In addition to the standard manual air-conditioning system, Audi also offers automatic air-conditioning. The automatic system takes into account the position of the sun and humidity. Its three dials – finely rippled cylinders that move very precisely with exact click sounds – are a visual and haptic highlight.

### **Unparalleled: the retractable monitor**

The middle of the centre console is home to the controls for the radio or the optional MMI operating and infotainment system. The 6.5-inch display, which comes standard with the concert radio, is retracted into the instrument panel. Tap it and it extends upward in a smooth, even motion into an excellent position where it can be read quickly and easily. The retractable monitor is unparalleled in this class.

The A1 comes standard with a three-spoke sport steering wheel wrapped in Fine Nappa leather and decorated with chrome-design inlays. A multifunction steering wheel is available, with optional paddles for manual shifting if the A1 is equipped with the cutting-edge S tronic transmission.

The instrument cluster with the large round dials – black faces, red needles and white numbers – is laid out clearly and elegantly. As always with Audi, operation

via the steering column stalks is logical and ergonomically perfect. At night the instruments are lit in white, the buttons in red.

The optional LED interior lighting package is another exclusive solution in the segment. Both elegant and efficient, white light-emitting diodes are used for the ambient lighting in the doors and roof module, the cabin and reading lights and to illuminate the footwells, the entry area of the doors and the vanity mirrors. The LED interior lighting package is included in the optional media style package or can be ordered separately. If the A1 is equipped with the Bose surround sound system and the media style package, the frames of the bass/mid-range speakers in the front doors are indirectly lit with white light, creating a fascinating visual effect.

Another top feature in the A1 is the driver information system, which is optional with the Attraction trim line and standard with Ambition. It presents all key information from the audio sources, the telephone, the vehicle and the optional navigation system on the monochrome display between the instrument dials.

A modern tab concept and a freely programmable Favourites button make operation of the system intuitive and easy. As with the large models from Audi, the system can be controlled via the buttons, rocker switches and roller switches of the optional multifunction steering wheel. The system comes standard with the MMI navigation plus system.

Integrated into the driver information system is the on-board computer, which includes an efficiency program. The computer gives the driver tips for efficient shifting. An enlarged representation of the gear-change indicator indicates when it is appropriate to shift gears. Another function provides information on which on-board consumers, such as the air conditioning or the rear window heating, are active and how they affect fuel consumption.

### **Firm hold: the seats in the A1**

The front seats in the A1 offer great hold and support and for people of all sizes. A height-adjustable driver's seat is standard. The standard specification of the Ambition trim line includes sport seats with lumbar support and a height-adjustable passenger seat.

The easy-entry function for comfortable access to the back is standard on all models. The rear seats are anatomically contoured; the headrests can be lowered so far that they do not impair the view in the rearview mirror.

There is ample storage at all seats – two cup holders, a large tray and a 12-volt power outlet on the console of the centre tunnel, plus roomy pockets in the doors and the rear side panels.

Audi offers a height-adjustable centre armrest as an option. The optional storage package includes multi-attachment points with folding hooks in the rear, a locking glove box, a fold-down compartment under the left front seat, two storage pockets on the backs of the front seats, a net in the front passenger footwell plus three cup holders and storage trays for the rear seats.

### **Upscale and youthful: the quality and the materials**

The premium character of the A1 is also manifested in every detail of the interior. No compromises were made compared to the larger models with respect to the choice of materials, their fit and finish and the tight, even gaps. The surface of the instrument panel is softly backed with foam and elegantly textured. All buttons and controls are seated without play and move easily; even the pull handle that unlatches the bonnet releases moves precisely and crisply.

Standard with the Ambition trim line and optional with Attraction are numerous aluminium-look control elements, including the entry strips, the dials for the air conditioning system, the glove box handle and the light dials. The ring of the three-spoke sport steering wheel, the handbrake handle and the gear shift lever are wrapped in leather and adorned with subtle aluminium clips.

There are numerous differences in the materials used in the two lines. Attraction features black or titanium grey cloth upholstery with the centre console, map pocket and speaker grilles in the same colour. The sport seats in the Ambition line feature a two-colour design with titanium grey or wasabi green as a contrasting colour to black. A completely black interior is also available as an option.

The media style package offers velvet beige as an alternative. The optional Milano leather upholstery is available here and with the Ambition line in a choice of three colours and combinations. The centre console and the armrest in the door match the seat colour; the bezels of the air vents gleam in the interior colour, high-gloss white or aluminium look.

Everything about colours and trim is novel, youthful and modern. A large choice of colours is available for the bezels of the air vents. They are matt (Attraction) or high-gloss (Ambition) black. Printed films covered by a roughly 3 millimetre-thick transparent layer provide an unusual sense of depth.

Depending on the interior colour, Audi also delivers the air-vent bezels in high-gloss white, titanium gray, amulet red, velvet beige and wasabi green – the latter is a trendy new colour that perfectly expresses the fresh character of the A1.

### **Practical: the luggage compartment**

The luggage compartment of the Audi A1 has plane walls and a low step to the loading lip. It holds 270 litres and is very wide because the shock absorbers are located far to the outside of the body.

The plate of the cargo floor is particularly lightweight, and parts of it are made of natural fibres. It forms a level surface with the fold-down seat backs and the loading lip. Two small latches secure the cargo floor when it is folded up. A multi-attachment point is located on the right wall.

The split rear seat backs can be folded down quickly and easily in just one step. The headrests do not have to be removed. When loaded to the ceiling, cargo volume in this configuration increases to 920 litres. Audi also offers an optional luggage compartment package with practical storage compartments under the cargo floor, a second multi-attachment point, a versatile stretch net, a power outlet, a second light and a strap retainer.

Audi does not compromise quality in the luggage compartment, either. The hatch unlocks electronically, including via the remote key fob. It swings up and falls securely into the latch. Its clasp has a separate, small, spring-loaded cover that keeps it from getting dirty – another typical Audi detail.

### **Infotainment systems**

The Audi A1 offers luxury-class infotainment and multimedia systems, which have been updated in a number of areas. Typically Audi, its components are modular to allow for a wide range of possible combinations.

The standard concert radio features a high-performance, dual-core processor. The operating logic follows the MMI principle from the larger Audi model lines.

The fold-out on-board monitor – a 6.5-inch colour display – is standard at this level. Also included are a CD player, an SD card reader, an AUX-IN connection and eight speakers. The concert radio integrates a double tuner. The first tuner receives the signal; and the second searches in the background for additional stations.

Audi offers the optional connectivity package in conjunction with the concert radio. The connectivity package also includes a Bluetooth interface and the Audi music interface for the easy connection of a mobile player.

### **High-end media centre: MMI navigation plus**

The top of the line is MMI navigation plus: as a high-end media centre, it is the benchmark in the compact vehicle class. It comprises four primary components – the main unit with a 60 gigabyte hard drive, the radio unit, the MMI control terminal and the colour display.

Thanks to its high resolution, the fold-out 6.5-inch display delivers tack-sharp images. Graphics, including the cover art for the audio titles, are elegantly sculptured.

A large rotary pushbutton is at the centre of the MMI control unit. It can be rocked in four directions like a joystick, which makes many functions even more convenient. To both sides and above the central element are the volume controls, seven soft keys and eight hard keys. These provide fast access to the Vehicle, Tone, Radio, Media, Menu, Telephone, Navigation and Info functions. Sound flows from eight speakers.

The MMI navigation plus system can store 20 GB of music. It includes two SDHC card readers and uses a Bluetooth interface and the Audi music interface (AMI) to connect modern mobile media players very easily and conveniently. It has a drive for audio and video DVDs and voice control to activate certain functions.

Hi-fi fans can choose between two sound systems: the 180 watt Audi sound system with ten speakers and the Bose surround sound system. A ten-channel, 465 watt amplifier sends the sound to 14 speakers, including a subwoofer. The Bose surround sound system uses a special algorithm to play stereo signals in 5.1 surround sound. Its digital amplifier uses a microphone to analyse intrusive noises and adjusts music playback accordingly. And the distinctive illumination of the sub-woofers of the Bose surround system is a visual highlight in the cabin.

From the concert radio up, Audi networks all of these systems using MOST bus, in which the controllers are arranged in a ring structure and communicate with one another via fibre-optic cables. The MOST bus, which was designed specifically for the transfer of media data, is another premier in the compact segment.

## **Drivetrain**

Audi will initially offer the A1 with one engine. The TFSI petrol engine develops 90 kW of power. This powerful yet efficient engine combines direct-injection and turbocharging technologies. This innovative concept in conjunction with start-stop and recuperation systems delivers ample power with excellent fuel efficiency. The official fuel consumption rating is just 5.3 litres/100 km – making the A1 the most efficient petrol-driven car in its class.

From mid-2011, a 1.6 TDI will join the A1 range. Developing 66 kW of power and 230 Nm of torque, this model will offer outstanding fuel economy of 3.8 litres per 100 km, with an equivalent of 99 grams CO<sub>2</sub> per km when equipped with the 5-speed manual transmission. Audi's 7-speed S tronic will also be offered from launch.

### **Downsizing perfected: the petrol engine**

The abbreviation TFSI represents the combination of direct injection and turbocharging, a technology that Audi was the first carmaker in the world to introduce five years ago. The two technologies make an ideal couple. The fuel injected directly into the combustion chambers is extremely turbulent, thus cooling the chamber walls. This reduces the temperature, thus reducing an age-old problem inherent to all turbocharged engines – a tendency to knock due to the high amount of heat produced during combustion. Audi can also operate its TFSI engines with a high compression ratio, which plays a major role in their efficiency.

The 1.4 TFSI engine develops a very healthy 90 kW. Its peak torque of 200 Nm is available continuously from 1,500 to 4,000 rpm, meaning excellent flexibility – the 1.4 TFSI can be operated at low speeds in almost any situation. The 1,390 cc engine with four valves per cylinder is pressurised by a turbocharger with a water-cooled intercooler.

Paired with the seven-speed S tronic, the 1.4 TFSI gets the A1 up to 100 km/h in 8.9 seconds. Top speed is 203 km/h. Coupled to the six-speed manual transmission, the figures are identical at 8.9 seconds from zero to 100 km/h and a top speed of 203 km/h. Average fuel consumption is just 5.3 l/100 km for the S tronic and 5.3 l/100 km for the manual transmission. CO<sub>2</sub> emissions for the A1 1.4 TFSI with the S tronic are 122 g/km.

## **Groundbreaking efficiency: the TDI engine**

The 1.6 TDI, which displaces 1,598 cc, is characterised by the systematic minimisation of internal friction. The most important measures involve the regulated oil pump, the piston rings, the honing of the cylinder barrels, the toothed belt and the bolts of the cast-aluminium pistons.

Their DLC coating is a novel technology with its roots in racing engine construction. DLC stands for diamond-like carbon – a fine, diamond-like carbon coating.

The piezo injectors of the common rail system can perform six separate injection operations per work cycle, which benefits the quality of combustion, exhaust formation and cultivation. A tangential channel in the intake manifold imparts a targeted swirl to the inflowing air, and the spiral channel fills the combustion chambers. A turbocharger with adjustable turbine geometry and an unthrottled intake and charge air system round out the overall concept.

The 1.6 TDI develops 66 kW of power and 230 Nm of torque, the latter of which is available between 1,500 and 2,500 rpm. In combination with the five-speed manual transmission, the diesel accelerates the A1 from 0 to 100 km/h in 11.5 seconds. It reaches a top speed of 182 km/h and offers groundbreaking fuel economy of 3.8 litres/100 km, an equivalent of 99 grams CO<sub>2</sub>/km.

Both engines in the A1 use a technology from the Audi modular efficiency platform: the recuperation system uses intelligent voltage control for the generator to recover energy during the braking and coasting phase. The energy is stored temporarily in the battery and flows back into the on-board electrical system, relieving the load on the generator and thus the engine the next time the car accelerates.

The start-stop system, another technology from the modular efficiency platform, is standard on both 1.4 TFSI models and the manual-transmission 1.6 TDI model. This system turns the engine off when the car is at rest, if the gear selector lever is in neutral and the driver's foot has left the clutch pedal. Start-stop then turns the engine back on as soon as the clutch pedal is depressed – all the while functioning quietly, conveniently, and quickly. The start-stop system,



which the driver can deactivate at any time, also harmonizes perfectly with the seven-speed S tronic in the 1.4 TFSI.

### **Cutting-edge transmission: the seven-speed S tronic**

The seven-speed S tronic combines the convenience and smoothness of a torque converter transmission with the dynamics and efficiency of a manual transmission. It comprises two sub-units and integrates two multi-plate clutches that control the various gears. The large K1 clutch located on the outside directs the torque via a solid shaft to the gear wheels for the odd-numbered gears 1, 3, 5 and 7. A hollow shaft rotates around the solid shaft. It is connected to the smaller K2 clutch, which is integrated into the inside of its larger sibling, and which controls the gear wheels for the even-numbered gears 2, 4 and 6, as well as reverse gear.

Both transmission structures are continuously active, but only one is connected to the engine at any one time. For example, when the driver accelerates in third gear, the fourth gear is already engaged in the second transmission structure. Shifts are performed by switching the clutches. Shifting gears takes only a few hundredths of a second and is completed with no perceptible interruption of traction. Shifts are so fluid, dynamic and smooth as to be barely noticeable.

Only 37 centimetres long, the seven-speed S tronic is very compact and weighs only around 70 kilograms, which is extremely light for a high-end transmission. Its two clutches run dry, without a separate oil supply, further adding to the already impressive efficiency. Oil is required to operate the transmission; the oil pump responsible for supplying the oil is demand-regulated. The seven gears are laid out for a sporty response, with the top gear being high-geared to reduce engine speed. This, too, reduces fuel consumption.

The driver can operate the seven-speed S tronic via a selector lever or optional paddles on the steering wheel, as in a sports car. There are also two fully automatic operating modes available. In D mode, the transmission management system operates the engine as often as possible at low engine speeds to maximise fuel efficiency; in S mode, the driving style is sporty and the engine speeds are kept higher. A hill-start assist, which holds the A1 in place when starting on a hill, is standard with the S tronic. It can be ordered separately for the A1 with a manual transmission.

## **Chassis**

The front-wheel-drive Audi A1 is the sportiest car in the premium subcompact class. It is nimble and agile in the city, steady and precise on interurban roads, and comfortable on the highway. These qualities can be attributed largely to the sophisticated chassis with the favourable weight distribution.

The engineers devoted a great deal of attention to the distribution of axle loads during the development of the Audi A1. Only 808 millimetres long, the front overhang is unusually short. Depending on the engine, only between 61 and 63 percent of the weight is on the front axle. A number of different details contribute to this, such as the battery, which is located beneath the luggage compartment. With a base weight of only 1,040 kilograms, the A1 is the lightest vehicle in the premium compact class.

The front suspension is a classic MacPherson design with lower wishbones and new elastokinematics. The subframe is made of high-strength steel. A torsion beam axle with the springs and dampers separated is used in the rear. Newly designed guide bearings were used to optimise the elastokinematics for driving dynamics and comfort. The A1 has a purposefully wide track, measuring 1,477 millimetres up front and 1,471 at the back; ensuring excellent roadholding.

### **Precise and efficient: the power steering**

The youngest, freshest Audi comes equipped with electrohydraulic, rack-and-pinion power steering. The flow of oil is produced by an electric motor, which works more efficiently than a strictly hydraulic system. As speed increases, the speed of the electric motor and thus the power assist decrease. The volumetric flow increases with high steering angles.

Steering response is spontaneous; feedback is precise and sensitive. The steering ratio is a very direct 14.8:1. The high turn-in of the front wheels keeps the turning circle to 10.6 meters – both factors make the A1 extremely agile.

Audi has tuned all chassis components for sportily balanced handling. The front control arm bearings, for example, are stiff to improve lateral support. The rear bearings, on the other hand, have non-linear characteristics for better comfort.

Twin-tube gas shock absorbers with supplemental polyurethane springs provide the damping at all four wheels. A tautly tuned sport suspension is standard with the Ambition trim line.

## **Dynamic and safe: ESP with electronic limited slip differential**

The A1 comes equipped with an attractive Audi technology regardless of the engine selected – the ESP stabilisation system with electronic limited slip differential. Similar to a mechanical locking differential, it makes the already agile handling even more dynamic. If the controller detects that the load on the inside front wheel is reduced too much, it initiates brief, controlled braking of that wheel – not more than subtly brushing the pads to the disc with minimal pressure.

The smooth and continuous intervention takes place before excess slip, which would waste significantly more energy, can occur. The slight braking causes the excess torque to flow to the outside wheel, which can apply more power to the road. At the same time, the difference between the drive forces generates a certain yaw moment that helps the driver by turning the car very slightly into the corner.

The result is impressive: The A1 remains neutral noticeably longer, and understeer is largely neutralised when turning into corners and when accelerating. The ESP stabilisation program intervenes later and more gently, if it is even necessary at all. Overall road behaviour is even more precise, agile and stable; further enhancing objective safety and the driver's subjective confidence in the car.

## **Sporty: the wheels and brakes**

The ESP in the A1 works in conjunction with large, powerful brakes. The front discs are internally ventilated and have a diameter of 256 millimetres on the 66kW 1.6 TDI; the more powerful 1.4 TFSI model wears 288 millimetre discs. All models sport solid, 230 millimetres discs gripped by aluminium floating calipers in the rear. The brake lights blink during emergency braking to warn trailing traffic. The warning blinker is also activated when the car is at rest.

The Attraction trim line features 15-inch alloy wheels, while the Ambition comes standard with 16-inch alloy wheels, with an additional 16-inch wheel design also available.

Audi also offers the option of elegant 17-inch cast aluminium flow-formed wheels. These can be partly polished or may have coloured decorative elements, if desired. All Australian-delivered A1 models carry a space-saver spare tyre.

## **Equipment and trim**

The A1 is being launched with extremely competitive prices. Pricing starts at just \$29,900 for the 1.4 TFSI Attraction (6-speed manual), and \$32,650 for the 1.4 TFSI Ambition (6-speed manual).

Audi offers the A1 in two trim lines. Attraction is the richly appointed, high-character version; Ambition the sporty and dynamic variant. Both lines can be combined with the media style package, which offers attractive infotainment and interior design options. Customers can also purchase features such as the navigation package later, keeping the A1 fresh and attractive for years to come. The LED interior lighting package – available as part of a larger package or separately – provides the interior with small but attractive highlights.

The Attraction line comes equipped with a number of upscale features – the three-spoke sport steering wheel, a split folding rear seat, cruise control, concert radio, a radio remote-controlled central locking system, power-adjustable side mirrors, power windows and a height-adjustable driver's seat. Standard safety features include front airbags, thorax/pelvic side airbags and head airbags. Belt force limiters and the integral Audi headrest system.

The Ambition trim line can be identified at a glance thanks to the 16-inch alloy wheels, the fog lights and the highly polished tailpipe of the exhaust system. The driver and passenger sit in sport seats featuring an easy-entry function (also standard on Attraction models) and lumbar supports, and the passenger seat is also height-adjustable. A front-centre armrest is standard. The shift lever knob, the steering wheel and the parking brake handle are covered in leather; the door sill trims and some parts of the interior sparkle in aluminium look. The Ambition line comes standard with the driver information system, which includes the on-board computer with efficiency program.

The connectivity package includes a Bluetooth interface, the speech dialogue system and the Audi music interface. The next step up is the MMI navigation package, which includes the connectivity package with the navigation function already active. A broad array of infotainment modules ranging from the high-performance MMI navigation plus and the Bose surround system are available independent of these packages.

Audi has developed a new lifestyle-oriented concept of colours and materials for the young, urban public of the A1. If so desired, components such as the seat

covers, the air vent housings and the inlays in the doors shine in fresh, expressive colours.

### **Luxurious: features from the luxury class**

Much of the optional equipment that Audi offers for the A1 comes directly from the luxury class. Exterior options include the xenon plus headlights with LED daytime running lights and the LED tail lights.

Audi has devoted a great deal of attention to the aspect of light and visibility. The high-beam assistant detects other vehicles and automatically changes between the high and low beams. The standard light and rain sensor automatically turns on the low beams and the windshield wipers. The optional panoramic sunroof brings light and air into the interior. The convenience key, another innovation in the compact class, can stay in the jacket pocket – the A1 unlocks when the driver pulls the door handle and starts at the push of the start-stop button.

Additional options include an alarm system, heated and folding side mirrors, a ski bag, a front centre armrest, storage and luggage compartment package and two different parking aid systems. There is also automatic air conditioning, heated front seats, an automatic anti-dazzle rearview mirror and a leather multifunction sport steering wheel, for which optional shift paddles are available in models equipped with the S tronic.

Available through quattro GmbH, the Audi exclusive program offers additional suggestions for customising the exterior and interior of the A1, such as custom leather colours for the steering wheel, the shift lever, the lower centre console and the door armrests.

### **Audi A1 Manufacturers List Price:**

(MLP excludes dealer delivery and government statutory charges)

Audi A1 1.4 TFSI Attraction 6-speed manual: \$29,900

Audi A1 1.4 TFSI Attraction 7-speed S tronic: \$ 32,250

Audi A1 1.4 TFSI Ambition 6-speed manual: \$32,650

Audi A1 1.4 TFSI Ambition 7-speed S tronic: \$35,000

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