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Zetland NSW 2017

June 2012

The compact Audi with five doors – The Audi A1 Sportback

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Summary

The compact Audi with five doors

Audi is extending the A1 family – the Audi A1 Sportback is rolling up to the starting line in 2012. The compact five-door is emotional, individual, youthful, sporty and efficient. Audi offers it with four powerful and efficient engines, the high-end S tronic transmission and numerous multimedia features.

Measuring 3.95 metres in length, the Audi A1 Sportback is the compact A1 Sportback for a young, urban public. Its design identifies it as a member of the large Audi family. The front is dominated by the single-frame grille with the beveled upper corners. If the headlights are equipped with the optional Xenon plus lights, LEDs are used for the daytime running lights. The sculpted tail lights are also equipped with light-emitting diodes in this case.

The engine hood and the rear hatch wrap around the body, the shoulder line encircles the entire car and the elegantly flowing roof with its integrated spoiler transitions to a steeply sloped C-pillar. A contrasting roof line is optionally available in one of three colours.

High- and ultra high-strength steels comprise roughly two-thirds of the A1 Sportback's body. With its strict adherence to lightweight construction, the body lays the groundwork for the low gross weight – equipped with the 1.2 TFSI engine, the five-door model tips the scales at just 1,065 kilograms. The body's rigidity, high level of safety and acoustic comfort provide for the composed, sportily precise feeling of the A1 Sportback.

Interior, equipment and infotainment

The interior of the A1 Sportback is spacious, bright and airy. With its stepped front, the instrument panel resembles an airplane wing; the round air vents bear hints of jet engines. The center console is inclined slightly toward the driver; the console on the center tunnel has similarities with the rear of a sailing yacht.

The roof of the A1 Sportback extends farther back than in the three-door model, providing 11 millimetres more rear seat headroom. It comes standard with five seats, although the optional sunroof requires deletion of the fifth seat.

The clean, clear controls and excellent workmanship are classic Audi strengths. Many carefully designed details document the premium character of the A1 Sportback, while fresh colours emphasize its youthfulness. Whether coloured air vent sleeves or fine leather upholstery, customers have countless possibilities for customizing the car to reflect their individual lifestyle.

The range of infotainment and multimedia systems, topped by MMI navigation plus, sets standards in this segment. The high-end system features a hard disk, the MMI operating principle, a DVD drive and intelligent voice control. The monitor, which folds out from the instrument panel, displays three-dimensional graphics in high resolution. The 465 watt Bose surround sound system is just one example of the high-end complementary modules available from Audi.

Drivetrain

The Audi A1 Sportback is available with a choice of four four-cylinder engines: one TDI and three TFSI units. Their performance range extends from 63 kW to 136 kW. All of the engines follow the downsizing principle – they substitute turbocharging for displacement and draw their fuel through direct injection units. All except the 1.6 TDI with S tronic and the top-of-the-line petrol engine are equipped with a start-stop system.

Regardless of the engine, the A1 Sportback is impressively efficient. For example, the 1.6 TDI paired with a manual transmission consumes on average just 3.8 litres of diesel fuel per 100 km, corresponding to 99 grams CO₂ per km. When equipped with the S tronic, these figures are 4.2 litres and 110 g per km, respectively. A new, highly sophisticated temperature management system in the 1.2 TFSI contributes to the low fuel consumption of 5.1 litres per 100 km.

The transmission of power to the wheels underscores the leading role that the A1 Sportback occupies in its segment. The manual five-speed

transmission offers the perfect combination of sportiness and efficiency. The seven-speed S tronic is available for the 1.4 TFSI with 90 kW and the 1.6 TDI with 66 kW; it comes standard with the top TFSI model with 136 kW. The dual-clutch transmission shifts smoothly, extremely quickly and with no perceptible interruption to the flow of power. The driver can let the S tronic shift automatically or control it manually.

Chassis

The dynamic chassis rounds out the agile character of the A1 Sportback. The front suspension is a McPherson construction; a torsion beam axle is used in the back. The weight distribution harmonizes perfectly with the front-wheel drive system. The electrohydraulic steering system features a very direct steering ratio of 14.8:1. The setup with the Ambition line is sportily taut; the sport suspension provides for even more dynamic handling.

Depending on the trim line, engine and option chosen by the customer, the wheels measure between 15, 16 and 17 inches in diameter. 18-inch wheels are available from quattro GmbH. The front brake discs are internally ventilated. The standard ESP stabilization program with electronic limited slip differential makes the handling even more precise while also enhancing driving safety. It minimizes understeer at the limit by braking the inside front wheel slightly, which also improves traction.

Pricing

Manufacturer List Pricing (MLP) - excludes dealer delivery and statutory charges

A1 Sportback 1.2 TFSI manual Attraction	63kW	\$26,500
A1 Sportback 1.4 TFSI manual Attraction	90kW	\$29,900
A1 Sportback 1.6 TDI manual Attraction	66kW	\$29,900
A1 Sportback 1.6 TDI S tronic Attraction	66kW	\$32,250
A1 Sportback 1.4 TFSI S tronic Attraction	90kW	\$32,250
A1 Sportback 1.4 TFSI manual Ambition	90kW	\$33,450
A1 Sportback 1.4 TFSI S tronic Ambition	90kW	\$35,800
A1 Sportback 1.4 TFSI S tronic Sport	136kW	\$42,500

At a glance

The Audi A1 Sportback

Body and design

- Lightweight, high-strength body with superior rigidity and safety
- Distinctive, progressive design, elegant roof arch line, optional contrasting roof line, encompassing shoulder line, large wheel wells
- Distinctive headlights, optional Xenon plus with LED daytime running lights, three-dimensionally styled LED tail lights

Interior and equipment

- Fresh materials and colours, intuitive ergonomics, excellent workmanship
- Elegant, modern interior design, generous amounts of space, optional three-person rear seat
- Two trim lines and numerous packages, many possibilities for customization, many high-tech options available

Infotainment

- Modern infotainment technologies available, fold-out display
- Bose surround system with 465 watts and 14 speakers
- MMI navigation plus with hard drive, DVD drive and 3D graphics

Drivetrain

- Four powerful and efficient TDI and TFSI engines, all with turbocharging and direct fuel injection, power output from 63 kW to 136 kW
- Start-stop system with most engines
- 1.6 TDI with 66 kW and manual transmission emits 99 grams CO₂/km
- Seven-speed S tronic optionally available for three engines; standard in top model

Chassis

- Well balanced axle load distribution and low total weight
- Sporty chassis with wide track and direct steering ratio
- ESP stabilization system with electronic limited slip differential at front to bolster the agile handling, powerful wheel brakes

Full version

The A1 Sportback – the young Audi for every day

Sporty, efficient and youthful, emotional and individual. A new member of the A1 family is scheduled to launch in 2012 – the Audi A1 Sportback. The five-door compact model demonstrates Audi's engineering expertise in all areas: from engines and powertrain to the chassis and multimedia technology.

Exterior design

The Audi A1 Sportback has a powerful road stance. The roof arch, the encompassing shoulder line and the sharply sloped C-pillars give it its characteristic silhouette, into which the rear doors are harmoniously integrated.

The five-door model is 3,954 millimetres long and 1,746 millimetres wide, but only 1,422 millimetres high. Its wheelbase measures 2,469 millimetres; the overhangs are correspondingly short. The Audi A1 Sportback is six millimetres taller and six millimetres wider than the three-door A1. Length and wheelbase are identical. The B-pillars are shifted forward by roughly 23 centimetres, and the roof, which is more than 80 millimetres longer, offers more rear seat headroom.

The front of the vehicle alone clearly identifies the A1 Sportback as a member of the large Audi family. The upper corners of the single-frame radiator grille are beveled, and the crossbars appear to float. The large air inlets feature distinctive edges and horizontal bars; the fog lights (standard with Ambition trim line and above) are located in their outer corners.

The headlights underscore the determined expression of the A1 Sportback. Their upper edges are truncated by the engine hood, and their lower edges form a wave. As with every Audi, the daytime running lights are standard.

With the optional Xenon plus headlights, the daytime running lights are implemented using two 10-watt light-emitting diodes and a light guide.

They appear as a homogenous strip that traces the arched “wing.” The Xenon plus lights are above and the turn signals below the daytime running lights.

The sporty, flowing contour of the roof characterizes the side view of the A1 Sportback. It flows into a sharply sloped C-pillar. Compared with the three-door A1, the contour is very slightly higher and somewhat longer. Upon request, Audi will paint the entire roof area – the roof arch, the roof itself and the roof spoiler – in one of three colours that contrast with the body colour. These are: Brilliant Black; Daytona Grey pearl effect; and Ice Silver metallic.

Edges and lines: the side view

The organization of the sheet metal surfaces stretches the A1 Sportback visually, and the third side window clearly identifies it as a member of the sporty, functional Sportback family from Audi. The line, which begins with the upper edge of the engine hood, extends below the side windows to the rear end. The wrap-around engine hood rests on the front fenders, where another typical Audi design element begins: The tornado line runs like a ligament over the doors and the rear side panel, extending tightly over the wheel wells.

Other elements of the Audi design language are the tautly curved surfaces and the sharply rising dynamic line above the side sills. The sheet metal-to-greenhouse ratio is two-thirds to one-third. The wheel wells are athletically defined; the exterior mirrors are mounted on the doors; and the door handles are distinctly bow-shaped.

At the rear, the wrap-around hatch emphasizes the width of the A1 Sportback – a design idea borrowed from Audi’s Q model series. The rear hatch is starkly sculptured, forming a spoiler lip above the license plate. A black diffuser in the skirt forms the bottom of the rear end. Depending on the engine, the exhaust system ends in one or two tailpipes on the left side with elegant trims.

The undivided tail lights are located below the spoiler lip. They have a wedge shape similar to that of the headlights and serve as three-dimensional design elements. Even with the base model, the light pattern of the tail

lights is wide and homogenous. In the xenon plus version – or as a separate option – each of the tail lights includes 54 LEDs, which all together consume only 3.5 watts of power. These are SuperRed LEDs, which put out an intense, deep red colour. They generate a three-dimensional light sculpture in the form of two flowing arches.

Two chrome trims lend 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. The tail lights cannot be seen when the hatch is open, so the Audi A1 Sportback also has small LED lights on the rear side of the C-pillars.

Audi offers the compact five-door in 13 exterior colours. The solid finishes are Amalfi White, Brilliant Black and Cumulus Blue; the metallic colours are Ice Silver, Glacier White, Samoa Orange, Scuba Blue, Shiraz Red, Sphere Blue and Teak Brown. The pearl effect finishes Misano Red and Phantom Black round out the lineup. Daytona Grey, pearl effect is available with the S line sport package. The Audi A1 Sportback can be further customized using the range of custom colours available from quattro GmbH.

Individual: packages and kits

Besides the finishes, Audi offers a number of other exterior options. The privacy glass option features tinted rear windows. With the Audi exclusive 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. The exterior mirrors are also optionally available in black or the colour of the roof.

quattro GmbH offers the S line exterior package, which is exclusively available on the 1.4 TFSI (136 kW) Sport. The body kit that comes as standard with the top models features special solutions for the bumpers, the single-frame grille, the front spoiler lip, the air inlets, the diffuser insert, the side sill trims and the tailpipes. The front fenders and the door sills sport S line badges. Fog lights are included starting with the Ambition line, and a distinctive roof spoiler rounds out the package.

For the exterior styling Audi offers the competition kits which are available

in a number of different versions. The sporty competition kits sharpen the appearance and aerodynamics and include features such as a large roof spoiler and body decals.

Body

The body of the Audi A1 Sportback combines a number of strong characteristics to establish the foundation for the high build quality, the precise, sporty handling, a quiet cabin and safety.

High-strength and ultra-high-strength steels comprise roughly two-thirds of the superstructure of the A1 Sportback. Topping the materials pyramid 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 extremely high tensile strength.

Hot-shaped steels comprise roughly 11 percent of the body and are a major reason for its low weight of 220 kilograms. They are used in the area of the passenger cell, in the rear sections of the longitudinal members, in the roof arch and in the A-pillars and B-pillars – in all places where ultra-high strength combined with low weight is particularly important.

The joining method used at the Audi plant in Brussels also contributes to the body's rigidity. Structural adhesive is used on the car, with optical systems monitoring its application in many areas. The adhesive provides for bonds that are both strong and tight. No additional sealant is needed in many cases – another weight advantage.

The body's rigidity also plays an important role in the acoustics of the A1 Sportback. The 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 for supreme quiet in the cabin.

The A1 Sportback is at the head of its class when it comes to passive safety. In the event of offset frontal collision, the body distributes the energy

imparted in such a way as to keep loads on the occupants to a low level. The A- and 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 detailed information to the airbag controller in any type of crash.

The Audi A1 Sportback comes standard with a complete array of retention systems. These include two front airbags, thorax-pelvis side airbags in the backrests of the front seats and curtain head airbags. Belt tensioners, belt force limiters and the integral Audi headrest system, which mitigates the consequences of a rear-impact collision, complete the package. ISOFIX child seat anchor points in the rear are standard, for when the standard is introduced in Australia in 2013. The instrument cluster includes a status indicator for the rear safety belts.

The compact five-door model from Audi far exceeds the statutory requirements for pedestrian protection. The front bumper, the crossbeam behind it and the engine hood satisfy all relevant criteria. The engine hood is secured to the body by two releases. This solution allows a rigid construction with a low weight.

Sophisticated: the aerodynamics

The Audi A1 Sportback has a drag coefficient of 0.32, placing it far to the front of its class. Its frontal area, the second key factor regarding aerodynamic drag, is 2.04 m². The sophisticated aerodynamics are the result of extensive fine-tuning in the Wind Tunnel Center in Ingolstadt. From the first model, 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.

Many body details, from the wheels and the subtle spoiler lips on the tail lights to the roof spoiler, document Audi's hard work in the wind tunnel.

The underbody flow also plays an important role. A plastic liner covers most of the A1 Sportback's underbody, protecting it against salt and stone chipping. Spoilers in front of the wheels and at the spare wheel well direct

the flow of air. The aerodynamic underbody measures lower the coefficient of drag by roughly ten percent. The singleframe grille and the surrounding area are sealed so that the inflowing air reaches the radiator with virtually no losses instead of becoming turbulent in the engine compartment.

The Audi A1 Sportback produces only slight wind noise. The seals, the windows and many body details all play a role in its aero acoustic concept. The grooves and deflector edges of the exterior mirrors reduce fouling of the side windows and the mirror glass when the five-door car is traveling on wet roads.

Interior

The interior of the Audi A1 Sportback is spacious, sporty and airy. The curved instrument panel, whose front is stepped horizontally, resembles an airplane wing. The four round, protruding air vents are reminiscent of jet turbines and can be adjusted using a ball mechanism. The console on the centre tunnel is reminiscent of the rear of a sailing yacht.

The layout of the controls is ergonomically perfect – just like always with Audi. The centre console is inclined slightly toward the driver. Located on its lower end are the switches for the secondary functions and the unit for the climate control system. Manual air conditioning is standard; an automatic air conditioning system that considers humidity and the position of the sun is available as an option or as part of the Technik package. Its dials – finely ridged rings that move very precisely with exact click sounds – are a highlight in the cabin of the A1 Sportback.

Located in the middle of the centre console are the controls for the radio or the optional MMI navigation plus. The retractable 6.5-inch display comes standard in combination with the concert radio and is unrivaled in this class. Retracted into the instrument panel when not in use, it slides smoothly upward by mechanical action when tapped into a position where it can be read quickly and safely.

The A1 Sportback comes standard with a multifunction three-spoke sports steering wheel which can be optionally equipped with shift paddles for controlling the seven-speed S tronic. The instrument cluster with its large dials – black faces, red needles and white digits – is clearly laid out. In the

dark the instruments are lit in white, the buttons red. Additionally, the 3.5-inch TFT monochrome display of the driver information system (DIS), located directly in the driver's field of vision, provides useful information about temperature, fuel consumption, the Multi Media Interface (MMI) and devices connected via Bluetooth. Thanks to a modern tab concept and the buttons, rocker and roller switches on the leather multifunction steering wheel, the system is intuitive and easy to use.

Another exclusive option in the small compact segment is the LED interior lighting package. The efficient white light-emitting diodes are used for the ambient lighting in the doors and the roof module, the cabin and reading lights and to illuminate the footwells, the entry area and the vanity mirrors. It comes standard with the 1.4 TFSI (136 kW) Sport.

If equipped with the Bose surround sound system, the frames of the bass/mid-range speakers in the front doors are indirectly lit with white light by means of light guides.

In A1 Sportback models equipped with a manual transmission, the on-board computer with efficiency program is integrated into the DIS. The computer gives the driver tips for fuel-efficient shifting. A gear-change indicator shows when a gear shift is recommended. Another function that is also applicable for S tronic variants provides information on which on-board electrical consumers, such as the air conditioning, are active and how much fuel they consume.

Excellent hold: the seats

The front seats in the A1 Sportback provide excellent hold, guidance and support to persons of all sizes. A height-adjustable driver's seat is standard. The Ambition trim line includes sport seats with lumbar support, and the passenger seat is also height-adjustable. Heated front seats are available as an option for all versions of the A1 Sportback.

The rear seats are comfortably contoured and offer passengers ample foot, knee and elbow room. There is roughly 11 millimetres more headroom than in the three-door Audi A1. The L-shaped head restraints can be lowered far enough so as not to impair the view in the rearview mirror. The Audi A1

Sportback rolls off the assembly line as a five-seater. If fitted with a sunroof, the fifth seat must be deleted.

There is ample storage at every seat for small everyday items. The console of the centre tunnel offers two cup holders, a tray and a 12-volt outlet. There are pockets in all four doors.

Audi offers an angle-adjustable centre armrest including a cell phone compartment as an option. The optional storage package includes a locking glove box, a fold-down compartment under the driver's seat, storage pockets on the backs of the front seats, a net in the front passenger footwell plus three cup holders and a tray for the rear seats.

Uncompromising: the quality

Evidence of the premium character of the A1 Sportback can be seen in every last detail in the interior – in the selection of the materials, in their processing and in the tight, even gaps. Together with the characteristic Audi design, this perfection lends the interior of the five-door compact car the mature, high-quality feeling of a larger model.

The surface of the instrument panel is softly backed with foam and finely textured. All buttons and controls are seated without play and move easily. The Ambition trim line features numerous control elements that shine with an aluminium-look finish, including the dials for the air conditioning system, the door pull handles and the light dials. The steering wheel, the parking brake handle and the gear shift lever are covered in leather and refined with subtle inserts. The door sill trims feature aluminium inlays.

Everything about colours and trim is novel, youthful and modern in the Audi A1 Sportback. There are numerous differences in the materials used in the Attraction and Ambition lines. Attraction features black or titanium grey cloth upholstery, with the centre console, armrests, door pockets and speaker grilles in the same colour. With the Ambition line, the coverings are either all black or two-tone, with titanium grey, garnet red (new for the A1 Sportback) and wasabi green contrasting with black.

Audi offers Milano leather as an option with Ambition and as part of the media style package. The colours vary here too according to the trim line.

Audi also offers special fabrics and interior elements in mono pure on the yacht stern and the door armrest as part of the style package. These are coordinated with the colour of the fabrics.

A large choice of colours is available for the trims of the air vents. They come standard in 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 colour of the trim, Audi also offers the air vent trims in high-gloss white, titanium grey, garnet red or wasabi green.

Attractive colours are also available for the door armrests, the door pockets, the speaker grilles, the “yacht stern” on the centre tunnel, the centre console, the air vent trims, the door pull handles and the interior mirror. Another option is the black headliner (standard with the 1.4 TFSI with 136 kW).

Audi offers the S line sport package exclusively as an option for the A1 Sportback 1.4 TFSI (136kW) Sport. Here the interior is entirely in black, with grey stitching and piping providing accents. The sport seats are covered in cloth / leather upholstery, with slight updates to the leather steering wheel and the shift lever knob.

The Audi exclusive line makes the interior even more elegant. It includes Audi exclusive Fine Nappa leather for the sport seats. Grey and alabaster white elements contrast with the dominant black. But for that special touch, quattro GmbH offers fully customisable interior and control elements in coloured leather or suede as part of the Audi exclusive range.

Spacious: the luggage compartment

The luggage compartment of the Audi A1 Sportback has a capacity of 270 litres. The walls are plain, and the step to the loading lip is low. The luggage compartment hatch unlocks electronically, including via the remote key fob. It swings up high and falls securely into the latch. The split rear seat backs can be folded down quickly and easily in just one step. The L-shaped headrests can remain in place. When loaded to the roof, cargo volume in this configuration increases to 920 litres.

The details illustrate how much attention Audi invested in the luggage compartment. For example, the cover plate of the loading floor is very light. Practical solutions, such as the two small latches that secure the plate, were also taken into consideration

A multi-purpose retaining hook is located on the right wall of the luggage compartment, and four tie-down rings are standard. Audi also offers an optional luggage compartment package with storage compartments under the floor, a luggage net, a power outlet, a second light and a strap retainer. The range is also available with a ski and snowboard bag for winter sports enthusiasts.

Infotainment

Audi offers a choice of luxury-class infotainment and multimedia systems for the A1 Sportback. As is typical for Audi, the components are modular to allow for a wide range of possible combinations.

The five-door compact model comes standard with the concert radio. It features a CD player that can also read mp3 format and GALA speed-dependent volume control. At its heart is a high-performance processor, and the operating logic follows the MMI principle from the large Audi model lines.

The 6.5-inch fold-out monitor is standard at this level. A triple tuner, a CD player, an SD card reader, an AUX-IN connection and eight speakers round out the features.

High-end media centre: MMI navigation plus

The top-of-the-line solution in the portfolio is MMI navigation plus, a high-end media centre that sets new standards in the small compact segment. It is made up of four primary components – the main unit with hard drive, the radio unit, the colour display and the MMI control terminal. A large rotary pushbutton is at the centre of the system. It can be rocked like a joystick, which makes many functions even more convenient. Arranged around the pushbutton are the volume control, seven soft keys and eight hard keys. The latter provide access to the Vehicle, Sound, Radio, Media, Menu, Telephone, Navigation and Info functions.

The MMI navigation plus can store 20 GB of music. It includes two SDHC card readers and uses a Bluetooth interface and the Audi music interface to connect mobile phones and mobile players. It has a drive for audio and video DVDs and a voice control system that understands 12 languages.

Thanks to its high resolution, the fold-out 6.5-inch monitor delivers outstandingly sharp 3D images.

The A1 Sportback is available with a choice of the 180W Audi sound system with ten speakers or the Bose surround system. A ten-channel, 465W amplifier sends the sound to 14 speakers, including a subwoofer. The digital amplifier can play back stereo signals in 5.1 surround sound and uses a microphone to analyze intrusive noises and adjusts music playback accordingly. The frames of the front bass/midrange speakers are lit with white light using LEDs and light guides. At night they seem to float.

Both the MMI navigation plus and the concert radio come with Bluetooth connectivity for conveniently pairing a mobile phone and Audi streaming and can be ordered with six-disc CD changer as well.

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

Drivetrain

The Audi A1 Sportback is available with a choice of four engines: a TDI and three TFSI units. They cover a performance range from 63 kW to 136 kW. All of these units combine direct injection and turbocharging. This downsizing concept is what gives them their sporty performance with minimal fuel consumption.

With the exception of the top TFSI and the 1.6 TDI with S tronic, the engines in the A1 Sportback use technologies from the Audi modular efficiency platform. The start-stop system shuts off the engine when the car is stopped and starts it again when driving off – quietly, comfortably and quickly.

Vigorous power: the TDI engine

The TDI engine produces 66 kW and displaces 1,598 cc (bore x stroke 79.5 x 80.5 millimetres). It impresses with the systematic minimization 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 carbon-coated bolts of the cast-aluminium pistons.

The piezo injectors of the common rail system can perform six separate injection operations per work cycle, which benefits combustion and exhaust quality as well as engine smoothness. A tangential channel in the intake manifold imparts a targeted swirl to the inflowing air, and the spiral channel fills the combustion chambers. An adjustable swirler flap metres the intake volume as a function of load and engine speed. A turbocharger with adjustable turbine geometry and an unthrottled intake and charge air system round out the overall concept.

The 1.6 TDI produces 66 kW and generates 230 Nm of torque between 1,500 and 2,500 rpm. With the five-speed manual transmission, the sprint from 0 to 100 km/h takes 11.6 seconds. Top speed is 182 km/h. Fuel consumption is just 3.8 l/100 km, corresponding to CO₂ emissions of 99 grams per kilometre. Audi also offers the seven-speed S tronic. Performance is identical with slightly different fuel consumption values.

Technical dream team: the TFSI engines

The Audi abbreviation TFSI represents the combination of direct injection and turbocharging, a technology that Audi was the first carmaker in the world to introduce. The combination of the two technologies results in high power and torque as well as low fuel consumption.

The smallest of the three petrol engines is the 1.2 TFSI. It exemplifies the philosophy of downsizing and has been rigorously designed for low weight, weighing just 89.5 kilograms without add-on parts. The entry-level TFSI has just two valves per cylinder and displaces 1,197 cc (bore x stroke 71.0 x 75.6 millimetres). The piston rings with their low pre-tension and the compact main and connecting rod bearings of the crank shaft are optimized for low friction, and the regulated oil pump requires little energy itself.

The aluminium crankcase has its own coolant circuit separate from the cylinder head. A regulated water pump ensures that the water in the block is not circulated immediately after the engine is started, enabling the engine to come up to temperature more quickly. The common rail unit injects the fuel at up to 150 bar pressure into the combustion chambers. The turbocharger has an electric actuator that actuates the wastegate flap particularly quickly and precisely. Boost pressure develops spontaneously and fuel consumption under partial load decreases.

The 1.2 TFSI generates 63 kW and produces its peak torque of 160 Nm between 1,500 and 3,500 rpm. Coupled with a five-speed manual transmission, it accelerates the A1 Sportback from 0 to 100 km/h in 11.9 seconds on its way to a top speed of 180 km/h. In the EU cycle, it consumes 5.1 litres of fuel per 100 km, which corresponds to only 118 grams of CO₂/km.

The 1.4 TFSI displacing 1,390 cc (bore x stroke 76.5 x 75.6 millimetres) is available in two versions. With the 90 kW version, the four-cylinder unit is boosted by a turbocharger with a water-cooled intercooler. Peak torque of 200 Nm is available between 1,500 and 4,000 rpm. This power accelerates the Audi A1 Sportback to 100 km/h in 9.0 seconds en route to a top speed of 203 km/h. Its average fuel consumption is just 5.4 litres per 100 km; with the optional seven-speed S tronic, this improves to 5.3 litres per 100 km.

The most powerful engine in the model series is also a 1.4 TFSI. The four-cylinder unit, which is only available with S tronic, produces 136 kW and 250 Nm of torque. The sprint from zero to 100 km/h is a matter of 7.0 seconds, and the top speed is 227 km/h. Average fuel consumption is just 5.9 litres per 100 km.

The secret of all this power from such small displacement is the dual-charging system. From idle, a mechanical, engine-driven supercharger provides more than 1.0 bar of relative boost pressure. Equipped with an internal transmission, it is located upstream of the exhaust turbocharger.

In most situations, the supercharger disengages at 2,400 rpm, at which point the turbocharger – which began turning at 1,500 rpm – takes over all

of the work. Because it is not asked to provide much power at low revs, it is large and designed for high efficiency.

Tailored: the transmissions

Audi pairs each engine with the appropriate transmission. The manual five- or six-speed transmission that is standard in all models with engines up to 90 kW is characterized by its low weight, high efficiency and precise operation. Its wide spread – the ratio between the longest and shortest gear ratio – ensures that the A1 Sportback accelerates strongly in the lower gears while rolling along at low revs and consuming little fuel in the higher gears.

Sporty performance: seven-speed S tronic

The seven-speed S tronic is available as an option for the 1.6 TDI with 66 kW and the 1.4 TFSI with 90 kW; it comes standard with the top TFSI model. The high-tech transmission underscores the Audi A1 Sportback's technological leadership in its segment, combining the convenience of a classic automatic with the dynamics and efficiency of a manual.

The driver can operate the seven-speed S tronic via the short selector lever or with the optional paddles on the steering wheel. There are also two automatic operating modes available. D mode is designed for low fuel consumption and long ratios. In S mode, the driving style is sporty and the revs are higher. A hill hold assist function is standard. It can be ordered separately for A1 Sportback models equipped with a manual transmission. The seven-speed S tronic consists of two sub-units, which are alternately actuated by two multi-plate clutches. 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 inside its larger sibling, and which acts on the gear wheels for the even-numbered gears 2, 4 and 6, as well as reverse.

Both transmission structures are continuously active, but only one of them 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 section. Shifts are performed by switching the clutches. This takes just a few hundredths of a second and occurs with no perceptible interruption to the flow of power – smoothly, dynamically and comfortably.

Roughly 37 centimetres long, the seven-speed S tronic is very compact and weighs only around 70 kilograms. Its two clutches run dry, without an oil supply, further enhancing the high efficiency. Oil is required for the geared section of the transmission; the electric oil pump responsible for this is demand-regulated. The transmission ratio in the lower gears is sporty; the top gear is long for reduced engine speed.

Chassis

The chassis expresses the character of the Audi A1 Sportback perfectly. The five-door model is nimble and agile in the city, steady and precise on interurban roads and comfortable on the highway.

The axle load distribution harmonizes perfectly with the front-wheel drive system. Depending on the engine, between 61 and 63 percent of the weight is on the front axle. Only 808 millimetres long, the front overhang is unusually short. The battery also contributes to the favorable weight distribution. With most engines, it is located beneath the luggage compartment. With a base weight (minus driver) of 1,065 kilograms, the A1 Sportback is very light in weight.

The front suspension of the five-door compact model is a classic McPherson construction with lower wishbones. The subframe to which they are fastened is made of high-strength steel. A torsion beam axle with separate springs and dampers is used at the rear. Track widths are 1,477 millimetres at the front axle and 1,471 millimetres at the rear axle.

All chassis components have been tuned for sportily balanced handling. Up front, stiff front control arm bearings provide for excellent lateral support. The rear control arm bearings, on the other hand, have non-linear characteristics for better comfort. Newly designed guide bearings make a major contribution to elastokinematics that combine dynamics and comfort.

Twin-tube gas shock absorbers with supplemental springs are used at all four wheels. The Attraction trim line features the comfortable dynamic suspension, whereas the Ambition and the 1.4 TFSI Sport come with sport suspension as standard. The dynamic S line sport suspension is also available in the S line sport package on the 1.4 TFSI Sport.

One of the technical highlights of the A1 Sportback is the 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. Feedback is precise and sensitive, the response spontaneous. With a ratio of 14.8:1, the steering is unusually direct and the turning circle measures just 10.6 metres. These two factors imbue the A1 Sportback with maximum agility.

Audi equips all versions of the A1 Sportback with the ESP stabilization program with electronic limited slip differential. On detecting that the front inside wheel in a turn is relieved too much, the system's control unit arranges for a small and precise brake intervention there. This braking is applied smoothly and before increased slip occurs. The excess torque flows to the outside wheel, which can apply more power to the road. The difference between the drive forces generates a targeted yaw moment that helps the driver by turning the car very slightly into the corner.

Thanks to the slight braking, the A1 Sportback remains neutral longer, and understeer is largely neutralized when turning into corners and when accelerating. The ESP intervenes later and more gently, if it is even necessary at all. Handling becomes more precise, agile and stable overall.

Large and powerful: the brakes

The Audi A1 Sportback features large disc brakes; the front discs are internally ventilated. With the 1.2 TFSI and 1.6 TDI with 66 kW, they are 256 mm in diameter and 288 millimetres with all other engines. All models sport solid, 230 millimetre discs gripped by aluminium floating calipers in the rear. The adaptive brake lights blink during emergency braking to warn drivers of following vehicles. The hazard warning lights are then activated when the car is stationary.

Luxury-class level: the individual options

Much of the optional equipment for the A1 Sportback comes directly from the luxury class. Exterior options include Xenon plus headlights with LED daytime running lights and the LED tail lights. The high-beam assistant detects both oncoming traffic and vehicles ahead and switches

automatically between the low and high beams. It is complemented by the light and rain sensor.

The panoramic sunroof brings light and air into the interior; privacy glass darkens the rear seat. The LED interior lighting package (standard with 1.4 TFSI Sport) accents the interior with tiny highlights. The convenience key, another innovation in the compact class, can stay in the jacket pocket at all times – the A1 Sportback unlocks when the driver pulls the door handle and starts at the push of the start-stop button.

Additional individual options include an alarm system, heated and folding exterior mirrors, cruise control, a ski bag, a front centre armrest, a storage and luggage compartment package and Audi parking system plus with front and rear parking sensors. Audi also offers an automatic air conditioning system, heated front seats, an automatically dimming interior mirror and a leather multifunction steering wheel, for which optional shift paddles are available in models equipped with S tronic.

With its compact dimensions and functionality, the A1 Sportback appeals to an urban, modern, lifestyle-oriented customer base. The A1 Sportback also extends the clientele of the A1 model series to include young couples and families with a small child.

Pricing

Manufacturer List Pricing (MLP) - excludes dealer delivery and statutory charges

A1 Sportback 1.2 TFSI manual Attraction	63kW	\$26,500
A1 Sportback 1.4 TFSI manual Attraction	90kW	\$29,900
A1 Sportback 1.6 TDI manual Attraction	66kW	\$29,900
A1 Sportback 1.6 TDI S tronic Attraction	66kW	\$32,250
A1 Sportback 1.4 TFSI S tronic Attraction	90kW	\$32,250
A1 Sportback 1.4 TFSI manual Ambition	90kW	\$33,450
A1 Sportback 1.4 TFSI S tronic Ambition	90kW	\$35,800
A1 Sportback 1.4 TFSI S tronic Sport	136kW	\$42,500