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The new Audi R8 Spyder: faster – lighter – more dynamic

The equipment and data specified in this document refer to the model range offered in Germany. Subject to change without notice; errors and omissions excepted.

*The fuel consumption and emissions values of all models available on the German market and named in this text are listed on the last page of this document.

Summary

Pure emotion: the new Audi R8 Spyder V10

Spectacular design and breathtaking dynamics, combined with the allure of open-top driving – Audi presents the second generation of the R8 Spyder*. Its 540-hp V10 engine provides breathtaking performance and a sound that will move you.

“The new Audi R8 Spyder is faster, lighter and more dynamic than its predecessor,” says Stephan Winkelmann, CEO of quattro GmbH. “Together with the Coupé, it forms the vanguard of the Audi model lineup and offers the ultimate in open-top driving enjoyment.”

Honed: the design
The new Audi R8 Spyder is much more chiseled and athletic than its predecessor. It has grown by 36 millimeters *(1.4 in)* in width to 1.94 meters *(6.4 ft)*. This added width is underscored by the horizontal lines at the front and rear. The sculpted Singleframe with its eye-catching honeycomb grille appears wider and is positioned lower. It is flanked by large air inlets with vertical bars. Positioned seamlessly above the Singleframe are the wedge-shaped LED headlights, which are optionally available with Audi laser light. This option provides for optimal visibility in the dark and can be identified by the lighted, anodized blue strips dividing the headlights and also by the dynamic turn signals. The narrow LED lights provide a distinctive red light signature at the stately rear of the car. Downforce is provided by a large diffuser bordered on both sides by trapezoidal exhaust tailpipes. The new sideblades emphasize the sporty lines on the flanks. The inlets there feed air to the mid-mounted V10 engine.

Typical Audi: lightweight soft top
The convertible top of the R8 Spyder weighs just 44 kilograms *(97.0 lb)*, thus contributing to the low center of gravity of the open-top, high-performance sports car. Two fins running to the rear stretch the cloth. They and the large cover of the compartment for the convertible top harmonize perfectly with the striking design of the R8 Spyder. An electro-hydraulic drive opens and closes the top in just 20 seconds at speeds up to 50 km/h *(31.1 mph)*. The rear window is sunk into the bulkhead and can be retracted and extended electrically. With all windows up, the air stream strokes the R8 Spyder with a minimum of turbulence.

Aluminum and carbon fiber components: the new Audi Space Frame
The open-top two-seater has an unladen weight of 1,720 kilograms *(3,792.0 lb)*. When weighed without operating fluids as is the norm in motorsport, it tips the scales at just 1,612 kilograms *(3,553.9 lb)*. Its strong backbone is the newly developed multimaterial Audi Space Frame (ASF), made from aluminum and carbon fiber.

The aluminum components make up 79.6 percent of its weight. In a progression from the R8 Coupé*, they create a lattice that Audi's engineers have used to incorporate specific reinforcements especially into the sills, A-posts and windshield frame. Besides the choice of materials, innovative manufacturing methods reduce the weight of individual components by as much as 10 percent. As a result, the highly rigid body weighs just 208 kilograms *(458.6 lb)*, and its torsional rigidity has increased by over 50 percent compared with the previous model. That is the key parameter for a dynamic, solid and premium driving experience.

Strong motorsport DNA: the V10 power unit
The impressive mid-engine with dual injection system sets the tone in the new Audi R8 Spyder V10. The free-breathing, 5.2-liter engine responds spontaneously and revs up quickly. Its sonorous sound – which can be optionally amplified by a sport exhaust system with gloss black tailpipe trims – is goosebump-inducing. 397 kW (540 hp) of power at 7,800 rpm and 540 Nm *(398.3 lb-ft)* of torque at 6,500 rpm deliver impressive road performance: from 0 to 100 km/h *(62.1 mph)* in 3.6 seconds and a top speed of 318 km/h *(197.6 mph)*. The new R8 Spyder thus tops its predecessor by 15 hp, 0.2 seconds in the sprint and 7 km/h *(4.3 mph)* in top speed.

At the same time, a variety of efficiency technologies reduce fuel consumption by ten percent versus the previous model. These include the new freewheeling mode, in which the R8 Spyder coasts when the engine is disengaged, and the cylinder on demand (COD) system, which deactivates one cylinder bank entirely at low to intermediate load. When the car comes to a stop, a start-stop system deactivates the V10 engine. Thanks to these technologies, the new R8 Spyder consumes just 11.7 liters per 100 kilometers (*20.1 US mpg*), corresponding to 277 grams CO_2 per kilometer (*445.8 g/mile*).

Stability and dynamics: quattro drive
Working behind the V10 there is a seven-speed S tronic with lighting-fast action, which the driver controls electrically – by wire. The dual-clutch transmission directs forces to a newly designed quattro drive system with an electro-hydraulically actuated multi-plate clutch at the front axle. In contrast to the previous component, the all-wheel drive clutch, which is water-cooled for maximum performance, distributes the drive torque completely variably depending on the driving situation. In extreme cases, as much as 100 percent is directed to one axle. A mechanical locking differential on the rear axle provides for outstanding traction and even more dynamic handling.

The intelligent control system for the quattro drive is incorporated into the Audi drive select system, which offers four modes ranging from overtly dynamic to comfort-oriented. In conjunction with the new, optional R8 performance leather steering wheel, there are three more driving programs: dry, wet and snow. They adapt the handling even more precisely to the respective road conditions.

Focused on the driver: cockpit and controls
No matter how fast the car is moving through the corners, the low R8 sport seats with integrated head restraints hold the driver and passenger securely in position. Optionally available are R8 bucket seats, which are even more strongly contoured for even greater lateral hold.

The standard R8 sport leather steering wheel serves as the control center, with two large satellite buttons in addition to the multifunction buttons for telephone, navigation, media and the voice control system. The driver can use these to start and stop the engine and adjust the settings of the driving dynamics system Audi drive select. The optional R8 performance leather steering wheel includes two additional buttons and a rotary wheel for controlling the performance mode and the exhaust flaps.

The large 12.3-inch, fully digital Audi virtual cockpit presents all information using rich 3D graphics – if desired, in a special performance view. It brings the tachometer into the center and supplies information on the power output and torque of the 5.2 FSI engine, g-forces, lap time and the temperature of the tires, engine and transmission fluid.

The R8 Spyder comes standard with the comprehensive MMI navigation plus including MMI touch. The required information can be found quickly thanks to the free text search, which makes search suggestions after input of just the first few letters. The natural voice control system understands many terms of everyday speech, which makes using the MMI system even more convenient. Standard seatbelt microphones provide for optimal audio quality, even when the top is down. Furthermore, MMI navigation plus includes a WiFi hotspot so that passengers can go online with their smartphone, tablet or other device.

High bandwidth: Infotainment and Audi connect
New onboard the R8 Spyder is the Audi smartphone interface. It displays selected content from the smartphone directly in the Audi virtual cockpit. Examples include apps for telephony, navigation and streaming services. The driver operates them via the multifunction steering wheel, the voice control system and the rotary pushbutton on the center console. Audi phone box can also be supplied. It connects cellular phones to the car's antenna and charges them wirelessly according to the Qi standard. Audi connect gets the R8 Spyder on the Internet via LTE and makes a number of services available, from navigation with Google Earth and Google Street View to travel and traffic information to POI search. The Bang & Olufsen Sound System is another highlight: For the first time, Audi integrates two head restraint loudspeakers into each seat, for an excellent audio experience even when driving with the top down.

Your wish is our command: the personal touch
Over and above the extensive standard equipment, customers have almost unlimited scope to tailor both the interior and exterior as they desire. There are many upholsteries, trim panels and colors from which to choose. The door sill trims can be personalized with logos and emblems. If desired, Audi will visually highlight individual add-on body components such as the new sideblades in high-gloss carbon fiber, for example.

Hand-built: the “Böllinger Höfe” factory

The workmanship of the new R8 Spyder satisfies the most demanding quality requirements. At the “Audi Böllinger Höfe” near Neckarsulm, roughly 500 highly qualified employees build each car with painstaking craftsmanship. Prior to delivery, each high-performance sports car undergoes a stringent procedure that begins with quality control in the factory and includes laps on the factory’s own test track and a final acceptance test drive on public roads. Presales began in July 2016 with a starting price of 179,000 euros. Initial deliveries of the Audi R8 Spyder will begin this fall.

Successful: R8 Spyder benefits from motorsport

What’s good for wins in motorsport is just fine for production. Audi subjects its technologies to the ultimate acid test under live racing conditions before R8 drivers get to experience them on the road. Like the Coupé, the new Spyder shares a foundation with the R8 LMS GT3 racing car. The result is a significant performance increase over the first generation. The success of this philosophy is confirmed by prestigious awards such as the “Golden Steering Wheel” and the “Auto Trophy” bestowed on the Coupé last year.

At a glance

The new Audi R8 Spyder V10

Body, design and convertible top

- Multimaterial Audi Space Frame (ASF) made from aluminum and carbon fiber-reinforced polymer (CFRP), weight of just 208 kilograms *(458.6 lb)* with top rigidity (approx. 50 percent higher than the previous model); dry weight: 1,612 kg *(3,553.9 lb)*; unladen weight: 1,720 kilograms (*3,792.0 lb*)
- aerodynamic concept focuses on high downforce values
- taut body line, classic mid-engine proportions
- electro-hydraulic cloth top, opens or closes in 20 seconds, even while driving up to 50 km/h *(31.1 mph)*.
- separate rear window, optional wind deflector
- LED headlights standard, optional Audi laser light with dynamic turn signals
- Sideblades with numerous customization options, many add-on parts optionally available in carbon fiber

Engine

- free-breathing, mid-mounted V10 engine with 5.2-liter displacement, dry sump lubrication, dual injection – direct and into the induction pipe cylinder on demand technology
- high-revving, spontaneous engine response, characteristic sound
- powerful performance: 397 kW (540 hp), 540 Nm *(398.3 lb-ft)* of torque, 0 to 100 km/h *(62.1 mph)* in 3.6 seconds, top speed 318 km/h *(197.6 mph)*
- NEDC consumption 11.7 liters pro 100 Kilometer *(20.1 US mpg)*, corresponding to 277 grams CO_2 per kilometer *(445.8 g/mi)*

Drivetrain

- lightning-quick seven-speed S tronic with freewheeling function/coasting
- newly developed quattro permanent all-wheel drive for fully variable distribution of drive torque, electrohydraulic multi-plate clutch with electronic control and water cooling, rear axle with mechanical locking differential

Suspension

- double wishbone suspensions at all four wheels, optional Audi magnetic ride damper control
- 18-inch high-performance brake system at all four wheels, optional 19-inch ceramic brake system

- electromechanical steering, alternatively dynamic steering with variable ratio
- 19-inch wheels with mixed tires as standard, alternatively 20-inch wheels
- driving dynamics system Audi drive select with four modes (auto, individual, dynamic, comfort) is standard; optionally available with three additional performance programs (dry, wet, snow) for maximum dynamics tuned for the respective road conditions

Interior
- clear lines, new seats, arc-shaped “monoposto” in cockpit
- new colors and materials, many customization options
- controls are fully focused on the driver; all key functions are on the multifunction steering wheel
- R8 sport leather steering wheel with two satellite buttons for engine start/stop and Audi drive select standard
- optional: performance steering wheel with two additional buttons for the new performance mode and for controlling the exhaust flaps
- freely configurable Audi virtual cockpit with 12.3-inch display standard, including performance view with driving dynamics information

Infotainment and Audi connect
- Modular infotainment platform, second generation (MIB2)
- MMI navigation plus with MMI touch is standard, newly developed operating concept with flat hierarchies, including free text search
- seatbelt microphones for convenient telephony standard, as is the natural voice control system
- optional Audi connect, Audi smartphone interface and Audi phone box with inductive charging
- debut at Audi: Bang & Olufsen Sound System with innovative head restraint loudspeakers

Production
- fabrication in the “Audi Böllinger Höfe” production facility near the Audi Neckarsulm site, 30,000 m^2 *(322,917.3 sq ft)* of floor space, 500 highly qualified employees
- flexible and innovative production, 16 assembly cycles of approx. 30 minutes each, work almost exclusively by hand
- three-stage acceptance procedure prior to delivery (commissioning at the test center, quality acceptance on the factory’s own test track, one-hour test drive on public roads)

Full version

Power all along the line: the Audi R8 Spyder V10

540-hp mid-mounted engine, quattro drive with variable torque distribution, lightweight body of carbon fiber and aluminum, new performance mode – the Audi R8 Spyder* offers the finest in high-tech, and its cloth top provides for first-class open-top driving enjoyment.

“We are bringing all of our motorsport know-how to series production with the new R8 Spyder V10,” says Stephan Winkelmann, CEO of quattro GmbH. “The second generation thus tops the powerful performance of its predecessor.”

Exterior design

The dynamic character of the new Audi R8 Spyder V10* is immediately apparent at first glance. The forward position of the passenger compartment, the highly accentuated wheel arches and the long back define the classic silhouette of a mid-engine sports car.

Athletic: wider than predecessor

The new R8 Spyder is 14 millimeters *(0.6 in)* shorter than the previous model and thus measures exactly 4,426 millimeters *(14.5 ft)* in length. It has grown by 36 millimeters *(1.4 in)* in width to 1,940 millimeters *(6.4 ft)*. The height of 1,244 millimeters *(4.1 ft)* is unchanged from the first-generation R8 Spyder, as is the wheelbase of 2,650 millimeters *(8.7 ft)*.

Striking details: sideblades and diffuser

Horizontal lines characterize the front view, as does the wide and low Singleframe with its honeycomb grille. Sculpted surfaces connect it to the wedge-shaped headlights. The contours above the wheels are a cue to the quattro drive; the sideblades, which have been updated from the previous model, set bold accents.

The aluminum tank cap bears an embossed logo. After opening the cap, the driver can insert the fuel nozzle directly into the tank neck. Just like with a racing car, there is no fuel cap to unscrew.

The concept of emphasized horizontals also gives the rear a wide, athletic look. Trapezoidal exhaust tailpipes, optionally with glossy black tips, flank a diffuser with vertical ribs. The engine compartment vents and the LED rear lights refer visually to one another; the forked contours of the lights create a distinctive red light signature. Each rear light includes 118 individual LEDs that produce an absolutely homogeneous light.

Top visibility in the dark: Audi laser light
37 light-emitting diodes in each of the headlights of the new R8 Spyder produce a bright LED light that can be augmented with the optional Audi laser light. A module with four high-power laser diodes, each of which is just 300 micrometers in diameter, emit a blue laser beam with a wavelength of 450 nanometers. A phosphor converter converts it into white light with a color temperature of 5,500 Kelvin, which is pleasant to the human eye.

The Audi laser light, which is activated at speeds of 60 km/h *(37.3 mph)* and above in extra-urban areas, increases the range of the high beam and thus provides the driver with added visibility and safety. An intelligent camera-based sensor system detects other road users and actively adjusts the light pattern to dim the light intensity specifically for them. The presence of the Audi laser light is indicated by the lighted, anodized blue strips dividing the headlights. It is combined with dynamic turn signals up front, which run from the inside out with a cycle time of 400 milliseconds. This feature is standard at the rear.

As desired: color design
The open-top, high-performance sports car is available in eleven colors, with the new shade Argus brown reserved exclusively for the Spyder. The Audi exclusive program allows customers to mix the paint according to their personal test. The new sideblades are available in a choice of four colors plus a version in high-gloss carbon fiber. Audi also offers the front spoiler, the diffuser, the new sideblades and the frames of the air outlets on the cover of the top compartment and the rear hatch in carbon fiber as an option. The convertible top is available in black, brown or red.

Convertible top

The convertible top of the new Audi R8 Spyder* integrates perfectly into the design line when closed. It stretches low above the body and extends to the rear in two long, slender fins. It's large compartment cover is made of carbon fiber-reinforced polymer (CFRP) and has two cowls, each of which encloses three ventilation slits. They extend to the service flap, where a wide opening joins the cowls. The V10 engine draws air in through these and the inlets in the sideblades. Flaps in the muffler manage the switching tasks and thereby control induction noise.

Typically Audi: lightweight cloth top
The convertible top's substructure is made largely of lightweight materials such as magnesium and aluminum; the outer skin of cloth – typically Audi. The soft top weighs just 44 kilograms *(97.0 lb)*, thus keeping the weight and center of gravity of the open-top, high-performance sports car low. An electro-hydraulic drive, whose 175-bar pump moves nine actuators, opens and closes the convertible top at the press of a button in just 20 seconds, and this can even be done while driving at speeds up to 50 km/h *(31.1 mph)*.

When opened, the soft top folds like a Z into a flat storage compartment over the engine. The compartment cover moves fluidly on two seven-link hinges. The rear window is located between the passenger module and the convertible top module. Like the soft top, it can be moved electrically via a switch on the center tunnel console. When closed, the window blocks the wind; opened, it allows the rich sound of the V10 engine to flow into the interior. Turbulence at head level has been greatly reduced compared with the previous model. The optional wind deflector made of synthetic textile further increases comfort. It reduces the reverse flow around the head by approximately 90 percent and in the shoulder/neck zone by 80 percent.

Two strong steel sections pretensioned by springs serve as roll-over protection. They together with the top, its tray, the rear window compartment and the multiple-joint hinge for the carbon fiber-reinforced, hydraulically actuated convertible top compartment cover comprise the convertible top module.

Multimaterial Audi Space Frame

According to DIN unladen weight without driver, the new Audi R8 Spyder* tips the scales at just 1,720 kilograms *(3,792.0 lb)*; dry weight is a mere 1,612 kilograms *(3,553.9 lb)*. The key to this outstanding figure is the new multimaterial Audi Space Frame (ASF). It combines aluminum components with components made of structurally integrated carbon fiber-reinforced polymer (CFRP). The ASF in the new Audi R8 Spyder has a total weight of just 208 kilograms *(458.6 lb)*.

Comprising 79.6 percent of the ASF, the aluminum components form a lattice that Audi's engineers have used to incorporate specific reinforcements especially into the sills, A-posts and windshield frame compared with the R8 Coupé*. The front and rear ends of the new Audi R8 Spyder are assembled primarily from cast aluminum nodes and extruded sections. The body's outer skin, for example the front hatch, doors and side elements, is also made primarily of aluminum. The center tunnel, bulkhead, B-pillars and cover of the convertible top compartments are made of CFRP. They form the ultra-strong, nearly torsion-free backbone of the occupant cell. Innovative manufacturing methods lower the weight of individual components by up to ten percent.

Compared to the previous model, the ASF of the new Audi R8 Spyder has become significantly better in all criteria. With nearly 50 percent higher torsional rigidity, it is the foundation for the precise handling, high crash safety and acoustically pleasing vibration behavior. The new multimaterial ASF attains a top figure in the sports car segment for its lightweight index – a measure of the relationship between weight, size and rigidity.

Powerful downforce: the aerodynamics

High cornering speeds and the greatest possible stability are contingent upon optimal downforce. This is provided in the R8 Spyder by a wide diffuser. It takes effect at the rear axle and returns the air to ambient speed without all that much turbulence. This suction effect allows the air to flow even faster and presses the R8 Spyder even more forcibly on to the road. Two venturi spoilers guide the air precisely into the diffuser and nearly double its effectiveness. Longitudinal ribs channel the flow so that it does not reach the center.

In the area of the front axle, front diffusers, air dams and venturi spoilers send the air precisely through the wheel wells. A smooth liner accelerates the flow of air along the underbody. It covers the underbody and the propshaft, leaving cooling only the cooling air openings for the engine, its dry sump lubrication system and the S tronic exposed. The open two-seater has a drag coefficient of 0.36; its low height provides for a relatively small frontal area of 2.01 m^2 *(21.6 sq ft)*.

Engine

From 0 to 100 km/h *(62.1 mph)* in 3.6 seconds, 11.8 seconds for the sprint from 0 to 200 km/h *(124.3 mph)* and a top speed of 318 km/h *(197.6 mph)* sum up the dynamic performance of the new Audi R8 Spyder*. It sprints to 100 km/h *(62.1 mph)* two-tenths of a second faster than its predecessor, reaches the 200 km/h *(124.3 mph)* mark six-tenths of a second sooner and delivers 7 km/h *(4.3 mph)* more top speed. From its 5,204 cm^3 displacement, the free-breathing, high-compression (12.7:1) V10 engine develops 397 kW *(540 hp)* of power and 540 Nm *(398.3 lb-ft)* of torque at 6,500 rpm. That's 15 hp and 10 Newtonmeters *(7.4 lb-ft)* more than the first-generation R8 Spyder. The power-to-weight ratio is just 3.19 kilograms *(7.0 lb)* per hp.

Unmistakable music: the free-breathing V10 engine
The ten-cylinder engine responds lightning fast to the accelerator and spins up effortlessly to 8,700 rpm. At the redline, the pistons are traveling nearly 27 meters *(88.6 ft)* every second. With the ignition sequence 1 - 6 - 5 - 10 - 2 - 7- 3 - 8 - 4 - 9 and alternating firing intervals of 54 and 90 degrees, it plays a very unique, unmistakable music: a hissing and roaring that becomes increasingly voluminous and exhilarating as the revs rise. Sound flaps in the exhaust system are standard; the optional sport exhaust system with gloss black tailpipe trims gives the sound an added edge.

New efficiency technologies: lower consumption
Compared with the previous model, NEDC fuel consumption has declined by ten percent thanks to potent efficiency technologies. The cylinder on demand (COD) system deactivates one cylinder bank at low to intermediate load, and the dual injection system injects fuel directly in to the combustion chambers (FSI) and into the induction pipe (MPI) as needed.

When the car comes to a stop, a start-stop system deactivates the engine. The new Audi R8 Spyder thus consumes on average 11.7 liters of fuel per 100 kilometers (*20.1 US mpg*) and emits 277 grams CO_2 per kilometer (*445.8 g/mile*).

Like in a racing car: dry sump lubrication
The oil system is designed as a dry sump system. In contrast to a conventional oil pan bolted on below the engine, the separate oil tank – an upright aluminum vessel behind the engine – allows the V10 engine to be installed in a lower position, thus enabling the car's very low center of gravity. The system is designed for racing and ensures the flow of oil up to 1.5 g of longitudinal or lateral acceleration.

The system architecture of the dry sump lubrication system is complex. A high-performance pump module combines the coolant pump with a multi-stage oil pump. The motor oil and blow-by gases from the crank chambers, the chain box and the cylinder heads are extracted via the suction stages and pumped through the oil cooler into the oil tank. The discharge stage pumps the lubricant from the tank through the oil filter back into the engine to the various bearing points.

Drivetrain

Breathtaking cornering speeds, highly precise and always stable handling – the new Audi R8 Spyder* is also at the head of the pack when it comes to the drivetrain. It combines three high-tech components: a seven-speed S tronic, a newly developed, fully variable multi-plate clutch and a locking differential.

Freewheeling mode: the S tronic
The ultra compact and lightning-fast seven-speed S tronic is placed behind the V10 engine, and commands are transmitted strictly electrically – by wire. The driver can shift gears manually using the gear selector lever or the shift paddles on the steering wheel. Or the driver can have the S tronic shift automatically in the D or S program. At the push of a button, the launch control system automatically engages the clutch at approximately 4,500 rpm to enable maximum acceleration from a standing start.

If the driver lets off the accelerator at a speed of over 55 km/h *(34.2 mph)*, the transmission opens both clutches and the new R8 Spyder coasts at idle with minimal fuel consumption.

Redesigned: quattro permanent all-wheel drive
The power is transferred via a propshaft from the seven-speed S tronic to a completely redesigned quattro drive. Its heart is an electronically controlled and electro-hydraulically actuated multi-plate clutch that is integrated into the front axle transmission and is connected to the engine cooling circuit for maximum performance.

Unlike the component used previously, the clutch regulates the drive torque variably. The all-wheel drive software continuously computes the ideal distribution of torque to the axles for the given situation as a function of the driving situation, driver input and ambient conditions. Up to 100 percent of the power can flow to the front or rear axle, for instance. During fast cornering, the wheel-selective torque control, an intelligent software function of the electronic stabilization program, uses targeted, minor braking interventions at the inside wheels to make handling even more stable and fluid.

Management of the multi-plate clutch is integrated into the driving dynamics system Audi drive select, which offers the four modes comfort, auto, dynamic and individual. In each of these, the open-top high-performance sports car displays a different character ranging from effortless, relatively comfortable autobahn cruising to an uncompromising style that savors every bend on a mountain pass.

Improved traction: the locking differential
The mechanical rear axle differential further improves traction and handling. It has a locking effect of 25 percent during engine traction operation and 45 percent during engine overrun. It is precisely tuned for the dynamic character of the new R8 Spyder and the actively controlled quattro drive. The mid-mounted engine is positioned very near the vertical axis of the car's center of gravity, so its mass inertia hardly comes into play in fast changes of direction. The new Audi R8 Spyder has an axle load distribution of 42:58 (front/rear) – a very good value thanks to its mid-engine concept.

Chassis

Audi drive select integrates other components besides the quattro drive – the accelerator, steering, the S tronic, control of the exhaust flaps and the optional adaptive damper system Audi magnetic ride. In dynamic mode, these systems support safe, controlled drifts and make the handling even more taut. In auto mode, on the other hand, traction and stability have priority – for high speed and low lap times.

The car's handling becomes even more accomplished and precise with the optional performance leather steering wheel. It adds three more driving programs: dry, wet and snow. These adapt the most important parameters for dynamic driving to the grip conditions of the road surface, affecting not only the quattro drive and the technical components indicated above, but also the electronic stabilization control (ESC) for the best possible lap times.

The electro-mechanical steering delivers differentiated feedback from the road. It offers the specific optimum for sports cars of precision, manageability and composure at high speeds. The optional dynamic steering improves vehicle reactions at all speeds up to the limit for high-performance cornering and fast turn-in. It varies its ratio between 10.0:1 and 17.5:1 as a function of driving speed while simultaneously adjusting steering torque. It countersteers with tiny impulses at the cornering limit to future improve stability. Both steering systems can be freely configured using Audi drive select, from comfortable long-distance cruising to the optimum on the racetrack.

Like a racing car, the new Audi R8 Spyder* has a lightweight aluminum double wishbone suspension. Track width is 1,638 millimeters *(5.4 ft)* at the front axle and 1,599 millimeters *(5.2 ft)* at the rear axle. 19-inch wheels with mixed tires (245/35 front and 295/35 rear) are standard. Audi offers 20-inch wheels with size 245/30 tires at the front and 305/30 tires at the rear as an option.

The brakes slow the open-top high-performance sports car with supreme control. The standard steel discs – internally vented and perforated – have a weight-saving wave design and a diameter of 365 millimeters *(14.4 in)* up front and 356 millimeters *(14.0 in)* in the rear. Stainless steel pins connect them to the aluminum caps, which prevents the transmission of temperature peaks. Eight-piston calipers are used up front and four-piston calipers at the rear. They are painted gloss black, with red as an option.

Audi offers particularly durable and lightweight carbon fiber-ceramic brake discs as an option. These measure 380 millimeters *(15.0 in)* in diameter on the front axle and 356 millimeters *(14.0 in)* on the rear axle. They are highly temperature-resistant and long-lasting, and are a total of 15.2 kilograms *(33.5 lb)* lighter than their steel counterparts. The fixed calipers, with six pistons up front and four in the rear, are painted anthracite gray.

Interior

The interior of the new Audi R8 Spyder* echoes the streamlined styling of the exterior and also visualizes the systematic lightweight construction concept. The defining element is the “monoposto”, the large arc running around the cockpit. The instrument panel appears to float weightlessly, and cylindrical controls for the automatic air conditioner are arranged along its lower edge.

The driver and passenger sit in the new, low-mounted R8 sport seats with integrated head restraints, which are standard. They are power-adjustable and heatable at the push of a button. The lumbar support is pneumatically adjustable, as are the seat and backrest side bolsters. Audi also offers optional R8 bucket seats. These are even more strongly contoured, can be folded down and feature some power adjustments.

Elegant and bold: the materials and colors

Upholstery choices include an Alcantara/leather combination and fine Nappa leather, plus two leather packages and a diamond pattern. The shades rotor gray, black and express red are offered in combination with the black instrument panel.

In combination with the granite gray cockpit, the elegant colors Vermont brown and parchment beige are also available. With the black interior, there is a wide choice of colors available for the contrasting stitching.

The trim areas – the “monoposto,” the center tunnel console and the door inlays – come standard in the anodized paint finish anthracite. Audi also offers these in titanium finish anthracite matt, piano finish black or gloss carbon as options. The air vents come standard in titanium finish anthracite gloss and the housing of the Audi virtual cockpit in black matt. Both are optionally available in gloss carbon. Furthermore, the pedals and footrest are available in stainless steel.

The Audi exclusive program allows dedicated individualists to fulfill virtually any special wishes. For instance, illumination and personalization in the form of logos and emblems are available for the door sill trims. Customers can choose from many different upholsteries, trim panels and colors; the selection is virtually unlimited.

Controls and displays

Driving fast demands your full concentration. In the new R8 Spyder*, the control concept is completely focused on the driver. All important functions can be controlled without drivers having to take their hands off the steering wheel or look away from the road. Besides the multifunction buttons for the telephone, navigation, media and the voice control system, the R8 sport leather steering wheel also includes two large satellite buttons. They are used to start and stop the engine as well as to operate Audi drive select. The optional performance leather steering wheel includes two more buttons and a rotary wheel for the performance mode and for controlling the exhaust flaps.

Like in a racing car: the Audi virtual cockpit

The standard Audi virtual cockpit, the fully digital display of the open-top two-seater, displays all information in richly detailed, tack-sharp 3D graphics. Its TFT display has a 12.3-inch diagonal and offers a resolution of 1,440 x 540 pixels. The display varies its context-related color scheme according to the main menu selected. In the Media menu, for example, it is orange, while green is used for the Phone menu.

The driver can switch between the display interfaces by pressing the “View” button on the steering wheel. In infotainment mode, the navigation map or lists from the Telephone, Radio and Audio areas appear in a large central window – while the tachometer and speedometer appear as small dial instruments on either side of this display window. In the classic view, the instruments are approximately as large as analog instruments, and the center display window is therefore smaller.

There is a performance view specially for driving on the racetrack. Here the primary instrument is a central tachometer. It also serves as a gear shift indicator – when the seven-speed S tronic is being operated in manual mode, its scale has a color background at higher engine speeds. Green, orange and red segments are activated as revs increase. As soon as the engine reaches its limit, the entire scale flashes red.

The driver can place other displays to the left and right of the tachometer using the multifunction buttons. The power output and torque of the 5.2 FSI are shown as percentages, and a g-meter, whose peak value is 1.5 g, visualizes the forces acting on the car. A lap timer records up to 99 laps and compares times. The status of important technical components is also displayed – the temperature of the tires, motor oil and transmission fluid as well as tire air pressure.

The heart of the Audi virtual cockpit is a high-performance Tegra 30 chip supplied by Audi joint venture partner Nvidia. It is designed for low electrical consumption and has separate audio, video and image processing units.

Infotainment and equipment

Among the highlights on the list of standard equipment in the new R8 Spyder* is the MMI navigation plus with MMI touch – a versatile infotainment control center. It integrates a touchpad on the rotary pushbutton that the driver can use to write, scroll and zoom in on the navigation map. Like in a smartphone, the operating logic is structured in flat hierarchies, including MMI search. It is available for all basic menus and generally answers queries after just a few letters have been entered.

Vehicle functions can be controlled from the steering wheel, the MMI terminal on the center tunnel console or by the natural voice control system, which can already process simple commands and questions. Three small microphones in the seatbelts make telephony and the voice control system particularly convenient and ensure top quality. The infotainment system also includes a WiFi hotspot that passengers can use to surf the World Wide Web with their mobile devices.

MMI navigation plus also has a Tegra 30 chip working in the background. It collaborates with its counterpart in the Audi virtual cockpit in a cycle measured in the thousandths of a second. The process is part of the second-generation Modular Infotainment Platform. Thanks to its highly flexible concept, Audi can quickly implement innovations from the consumer electronics industry in the automobile.

Well connected: Audi connect and the Audi MMI connect app
The perfect counterpart to MMI navigation plus is the Audi connect module, which gets the open two-seater on the Internet via LTE and gives access to a wide range of services. The portfolio ranges from navigation with Google Earth and Google Street View to travel, traffic and parking information. In addition, drivers can access their Twitter account and call up online news. Information is displayed in the Audi virtual cockpit and operation is via the MMI system.

The same is true for the diverse functions of the free Audi MMI connect app. It enables online media streaming using the Aupeo!, Napster and web radio services and displays where the R8 Spyder is parked on the smartphone.

Furthermore, the telephone's appointment calendar can be displayed in the all-digital instrument cluster. The driver can use the appointment location as a navigation destination and save the telephone number of the person to be met as a contact. WiFi is used for the transfer of data from the smartphone to the car.

Debut in the R8 Spyder: the Audi smartphone interface
New to the R8 Spyder is the Audi smartphone interface, which brings Apple Car Play and Android Auto into the car. If the driver connects a suitable iOS or Android smartphone to the USB port, the Audi virtual cockpit displays the smartphone's contents such as navigation, phone, music and selected third party apps in a separate menu. These can be conveniently used via the multifunction steering wheel, voice control system or the rotary pushbutton.

Wireless charging: die Audi phone box
Another infotainment option is the Audi phone box. It is located in the center console of the R8 Spyder and uses near-field coupling to connect the smartphone to the car's antenna This guarantees optimal reception. The Audi phone box also charges the smartphone wirelessly according to the Qi standard. The current flows inductively from a coil in the base of the phone box to the receiver coil in the cellular phone.

Acoustic highlight: Bang & Olufsen Sound System including head restraint loudspeakers
An alternative to the standard Audi sound system is one from Bang & Olufsen, in which a 550-watt amplifier drives 13 loudspeakers. The subwoofer is located at the bulkhead in the right front wheel well. The woofers are mounted in the doors with anodized aluminum trim brackets. When it is dark, they are illuminated by LED accent lighting. Two of the 13 loudspeakers are integrated into each of the head restraints of both the R8 sport seats and the R8 bucket seats. The Symphoria algorithm that Audi developed in collaboration with the Fraunhofer Institute adds great width and depth to the sound. It thus conveys an excellent impression of space.

Factory

quattro GmbH manufactures the new R8 Spyder* in a purpose-built production facility, the “Audi Böllinger Höfe” in Heilbronn, close to Audi’s traditional Neckarsulm site. As many as 500 highly qualified employees build each car with painstaking craftsmanship at the 30,000 m^2 *(322,917.3 sq ft)* facility. As was the case with the previous model, production is organized as a highly flexible factory. This offers virtually unlimited freedom to fulfill individual customer wishes.

In the body shop, the initial focus is on the aluminum parts of the Audi Space Frame (ASF). In a first step, specialists separately weld together the front body module, middle floor and rear body module – which are made of aluminum castings and extruded aluminum profiles – and then join the three modules to produce the underbody. In Superstructure and Finish, the body gets its side structure and add-on parts such as doors and the front hatch. Finally, it is painted in the color requested by the customer. The convertible top module – a closed unit – is bolted to the ASF at three points.

Only cold techniques are used to join aluminum to carbon fiber-reinforced polymer (CFRP). The ASF includes 215 semi-hollow punch rivets, 184 blind rivets, 244 metric and 286 self-tapping screws. An engineered adhesive (total length of the seams: 51 meters *(167.3 ft)*) and a special seal ensure that the metal alloy does not corrode in contact areas with the CFRP. The weld seams between the aluminum components have a total length of 84 meters *(275.6 ft)*.

The finished body is transferred on a self-propelled assembly skid known as a driverless transport system (DTS) to the assembly shop, which is laid out as a U-shaped chain. There the employees work almost exclusively by hand in 16 assembly cycles of approx. 30 minutes each. In the interest of flexibility, there is no overhead conveyor. The cars move through the hall primarily on the DTS.

Audi makes no compromises when it comes to the quality of the R8 Spyder. Prior to delivery, every new high-performance sports car undergoes a stringent acceptance procedure. Its commissioning in the test center comprises six individual cycles, after which the car completes quality acceptance on the factory's test track. After this, an approximately one-hour test drive that also includes freeway driving is conducted on public roads. Only then is the new Audi R8 Spyder released for delivery to the customer.

Available: market launch and prices
Presales of the new Audi R8 Spyder began in July 2016 at a starting price of 179,000 euros. Initial deliveries are scheduled by november.

Success story

The new Audi R8 Spyder* opens another chapter in the R8 story. It all started in 2007 with the market introduction of the first-generation Coupé, followed by the Spyder in 2010. Sales of both versions combined reached approximately 27,000 units. They demonstrate the high-tech expertise of Audi and the strong connection with motorsport.

Audi restates this with the second R8 generation – its engineers developed the new Audi R8 LMS, a GT3 racing car, in parallel with the production models. As a result, almost 50 percent of all the parts used on the R8 LMS are also found in the R8. The close cooperation between racing engineers, motorsport specialists and developers has given the street version a significant boost in performance. The success of the Coupé is confirmed by prestigious awards bestowed on it last year, such as the "Golden Steering Wheel" and the "Auto Trophy."

The mid-mounted engine in the Audi R8 and R8 Spyder is not only a classic concept in motorsport; it is also an integral part of the brand's sporty DNA. The engines were located in front of the rear axle even in the Grand Prix racing cars used by Auto Union in the 1930s – a revolutionary step at the time.

In 2000, the LMP R8 prototype with a 3.6-liter V8 engine won the 24 hours of Le Mans for the first time. By 2005, the namesake of today's high-performance production sports car had taken five overall victories at the Sarthe. It was then retired and replaced by the Audi R10 with a TDI engine.

Fuel consumption of the models named above

Audi R8 Spyder V10:
Combined fuel consumption in l/100 km: 11.7 *(20.1 US mpg)*;
Combined CO_2 emissions in g/km: 277 *(445.8 g/mi)*

Audi R8 Coupé V10:
Combined fuel consumption in l/100 km: 11.4 *(20.6 US mpg)*:
Combined CO_2 emissions in g/km: 272 *(437.7 g/mi)*