



Communications Audi Sport GmbH Lisa Först Spokeswoman Audi Sport GmbH Tel.: +49 152 57718308 E-mail: <u>lisa.foerst@audi.de</u> www.audi-mediacenter.com

May 2023

BASICINFO

Highlights from 40 years of Audi Sport GmbH

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The beginning: creating a brand experience

• Anita Hofmayer, employee at quattro GmbH: "We were all extremely motivated to be able to work on the new image and success of the Audi brand at quattro GmbH."

Audi Sport GmbH was founded on October 10, 1983, under the name "quattro GmbH" as a wholly owned subsidiary of AUDI AG. "quattro" already meant much more than the completely new transmission system with permanent all-wheel drive presented by Audi in 1980. The pioneering technology helped the Audi quattro sports coupé, which was introduced at that time, to achieve much more in terms of driving dynamics, driving stability, traction and safety, and created the basis for its major sales and motorsport successes.

quattro revolutionized the automotive industry and became synonymous with a new technological dimension with its driving dynamics, driving stability, traction and safety, thanks to the technical expertise and top performance from Audi. The term quattro continues to grow into a defining trademark for the premium manufacturer's outstanding quality features and clearly underscores the Audi motto of "Vorsprung durch Technik." The name quattro GmbH unmistakably stands for the special note of individuality, sportiness and exclusivity that Audi's new subsidiary delivers.

The original goals of the newly created quattro GmbH: on the one hand, it was intended to protect the quattro name and marketing rights internationally in a legally regulated manner; while on the other hand it specifically supplemented the Audi portfolio with sophisticated product and service offerings marked with the quattro logo. In 1984, quattro GmbH offered its first high-quality collection. It was comprised of 22 elegant, olive and black-colored luggage items and small leather goods – from travel bags and wallets to key rings.

The new line of business is thriving and inspiring. "We were all extremely motivated to work on this new image and success for the Audi brand at quattro GmbH," says Anita Hofmayer, an employee of quattro GmbH in the early days. The sporty Audi subsidiary systematically expanded its product range, upgraded Audi vehicles from the 1990s onwards, which were characterized by high design standards and technical sophistication, and finally became a car manufacturer itself in 1996.

With its individual program from 1995 onwards, now known as "Audi exclusive", quattro GmbH creates more and more new equipment and refinement options outside of the standard Audi range – from exciting special exterior and interior colors to luxurious, high-quality design options for the passenger cabins, to technology highlights and sporty wheels, and also small-





series production special editions and model concepts, such as the unique convertible in the elaborately printed Picasso design. For the Audi customers of tomorrow, who are already older than twelve, quattro GmbH even offers a mini convertible that can reach speeds of up to 25 km/h and it is available in six colors – with a single-cylinder four-stroke engine and a two-speed manual transmission.

Nowadays, highly personalized vehicles with the four rings can also be created with the help of digital solutions such as the "Audi exclusive Customiser": a 3D visualization tool that turns selected models (Audi RS e-tron GT*, Audi RS 6 Avant*, Audi RS Q8* and Audi Q8 e-tron*) into personal one-offs in real time with thousands of individual design combinations. The Audi collection program currently offers, among other things, four high-quality collections with fashion, lifestyle products and matching accessories.

The topic of sustainability is of particular importance to the former quattro GmbH (renamed as Audi Sport GmbH since 2016), both now and in the future. For example, production of the Audi RS e-tron GT is already net CO₂-neutral in terms of the overall process – and this will be successively carried out at all Audi plants by 2025. And the extensive range of equipment is also steadily becoming more sustainable. "We already offer our customers options such as leather-free fabrics with recycled materials or sporty rims made from CO₂-reduced production processes. And we will continue to expand this range," says Sebastian Grams, Managing Director of Audi Sport GmbH.





High-performance models made by quattro

• Rudolf Gölz, former Managing Director of quattro GmbH, 1995 to 1998: "Today, our brand is mature enough to offer complete vehicles in the exclusive niche segment."

quattro GmbH systematically pursued the path of exclusive vehicle individualization and became a vehicle manufacturer in its own right in 1996. Under the motto "Experience individuality – Experience sportiness – Enjoy exclusivity," the Audi subsidiary presented its first high-performance model at the Geneva Motor Show in the spring of the same year: the Audi S6 plus. "Today, our brand is mature enough to offer complete vehicles in the exclusive niche segment," says Rudolf Gölz, Managing Director of quattro GmbH from 1995 to 1998, on the occasion of the premiere in Switzerland.

The Audi S6 plus is based on the eight-cylinder model of the Audi S6 production model, which is offered in four variants. "Project Q1" is the internal name of the joint effort between quattro GmbH and AUDI AG. The Audi S6 plus was launched as a sedan and an Avant. Its eight-cylinder engine is based on the 4.2-liter powerplant of the Audi S6 4.2.

The engine developers at quattro GmbH are giving it a thorough performance makeover: they have taken the rotary valve intake manifold from the Audi A8 4.2 quattro. Combined with a larger mass air flow sensor and an optimized exhaust system, it improves the gas flow. The intake camshafts in the Audi S6 plus operate with increased lift and timing. The valve lash adjustment, which was previously hydraulicly operated in the standard concept, is now actuated mechanically on the intake side to increase performance. The compression ratio was raised from 10.8 to 11.6. A new control unit with adapted map data ensures the correct engine management and perfect interaction between the eight-cylinder engine and the six-speed manual transmission, which has a shorter ratio from third gear when compared to the standard model.

The increase in power from 213 to 240 kW (290 to 326 hp) is clearly reflected in the performance figures: The Audi S6 plus reaches 100 km/h from a standstill in 5.6 seconds. Its top speed is electronically limited to 250 km/h (155 mph). As was the case for all subsequent models, the standard for all quattro GmbH vehicles, the Audi S6 plus and Audi S6 plus Avant were offered exclusively with quattro permanent all-wheel drive from the outset.

Visual distinguishing features of the Audi S6 plus made by quattro GmbH were the 17-inch lightalloy wheels in a 6-spoke design, the black-painted frame of the Audi radiator grille and other accents in black. Also: the distinctive emblem placed at the front and rear, consisting of a red





Audi rhombus combined with a blue and silver bar. Compared with its standard counterpart, the Avant model of the Audi S6 plus also has a roof spoiler with an integrated brake light. Exclusive leather/Alcantara upholstery in three different color combinations and a variety of extravagant interior details, such as the instrument insert available in blue, light gray and anthracite, provide the special plus ambience in the interior of the sedan and Avant.





Growth years: Between Neckarsulm and Nürburgring

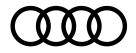
• Thomas Degenhard, former Customer Consultant Vehicle Customization at quattro GmbH: "After all, we had already created a brand. But Werner Frowein developed it further and not only laid the foundations but also built the first and second floors right away."

1998 simultaneously marks the beginning of a radical change for the then quattro GmbH in two respects. Having previously been based at AUDI AG's headquarters in Ingolstadt, the company moved to Neckarsulm. In addition, a new managing director, Werner Frowein, was appointed in the middle of the year – who shaped the company's development over the next 14 years. With the appointment of the experienced automotive engineer and manager by the Chairman of the Board of Management of AUDI AG Franz-Josef Paefgen, quattro GmbH was restructured and its own development, sales and marketing divisions were created. "These measures enabled us to respond better to the wishes of the individual markets and thus even more specifically to the demands of the customers," explained the managing director.

During Frowein's era, the model portfolio expanded significantly: starting with one model, the portfolio was expanded to include various vehicle segments. By 2012, when Frowein retired, it already included eight models. "Werner Frowein was exactly the right man for the job," recalls Stephan Reil, the longstanding head of development at quattro GmbH. This is also emphasized by Thomas Degenhard, former customer advisor for vehicle customization: "He put an extreme amount of energy into our projects and worked to ensure that they were realized as quickly as possible. We had already created a brand, but he developed it further and not only laid the foundations but also built the first and second floors right away."

During this time, quattro GmbH's special connection to the Nürburgring-Nordschleife also began. Decision-makers such as Werner Frowein and Stephan Reil were influenced by motorsport and the legendary "Green Hell," which is considered as the most demanding race track in the world – both for the drivers and for technology. That's why all of the highperformance production cars have been tested under extreme conditions on the Nordschleife since the late 1990s. Every RS and R model has to cover several thousand kilometers there before going into production. The first endurance run takes place during the very early development phase with a prototype and many test parts, in order to validate the technical concept and identify weak points. The second endurance run then uses a pre-production vehicle. "The accelerated wear factor on the Nordschleife is between 10 and 15, depending on the specific component," explains Stephan Reil. "This means that the load on the component for every kilometer on this race track is roughly equivalent to the load of 15 kilometers on normal





public roads."

Audi Sport driver Frank Stippler, two-time winner of the 24-hour race and involved in the test program of the production cars since 2003, knows what makes the Nordschleife so demanding: "You can filter out the final weak points there during the endurance runs before the production process begins, which is not possible on the dyno or with simulations. As a race driver, I can test the car at the absolute limit and thus give the Audi engineers additional input during the fine-tuning stage." With the high-performance models from quattro GmbH, these endurance tests at the "Green Hell" have become an indispensable part of development approval for road car production.





From bestseller to legend

• Stephan Reil, former Head of Technical Development at quattro GmbH: "It remains a unique feeling to have been responsible for such a high-performance car, quattro GmbH's first RS model, and to have realized it with a small team. When twice as many units are then sold than what was originally planned, you have created an icon."

One of quattro GmbH's most important milestones is the Audi RS 4 Avant. Offered exclusively as a station wagon variant, this high-performance model based on the then Audi S4 from AUDI AG is the first complete vehicle to be entirely independently designed and put on the road by quattro GmbH. From the beginning of 2000, the Audi RS 4 Avant – advertised and sold at the time as the Audi RS 4 and as the special Audi RS 4 Sport model – became the new spearhead of the Audi A4's B5 generation. And an absolute sales hit: instead of the planned 3,000 units to make the project profitable, just over 6,000 Audi RS 4 Avant examples find highly enthusiastic, as well as highly satisfied, buyers. The special edition RS 4 Sport features a chassis lowered by a further 10 mm, a reinforced rear axle stabilizer, perforated brake discs and sports brake pads, and a sports exhaust system. Racing bucket seats with a yellow center track and a steering wheel and shift knob covered in suede leather round out the sport package.

The Audi RS 4 Avant is a pioneer in its market segment, bringing a new dimension of power to the midsize class. As in the Audi S4, a V6 engine with a displacement of 2.7 liters, five valves per cylinder and a biturbo is under the hood. quattro GmbH makes the engine, which is already very powerful as standard, even more powerful and torquey for use in the RS 4 Avant.

In collaboration with Cosworth Technology, the cylinder head, engine block and crankshaft are redesigned in line with the higher loads. A new design, also with stronger dimensions, replaces the regular crankshaft. Larger flow-optimized intake and exhaust ports ensure lower charge exchange losses. The cross-sections of the air ducts on the intake and discharge sides are enlarged, the turbochargers are bigger, and the boost pressure is increased. In this way, the S4 engine is effectively a new powerplant. Instead of 195 kW (265 hp), it develops a maximum output of 280 kW (380 hp). The third and fourth gear ratios in the six-speed transmission are shortened. The result: the Audi RS 4 Avant completes the 0–100 km/h sprint in 4.9 seconds. The high-performance station wagon that was unique at the time in was launched, was on par with sports cars.

Production of the Audi RS 4 Avant presents quattro GmbH with entirely new challenges. The extensive modifications required for its body and powertrain are not feasible on the assembly





line of the tightly timed mass production of the A4. "We only had the RS 4 Avant and our subsequent vehicles built as so-called three-quarter cars at AUDI AG's production lines during the first ten years," explains Stephan Reil, the head of development at quattro GmbH at the time. In the case of the Audi RS 4 Avant, that meant: The new spearhead of the A4 range arrived at quattro GmbH in Neckarsulm without bumpers, sills and intercooling. Instead of its standard 255 tires and 18-inch rims, the base vehicle rolled in on narrow "rotating wheels." For production of the vehicle base in Ingolstadt, the widened fenders for the Audi RS 4 Avant come from a supplier. In the run-up to base assembly, the standard A4 sidewall frames were also widened by three centimeters to RS 4 size in the area of the rear wheels.

"We at quattro GmbH then completed the remaining 25 percent of the production for the Audi RS 4 Avant exclusively by hand on our lifting platforms," says Stephan Reil. This was done with 50 new assembly employees who were specifically hired for this premiere project. "It remains a unique feeling to have been responsible for such a high-performance car, quattro GmbH's first RS model, and to have realized it with a small team. When twice as many units are then sold than what was originally planned, you have created an icon," emphasizes Reil. During the 15 months of production of the Audi RS 4 Avant in Neckarsulm, around 25 units per day were ready to be delivered to customers. In addition to the development and production areas, quattro GmbH also established its own sales and marketing departments at the turn of the millennium.





A sports car icon is born

• Frank Lamberty, exterior designer of the first Audi R8: "There had never been a concept like this in the brand's history; there were no role models."

A super sports car from Audi? The Audi Avus quattro and Audi quattro Spyder concept cars presented in 1991 already gave a first impression of this idea. When the vision finally became reality 15 years later, both customers and fans of the brand were thrilled: In 2006, the brand with the four rings presented the Audi R8, a high-performance vehicle that raised goose bumps and ventured into completely new territory. This courage was rewarded: The R8 became a true icon and a milestone in the history of the car manufacturer. "This was a great project right from the start," recalls Werner Frowein, Managing Director of quattro GmbH from 1998 to 2012 and primarily responsible for implementing the R8 concept. "Of course, it wasn't easy to get such a complex new vehicle project through all the committees of a major corporation, but it was worth it."

With the Le Mans quattro concept car at the IAA in Frankfurt in 2003, exactly 20 years ago, Audi gave a sensational foretaste of what was to become the R8. "That was the starting point for a mid-engine sports car from Audi," says Frank Lamberty, exterior designer of the concept car and later the first R8. "There had never been a concept like this in the brand's history; there were no role models." Only a short time later, the Audi Board of Management decided to build the brand's first super sports car.

A sensation for the technicians at quattro GmbH: "Every engineer's dream is working on a midengine sports car one day," says Stephan Reil, longtime head of development at quattro GmbH. "After all, that's exactly what they tell you at university: The engine belongs in the middle of the car." Sebastian Grams, now managing director of Audi Sport GmbH, was also involved in the development of the R8: "As a young engineer, I was allowed to help develop the first engine. When I started the engine on the test bench for the first time, I got goose bumps," he recalls.

At the end of 2006, the time had come: quattro GmbH began production of its new top model in Neckarsulm. Buyers are thrilled: the capacity for producing the completely hand-built vehicle was quickly exhausted, and the number of units planned for Germany in 2007 was sold out after just a few months. This success is no coincidence, because no other production car from the brand with the four rings is closer to racing. The Audi R8 carries the genes of a genuine racing car: the sports prototype and namesake with which Audi won the Le Mans 24 Hours five times from 2000 to 2005.

The high-revving mid-engine, FSI direct injection, wind tunnel-tested aerodynamics with a rear





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diffuser, suspension with double wishbones and the lightweight construction philosophy with the Audi Space Frame (ASF) – all these technologies have been tested on the race track and guarantee maximum performance, driving pleasure, safety and reliability. The presentation of the Audi R8 also underlines how close and intensive the link between production and motorsport is at Audi: factory driver and Le Mans record winner Tom Kristensen presented the vehicle in Paris. At the time, the product manager of the new top model from quattro GmbH was Rolf Michl, now Managing Director of Audi Sport GmbH and Head of Motorsport at Audi.

A decisive factor in the success of the Audi R8 is its design. Flat, muscular lines, wide air vents and the characteristic single frame grille at the front, as well as the rear with its diffuser, large air outlets and flat taillights – the sports car makes a striking appearance in every detail. "Especially in a sports car, proportions count," says Frank Lamberty. "A mid-engine sports car is something very special again because the technical layout, the position of the engine, results in a completely different design language," continues the exterior designer. "A very important element in the design of the R8 are the sideblades. In front of them is the cockpit, and behind it comes the technology. The sideblade, as the air control element that feeds air to the engine, connects these sections of the vehicle. All of the R8's lines follow this one incredible logic, because for this model, it was important to find its own design key," emphasizes Frank Lamberty, saying with a wink, "I think that worked quite well."





The return of a unique concept

• Stephan Reil, former Head of Technical Development at quattro GmbH: "At the time we said to ourselves: the TT is a real sports car, and a high-performance version of it simply belongs on the road."

After two RS 4 and RS 6 models, each in the mid-range, quattro GmbH presented its first compact class vehicle in 2009: the Audi TT RS. "We said to ourselves at the time: The TT is a real sports car, and a high-performance version of it simply belongs on the road," says Stephan Reil, then Chief Developer at quattro GmbH. First of all, a suitable engine to base the pioneering project on had to be found. An engine that offers sufficient scope for increasing the performance of the second-generation TT to match those of high-performance RS models. Stephan Reil found it in an Audi concept that achieved cult status from 1976 to 1997 and not least in the original quattro of 1980: the five-cylinder engine.

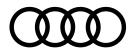
Such an in-line engine with the unique 1-2-4-5-3 ignition sequence and the unmistakable sound associated with it has not been in Audi's range for almost twelve years, but its sister brand Volkswagen did have it in its line-up. Based on the 2.5-liter five-cylinder engine from the U.S. version of the VW Jetta with the internal identifier EA 855, quattro GmbH developed a high-performance unit: A reinforced engine block with a modified cylinder head and gasoline direct injection TFSI together with a turbocharger for high efficiency and low emissions.

The relaunch of the five-cylinder concept gave the first Audi TT RS an output of 250 kW (340 hp). Unlike its predecessors in the larger Audi models, the inline five-cylinder engine of this second generation did not fit longitudinally, but only transversely installed in the more compact dimensions of the TT's front end. Subsequently, the 2.5-liter turbo five-cylinder developed into another globally celebrated Audi trademark. The continuously improved power unit was awarded "International Engine of the Year" nine times in succession.

Unlike the RS 4 and RS 6 models, the quattro drivetrain system, which is mandatory for RS models, does not distribute the engine power to the four wheels via a Torsen center differential in the Audi TT RS. Instead, for the first time in a quattro GmbH vehicle, it uses the Haldex principle. This means that in addition to the drive shafts of the front wheels, an angular drivetrain in the transmission transmits the driven forces toward the rear axle. The first Audi TT RS and its successors are offered as a coupe and roadster.

Audi Sport GmbH (named quattro GmbH until 2016) continues its successful five-cylinder tradition to this day in the models from the A-segment, in addition to the TT RS*, i.e. in both the RS 3* and the RS Q3*. The latest version of the 2.5-liter TFSI turbocharged engine, the most





powerful to date at 299 kW (407 hp), operates in the performance edition of the Audi RS 3 presented as a sedan* and as a Sportback* in 2022. "For me, the five-cylinder is an absolute icon that we continue to perfect to this day. The lap record of our current Audi RS 3 on the Nürburgring-Nordschleife in 2021 impressively demonstrated what the engine is capable of in its highest configuration stage in combination with the torque splitter," says Steffen Bamberger, Head of Technical Development at Audi Sport GmbH.





Racing as another mainstay

• Rolf Michl, Managing Director Audi Sport GmbH: "The Nürburgring-Nordschleife is considered a Mecca for all motorsport fans. For me, the 24hour race is one of the most beautiful things you can experience in motorsport."

Audi has had a customer racing program since 2009, which was transferred to quattro GmbH in 2011. Audi Sport customer racing develops and distributes the various customer racing models, provides technical support for customer teams around the world and also makes Audi Sport drivers available. Currently, the sports car portfolio comprises four racing categories: the R8 versions for the GT3, GT2 and GT4 classes, as well as the Audi RS 3 LMS for production-based touring car championships.

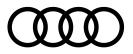
Audi Sport GmbH produced a total of 750 race cars by the end of 2022. Of these, around 300 GT3 versions of the Audi R8 have been delivered to customer teams worldwide. The Audi RS 3 LMS, of which 260 units have been sold to date, is also extremely popular as an entry-level touring car with a near-production bodyshell and an almost standard two-liter turbo engine.

In 2009, the first-generation Audi R8 LMS was the first model of the brand with the four rings to be developed specifically for customer use. The then Managing Director of quattro GmbH Werner Frowein – an absolute motorsport fan – played a decisive role in this. "All the customer racing with the R8 wouldn't have happened without Werner," Stephan Reil, longtime head of development at quattro GmbH, says with certainty. What started in its debut year with eight GT3 race cars based on the road-going version of the R8, which was released shortly before, grows rapidly into a highly extensive and successful program. As early as 2011, the Audi R8 LMS celebrated its 100th race victory.

High mileage, ease of maintenance and handling that can be easily mastered, even by nonprofessionals, are the strengths of the Audi R8 LMS, which is now successful on race tracks worldwide in its second generation. "Whether engine characteristics, interior climate control, suspension or traction control: we have consistently implemented the wishes that our globally active teams have expressed to us," says Chris Reinke, Head of Audi Sport customer racing. The racing and road-going models of the second-generation mid-engine coupe with rear-wheel drive are consistently developed hand-in-hand and tested under extreme conditions – like all highperformance vehicles from Audi Sport. The GT3 race car shares 50 percent of its components with the Audi R8 road car, even 60 percent in the case of the GT4 race car.

The track record of the Audi R8 LMS is impressive: In just under a decade and a half, the GT3





version has scored a total of 105 overall titles and won 152 GT3 championships. The younger GT4 version has been successful in 31 championships so far. The Audi R8 LMS GT2 has been available since 2019 as the youngest offering and its output of 640 hp makes it the most powerful sports car by far in the customer racing program. It has also won various championships in its category. A further 72 titles worldwide are attributable to the Audi RS 3 LMS entry-level touring car, which has been sold by Audi Sport customer racing since 2016.

But Audi Sport customer racing is also making motorsport history with numerous race victories. In 2011, the Audi R8 LMS clinched its first triumph in a 24-hour race at Spa, followed by three more victories at the Belgian classic. At the Nürburgring, the Audi R8 LMS has crossed the finish line as the overall winner of the 24-hour race a total of six times in 2012, 2014, 2015, 2017, 2019 and 2022. "The Nürburgring-Nordschleife is considered a Mecca for all motorsport fans. For me, the 24-hour race is one of the most beautiful things you can experience in motorsport. But the Nürburgring is also essential for the development of our production cars. All our models are tested there under extreme conditions and brought to production maturity," says Rolf Michl, Managing Director of Audi Sport GmbH and Head of Motorsport at Audi.

Another customer racing race car from Audi Sport customer racing, the TT RS, also celebrated a special success. In 2011, Michael Ammermüller, Frank Biela and Christian Hohenadel, sharing the touring car with a 5-cylinder turbo engine, clinched the only overall victory to date for a front-wheel-drive car in the 6-hour race of the VLN Endurance Championship that has been held on the Nürburgring-Nordschleife since 1977. There, in the 2011 edition of the 24-hour race two months earlier, Michael Ammermüller, Frank Biela, Jens Klingmann and Martin Tomczyk, had already won their class with the TT RS.

With the Audi TT cup model, Audi Sport GmbH created the basis for the first one-make racing cup under the banner of the four rings in Germany in 2014. From 2015 to 2017, the Audi Sport TT Cup took place as a springboard for young international talent in the supporting program of the popular DTM touring car series, wherein Audi was involved with factory teams at the time. The project manager in the set-up phase and in the first season of racing was Rolf Michl, who today is the Head of Audi Motorsport and, together with Sebastian Grams, is one of the two managing directors of Audi Sport GmbH. In addition to its lightweight construction of aluminum and carbon fiber, the Audi TT Cup compact touring car impressed above all with a safety concept that was unique for its class. Audi specifically combined components that had proven themselves in its Le Mans sports prototypes, DTM Class 1 touring cars and the Audi R8 LMS GT race car.





Manufacturing and smart factory: Unique cohesion

 Wolfgang Schanz, Production Manager Audi Böllinger Höfe: "We have retained the craftsmanship from the R8's manufacturing and added new and intelligent technologies. And our employees immediately transferred all their passion from the R8 to the e-tron GT."

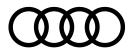
Audi Sport GmbH produces the Audi R8* and the two all-electric models, the Audi e-tron GT quattro* and Audi RS e-tron GT*, at the Böllinger Höfe industrial park in Heilbronn. The small batch production of the Audi subsidiary's two most powerful and sporty vehicles, not far from its Neckarsulm headquarters, is unique in the Group. "We have managed to put two completely different vehicles on one assembly line: The high-performance R8 sports car with a V10 combustion engine was joined by the e-tron GT, which is an all-electric Gran Turismo," says Wolfgang Schanz, production manager at Böllinger Höfe.

Planned to be highly flexible from the outset, Audi Sport GmbH is merging the best of two worlds at the end of 2020. "We have retained the craftsmanship from the R8's manufacturing and added new and intelligent technologies. And our employees immediately transferred all their passion from the R8 to the e-tron GT," Wolfgang Schanz continues. The independent Böllinger Höfe production facility came into being in 2014 in view of the great sales success of the road and motorsport versions of the Audi R8. Until then, quattro GmbH had built the super sports car within the high-volume structures of the main Neckarsulm plant, distributed across various production halls.

In order to integrate the production of the two e-tron GT models, Audi Sport GmbH expanded and modernized the Böllinger Höfe facility in 2019/2020 – for the most part during ongoing operations. State-of-the-art facilities were built in the body shop and assembly areas. Production competencies were expanded in the areas of electrification, automation and digitalization. This created a unique cohesion of craftsmanship and a smart factory on a production area of around 40,000 square meters. "The R8 was incredibly successful right from the start, and at the same time, it was also highly complex in terms of production; we pushed the limits of what was possible here. Our vision in 2012 was therefore to create a flexible manufacturing facility for quattro GmbH that offers ideal conditions for such highly emotional and highly individualized limited-series vehicles. Today's successful integration of the e-tron GT into the R8's manufacturing shows us that we helped lay the foundation for this back in 2012, when we designed the facility," says Jochen Wagner, Head of Production at quattro GmbH from 2011 to 2016.

The bodies of the Audi R8 and the Audi e-tron GT are largely manufactured separately: While the



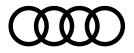


mid-engine sports car is built almost exclusively by hand, body construction for the e-tron GT is highly automated. Final assembly of the two performance models takes place on the same assembly line. For the integration of the e-tron GT, assembly was expanded by 20 to 36 work cycles. All employees working in production at Böllinger Höfe are equally proficient in the manufacturing steps of the R8 and the e-tron GT. "We have taken advantage of the opportunities offered by digitization and established many new methods. This starts with the planning of the assembly processes, which has been carried out virtually in many areas," says production manager Schanz. "In the body shop, for example, we have introduced correlationfree measurement by using digital applications. And assembly aids from the 3D printer also proved to be great assets right away."

Audi Sport GmbH also builds the chassis for all of the GT racing models of the R8 at the Böllinger Höfe facility in Heilbronn. Thereafter, the most powerful variants of the highperformance sports car are completed with specific components for use on the race track in the Audi Sport customer racing workshop in the Biberach district of Heilbronn and finished for delivery to customers.

Production in the Böllinger Höfe is already CO₂-neutral. Audi uses green electricity and heat from renewable sources – an important milestone for Audi and the Neckarsulm facility. The delivery of the e-tron GT to customers in Europe and the United States is also CO₂-neutral in terms of the overall process. Audi offsets CO₂ emissions that cannot currently be avoided through renewable energy sources with carbon credits from certified climate conservation projects. Audi is thus making an important contribution to Mission:Zero – the premium manufacturer's environmental program for consistently sustainable production.





The most high-performance models of all time from Audi

 Sebastian Grams, Managing Director Audi Sport GmbH: "Every RS model expresses the passion with which we develop our high-performance cars – and with which, model after model, we combine the highest driving dynamics, pure emotion and, at the same time, high suitability for everyday use in a precisely fitting manner."

In 2019, Audi Sport GmbH (formerly known as quattro GmbH) launched its largest RS model offensive within a year and thus offers the largest product portfolio of all time. The sporty subsidiary of AUDI AG presented seven new versions of its then twelve-model range alone: the TT RS as a coupé* and roadster*, the RS 6 Avant*, the RS 7 Sportback*, the RS Q3* and the RS Q3 Sportback*, and the RS Q8*. There are also three comprehensive updates: for the RS 4 Avant*, RS 5 Coupé* and RS 5 Sportback*.

The basis of this offensive is the new model strategy used by Audi Sport GmbH since 2014: the RS vehicles that it designs and implements are now available relatively soon after the respective basic models from large-scale production are launched. It is no longer the case that the RS vehicles are introduced within the last third of the respective basic model's market runtime. "This reorientation was possible primarily thanks to the forward-thinking portfolio planning of our well-established team. This not only enabled us to significantly extend the market period of our RS models, but also to reduce our production breaks," says Rolf Michl, Director of Sales and Marketing in 2019 and today Managing Director of Audi Sport GmbH. The characteristics of the sportiest road car models with the four rings are thus defined much earlier and their development runs in parallel to the work done on the respective road car models on which they are based. In addition to the design, the focus is on the drivetrain and chassis. After all, the sporty DNA that is in every Audi should be worked out to the maximum in the individual RS models.

Whether it's a 2+2 coupé or roadster, or a sedan, or an Avant or an SUV coupé: every new RS model from Audi embodies a philosophy that is driven by the pursuit of maximum performance and perfection. "Each RS model expresses the passion with which we develop our high-performance cars – and with which we repeatedly combine the highest driving dynamics, pure emotion and, at the same time, a high level of suitability for everyday use, model after model," says Sebastian Grams, Managing Director of Audi Sport GmbH, responsible for high-performance models and vehicle customization. "For almost 30 years, our customers have experienced the RS models as superior and, at the same time, dynamic companions in everyday





life, which convey the greatest possible driving pleasure. And we are already showing how fascinating sustainable mobility can be with our all-electric spearhead, the Audi RS e-tron GT," adds Rolf Michl, Managing Director of Audi Sport GmbH, responsible for finance, procurement, strategy and motorsport.

Audi produces its high-performance models at four locations. The RS 3 Sportback*, the RS 3 Sedan*, the RS 4 Avant*, the RS 5 Coupé* and the RS 5 Sportback* all roll off the production line at the main plant in Ingolstadt. The Neckarsulm site produces the RS 6 Avant*, the RS 7 Sportback*, the R8 Coupé*, the R8 Spyder* and the R8 racing cars (GT2, GT3, GT4), as well as the e-tron GT quattro* and RS e-tron GT*. The Hungarian plant in Győr produces the TT RS as a coupé* and roadster*, as well as the RS Q3* and the RS Q3 Sportback*. The RS Q8* comes from the Slovakian plant in Bratislava. All the RS models run in parallel with their sister models at common production facilities. The press shops of the Audi and Volkswagen Group supply the specific outer skin parts made of steel or often aluminum, which are then assembled in the body shop.

Also in 2019, Audi Sport GmbH rounds off its R8 range: the Audi R8 V10 RWS, introduced in 2018 as a limited special model, became the R8 V10 RWD – an integral part of the series of high-performance sports cars with the four rings. The new design features, which are analogous to the R8 quattro versions of the production model, make the mid-engine car with rear-wheel drive look even wider, flatter and therefore even more dynamic. From 2021, Audi Sport GmbH has delivered the R8 V10 performance RWD* as a coupe and as a Spyder*. In 2022, the sporty Audi subsidiary added further special editions and models to its range: In addition, the Audi TT RS Coupé iconic edition*, the Audi RS 3 performance edition*, the Audi RS Q3 edition 10 years* and the Audi R8 Coupé V10 GT RWD*, as well as the Audi R5 6* and the Audi R5 7* as performance models, all became available. The latest additions stand for exclusivity and driving pleasure at the highest level and mark the pinnacle of their respective road car models. The largest portfolio of Audi Sport GmbH to date currently includes 16 high-performance models.





Boldly and strategically into the electrified future

• Steffen Bamberger, Head of Technical Development Audi Sport GmbH: "We have been very successful at what we do for 40 years. We're now taking our DNA, that what sets us apart, with us into an exciting future."

"A clear and consistent electrification strategy is the basis for the future viability of our business," says Sebastian Grams, Managing Director Audi Sport GmbH. Audi will flip the switch as early as 2026 and from that moment on, the brand will only launch new electric cars for the global market. Production of the last combustion engines will be phased out by 2033.

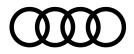
Audi Sport GmbH plays a key role in the electrification of the vehicles of the brand with the four rings. "The step forward is exciting. We have been very successful at what we do for 40 years. We are now taking our DNA, that what sets us apart, with us into an exciting future," says Steffen Bamberger, Head of Technical Development Audi Sport GmbH. "As far as the striking design of our RS models is concerned, we will also combine the proven with the new in the future. Confident understatement and dynamic sharpness, paired with futuristic design elements that stand for e-mobility," says Audi exterior designer Stephan Fahr-Becker.

Audi Sport GmbH has been producing the all-electric Audi e-tron GT quattro* and Audi RS e-tron GT* models on its Böllinger Höfe small-series production line in Heilbronn since the end of 2020. The basic model and the RS variant of the four-door Gran Turismo went on sale simultaneously in February 2021. The Audi RS e-tron GT is the dynamic spearhead of electric mobility at Audi. "With the RS e-tron GT, we are pioneers of e-mobility in the high-performance segment. It marks the entry into the purely electric RS world of Audi and, as a highly emotional image bearer, is an important milestone for the entire brand," says Rolf Michl, Managing Director of Audi Sport GmbH.

The Audi RS e-tron GT consistently combines high performance and sustainability, and thus represents a new dimension of RS. Its two electric motors on the front and rear axles deliver a total output of 440 kW (598 hp). The superior all-wheel drivetrain, with its lightning-fast control systems, ensures maximum dynamics, stability and traction and makes the high-performance electric coupe from Audi Sport GmbH a true next-generation quattro.

The RS version of the progressive sports car impresses with dynamic performance. The Audi RS e-tron GT accelerates from 0–100 km/h (62 mph) in 3.3 seconds, to 200 km/h (124 mph) in 10.9 seconds and reaches a top speed of 250 km/h (155 mph). The fast-charging times of its high-voltage battery are as superior as its driving performance. Its voltage level of 800 volts





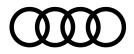
allows fast direct current (DC) charging with a maximum output of 270 kW – under ideal conditions, five minutes of charging is enough for about 100 kilometers of driving. The standard equipment of the Audi RS e-tron GT, which has been expanded compared with the basic model, includes the e-tron sport sound and adaptive air suspension.

Audi Sport GmbH is also a key driver of electrified mobility for Audi in motorsport. For example, the innovative Audi RS Q e-tron prototype was developed under the leadership of the sporty Audi subsidiary. With the most complex race car in its history to date, Audi has been engaged in cross-country rally racing since 2022, including the most famous and toughest desert classic, the Dakar Rally. The alternative drivetrain concept of the Audi RS Q e-tron combines an electric drivetrain with a high-voltage battery and a highly efficient energy converter for the first time. The energy converter consists of the highly efficient TFSI engine from the successful Audi DTM touring car, together with another generator. This system charges the high-voltage battery as needed while driving. It supplies the electric drivetrain of the Audi RS Q e-tron with current. The high efficiency of the overall system saves fuel significantly when compared to conventional drivetrains.

Audi Sport GmbH realized another e-highlight together with Audi Design in the record time of eight months: the Audi S1 e-tron quattro Hoonitron. The legendary Audi Sport quattro S1 from the 1980s served as the visual inspiration for this purely electric all-wheel-drive prototype. Technically, the Audi S1 Hoonitron, developed especially for the unforgotten U.S. drift star Ken Block and his crowd-pleasing video production Electrikhana, combines the highlights of all Audi e-drives from large-scale production and motorsport. And provides the driving proof: maximum dynamics and pure emotion can still be experienced with purely electric drivetrain technology from Audi.

"Consistent forward thinking and striving have been the basis for the success of Audi Sport GmbH for 40 years. Since 2012, we have more than doubled our vehicle range and currently offer the largest portfolio ever with 16 Audi Sport models. We will continue to redefine the individual mobility of tomorrow in the high-performance segment and continue to design it as a highly emotional experience with our high-performance models," says Audi Sport GmbH Managing Director Sebastian Grams, emphasizing: "This also takes courage. The courage to look at things from completely different angles and, in doing so, to explore new avenues that inspire our loyal and also new customers around the world."





Communications Audi Sport GmbH

Lisa Först Spokeswoman Audi Sport GmbH Tel.: +49 152 57718308 E-mail: <u>lisa.foerst@audi.de</u> www.audi-mediacenter.com



The Audi Group is one of the most successful manufacturers of automobiles and motorcycles in the premium and luxury segment. The brands Audi, Bentley, Lamborghini, and Ducati produce at 22 locations in 13 countries. Audi and its partners are present in more than 100 markets worldwide.

In 2022, the Audi Group delivered 1.61 million Audi vehicles, 15,174 Bentley vehicles, 9,233 Lamborghini vehicles, and 61,562 Ducati motorcycles to customers. In the 2022 fiscal year, AUDI Group achieved a total revenue of €61.8 billion and an operating profit of €7.6 billion. Worldwide, more than 87,000 people worked for the Audi Group in 2022, over 54,000 of them at AUDI AG in Germany. With its attractive brands, new models, innovative mobility offerings and groundbreaking services, the group is systematically pursuing its path toward becoming a provider of sustainable, individual, premium mobility.





Fuel/electric power consumption and emissions values** of the models named above:

Audi RS e-tron GT

Combined electric power consumption in kWh/100 km: 22.1–19.8; combined CO_2 emissions in g/km: 0

Audi RS 6 Avant 4.0 TFSI quattro

Combined fuel consumption in l/100 km: 12.7–12.1; combined CO₂ emissions in g/km: 289–276

Audi RS Q8 4.0 TFSI quattro

Combined fuel consumption in l/100 km: 13.6–13.2; combined CO₂ emissions in g/km: 308–300

Audi Q8 e-tron

Combined electric power consumption in kWh/100 km*: 29.0 - 26.2; combined CO_2 emissions in g/km*: 0

Audi TT RS Coupé 2.5 TFSI

Combined fuel consumption in l/100 km: 9.2–8.8; combined CO₂ emissions in g/km: 208–201

Audi TT RS Roadster 2.5 TFSI

Combined fuel consumption in l/100 km: 9.3-9.2; combined CO₂ emissions in g/km: 210-208

Audi RS 3 Sportback 2.5 TFSI quattro

Combined fuel consumption in l/100 km: 9.5–9.0; combined CO₂ emissions in g/km: 216–205

Audi RS 3 Sedan 2.5 TFSI quattro:

Combined fuel consumption in l/100 km: 9.4–8.9; combined CO₂ emissions in g/km: 214–201

Audi RS Q3 2.5 TFSI quattro

Combined fuel consumption in l/100 km: 10.1–9.5; combined CO₂ emissions in g/km: 228–216

Audi RS Q3 Sportback 2.5 TFSI quattro

Combined fuel consumption in l/100 km: 10.1–9.6; combined CO₂ emissions in g/km: 229–218

Audi TT RS Coupé iconic edition

Combined fuel consumption in l/100 km: 9.1 (25.8 US mpg) (WLTP); combined CO₂ emissions in g/km: 207 (333.1 g/mi) (WLTP)

Audi RS 3 Sportback 2.5 TFSI quattro

Combined fuel consumption in l/100 km: 8.8–8.3; combined CO₂ emissions in g/km: 201–190

Audi R8 Coupé V10 performance quattro

Combined fuel consumption in l/100 km: 13.1–12.9; combined CO₂ emissions in g/km: 297–293





Audi R8 Spyder V10 performance quattro

Combined fuel consumption in l/100 km: 13.9–13.8; combined CO₂ emissions in g/km: 316–313

Audi e-tron GT quattro

Combined electric power consumption in kWh/100 km: 21.6–19.6; combined CO_2 emissions in g/km: 0

Audi RS 7 Sportback 4.0 TFSI quattro

Combined fuel consumption in l/100 km: 12.6–12.0; combined CO₂ emissions in g/km: 285–272

Audi RS 4 Avant 2.9 TFSI quattro

Combined fuel consumption in l/100 km: 10.1–9.6; combined CO₂ emissions in q/km: 229–217

Audi RS 5 Coupé 2.9 TFSI quattro

Combined fuel consumption in l/100 km: 9.8-9.3; combined CO₂ emissions in g/km: 223-211

Audi R8 Coupé V10 performance quattro

Combined fuel consumption in l/100 km: 13.0; combined CO₂ emissions in g/km: 299–297

Audi R8 Spyder V10 performance quattro

Combined fuel consumption in l/100 km: 13.4–13.3; combined CO₂ emissions in g/km: 306–304

Audi RS 6 Avant 4.0 TFSI quattro performance

Combined fuel consumption in l/100 km: 12.7–12.2; combined CO₂ emissions in g/km: 289–277

Audi RS 7 Sportback 4.0 TFSI quattro performance

Combined fuel consumption in l/100 km: 12.5–12.0; combined CO₂ emissions in g/km: 284–273

**The indicated consumption and emissions values were determined according to the legally specified measuring methods. Since September 1, 2017, type approval for certain new vehicles has been performed in accordance with the Worldwide Harmonized Light Vehicles Test Procedure (WLTP), a more realistic test procedure for measuring fuel consumption and CO₂ emissions. Since September 1, 2018, the WLTP has gradually replaced the New European Driving Cycle (NEDC). Due to the more realistic test conditions, the consumption and CO₂ emission values measured are in many cases higher than the values measured according to the NEDC. Additional information about the differences between WLTP and NEDC is available at <u>www.audi.de/wltp</u>.

At the moment, it is still mandatory to communicate the NEDC values. In the case of new vehicles for which type approval was performed using WLTP, the NEDC values are derived from the WLTP values. WLTP values can be provided voluntarily until their use becomes mandatory. If NEDC values are indicated as a range, they do not refer to one, specific vehicle and are not an integral element of the offer. They are provided only for the purpose of comparison between the various vehicle types. Additional equipment and accessories (attachment parts, tire size, etc.) can change relevant vehicle parameters, such as weight, rolling resistance and aerodynamics and, like weather and traffic conditions as well as individual driving style, influence a vehicle's electric





power consumption, CO₂ emissions and performance figures.

Further information on official fuel consumption figures and the official specific CO₂ emissions of new passenger cars can be found in the "Guide on the fuel economy, CO₂ emissions and power consumption of all new passenger car models," which is available free of charge at all sales dealerships and from DAT Deutsche Automobil Treuhand GmbH, Hellmuth-Hirth-Str. 1, 73760 Ostfildern-Scharnhausen, Germany (<u>www.dat.de</u>).