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Audi Sport customer racing  
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## MOTORSPORT INFORMATION

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Audi in the TCR

## **Strong start for the Audi RS 3 LMS gen II**

**The Audi RS 3 LMS already achieved success in the World Cup in its debut season. Following its debut in February 2021, the second generation of the successful model faced tough competition in the WTCR – FIA World Touring Car Cup. Gilles Magnus immediately won the Trophy classification for private drivers ahead of teammate Tom Coronel. Deliveries to customer teams around the world began at the end of the 2021 season with the aim of continuing the previous model’s streak of success from 2022 onwards.**

Ready for the future: the Audi RS 3 LMS gen II replaces the highest-volume model in the Audi Sport customer racing program. 180 examples of the predecessor, which was introduced in 2016, were built. It has clinched 74 titles worldwide and was the “TCR Model of the Year” in 2018, as well as 2021 – an award from TCR rights holder WSC for the best TCR touring car worldwide. Now customers can look forward to a second-generation Audi RS 3 LMS that has been improved in many areas. The focus was on everyday utility and ease of servicing. Whether it’s safety or ergonomics in the cockpit, the variable and quickly adjustable chassis or cost-effective operation thanks to customer-friendly running times: The teams benefit from many innovations. A worldwide service network, reliable parts supply and model upgrades by Audi Sport customer racing complete the current offering.

As an attractive stage in touring car racing, the TCR category has successively gained a foothold in Europe, Asia, North and South America, Australia and New Zealand since 2015. Whether for amateur, advancing or for gentleman drivers, the front-wheel-drive race cars enjoy great popularity. Probably no other category in racing opens up such a wide range of options: Around 30 racing series have a corresponding license from rights holder WSC, plus renowned individual events such as the Nürburgring 24 Hours. Sprint races are an integral part of the TCR calendar, as are endurance events. Currently, race cars from 14 manufacturers are homologated for TCR racing. Beyond this spectrum, Audi customers are traditionally also involved in club racing on a national level with the RS 3 LMS.

In the basic design of its body, but also in many characteristic accents of its design, the new Audi RS 3 LMS is closely based on the high-performance model from Audi Sport. It is thus the perfect link between a fast family model for everyday use and fascinating touring car racing on the race track.

Interview with Chris Reinke

## **“Much interest for the second generation”**

**Chris Reinke, Head of Audi Sport customer racing, on the second generation of the Audi RS 3 LMS.**

**In its debut season, the Audi RS 3 LMS gen II already attracted attention with good results. How do you assess the debut year?**

We had set ourselves an ambitious task: To finish developing the new race car, to manage the production build-up in parallel and to fight for success in the toughest TCR racing series worldwide. We mastered all the tasks and even scored race wins, one title and four runner-up finishes in the WTCR – FIA World Touring Car Cup.

**So you sent out strong signals to your customers. How has the demand developed?**

We've received a lot of interest for the second generation. Although we didn't start deliveries until the fourth quarter of 2021, more than 20 race cars had been built by the end of the year. The high level of interest confirms several of our objectives at once: We believe in the future of the TCR category and have therefore decided to offer a second-generation model. We also see our development direction confirmed, because the car is very customer-friendly on the one hand and absolutely competitive on the other, as our good WTCR results have shown. In addition to existing customers who are purchasing the second generation, we have also won over numerous new teams.

**Where does the Audi RS 3 LMS gen II fit into the Audi Sport customer racing model range?**

Even though TCR racing series and race cars have become more professional over the years, we associate this category and the technology of our race car with a clear claim: This is the entry into our broadly diversified model range. This class is aimed at privateers outside of the FIA WTCR. The needs, demands and means of our customers define the cornerstones. At the same time, the Audi RS 3 LMS offers a perfect starting point for dealers and distributors. Whether regionally or nationally, dealers and importers have already been involved in the past. They can continue to do so in the TCR class with moderate budgets. With the Audi RS 3 LMS, they have the ideal product.

The Audi RS 3 LMS

## **Even greater customer benefit, even more race car character**

**The second generation of the Audi RS 3 LMS presents itself with new developments in all areas that serve two goals: To make the near-production entry-level model an even better race car and to optimize customer benefits in all areas. Despite this, the model remains inexpensive to buy and maintain, offers an even higher level of safety and, with up to 250 kW (340 hp), provides ample driving pleasure.**

Visually, the second generation of the new Audi RS 3 LMS already differs significantly from its predecessor. At 1.95 meters, the model still meets the maximum width defined in the regulations, but the body extensions are integrated into the vehicle contours in a more harmonious and aerodynamically favorable way than before. The front apron incorporates the air intakes as part of a significantly revised cooling concept for the engine and brakes. The rear wing, suspended from the rear for the first time, completes the optimized aerodynamics of the TCR race car. For the first time, the engineers have calculated the aerodynamic components completely on the computer using flow simulation, known as Computational Fluid Dynamics (CFD), without using the wind tunnel. The bodyshell comes from Ingolstadt, the two-liter turbo engine from the Győr plant in Hungary. As before, the race car is built at the Martorell site in Spain. This is where the Group has continued to pool all synergies in the construction of its TCR race cars. Many valuable detailed solutions, for example in the chassis area, make it easier to quickly adapt the model to the demands of the frenzied day-to-day racing business. And once again Audi sets standards in safety.

### **New engine generation**

In the new Audi RS 3 LMS, the fourth generation of the two-liter four-cylinder engine called EA888 replaces the predecessor series. The engine block and cylinder head, crank drive, valve train, intake manifold, fuel injection and the new turbocharger remain absolutely standard in the race car. Only the valve cover breather with its oil separator differs from the standard component, as does the exhaust system. The adoption of the engine from volume production has proved highly successful in TCR racing. In many cases, Audi's power units already achieved tens of thousands of racing kilometers in the previous vehicle generation in the hands of the customers. The standard engine management system from Magneti Marelli specified by the regulations is new. It required a great deal of development work. The maps are programmed for specific manufacturers and stored with the promoters of the racing series.

Together with the standardized hardware, this guarantees transparency and equal opportunities for all manufacturers. Audi has optimized the cooling of the unit in the areas of coolant and charge air. The two water coolers, which are arranged horizontally one above the other, are now separate units mounted in silent blocks and therefore much less sensitive to vertical impacts, such as those that can occur when riding off the track on rough uneven ground.

### **Optimized power transmission**

Audi Sport customer racing has renewed the power transmission for the second generation of its TCR race car in all areas. The twin-plate racing clutch now weighs 800 grams less than in the previous model and thus reduces rotational masses as well as inertia. Hewland's new pneumatically actuated six-speed transmission is particularly robust and can be operated sequentially via paddle shifters on the steering wheel. Mechanics can adjust the locking effect of the newly developed multi-disc locking differential with its twelve friction surfaces easily and quickly from the outside. For their part, stronger drive shafts contribute to higher mileage and an improved cost balance.

### **Benchmarks in safety**

No other TCR touring car offers as many optional safety components as are on board as standard in the Audi RS 3 LMS. The roll cage consists of steel tubes that add up to just under 25.8 meters in length. A six-point safety belt serves as restraint system for the driver. The Audi Sport Protection Seat, unique in the TCR class, with its robust construction and elaborate upholstery offers maximum accident safety. It is fixed at six points and for better occupant protection in the event of a side impact, it is moved closer toward the center of the vehicle. Optionally available seat-wrapping safety nets on the right and left provide additional protection for the driver. The standard roof hatch facilitates recovery of the driver after accidents. It allows the helmet to be gently removed upward and, if necessary, a rescue corset ("Kendrick Extrication Device") to be inserted vertically from above to stabilize the driver's spine. Front and rear windows are optionally available in polycarbonate. This material reduces weight and is extremely impact-resistant. Foreign objects can only penetrate this window with difficulty in the event of an accident, for example. The safety fuel tank complies with FIA FT3 regulations and has a capacity of 100 liters. Teams can order a filler neck for external refueling in the rear triangular window for long-distance races. A fire extinguishing system completes the safety equipment.

### **Improved ergonomics in the new cockpit**

The cockpit is even more driver-oriented and easier to operate. The steering wheel features a control panel specified for TCR purposes. In the center console, twelve functions are ergonomically optimized and logically grouped in a clearly arranged

keypad. The ignition and various light functions can be activated there, as can the cockpit fan or the optional windshield heating. The brake balance and the fire extinguishing function are also within easy reach below the center console and are easy to identify. The new wiring system developed for motorsport with six decentralized electronic fuse boxes reduces weight and cable complexity and offers targeted redundancies. This means that any electrical malfunctions in individual subsystems have less impact on the entire network. The pedal box can be adjusted mechanically after loosening the screw connections and thus adapted to different driver sizes within a few minutes.

### **Adaptable chassis and consistent brakes**

Audi Sport customer racing is breaking new ground in chassis adjustment. The McPherson design on the front axle makes it possible to implement changes to the kinematics faster than ever before. Whereas the previous bolting system always required a chassis measurement for changes, spacer components known as shims can now be inserted in the control arm and track rod in a matter of minutes. In four different widths from 1.2 to 10 millimeters at the wishbone, they can be combined in such a way that camber changes from 2 to 7 degrees at the front axle can be variably adjusted. Without wheel alignment, the respective session can be continued on the race weekend – an unbeatable advantage, for example, when changing the set-up at short notice during qualifying. The Audi RS 3 LMS also features track rods as standard on the four-link rear axle to achieve bump steer effects. They support the agility of the race car when turning in. Other variables of the suspension kinematics such as anti-dive and anti-lift, the height of roll centers, caster or the distance of the subframes to the body when the ride height is changed offer all the options a team could wish for when setting up. For the first time, the stabilizers have a quick-release fastener and can therefore be replaced at short notice. This gives the engineers even more freedom: In total, there are nine stabilizer settings on the front axle and six on the rear axle. Different springs and dampers that can be adjusted in two ways complete the chassis setup options. The brakes, whose dimensions are limited by the regulations, operate in a more favorable thermal window in the new model. In addition to the discs, the ventilation also includes the highly stressed six-piston calipers on the front axle for the first time. An ABS system is optionally available for endurance races. With all these innovations, the Audi RS 3 LMS offers more race car feeling than ever before.

## Technical data

# Audi RS 3 LMS

As of: March 2022

Model	Audi RS 3 LMS (2022)
<b>Vehicle</b>	
Vehicle type	Touring car according to TCR regulations
Structure	Reinforced steel body with weld-in steel safety cell
Body	Carbon fiber, sheet steel and aluminum
Safety concept	Energy-absorbing steel crash structures front/rear. Rescue hatch in roof
<b>Engine</b>	
Type	Four-in-line gasoline engine, front-mounted transverse engine, four valves per cylinder, double-overhead camshaft, gasoline direct injection, exhaust gas turbocharger with intercooler
Exhaust emission control system	Oxygen sensor upstream of catalytic converter, steel racing catalytic converter
Engine management	Control ECU by WSC
Engine lubrication	Wet sump
Cubic capacity	1,984 ccm (bore x stroke 82.5 mm x 92.8 mm)
Power output	Upt to 250 kW (340 hp) at 6,250 rpm
Torque	Up to 420 Nm at 2,500 rpm
<b>Drive train/transmission</b>	
Type of drive	Front-wheel drive
Clutch	Sintered twin-plate clutch
Transmission	Sequential 6-speed racing transmission
Differential	Multi-plate limited slip differential, adjustable preloading
Driveshafts	Constant velocity outer joint shafts, tripod inner joints
<b>Suspension/steering/brakes</b>	
Steering	Electric rack and pinion steering with modified soft- and hardware
Front suspension	McPherson struts with lower steel wishbones, aluminum swivel bearing, steel subframe, struts with coil springs and adjustable dampers, infinitely variable ride height, toe and camber, three different stabilizers adjustable in three ways each
Rear suspension	Four-link rear suspension, dampers with coil springs (coil-over configuration), steel subframe, aluminum uprights, infinitely variable ride height, toe and camber, two different stabilizers adjustable in three ways each
Brakes	Hydraulic dual-circuit braking system with adjustable brake pressure distribution (front/rear axle), steel brake discs front (378 x 34 mm) and rear (272 x 12 mm)
Rims	Cast aluminum rims, front and rear 10 x 18 inches offset 26
Tires	27/65 - 18, 260/660 R18
<b>Weight/dimensions</b>	
Length/width/height	4,650 mm/1,950 mm/1,250 mm
Wheelbase	2,665 mm
Dry weight/race weight (incl. driver)	1,115/1,265 kg *
Fuel tank capacity	100 l
<b>Equipment</b>	
Fire extinguishing system	FIA-Standard 8865-2015
Controls	Height- and length-adjustable safety steering column, multi-functional steering wheel, adjustable pedals
Seat system	Audi Sport Protection Seat according to FIA 8862-2009
Refueling system	Production with safety valve
Electrical system	Motorsport electrical system
<b>Price</b>	139,000 Euro (plus VAT)

\* Established by BoP of the series organizers

The TCR category

## **Customer racing with production-based touring cars**

**The TCR category, which Italian Marcello Lotti created and markets worldwide with his organization WSC, has been in existence since 2015. The abbreviation stands for “Touring Car Racing.” It is a cost-effective and attractive platform that appeals to many automakers with its production-based touring cars and is popular in industrialized nations as well as in emerging countries.**

TCR touring cars are derived from mass-production models that must have been built in at least 5,000 units over twelve consecutive months. A minimum length of 4.20 meters, a body with four or five doors, front-wheel drive and engines between 1.75 and two liters displacement with a single turbocharger are prescribed. The model range of many manufacturers meets these requirements. Currently, 28 TCR models from 14 automotive brands have been homologated. Expensive materials such as titanium, magnesium and ceramic materials are prohibited. Homologation is frozen for three years. After that, at the earliest, the next stage of evolution can follow.

A balance of performance and the compensating weight enable those responsible to increase the equality of opportunity between the different products. Low costs for a race-ready touring car that can handle sprints as well as long distances determine this class for diverse areas of use from amateur to top-level racing.

In total, WSC currently has about 30 race series licensed worldwide, from the WTCR – FIA World Touring Car Cup initiated in 2018 as the most high-profile platform, to continental series such as TCR Europe or TCR Asia, to regional series such as TCR South America and the Baltic Touring Car Championship. The vast majority of TCR racing series, however, remain the national offshoots in North America, Europe, Asia and Australia. Classes in mixed sports and touring car series are also licensed, for example in the 24H Series held on several continents, the IMSA Michelin Pilot Challenge in North America, the Super Taikyu Series in Japan or the Nürburgring Langstrecken-Serie in Germany. In addition, there are Audi customer teams that successfully race the RS 3 LMS in other fields. These include the Spezial Tourenwagen Trophy in Germany, the Trophée Tourisme Endurance in France, the Belcar Endurance Championship in Belgium, the North and South Island Endurance Series in New Zealand, the China Endurance Championship in Asia or competitions in Brazil.



TCR fielding opportunities

## TCR worldwide

The TCR category started a real streak of success around the world in 2015. Whether national, regional, continental or international, these touring cars are present everywhere. Teams and drivers can choose between sprint and endurance racing, as well as pure TCR racing series or TCR classes in mixed events. Audi is represented globally thanks to its large customer base.

### Asia

China Endurance Championship	<a href="http://www.facebook.com/CEC-China-Endurance-Championship-579241832461381">www.facebook.com/CEC-China-Endurance-Championship-579241832461381</a>
Macau Grand Prix	<a href="http://www.macau.grandprix.gov.mo">www.macau.grandprix.gov.mo</a>
NGK UAE Procar Championship	<a href="http://www.dubaiautodrome.ae/motorsport/uae-procar">www.dubaiautodrome.ae/motorsport/uae-procar</a>
TCR Asia	<a href="https://asia.tcr-series.com">https://asia.tcr-series.com</a>
TCR Endurance	<a href="http://www.supertaiky.com">www.supertaiky.com</a>
TCR Japan	<a href="http://www.tcr-japan.jp">www.tcr-japan.jp</a>

### Europe

ADAC TCR Germany	<a href="http://www.adac-motorsport.de/adac-tcr-germany">www.adac-motorsport.de/adac-tcr-germany</a>
Baltic Touring Car Championship BaTCC	<a href="http://www.batcc.eu">www.batcc.eu</a>
BEC6H	<a href="http://www.batcc.eu">www.batcc.eu</a>
Belcar Series	<a href="http://www.belcarseries.com">www.belcarseries.com</a>
Campeonato de España Resistencia	<a href="http://www.vlineorg.com/es/gt-cer-2">www.vlineorg.com/es/gt-cer-2</a>
Coppa Italia	<a href="http://www.gruppoperonirace.it/campionati/42-coppa-italia-turismo">www.gruppoperonirace.it/campionati/42-coppa-italia-turismo</a>
Eset V4 Cup	<a href="http://www.eset-v4.com">www.eset-v4.com</a>
FIA CEZ	<a href="http://www.cez-motorsport.com">www.cez-motorsport.com</a>
Nürburgring Langstrecken-Serie	<a href="http://www.nuerburgring-langstrecken-serie.de">www.nuerburgring-langstrecken-serie.de</a>
Spezial Tourenwagen Trophy	<a href="http://www.spezial-tourenwagen-trophy.de">www.spezial-tourenwagen-trophy.de</a>
TCR Denmark	<a href="http://www.tcr-denmark.com">www.tcr-denmark.com</a>
TCR Eastern Europe	<a href="https://easterneurope.tcr-series.com">https://easterneurope.tcr-series.com</a>
TCR Europe	<a href="http://www.europe.tcr-series.com">www.europe.tcr-series.com</a>
TCR Italy	<a href="http://www.acisport.it/it/TCRItaly/home">www.acisport.it/it/TCRItaly/home</a>
TCR Scandinavia	<a href="http://www.stcc.se">www.stcc.se</a>
TCR Spain	<a href="http://tcr-spain.rfeda.es">tcr-spain.rfeda.es</a>
TCR UK	<a href="http://www.tcr-uk.co.uk">www.tcr-uk.co.uk</a>
Trophée Tourisme Endurance	<a href="http://www.trophee-endurance.fr">www.trophee-endurance.fr</a>

**International**

24H TCE Series

[www.24hseries.com](http://www.24hseries.com)

FIA Motorsport Games

[www.fiamotorsportgames.com](http://www.fiamotorsportgames.com)

FIA WTCR

[www.fiawtcr.com](http://www.fiawtcr.com)

**Endurance races**

24h Nürburgring

[www.24h-rennen.de/en](http://www.24h-rennen.de/en)

**North America**

IMSA Michelin Pilot Challenge

[www.imsa.com/michelinpilotchallenge](http://www.imsa.com/michelinpilotchallenge)

Sports Car Championship Canada

<https://felmotorsports.com>

**Oceania**

North Island Endurance Series

<https://nierdc.com>

South Island Endurance Series

[www.facebook.com/pg/sierdcnz](http://www.facebook.com/pg/sierdcnz)

TCR Australia

[www.tcraustralia.com](http://www.tcraustralia.com)

**South America**

TCR South America

<https://southamerica.tcr-series.com>

## Partners

# **The partners of Audi Sport customer racing**

**Audi Sport customer racing cooperates with two strategic partners in its TCR racing program.**

### **OZ Group**

OZ is an Italian company with global distribution and a multi-brand marketing strategy. Its main headquarters and production facility are in Italy (San Martino di Lupari, Padua), and it sells light alloy wheels through a global network of branches and qualified sales partners. OZ symbolizes Italian excellence in the world of wheels and is a major supplier to multiple sectors, including motor racing, aftermarket, motorbike, and OEM with custom projects for luxury automakers.

### **Ravenol**

Ravenol is the brand name of Ravensberger Schmierstoffvertrieb GmbH that was founded in 1946 in Westphalia, Germany. Initially, the company restricted its activities to the manufacture and sale of monograde engine oils and a selection of industrial cleaning products. Nowadays, motorists and many businesses from the automotive, engineering, steel and construction sectors, as well as mining, agriculture and transport companies rely on Ravenol-branded oils and lubricants, and Ravenol products are now available in over 80 countries.

Interesting details about the Audi RS 3 LMS

## Facts and figures

**Background information, facts and figures pertaining to the Audi RS 3 LMS at a glance.**

Did you know that ...

... the appearance of the new Audi RS 3 LMS was created in close collaboration with the design department of AUDI AG?

... the water radiators of the new Audi RS 3 LMS come from the production model of the R8?

... the RS 3 LMS achieves its performance on the race track with an almost completely standard engine that came off the production line at the Győr site in Hungary? The crank drive, valve train, engine block and cylinder head are all standard, as are the intake manifold, turbocharger and fuel injection system.

... the roll cage of Audi's TCR touring car consists of 18 individual steel tubes that add up to a length of 25.781 meters?

... the new body add-on parts for racing in the area of fenders and front and rear aprons compared with the production model are all made of CFRP?

... the newly designed light-alloy wheels of the Audi RS 3 LMS in titanium gray have the same color tone as the wheels of the standard RS model series from Audi?

... the operation of the side window in the driver's door must comply with the principle of the standard model? Thus, the driver operates a power window.

... a maximum duration is defined in the regulations for exiting the cockpit in an emergency? It may not exceed seven seconds when exiting through the driver's door and nine through the passenger door.

## **Fresh model range on four pillars**

**Audi's customer racing program has a fresh and modern setup. The brand's touring car, the Audi RS 3 LMS, debuted in its second generation in February 2021. The entry into the world of GT racing is made with the Audi R8 LMS GT4, which was newly revised for the 2020 season. The Audi R8 LMS GT2 has been thrilling sports car fans since 2019 as the most powerful model in the line-up. The Audi R8 LMS GT3, the first generation of which started the customer racing program in 2009, has been available to customers in its latest development stage, the evo II, since the 2022 season.**

Following 180 examples of the first generation model, the Audi RS 3 LMS gen II seamlessly continues the success of its predecessor. The touring car, with up to 250 kW (340 hp), already won the Trophy classification title in its debut season during 2021 in the WTCR – FIA World Touring Car Cup and claimed four runner-up titles. A wide range of innovations makes the work for the teams easier in terms of preparation before and at the race track.

Audi has positioned the R8 LMS GT4 above this entry-level model for touring car racing. The near-production coupe, with up to 364 kW (495 hp), competes with various sports cars from other manufacturers in the GT4 category, which is widely used around the world. The predictable and basic character of the race car, combined with the sensitive controls of the driving aids, facilitate individual customization. With its technical revision presented for the 2020 season, the Audi R8 LMS GT4 is right up to date.

Audi Sport customer racing's most powerful race car already made its debut in 2019. The Audi R8 LMS GT2 generates pure fascination with 470 kW (640 hp) and its spectacular appearance. Right off the bat, the model won the GT2 European Series, which was held for the first time in 2021 and featured up to six brands. Club races and track days complete the spectrum of possible uses for this model.

The central pillar of the program remains the GT3 version of the Audi R8 LMS. The latest development version, the evo II, with improvements in the areas of aerodynamics, engine characteristics, interior climate control, suspension and traction control, is even more customer friendly. Customers all over the world have been regularly achieving victories and championship titles in the popular GT3 series for years.

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