

# FACT SHEET XXL Round 5

## DTM MOSCOW

SCHAEFFLER

July 22/23, 2017

### Good memories

No DTM car has won as often at the Moscow Raceway as the Schaeffler Audi RS 5 DTM



#### Rule of three ...

The third generation of the Audi RS 5 DTM in detail

p. **8**



#### Schaeffler and Audi

Partners on and off the race track

p. **20**

## Editorial



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The 2017 DTM season is turning out to be extremely tight. After the first four race weekends, the top three drivers – all from different manufacturers – are within eleven points of each other. This race weekend will unfold in Russia. Our driver Mike Rockenfeller has recovered from his

heavy accident at the Norisring and is planning to compete again in the Schaeffler Audi RS 5 DTM. We wish “Rocky” well and hope the fans have fun at the track.

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## Contents

- 2 Schaeffler in the DTM
- 4 2017 race calendar
- 6 DTM changes
- 8 DTM technology
- 10 Interview with two executive board members
- 12 Schaeffler in motorsport
- 14 The future of the IC engine
- 16 Audi Sport Team Phoenix
- 17 Mike Rockenfeller
- 18 DTM history
- 20 Schaeffler and Audi
- 22 Schaeffler company profile
- 23 Schaeffler and DTM facts & figures
- 24 Info on the DTM weekend



Loyal Schaeffler ambassador  
Mike Rockenfeller competes  
sporting the Schaeffler colors  
for the sixth time in 2017

# Motorsport in a *class of its own*

The DTM has been delivering top-class touring car racing for more than 30 years. The German manufacturers, Audi, BMW and Mercedes-Benz, and renowned drivers, battle for positions and points within the range of thousandths

The idea of a new touring car series was born in 1983 and, unlike other championships it did not group the field in various classifications. The driver to finish first was the winner: a transparent concept that was working well in the French Touring Car Championship too. The championship which in 1984 began as “Deutsche Produktionswagen-Meisterschaft” (German Production Car Championship) evolved into the most important international touring car series, DTM, over the period of more than three decades.

2017 marks a very special year for the DTM. For the first time, fans have the opportunity to watch the teams’ activities at close range. Three garages are open, allowing visitors to

take a look inside the inner sanctum – even during most of the sessions: another step of making the DTM as fan-friendly as possible.

A tight set of regulations has been ensuring a sporting competition on an equal footing for years. 18 vehicles, each delivering about 500 HP, are driven by top-class campaigners such as Mike Rockenfeller, Mattias Ekström, Gary Paffett, Bruno Spengler or Timo Glock. Six champions in total, including title defender Marco Wittmann, are aiming to again go down in the annals of DTM history.

### Attractive for fans and partners

As usual, two races will be held at each event. However – another novelty – both

of them now being equivalent. Each of the 18 classified rounds in the upcoming season covers a 55-minute distance plus one lap.

Schaeffler supported drivers and teams even in the DTM’s early years. Stickers of the LuK product brand were displayed on driver suits and vehicles. In 2011, the technology group concentrated its commitments, gave its name to the Schaeffler Audi and celebrated impressive successes. In the year of its premiere, Martin Tomczyk won the title and in 2013, Mike Rockenfeller achieved the same feat. In 2017, Schaeffler, Audi Sport Team Phoenix and Rockenfeller are again forming a congenial trio that continues to make its mark on the DTM. ■

# Tour of *Europe*

18 races, 9 events, 5 countries – facts & figures of the 2017 DTM



## 1 *Champagne pleasures* Hockenheim Germany

May 6/7, 2017  
Mike Rockenfeller manages a good start to the season in his Schaeffler Audi RS 5 DTM, clinching a third and a seventh place in the opening races.



## 2 *Strong early form* Lausitzring Germany

May 20/21, 2017  
With two impressive comebacks from grid positions eight and eleven to fifth-place finishes, Rocky continues attracting attention in the DTM.



## Rate: 100 % Budapest Hungary

June 17/18, 2017  
Six races, six point results: Mike Rockenfeller has established his spot in the top group of the standings following a fourth and tenth place at the Hungaroring.



## 4 *Shock moment* Norisring Germany

July 1/2, 2017  
In the second race at the Nuremberg city-circuit, through no fault of his own, Rockenfeller was involved in a heavy collision and suffered a foot injury.



## 6 *Rocky's victory premiere* Zandvoort The Netherlands

August 19/20, 2017  
In the first year of the Schaeffler Group's DTM commitment, in 2011, Mike Rockenfeller, at Zandvoort, celebrated his first ever DTM victory as well.



## 5 *Russia record holder* Moscow Russia

July 22/23, 2017  
In a third of the six DTM races held at the Moscow Raceway, the Schaeffler Audi RS 5 DTM with Mike Rockenfeller at the wheel was the first to cross the finish line.



7

## *Amidst nature* Spielberg Austria

September 23/24, 2017  
An exciting roller coaster ride including an Alpine panorama – the Red Bull Ring features a unique flair. Rocky has been holding the lap record in Austria since 2014.

## *A fixture since 1984* Nürburgring Germany

September 9/10, 2017  
The Nürburgring is the only race track to have been consistently represented on the calendar since the DTM's inaugural season in 1984. The DTM races are run on the short version of the Grand Prix circuit.



9

## *Showdown* Hockenheim Germany

October 14/15, 2017  
Six times in the past ten years the title race was not decided before the season finale that is traditionally held at Hockenheim – on five of these occasions the decision was produced in the very last race.



8

### Drivers' classification

P	Driver	Manufacturer	Pts
1	Mattias Ekström (S)	Audi	89
2	Lucas Auer (A)	Mercedes-Benz	87
3	Maxime Martin (B)	BMW	78
4	Jamie Green (GB)	Audi	75
5	René Rast (D)	Audi	72
6	Timo Glock (D)	BMW	60
7	Gary Paffett (GB)	Mercedes-Benz	55
8	Mike Rockenfeller (D)	Audi	54
9	Paul Di Resta (GB)	Mercedes-Benz	53
10	Marco Wittmann (D)	BMW	46
11	Robert Wickens (CDN)	Mercedes-Benz	44
12	Bruno Spengler (CDN)	BMW	43
13	Edoardo Mortara (I)	Mercedes-Benz	40
14	Nico Müller (CH)	Audi	36
15	Tom Blomqvist (GB)	BMW	15
16	Augusto Farfus (BR)	BMW	6
17	Maro Engel (D)	Mercedes-Benz	3
	Loïc Duval (F)	Audi	0

### Teams' classification

P	Team	Pts
1	Audi Sport Team Rosberg	147
2	Mercedes-AMG Motorsport BWT	127
3	Audi Sport Team Abt Sportsline	125
4	BMW Team RBM	121
5	Mercedes-AMG Motorsport Mercedes me	99
6	BMW Team RMR	75
7	Mercedes-AMG Motorsport SILBERPFEIL Energy	56
8	Audi Sport Team Phoenix	54
9	BMW Team RMG	52

### Manufacturers' classification

P	Manufacturer	Pts
1	Audi	326
2	Mercedes-Benz	282
3	BMW	248



# Changes at a glance

Besides opening the team garages to the fans, the DTM organizers have made further changes to the technical and sporting regulations in order to make the series as exciting and, at the same time, as transparent as possible. In addition, the drivers' skills are moving into focus in the 2017 season even more so than before. The changes in a nutshell

## Technology

### Engine

The 4-liter V8 engines in 2017 deliver more than 500 HP. The higher engine output results from the air restrictors in the intake system having been enlarged from 28 to 29 millimeters. In addition, special areas in the engine's intake system have been released for further development in order to optimize performance.

### Aerodynamics

The specifications of the new Technical Regulations encompass reductions in aerodynamics in order to decrease downforce of the vehicles. For this purpose, the geometries of the front splitter, underfloor and rear diffuser were modified and ride height was increased. Use of the drag reduction system (DRS), which makes overtaking easier in the DTM, will be limited to twelve laps (a total of 36 activations) in all races.

### Tires

In conjunction with the new Hankook specification tires that provide more short-term grip but degrade more heavily over time, the resulting overall handling characteristics of the new DTM race cars will be putting clearly greater demands on the driver.

### Specification components

This year's body styles correspond to the most recent vehicle generations of their production counterparts. In order to limit the areas that permit cost-intensive high-tech developments by the manufacturers, clearly more areas for jointly developed specification components than before have been included in the new regulations.



## Sport

### Races

Each of the 18 classification races in the upcoming season will cover a 55-minute distance, plus one lap. As a result, the race duration of a weekend is extended by ten minutes compared with last year (60 and 40 minutes).

### Radio

During the races, radio communications between the pit lane and the driver are prohibited. As a result, the driver has to assume clearly more responsibility and make decisions himself. The radio ban is only lifted in a few exceptional situations such as a safety car period.

### Heating blankets

The utilization of heating blankets is prohibited. Consequently, the drivers have to first bring their tires up to the optimum temperature both at the start and after the pit stop. This opens up opportunities for additional overtaking maneuvers.

### Pit stops

In each race, a mandatory pit stop, no earlier than after the first and no later than after the last race lap, has to be made. This results in many tactical opportunities to define the race strategy. The teams have to perform their tire changes with clearly fewer crew members than before and may use only two impact wrenches. As a result, the pitting time of the cars inevitably becomes longer and every single mechanic has additional tasks to perform and thus more responsibility than before.

### Racing time

In 2017, the times at which the DTM race cars can be seen on track will be longer than before. In addition to the two races, they will continue to be out during the free practice sessions – each lasting for 30 minutes on Friday, Saturday and Sunday – plus in the two qualifying sessions of 20 minutes each. This results in a total driving time of four hours per race weekend.

# Rule of *three* ...

The third-generation Schaeffler Audi RS 5 DTM was developed in parallel to the production model. It appears even more progressive and is even more extreme in terms of aerodynamics than the successful predecessor model. Mike Rockenfeller's DTM race car again represents the Schaeffler colors

## Engine

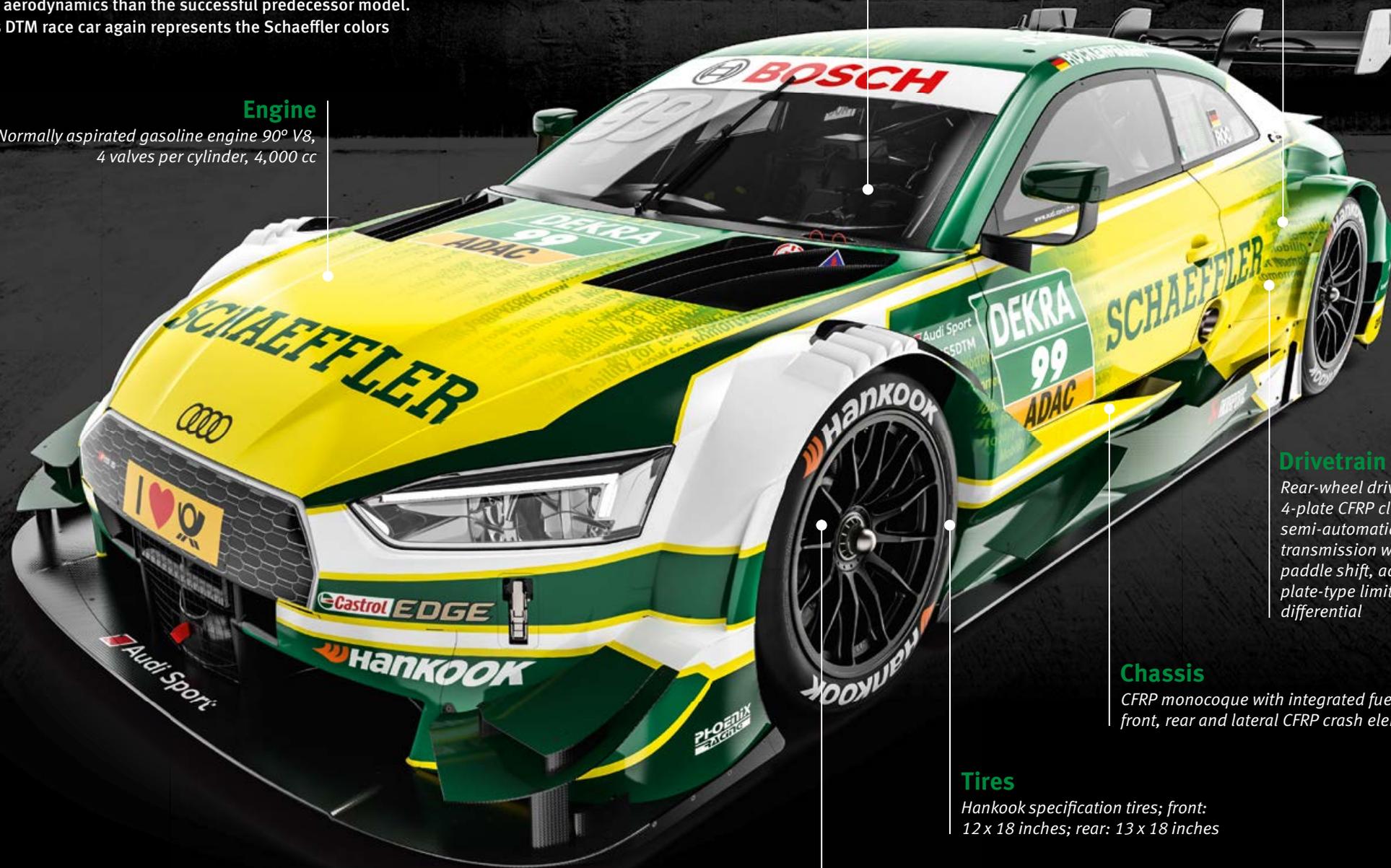
Normally aspirated gasoline engine 90° V8,  
4 valves per cylinder, 4,000 cc

## Steering wheel

Servo-assisted rack  
and pinion steering

## Suspension

Independent front and  
rear suspension, double  
wishbones, pushrod  
system with spring/  
damper unit



## Drivetrain

Rear-wheel drive,  
4-plate CFRP clutch,  
semi-automatic 6-speed  
transmission with  
paddle shift, adjustable  
plate-type limited slip  
differential

## Chassis

CFRP monocoque with integrated fuel cell (120 l),  
front, rear and lateral CFRP crash elements

## Tires

Hankook specification tires; front:  
12 x 18 inches; rear: 13 x 18 inches

## Brakes

Hydraulic dual-circuit brake systems,  
adjustable brake balance, light alloy  
monobloc brake calipers

## Dimensions

Length 5,010 mm (incl. rear wing)  
Width 1,950 mm  
Height 1,150 mm  
Weight 1,125 kg (incl. driver)

## Power output

More than 500 HP  
More than 500 Nm torque



## “The DTM reaches our employees”

Prof. Peter Gutzmer, Deputy CEO and Chief Technology Officer of Schaeffler AG, and Matthias Zink, CEO Automotive of Schaeffler AG, discuss the DTM commitment of their company in an interview

*As early as in the 1980s, DTM cars sporting stickers of Schaeffler's LuK product brand competed in the DTM and since 2011 an Audi completely wrapped in Schaeffler colors has been attracting attention. What's the objective behind this commitment?*

*Peter Gutzmer: “Schaeffler has always been an innovation driver. About three decades ago, we extended our commitment from the factories to*

Decision-makers Matthias Zink (left) and Prof. Peter Gutzmer are members of Schaeffler's executive board

*the race tracks in a manner of speaking in order to present our brands in the competitive motorsport environment. Not only in the DTM but also in other motorsport disciplines such as rally racing, logos of Schaeffler's LuK, FAG and INA brands have been emblazoned on many vehicles. Today, and this reflects the development of our company as well, we're communicating our brand values in motorsport under the central theme of 'One Schaeffler.'”*

*In 2017, Schaeffler brand ambassador Mike Rockenfeller is again competing in the DTM at the wheel of an Audi. The vehicle communicates a clear message.*

*Peter Gutzmer: “Exactly, and it does so even in its name: Schaeffler Audi RS 5 DTM. Besides the purposely selected conspicuous color scheme, the 'Mobility for tomorrow' inscriptions are unmistakable as a visual highlight. So the graphic layout of the vehicle carries the Group's strategy of 'Mobility for tomorrow' into motorsport. Schaeffler is actively involved in designing future mobility with its innovative products and technology expertise. Appearances in motorsport – and I include those in Formula E and in the WEC – are the optimum communicators of our messages.”*

*In 2016, some 1,000 Schaeffler employees with banners, baseball caps and T-shirts of your company practically transformed the grandstands during the DTM season's highlight at the Norisring into a “green wall.” What kind of a feeling was that?*

*Matthias Zink: “A wonderful one. The Schaeffler Audi has been showing the integrative power and mojo of motorsport from day one. Our employees identify with our company via motorsport. And they do so around the globe. Posters and stickers of the Schaeffler racer are displayed in numerous production halls, our research and development sites and in offices. Whenever Mike Rockenfeller visits a Schaeffler location and our employees have the opportunity to shake his hand during personal tech talks it becomes clear that this is a perfect partnership.”*

*The technologies used in race cars and production vehicles in many cases are not very far apart. How do these two areas benefit from each other?*

*Matthias Zink: “The complexity and speed of motorsport commitments sharpen the focus on essentials and challenge our engineers to deliver feasible solutions by deadlines that are locked in concrete. In addition, motorsport promotes team spirit. All of this is beneficial in Schaeffler's day-to-day work as a globally active automotive and industrial supplier as well. The keyword is technology transfer, for instance in the field of hybridization, which is a very important topic on the road as well as in motorsport. That's why we're involved in the FIA World Endurance Championship (WEC) where we're able to demonstrate our expertise in this field together with our partner Porsche. This applies to Formula E, where the main focus is on the interaction between the electric motor and the transmission, in similar ways. Since the 2015/2016 season, Schaeffler, as the exclusive technology partner, has been developing the powertrain of the race cars together with Team ABT Schaeffler Audi Sport.”*

*The DTM has always been racing with classic IC engines. By contrast, electrification is the predominant topic in the automotive industry at the moment. Will IC engines have a chance in the future?*

*Peter Gutzmer: “Yes, absolutely. Our future lies in electric mobility but, at the same time, electric mobility is the future of the IC engine as well. As a lot of research has shown, we will not be able to achieve the established targets by 2050 by means of purely battery-based electrification. Looking at the total system, this will only be possible if we create CO<sub>2</sub>-neutral energy carriers based on renewable energies and those will be gaseous and liquid synthetic fuels as well as hydrogen, in other words energy carriers that are ideally suited for use in an IC engine system. The future of our personal mobility will be defined by a healthy mix of hybrids, efficient IC engines and electric powertrains.”*

# Motorsport *in our genes*

Competition, momentum, vehicle control at the limit – motorsport has many facets that make it unique. But it also sharpens the senses and provides new ideas and motivation for routine tasks. All of these are reasons that motivate Schaeffler to be involved in motorsport

Be it in Formula E, the WEC or in the DTM – success in motorsport is closely tied to the ability of every individual and particularly to teamwork. Innovative prowess and dynamism, determination and courage are essential. This also applies to the daily endeavors of Schaeffler's employees and has resulted in Schaeffler successfully standing its

ground as one of the world's leading automotive suppliers. The motorsport commitment has been a substantial element of the Schaeffler brand strategy for more than three decades and is anchored in the company's genes in Herzogenaurach – as well as around the globe where Schaeffler's nearly 87,000 employees are active. ■



## E-mobility development laboratory

The first racing series for fully electric vehicles uniquely embodies what mobility for tomorrow stands for. At Schaeffler, involvement in shaping the electrification of the automobile is one of the central forward-thinking topics. Schaeffler is one of the innovation leaders in this field and frequently a pioneer. In Formula E, Schaeffler has been on board as the exclusive technology partner of Team ABT Schaeffler Audi Sport ever since the series' inaugural season of 2014/15. Since the second season, Schaeffler has been developing the vehicle's powertrain. The Brazilian Lucas di Grassi and the German Daniel Abt have been a well-gelled driver duo ever since the first race. Di Grassi has already finished overall runner-up twice and taken third place overall once.

## Touring car action

In the DTM, the green-yellow Schaeffler Audi has been the eye-catcher since 2011. In addition to its striking colors, its sporting successes are remarkable too. In the first year of the partnership, Martin Tomczyk, in a previous-specification car, secured one of the most surprising title wins in DTM history. His successor, Mike Rockenfeller, followed suit when he became champion in 2013. Furthermore, as a Schaeffler brand ambassador, Rockenfeller impressively embodies the company's values. For the trained automotive mechanic, participating in events at the Schaeffler plants is not an unpleasant duty. He enjoys them and asks employees to explain their jobs to him. For the employees, it is both an honor and motivation to familiarize the champion with the enormous breadth of the Schaeffler product range in direct exchange and to see him in action at close range.



## High-tech hybrids

Action at close range is something that Schaeffler experiences in the FIA World Endurance Championship (WEC) as well – together with Porsche. In 2014, the team based in Weissach returned to the top category, LMP1, following a 16-year abstinence but has not only been relying on Schaeffler's expertise since then. The partnership has historically grown and, in motorsport as well as in production, dates back to the 1940s, Schaeffler's cage-guided needle bearing having been installed in Porsche's first production model, the legendary 356. The WEC provides Schaeffler with a perfect opportunity to demonstrate technological expertise. With a set of Technical Regulations that limit the amount of usable energy while allowing substantial freedom in the areas of hybrid and powertrain technology, energy efficiency and forward-thinking technology are more important than ever – topics that drive the company in terms of automotive technology, the reliability and quality of production vehicles being of major importance to Schaeffler. Together, Schaeffler and Porsche won both the drivers' and the manufacturers' world championship title in 2015 and 2016 as well as the prestigious 24-hour race at Le Mans.





# Magic word *efficiency*

A technology on its way out? Not by a long shot! The IC engine is far from having reached the end of its development and will be playing a key role in mobility for tomorrow as well

The coming decades will continue to see valves opening and closing, pistons traveling up and down, and crankshafts rotating. This much is certain, the only question is: in how many cars? Legions of futurists are struggling to come up with an answer to this question. Not least because of the large number of factors, from legal requirements to infrastructures to technical developments and prices, that influence market developments. "There continues to be a high level of uncertainty about the way in which things are going to develop," says Klaus Rosenfeld, CEO of Schaeffler AG, describing the current state. Farsighted experts of the technology group assume that by 2030 a maximum of 30 percent of all automobiles will be propelled strictly by electricity. All others – in other words 70 percent and more – will have an IC engine

on board. An overestimated number? Not when taking the fact into account that hybrid-electric vehicles have IC engines as well.

## Combustion still has room for improvement

Especially because IC engines will be a driving force in mobility for tomorrow it's important to make them fit for the future. Engineers at Schaeffler are working on projects that aim to maximize the output delivered by the amount of energy employed. And, by the way, they've been doing so for decades (see info column, right). There's still considerable room for improvement, as only a fifth of the power in a fuel tank is actually put on the road at the moment. "We estimate the entire efficiency enhancement potential to be no less than 20 percent for

gasoline and 10 percent for diesel engines," reveals Schaeffler's Chief Technology Officer Prof. Peter Gutzmer. Industry experts are in agreement that a single measure to achieve this does not exist. The reduction of fuel consumption requires a large number of individual ideas and improvements, in the IC engine itself and in the drivetrain.

## This is how Schaeffler enhances efficiency

Reducing friction is one of these measures. Here Schaeffler leverages its wide-ranging know-how as a manufacturer of rolling bearings as well as its expertise in surfaces and coatings. In engine technology, for instance, fully variable "UniAir" valve control, the production of which Schaeffler launched in 2009 and has continuously improved ever since, significantly enhances efficiency. Combined with engine downsizing, the system makes it possible to reduce fuel consumption and CO<sub>2</sub> emissions by up to 25 percent. In addition, UniAir expands the possibilities of situational and demand-based engine operation. As a result, modern combustion strategies such as "Miller" and "Atkinson" can be achieved. Cylinder deactivation is possible without the need for any additional engineering modifications as well. In addition, Schaeffler's electro-mechanical camshaft adjuster enhances efficiency compared with conventional hydraulic systems. Not only with cylinders, Schaeffler pursues the simple approach to saving of "shutting everything off that's not needed at the moment." All-wheel drive disconnect clutches, start-stop systems or electric clutches – the portfolio of the automotive and industrial supplier includes all of these. Another piece of the optimization puzzle: the thermal management module launched in 2011 that helps IC engines and transmissions reach their ideal temperature windows faster.

Actually, whether IC engines or electric motors will prevail is not the question at Schaeffler. A more appropriate statement would be that there will be both: IC engines and electric motors because without electrification/hybridization even mid-size cars like the Audi A5 will not be able to comply with future CO<sub>2</sub> limits. ■

## 3 examples from decades

Innovations for more efficiency  
(Percentage: fuel savings)



# 22%

1985  
Dual-mass flywheel (DMF) with centrifugal force pendulum absorber

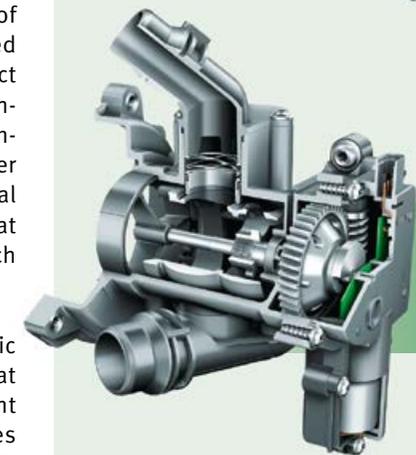
# 25%

2009  
Fully variable electro-hydraulic valve control (UniAir)



# 4%

2011  
Thermal management module



Always focused on progress Schaeffler has a decades-long track record of delivering innovations to reduce the fuel consumption and emissions of IC engines, which enhances their efficiency



## Experience is a trump card

Phoenix Racing is one of the few teams that have been racing in the DTM ever since the series' comeback in 2000. For the 2017 season, the Eifel-based team has partly reorganized

Audi and Phoenix Racing have been partners in the DTM since 2006. The squad based in Meuspath in the Eifel region has won the DTM drivers' title twice and provided the best Audi driver in the overall classification four times. Since the racing series' comeback in 2000, the team has been active in the DTM, which makes it one of the most experienced outfits in the field.

### Major successes of Phoenix Racing

- 1<sup>st</sup> place 2011, 2013 DTM (drivers)
- 1<sup>st</sup> place 2013 DTM (teams)
- 1<sup>st</sup> place 2000, 2003, 2012, 2014  
24 Hours of Nürburgring
- 1<sup>st</sup> place 2007, 2012 24 Hours of Spa
- 1<sup>st</sup> place 2012 12 Hours of Bathurst
- 1<sup>st</sup> place 2009 FIA European GT3 Championship
- 1<sup>st</sup> place 2009 Belgian GT3 Championship
- 1<sup>st</sup> place 1999 Touring Car GP Macau

Alongside Team Director Ernst Moser and Team Manager Dirk Theimann, Jürgen Jungklaus has returned to the DTM as Head of the Team. The seasoned engineer led Mike Rockenfeller to the DTM title in the 2013 season and had to take a break last year for health reasons.

GT racing is Phoenix Racing's second pillar. The team has won the 24-hour race at the Nürburgring twice with the Audi R8 LMS. GT racing commitments are again planned for 2017. In addition, Phoenix Racing has intensified its activities in Asia, including those in the Audi R8 LMS Cup. ■

- Phoenix.Racing.GmbH
- @phoenix\_racing
- phoenix-racing.de
- phoenixracing\_



## A champion attacks again

Together with Phoenix Racing and Schaeffler Mike Rockenfeller in 2013 achieved his greatest success in motorsport to date when he became DTM Champion. In spite of two difficult years most recently, Rocky is confident for 2017

Position 14, position 7, position 6, position 4, position 1 – since 2009, Mike Rockenfeller has evolved into a top-class driver in the DTM. In 2013, his upward performance curve culminated in winning the drivers' title. In addition, he occupied a strong third place in the overall standings in 2014. In the past two years, the Schaeffler ambassador remained below his expectations. No reason to bury his head in the sand. "I'm confident that we're going to make it back to the top," says Rockenfeller. "My team and I have to change a few things and we're ready for that. We're going to make a different showing again than we did in the past two years, especially better than the one in 2016." ■

### Career highlights

- 2003 2<sup>nd</sup> Porsche Carrera Cup
- 2004 1<sup>st</sup> Porsche Carrera Cup
- 2005 1<sup>st</sup> GT2 class FIA GT Championship  
1<sup>st</sup> GT2 class 24 Hours of Le Mans
- 2006 1<sup>st</sup> 24 Hours of Nürburgring
- 2008 1<sup>st</sup> Le Mans Series
- 2010 1<sup>st</sup> 24 Hours of Le Mans
- 2013 1<sup>st</sup> DTM (with Schaeffler)  
"ADAC Motorsportler des Jahres"
- 2014 3<sup>rd</sup> DTM (with Schaeffler)

### Biography

- Date of birth October 31, 1983
- Place of birth Neuwied (D)
- Residence Landschlacht (CH)
- Marital status Married to Susanne,  
two sons (Phil and Paul)
- Height 1.75 m
- Weight 68 kg
- Motorsport since 1995

- mikerockenfeller
- @m\_rockenfeller
- mike-rockenfeller.de
- mike\_rockenfeller



Champion Sporting stickers of Schaeffler's product brand LuK, the Swede Mattias Ekström wins the DTM in 2007

# Showing the colors

Schaeffler and its product brands have become “permanent fixtures” in the DTM. Small stickers marked the beginning and title wins have been some of the highlights to date – a success story

Represented by its product brands as early as in the DTM's pioneering days, Schaeffler concentrates its commitments for the 2011 season and starts sporting a new look. Colorful and ready to attack – the green-yellow Schaeffler Audi. It was visually conspicuous and conspicuously fast right from the beginning. Be it with the A4 DTM or the RS 5 DTM, with Martin Tomczyk or with Mike Rockenfeller at the wheel – Schaeffler stands for success in the DTM. For pole positions, fastest race laps, for victories and for title wins.

The globally active automotive supplier has started to sponsor a complete race car with its name and in a major project at that. The com-

pany has opted for a commitment in the tradition-steeped DTM – the most popular international touring car series with millions of fans throughout Europe. The vehicle is wrapped in the company's colors, its name, Schaeffler, and the logos of its product brands, LuK, FAG and INA, are emblazoned on the bodywork in several places – Schaeffler, from now on, will be inevitably linked to the results of this car.

## From underdog to dominator

The venture proves successful. The Schaeffler Audi A4 DTM, which the racing scene affectionately nicknames “caipirinha express” at the time, soon evolves into the revered “Schaeffler Audi.” Thanks to the outstanding work of driver

Martin Tomczyk and his team, Audi Sport Team Phoenix, Schaeffler can call itself champion right in the debut year of its DTM commitment, not only from a sporting perspective but from a business one as well. “Motorsport evokes emotions and promotes bonding particularly when you're successful,” says Schaeffler's Chief Technology Officer Prof. Peter Gutzmer. “At Schaeffler and the Schaeffler brands, motorsport has traditionally been enjoying particular importance – as befits a technology company driven by innovation.”

## 30 years ago: The Schaeffler brands mark the beginning

The tradition dates as far back as the mid-nineteen eighties when the LuK, FAG and INA brands are first featured on the race cars in international touring car series for advertising purposes. Among others, in the 1986 DTM, the Rover Vitesse is on track sporting the LuK logo, with Kurt Thiim at the wheel. In the first event at Zolder, the Danish rookie races to victory from second place on the grid, marking Thiim's first DTM success and the first triumph for a vehicle with LuK branding as the beginning of a long success story. Following two other victories that season, Thiim clinches the title. In the following DTM years, the INA and LuK logos are featured on many other cars of the Alpina, BMW, Ford, Mercedes-Benz and Opel marques, as well as on the racing suits of their drivers. The conspicuous presence and numerous race victories in the subsequent years enhance the level of awareness the company enjoys within the DTM scene with a lasting effect.

In 2007, Mattias Ekström and Mike Rockenfeller in their Audi A4 DTM cars are racing under the banner of Schaeffler's product brands LuK and INA, respectively. Ekström clinches the title. And this success really sets things in motion. 2011: Martin Tomczyk becomes champion. 2012: Mike Rockenfeller succeeds the title defender who has switched to BMW as the Schaeffler campaigner. In his Audi A5 DTM, on clinching fourth place overall, he achieves his best DTM result. 2013: Rockenfeller drives the season of his life and claims the title. For Schaeffler, this marks the second triumph in its third year as the main sponsor of a vehicle. And in 2014, “Rocky,” in third place overall, makes the Schaeffler colors shine again. ■

## Schaeffler's brand history in the DTM

The journey of the product brands, LuK, INA and FAG, to the Schaeffler umbrella brand

1986



1987



1988



1989



2007



2013



2017



# From *day one*



Schaeffler and Audi have been longstanding partners not only in the DTM – in the field of production automobiles, the two German automotive heavyweights have been teaming up for many decades as well

Both in the DTM and in the Formula E electric racing series, Schaeffler and Audi have jointly celebrated major successes. By developing the entire powertrain for the race car of Team ABT Schaeffler Audi Sport, Schaeffler is involved in shaping mobility for tomorrow as well. The same is true off the race track, as the successful partnership between Schaeffler and Audi has been in existence for several generations.

As far back as in 1950, Schaeffler's cage-guided needle bearing is installed in the DKW F89 made by Auto Union, a company that preceded today's AUDI AG. It turns into a million-seller within a very short period of time. Across the following decades, Schaeffler and Audi intensify their collaboration. Since the mid-1960s, clutches by Schaeffler's LuK brand are used at Audi as well. In the 1980s,

the efficiency of the clutches is enhanced by stiffer designs, for the Audi 100, among others. In 1993, the self-adjusting clutch (SAC) goes into production, debuting in the Audi S4 Bi-Turbo. The continuously variable transmission, the thermal management module or the electromechanical roll stabilizer – listed on the following page are other important technology milestones achieved in the partnership between Schaeffler and Audi.

## Know-how and ingenuity

Not only the people at Audi, but those at all automobile manufacturers around the globe, rely on Schaeffler's active support. With the ingenuity of its development engineers and its concentrated manufacturing know-how, the group has been decisively influencing progress in global automotive technology. ■



Auto Union DKW F89 1950

In 1949, Georg Schaeffler achieves a breakthrough invention, the **#Cage-Guided #INA Needle Bearing**. It offers reduced friction and torque stability which revolutionize the roller bearing market. In 1950, it is first used in the Auto Union DKW F89 dubbed as "Meisterklasse" ("Master Class").



Audi 50 from 1974

The **#Diaphragm Clutch** introduced into automobiles by Schaeffler's LuK brand in the mid-1960s displaces the preceding unit with helical springs from the passenger car market. As well as in other models, Audi uses the technology in its compact Audi 50, enabling the Four Rings to tap into new consumer groups.



Audi 80 quattro 1986

Today's Schaeffler ambassador Armin Schwarz, on winning the title in the 1986 Mitropa Rally Cup, achieves his breakthrough in international rally racing. In his Audi 80 quattro sporting conspicuous graphics of Schaeffler's INA brand, numerous new **#Valve Train Components** are tested.



Audi A4 from 1995

The **#Overrunning Alternator Pulley** debuts in the Audi A4. Today, it is installed in practically any efficient car, stabilizing rotational irregularities in the belt drive. The result: smoother running and enhanced NVH performance.



Audi A6 from 1999

The **#Continuously #Variable #Transmission** is enabled thanks to a high-tech engineering design from Schaeffler. Featured in the legendary "bobblehead" TV commercial, the technology which Audi calls "Multitronic" acquires fame.



Audi A4 DTM 2007

In many motorsport disciplines, such as in the DTM on Mike Rockenfeller's Audi A4 DTM, logos of Schaeffler's LuK, FAG and INA brands are emblazoned on the cars. Today, the company's appearance at the race track is billed as **#OneSchaeffler**.



Audi A5 Sportback from 2007

Schaeffler's **#Thermal Management Module** controls temperature management in the entire powertrain. This allows the ideal thermal condition of the engine and transmission to be achieved as soon as possible and fuel economy to be enhanced.



Audi TT 2014

In the "Schaeffler System 48 V" **#Concept Vehicle** based on an Audi TT, Schaeffler demonstrates the potential of 48-volt hybridization. An electric rear axle complements the IC engine and recuperates braking energy at the same time.



Audi SQ7 from 2016

The **#Electromechanical #Roll Stabilizer** from Schaeffler enhances safety, vehicle dynamics and ride comfort, for instance in the current Audi SQ7. In 2016, the pioneering component receives a "German Innovation Award."

# Mobility for tomorrow

For Schaeffler, innovation has been part of its corporate DNA since the foundation of the company. It is based on lateral and interdisciplinary thinking

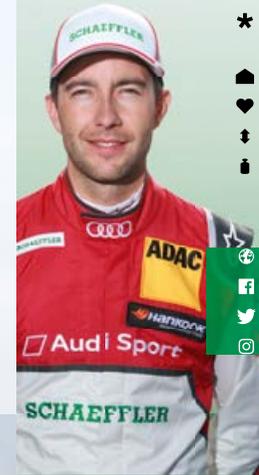
Schaeffler is known as an innovative leader delivering a wealth of technologies that make automobiles more fuel-efficient, environmentally friendly, and safer, as well as products for trains, aircraft, wind turbines, and many other industrial sectors. Schaeffler can be found wherever things are in motion – and motion also means mobility. The challenges facing mobility of the future are immense. That's why Schaeffler is committed to its holistic “mobility for tomorrow” concept, geared to finding sustainable solutions for the world of tomorrow.

**Mobility for tomorrow** Under this concept, Schaeffler concentrates on four focus areas: environmentally friendly drive systems, urban mobility, interurban mobility and energy chain



## Compact info

#99 Mike Rockenfeller



- ★ October 31, 1983, Neuwied (D)
- 🏠 Landschlacht (CH)
- ♥ Married, two sons
- 📏 1.75 m
- ⚖️ 68 kg

- 🌐 [mike-rockenfeller.de](http://mike-rockenfeller.de)
- 📘 [mikerockenfeller](https://www.facebook.com/mikerockenfeller)
- 🐦 [@m\\_rockenfeller](https://twitter.com/m_rockenfeller)
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### Schaeffler Audi RS 5 DTM

- Chassis CFRP monocoque, front, rear and lateral CFRP crash elements
- Drivetrain Rear-wheel drive, 4-plate CFRP clutch, semi-automatic 6-speed transmission with paddle shift, adjustable plate-type limited slip differential
- Engine Normally aspirated V8, 4,000 cc, more than 500 HP
- Suspension Independent front and rear suspension, double wishbones, pushrod system with spring/damper unit
- Weight 1,125 kg (including driver)
- Dimensions Length 5,010 mm, width 1,950 mm, height 1,150 mm

#### Schaeffler Audi RS 5 DTM facts

**3<sup>rd</sup>** generation  
(1st 2013, 2nd 2014, 3rd 2017)

**3.1 Seconds**  
in the sprint from 0 to 100 km/h

**280 km/h** top speed

### Rockenfeller in the DTM

**1** drivers' championship title (2013)

**6** pole positions

**5** fastest race laps

**125** races

**4** wins

### Schaeffler in the DTM (2011–2017)

**83** races

**6** pole positions

**6** wins

**4** fastest race laps

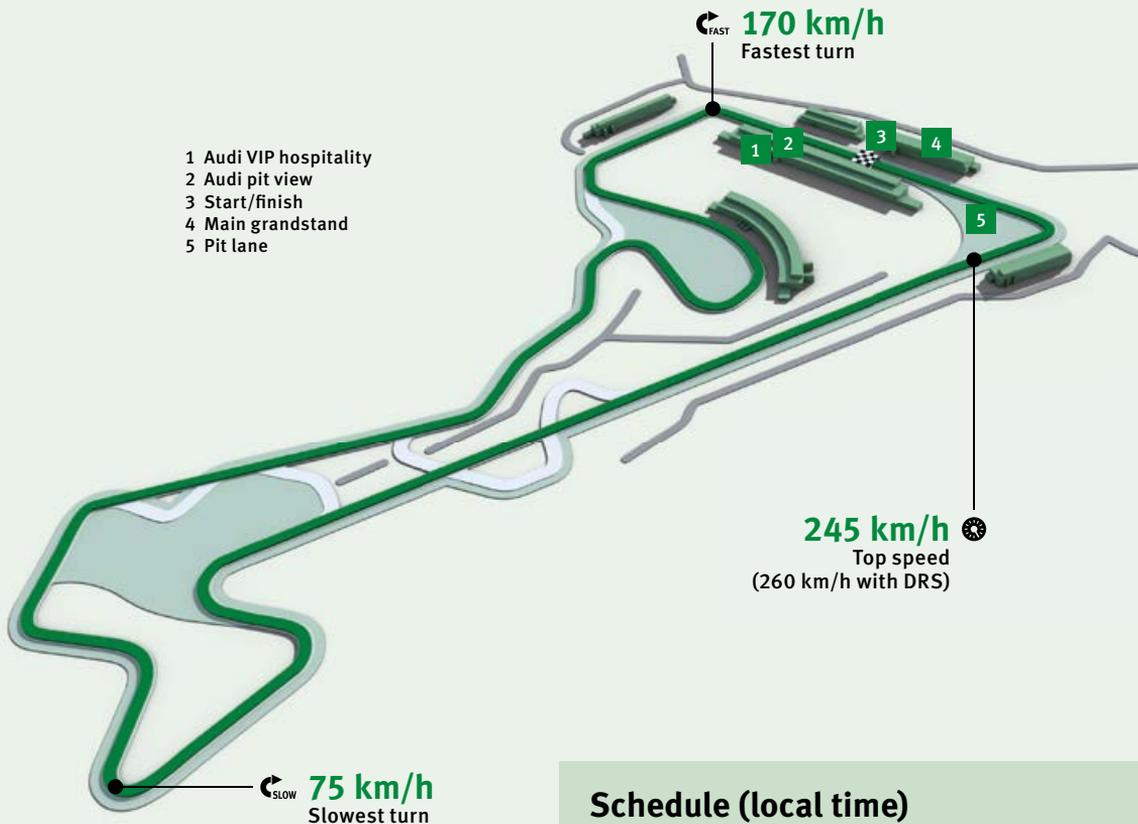
**2** drivers' championship titles (2011, 2013)

### Schaeffler facts

- ≈ 87,000..... employees worldwide
- 13.3..... billion Euro turnover in 2016
- > 2,300 ..... registered patents in 2016
- 25,000 ..... active and pending patents
- 170..... locations in 50 countries
- 75..... factories worldwide
- 60.... Schaeffler components in automobiles worldwide (average)
- 17..... R&D centers worldwide

# The race track

Moscow Raceway 



**3,931 m**  
Track length

## Schedule (local time)

Friday, July 21

11:45 – 12:00	MITJET 2L CUP	Test
12:45 – 13:00	MITJET 2L CUP	Test
13:45 – 14:00	MITJET 2L CUP	Test
16:00 – 16:30	DTM	Free practice 1
16:50 – 17:10	MITJET 2L CUP	Free practice

Saturday, July 22

10:00 – 10:20	MITJET 2L CUP	Qualifying
10:50 – 11:20	DTM	Free practice 2
12:40 – 13:00	DTM	Qualifying 1
13:25 – 13:50	MITJET 2L CUP	Race 1
15:43 – 16:38	DTM	Race 1

Sunday, July 23

09:40 – 10:10	DTM	Free practice 3
11:30 – 11:50	DTM	Qualifying 2
12:20 – 12:45	MITJET 2L CUP	Race 2
14:48 – 15:43	DTM	Race 2

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