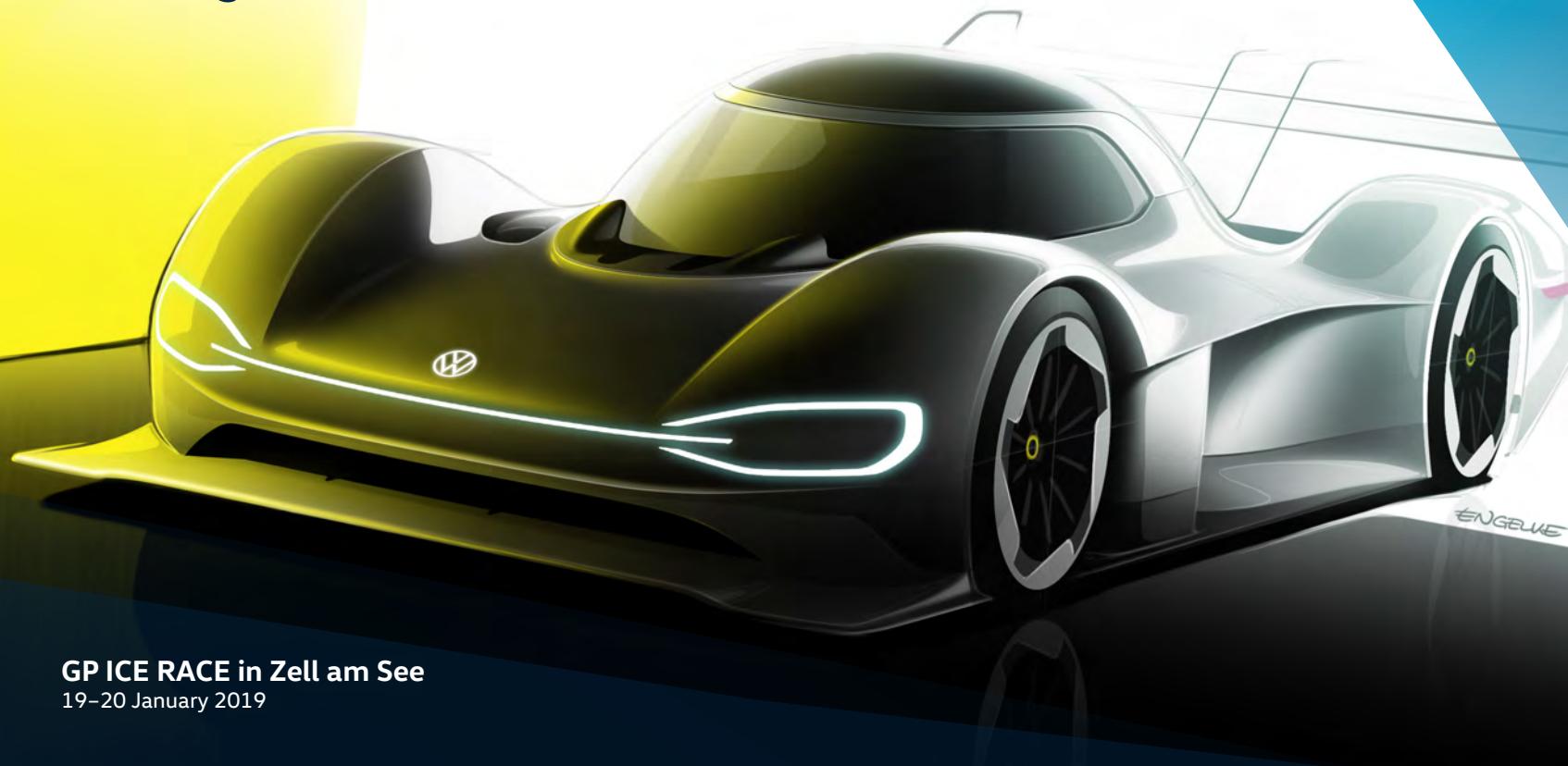




Volkswagen

The mission continues

Chasing new records: the ID. R



GP ICE RACE in Zell am See
19–20 January 2019

Bring on the next challenge

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Record breaker from the word go

Just 250 days from project launch to roll-out – it was the engineers who set the benchmarks with the electric ID. R Pikes Peak.

Those 7:57.148 minutes were worth all the effort. The remarkable time, with which Romain Dumas and the fully-electric ID. R Pikes Peak set a new all-time record at the most famous hill climb in the world, brought the most ambitious project in the history of Volkswagen Motorsport to an end on 24 June 2018 – for now, at least. “There were no predecessors to this race car, we started with a blank sheet of paper,” recalls François-Xavier Demaison, Technical Director at Volkswagen Motorsport.

Thanks to the extensive use of computer simulations and innovative production methods, such as 3D printing, the entire development took just 250 days. The ID. R Pikes Peak underwent its first functional test, the roll-out, at a racetrack in the south of France on 22 April 2018. “I had an awful lot to learn. A race car without the sound of an engine was new to me,” says Dumas, reflecting on the day when he added the new specialism of electric racing to his extensive CV, which ranges from Formula 3 and the 24 Hours of Le Mans to the Dakar Rally.

Meticulous preparation

The test team spent the majority of the final week ahead of the Pikes Peak International Hill Climb at a racetrack near the mountain. Because the 19.99-kilometre stretch of tarmac leading up to the summit at 4,302 metres above sea level is actually a public road, the opportunities to test on the route of the hill climb were limited and only possible on certain sections. The first time Dumas, already a three-time winner on Pikes Peak, actually drove the whole route in the ID. R Pikes Peak was in the race itself. The new record was ultimately the deserved reward for meticulous preparation, as tough as it may have been from a logistics point of view.

Just four weeks later, the ID. R Pikes Peak was breaking records again. Once again it was Romain Dumas who set a new record for electric vehicles, this time on the hill climb at the Goodwood Festival of Speed in the south of England. That was not the final time the ID. R will set its sights on a new record.



18.10.17
Announcement
of project



31.01.18
Romain Dumas
comes on board



22.04.18
World premiere of the
ID. R Pikes Peak



24.06.18
New all-time record at the
Pikes Peak International
Hill Climb



Breath-taking time in the ID. R – nobody has ever completed the 19.99-kilometre route up Pikes Peak faster than Volkswagen driver Romain Dumas (pictured, right)

The 2019 ID. R



Record hunter 2.0 – the further-developed ID. R has its sights set on the record for electric cars on the Nürburgring-Nordschleife

Evolution of an extreme sports car

Volkswagen Motorsport will continue to develop the ID. R, as it sets its sights on the electric record on the Nürburgring-Nordschleife.

The fully-electric ID. R model for the record attempt on the Nürburgring-Nordschleife is based on the ID. R Pikes Peak, with which Romain Dumas set a new record at the most famous hill climb in the world in June 2018. "However, we will modify some areas of the car, including the aerodynamics, to cope with the completely different conditions we will face on the Nordschleife," said François-Xavier Demaison, Technical Director at Volkswagen Motorsport. The philosophy of Volkswagen's fully-electric racer will remain unchanged: as light as possible, with an optimal balance for the power applied.

The drive is generated by two identical electric engines on the front and rear axles, which achieve a total power output of 500 kW (680 PS). The torque distribution is managed electronically. For energy storage, Volkswagen relies on lithium-ion batteries – as it does in the assembly of production cars with electric drivetrains. However, unlike with production vehicles, the goal is not to achieve maximum range, but the highest possible power output on the 21-kilometre lap. The ID. R will generate roughly 20 percent of the electrical energy required

during the run itself, by recovering energy when braking. The battery blocks are very compact, and are located next to and behind the driver to provide the perfect weight distribution.

Aerodynamic benefits

Including the driver, the ID. R weighs less than 1,100 kilograms – a true lightweight compared to other electric race cars. To achieve this, the chassis is made from a carbon-fibre/Kevlar composite. The same is true of the monocoque-structured cockpit. The ID. R's electric drivetrain requires efficient cooling, but the need for fresh air is much reduced than with a combustion engine. Furthermore, it is not necessary to guide intake air to the two electric engines. This has made it possible to reduce the size of the inlet openings in the chassis, which are usually a major aerodynamic shortcoming. This also makes the ID. R recognisable at first glance as a member of the ID. Family of electric production vehicles, which Volkswagen will launch in 2020.

The legend of the “Green Hell”

Formula 1 drivers like former world champion Jackie Stewart regard the Nordschleife as one of the toughest circuits in the world.

To break the Nürburgring record, the ID. R, whose two electric engines produce a total system performance of 500 kW (680 PS), must complete the 21-kilometre circuit in under 6:45 minutes. The iconic racetracks around Nürburg in Germany's Eifel region and on Pikes Peak in Colorado have more than just their length in common. “The narrow track, blind corners, switching between very fast and relatively slow sections – you cannot afford to make any mistakes,” says Romain Dumas, driver of the ID.R. The Frenchman knows what he is talking about. Not only does he have four victories to his name at the famous Nürburgring 24-hour race, held on the combination of the Grand Prix Circuit and the Nordschleife, but, at the wheel of Volkswagen's ID. R, he also became the first driver to go under the eight-minute mark at the no-less-legendary hill climb on the 4,302-metre Pikes Peak. “The ID. R is one of the most fascinating race cars I have ever driven,” says Dumas. “Attempting to break the electric record on the Nordschleife will be a huge challenge.”

From touring cars to Formula 1

Built in 1927, the Nürburgring-Nordschleife still demands the utmost respect from any racing driver, despite its many modernisations. Former Formula 1 world champion Jackie Stewart first coined the phrase “Green Hell”. For decades, the circuit used to host epic endurance races, some lasting up to 84 hours, rounds of the German Touring Car Masters (DTM) and, up to 1978, Formula 1 Grands Prix. Nowadays, the Nordschleife is the home of the 24-hour race and venue for a round of the global WTCR series (both 20–22 June 2019). Volkswagen is represented in both of these with the Golf GTI TCR. The undulating circuit, with 73 corners, is also regarded as one of the most demanding test tracks in the world for sports production cars.

“The narrow track, blind corners, switching between very fast and relatively slow sections – you cannot afford to make any mistakes.”

Romain Dumas,
Driver ID. R Pikes Peak

20.832 km
circuit length

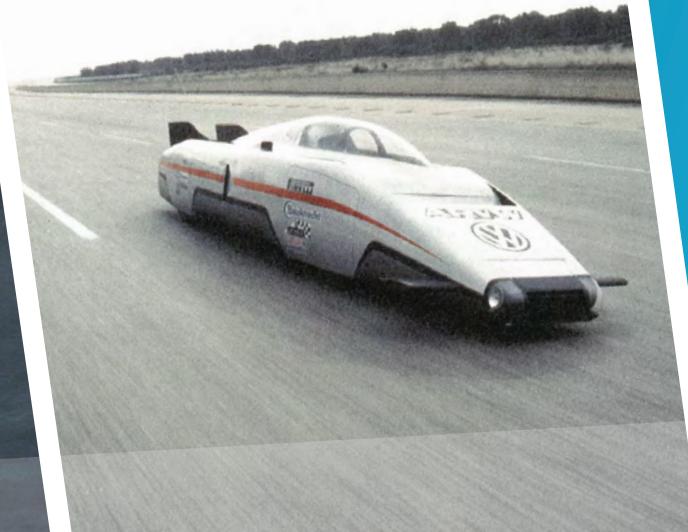
73
corners

6:45.900 min
current lap record for
electric vehicles

The "Carousel" is one of the
most famous sections of the
Nordschleife



Record-breaking Volkswagen cars



Volkswagen set world records in Nardo, Italy, with the W12 (top photo, 2002) and ARVW (bottom right, 1980) concept cars. The Polo G40 (bottom left, 1985) set two benchmarks in Ehra-Lessien.

The pacesetters

Even before the ID. R, Volkswagen cars had been hard at work setting records, some of which still stand to this day.

Volkswagen has enjoyed a long tradition of record breaking on the racetrack. Back in 1980, the high-speed, circular track in Nardo, Italy, was the venue for an experiment. The ARVW (Aerodynamic Research Volkswagen) was set the task of demonstrating what diesel technology, which at the time was still rarely used in cars, was capable of. With a relatively modest 129 kW (175 PS), the five-metre long concept car with an aerodynamically-sophisticated plastic chassis (cw value: 0.15) achieved a top speed of 362 km/h. The attempt was successful, with the team of three drivers setting two world and six class records. They also set a blistering average speed of 355.88 km/h during the first hour.

Records still standing today

To promote the innovative G-Lader technology, three modified Polo G40 equipped with 1.3-litre engines went in pursuit of records on the group's own test track in Ehra-Lessien in 1985. With their performance increased to 94 kW (129 PS), they set their sights on the 24-hour record for their class. And the G-Lader passed its test with flying colours. Over the 24 hours, the team set a new speed record of 208 km/h and

also cracked the 5,000-kilometre record. The W12 concept car, with which Volkswagen again went in search of records in Nardo in 2001, was in a different league. Six drivers alternated at the wheel of the supersports car, whose unique W12 engine generated roughly 441 kW (600 PS). After 24 hours, they had set three world and six class records. However, one thing was clear to all involved: there were more records for the taking.

The next attempt came in February 2002, and on this occasion the Volkswagen team did indeed surpass its own achievements. In the end they came away with seven world records, all of which still stand today, headed by the impressive average speed of 322.891 km/h set over the 24 hours – including fuel stops and driver changeovers.

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