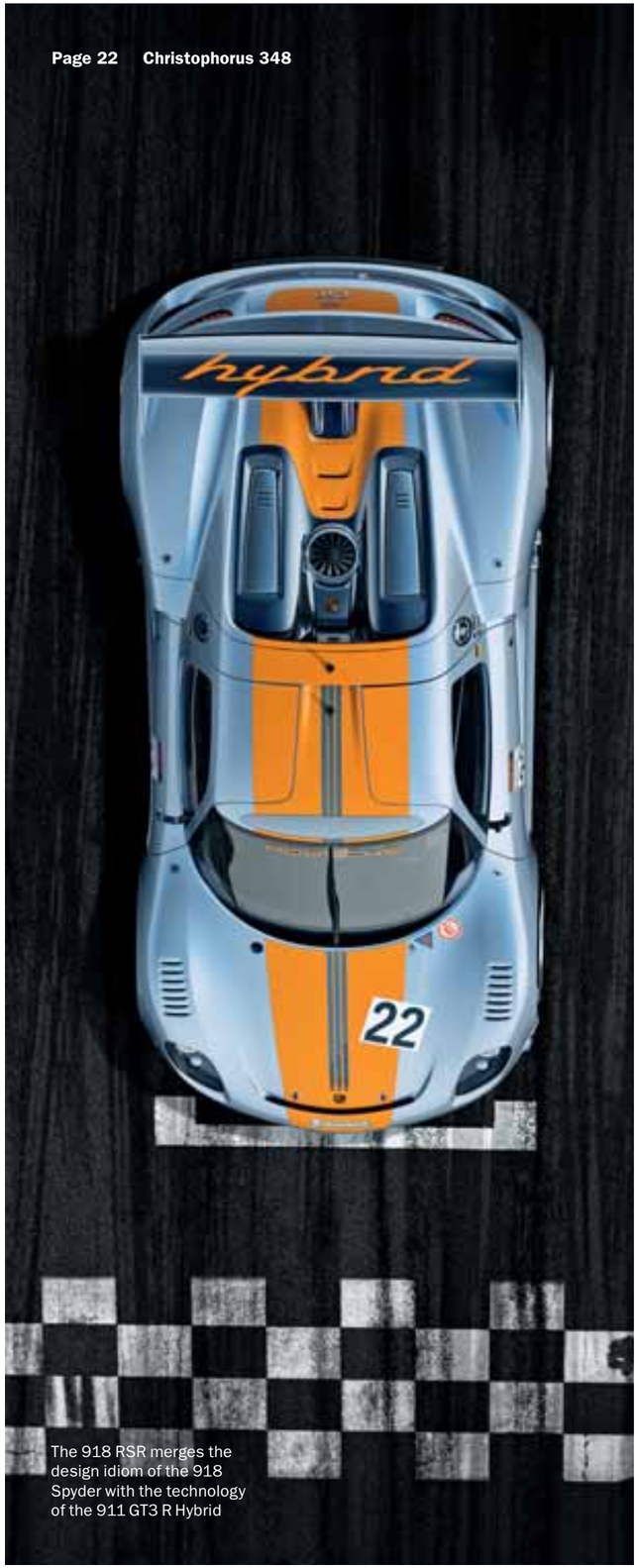
PORSCHE 918 RSR

LEADING THE CHARGE

Known as a “race lab,” this coupe with hybrid drive is designed to bring in more knowledge than victories.

By Eckhard Eybl



The 918 RSR merges the design idiom of the 918 Spyder with the technology of the 911 GT3 R Hybrid

"Race lab" sounds like "space lab," automatically evoking the vast expanse of outer space and the endless pursuit of research. And precisely these associations—namely, those of replacing earth-bound limits with very, very extensive new territory—are what the new Porsche 918 RSR is about.

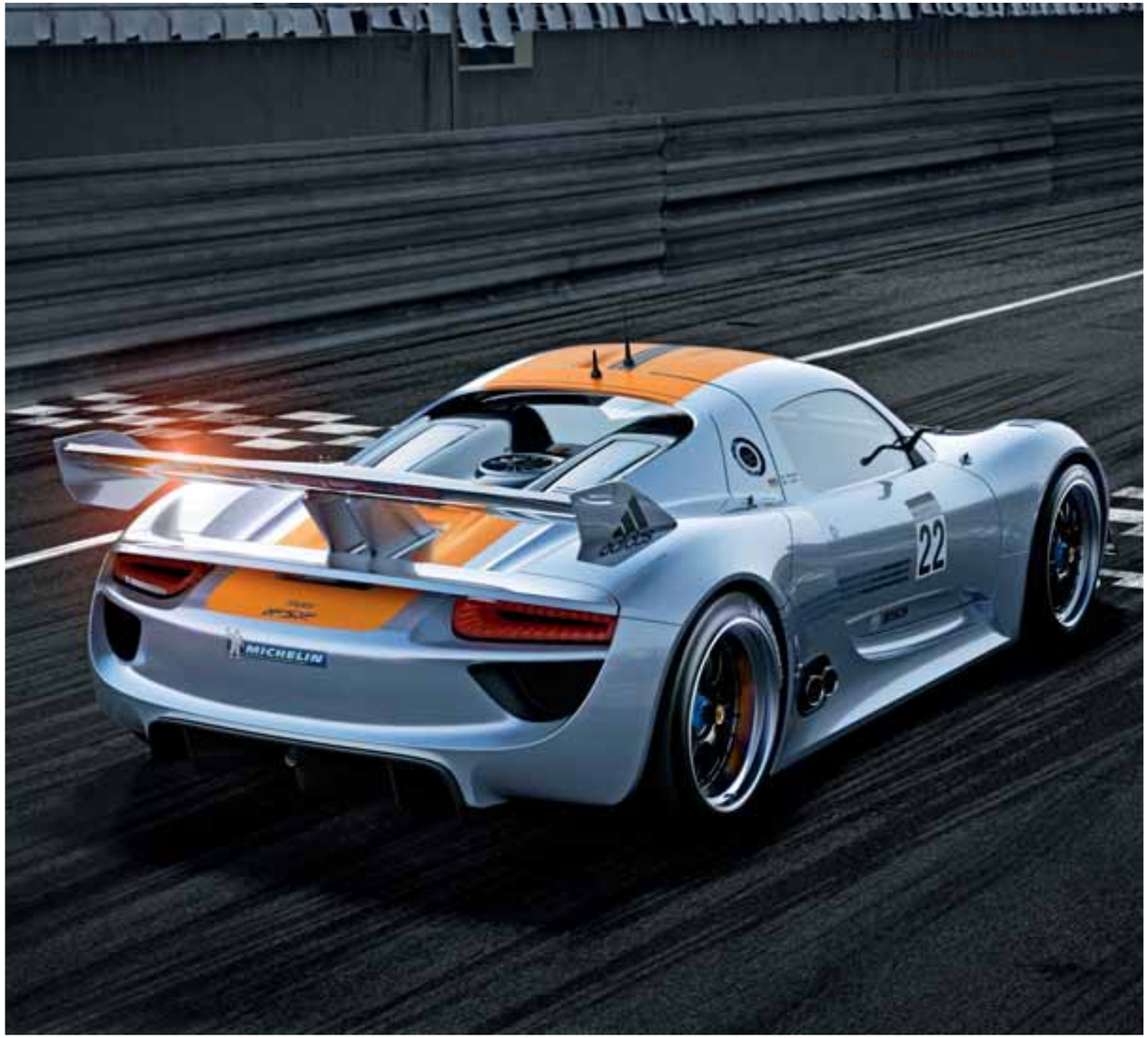
This RSR is not a racing car in the standard sense of one adhering to a restrictive set of regulations, nor is it a super sports car for the road as usually defined by the vehicle registration authorities.

The Porsche RSR is a hybrid, in both the metaphorical and the technical sense: a hermaphrodite that pushes limits as it converts the simple act of braking into electrical energy, combines a flywheel battery with a V8 engine, and generates the turbo-like power of an afterburner from curbing its own forward motion.

Porsche is the father of all cars with hybrid drive, dating back to when Ferdinand Porsche surprised and impressed the world with his "Semper Vivus" Lohner Porsche in late 1900. A good 110 years later, the hybrid idea is more alive than ever, also thanks to Porsche. The Cayenne S Hybrid with a parallel full hybrid design, the 911 GT3 R Hybrid GT racing car with a flywheel battery, and the 918 Spyder with a plug-in hybrid design are extending Ferdinand Porsche's idea along an entire spectrum—from a constantly active drive with zero emissions to drive-less gliding known as "sailing" to greater performance at the touch of a button.

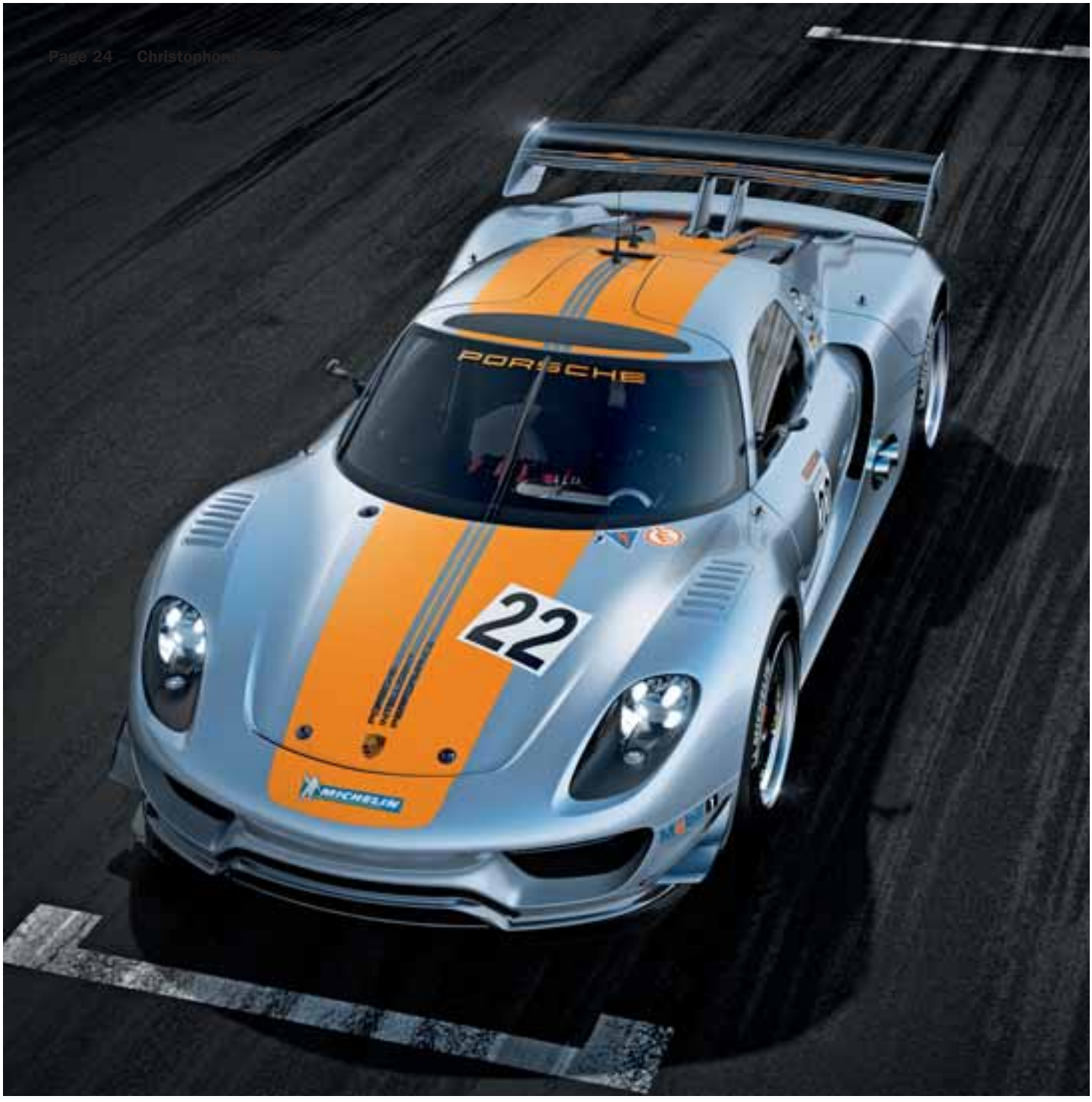
With the 918 RSR, the engineers at Porsche's Weissach Research and Development Center have combined the ideas of the company's founder with the racing technology of today and a visionary future to create a unique vehicle—the Porsche 918 RSR race lab with a V8 engine, six-speed double-clutch racing transmission, flywheel battery, and electric motors on the front axle.

Development centers like that in Weissach have connections throughout the world. The network of Porsche engineers extends from Zhuhai in China to Daytona Beach in Florida, from Le Mans in the Sarthe region southwest of Paris to the Nürburgring in the Eifel. All relevant information is combined with Porsche's research results and converted into automobiles that bear the exemplary type designation of 9-1-1. The 911 is the only car to have won



A HYBRID—IN BOTH THE METAPHORICAL AND TECHNICAL SENSE

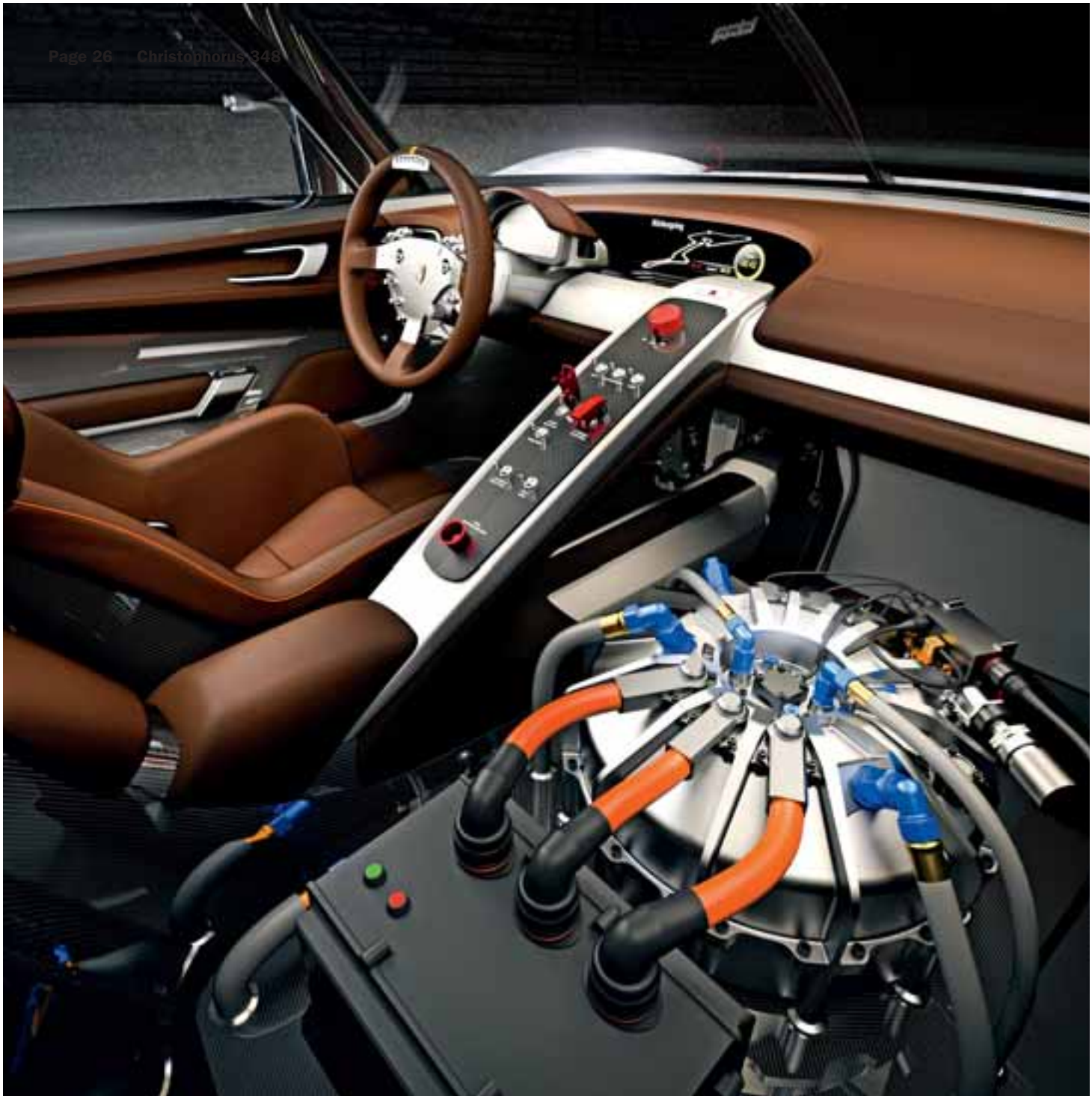
In the 918 RSR, elements of the centrally placed engine, racing technology, and the flywheel battery are distilled in a design at least as shapely as that of Botticelli's Venus.



world championship rallies, every type of race, each 24-hour classic at Le Mans, Daytona, Spa, and the Nordschleife, and the Paris–Dakar desert contest.

In the 918 RSR, elements of the centrally placed engine (Porsche 904 GTS, 911 GT1, and Carrera GT), racing technology (RS Spyder), and the flywheel (911 GT3 R Hybrid) are distilled in a design at least as shapely as that of Botticelli's Venus. Between its muscular wheelhouses stoops a low cockpit that trails off to the rear like the tail of a comet. The martial ventilator for the engine compartment freely recalls the Porsche 917. The opulent rear spoiler could come from the American Le Mans Series, and indeed the genes of the RS Spyder racing car are contained therein as well as in the V8 induction engine and the six-speed racing transmission.

Because it lacks the 918 Spyder's central console with a touch panel, the passenger seat makes room not for company but for a flywheel. With a maximum of 36,000 rpm, this baking tin stores energy that is delivered free of charge to the two electric motors on the front wheels as soon as the driver in the left-hand bucket racing seat brakes into a curve like Walter Röhrl. But where Röhrl trusts the ergonomic flow of his brilliant driving style, a red power button helps out in the 918 RSR. When it is activated,



During braking maneuvers, the flywheel absorbs energy, which then provides additional acceleration power via the electric motors on the front axle

some 150 kW of power boost the 563 horsepower of the centrally placed V8 engine. Because performance is intelligent at Porsche, this activation fulfills additional functions. The additional 75 kW of power per front wheel enable what is known as torque vectoring, which distributes power individually to the wheels. This targeted boost of as much as 75 kW to each wheel improves agility and steering performance.

While Herbert Linge, Hans Herrmann, and Rolf Stommelen used to venture out to the world's racetracks to bring racing knowledge back to the engineers at home, now all of Weissach's engineers are on board this 918 RSR. Well, they are not on board in actual fact but rather virtually in the form of sensors and telemetric data, to gather information about the future of combustion engines, electric motors, and all the ways in which they can be permanently combined.

This ensures the electric coil laid by Ferdinand Porsche himself in the Lohner Porsche back in 1900—an idea far ahead of its time—continues to be charged. For more than 110 years, as the 918 RSR now shows. •