



# *The Fast and the Furious*

*Fast, lightweight, and with new racing technology: right on time for the fiftieth anniversary of the 911 sports-car icon, Porsche is presenting the third generation of the GT3.*

By Peter Weidenhammer

**N**o street-legal 911 is closer to racing. The GT3 essentially always has two of its wheels on the racetrack. It is pure, polarizing, and emblematic. Around 80 percent of all 911 GT3s are also driven on racing circuits. Professionals like to explore the limits of these driving machines. At the same time, nearly all GT3s can also be found in normal road traffic, for that is one of the great special features of this small and select circle of top athletes—the 911 GT3 is suitable for everyday driving; it doesn't allow the road to be eclipsed by the track.

The new GT3 is based on the body of the latest generation of the 911 Carrera. This gives the two-seater that exemplary composite aluminum-steel shell which combines low weight with high rigidity. The new body, of course, also comes with the geometry of its chassis: a longer wheelbase and a wider track (2.1 more inches in the front, 1.2 inches in the back), both of which are also helpful for the rush around the racing circuit. The car offers ideal conditions for superior longitudinal and lateral dynamics: with an additional 3.9 inches of wheelbase, the new 911 GT3 drives as if on rails at very high speeds too, while the wider front track is key in ensuring that the car takes curves with even greater agility and stability.



*With its wheelbase lengthened by 3.9 inches, the new 911 GT3 drives as if on rails. The wider front track gives it even greater agility and stability in curves.*

A lot can be built on this foundation. The first ingredient is a completely new engine. A six-cylinder boxer engine with 3.8 liters of displacement generates 350 kW (475 horsepower). Although based on the assembly in the 911 Carrera S, it has practically none of the same components. Changes to the design have focused in large part on further developing the high rpm values characteristic of the 911 GT3. High rpm levels enable high levels of engine performance as well as a better flow of power when shifting gears. If drivers make full use of the broader range of rpm, it means they have more rpm right after shifting up and the engine can put more power immediately into acceleration. The new engine achieves this by means of racing technology which uses a rocker-lever control system to open the valves in specially developed cylinder heads. Small moving masses can thereby enable a peak engine speed of 9,000 rpm. All of the remaining components of the boxer engine, especially the crank and valve drive, have been developed or adapted especially for the GT3. For example, Porsche uses titanium connecting rods and forged pistons.



The racing engineers have shortened the ratios and thoroughly reworked the control technology for the Porsche double-clutch transmission (PDK) specifically for this new high-performance sports car. The new toothed gear pairings create completely new characteristics, so the 911 GT3 reaches peak speed in its seventh

## 911 GT3

and highest gear. PDK now completes gear shifts in less than one tenth of a second. It offers all of the major dynamic driving properties of a manual transmission, supplemented by the performance benefits of a double-clutch transmission. Its predecessor's shift sequence has been flipped to match the usual mode in racing: pulling the paddle switch will cause the car to shift up, whereas to downshift you now have to press.

The figures speak for themselves: the GT3 storms from 0 to 60 mph in 3.3 seconds, and doesn't stop accelerating until 196 mph. The longitudinal dynamics by no means lag behind their lateral counterparts. This is the first GT3 in which the rear axle steers actively too. That means more dynamic turn-in performance at low speeds and even better driving stability at high speeds.

Yet active rear-axle steering (see also "Practical Physics," pages 70–72) is no longer the finishing touch in this superb strategy for driving dynamics. Its basis consists of the fully aluminum chassis with the PASM active suspension system, the wider track, the longer wheelbase, and the 20-inch wheels. Dynamic engine bearings ensure that no unwelcome disturbances originate from the engine mass, even during fast lane changes under extreme conditions. And finally, the sophisticated aerodynamics and the striking rear fenders ensure a stabilizing downforce on the front and rear axles. One more result that speaks for itself: the lap time on the Nordschleife of the Nürburgring lies under 7:30 minutes. ●



### Controlled power pack

GT3 chassis and drive technology below the surface of the latest 911 Carrera

**911 GT3 (TYPE 991)**  
**Engine:** Six-cylinder boxer  
**Displacement:** 3,799 cc  
**Power:** 475 hp (350 kW)  
**Maximum torque:**  
 325 lb.-ft. at 6,250 rpm  
**0–60 mph:** 3.3 sec.  
**Top track speed:** 196 mph