



# Toyota Racing Enter New Era With The TS040 Hybrid

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Toyota Racing today took the wraps off the new TS040 Hybrid, the car which will take the team into the 2014 FIA World Endurance Championship and a new era of hybrid powered motorsport.

The new car, revealed today at the Paul Ricard circuit in the South of France, represents the most advanced hybrid technology in modern racing. Tomorrow it will begin an official championship test session, prior to making its competition debut at the season-opening Six Hours of Silverstone race on 20 April.

Toyota will be taking on rival manufacturers Audi and Porsche with a car that benefits from 480PS (473bhp/353kW) of all-wheel drive hybrid boost in addition to the 520PS (513bhp/383kW) produced by its 3.7-litre V8 petrol engine, taking maximum power to 1,000PS (986bhp/736kW).

The new powertrain has been developed in line with revised WEC technical regulations, which put an emphasis on fuel economy. Teams are required to use 25 per cent less fuel than in 2013, with savings achieved through changes to powertrains, aerodynamics and driving style. By adopting more road-relevant technology, the WEC will increase the possibilities for the transfer of Toyota's race-bred technical know-how to its production cars, strengthening its status as the world's leading manufacturer of hybrid vehicles.

Toyota Racing have made gains in efficiency and performance by using specialist lubricants they have developed with their official partner, Total. The more open regulations have also allowed the team to engineer a major increase in hybrid power, using a new motor-generator on the front axle in addition to the unit at the rear. Under deceleration, these motor generators apply braking force in combination with the traditional mechanical brakes to harvest energy, which is then transferred via an inverter to a super-capacitor. When the car accelerates, the motor-generators reverse their function, delivering a power boost to all four wheels.

The V8 engine has been engineered at the Higashifuji technical centre, the research base where Toyota's next-generation road car technology is also developed.

The TS040 Hybrid's chassis is designed, developed and manufactured by Toyota Motorsport (TMG) in Cologne, Germany. It marks a major evolution of last year's TS030 Hybrid, incorporating design changes dictated by the new championship regulations, including a maximum width reduced by 10cm and the adoption of additional safety features.

Particular attention has been paid to managing airflow around the car, not only to reduce drag and

improve fuel economy, but also to increase downforce and grip to compensate for the use of narrower tyres. The final design has been honed in TMG's wind tunnels and rendered exceptionally lightweight thanks to the use of advanced composite technologies and production processes. Individual components have been put through intensive computer simulations using real track data to ensure optimum performance in race conditions.

The TS040 Hybrid has already completed 12 days of testing across Europe since January and it will undergo a further test following this week's prologue event ahead of its first race.

### **Driver line-up**

Toyota Racing have shuffled the pack of drivers for the new season, with Alex Wurz, Stéphane Sarrazin and Kazuki Nakajima sharing the No7 car and Anthony Davidson, Nicolas Lapierre and Sébastien Buemi piloting the No8 machine.

Looking ahead to the prospects for the 2014 season, including a return to the Le Mans 24 Hours, Davidson said: "It's hard to know where our competition will be performance-wise. We are waiting to face them on track but you have to expect Audi will have done a good job and will probably be the one to beat despite Porsche's heritage in this category. The target is clear for us: winning races and of course Le Mans, which remains the main goal and the race I want to win. We just have to make the final step forward after our 2013 result."

He is confident the new car has what it takes: "When I first saw the car, I was most impressed with the level of detail. The aerodynamics are very advanced and you can immediately see how much effort the team has put into this when you look at the car. From the driving seat, the most impressive aspect is the four-wheel drive hybrid; the traction and the power really feel good when you come out of a corner.

### **2014 FIA World Endurance Championship Calendar:**

20 Apr	Six Hours of Silverstone (GB)
3 May	Six Hours of Spa-Francorchamps (Bel)
14 Jun	Le Mans 24 Hours (Fra)
20 Sep	Six Hours of Circuit of the Americas (USA)
12 Oct	Six Hours of Fuji (Jpn)
2 Nov	Six Hours of Shanghai (Chi)
15 Nov	Six Hours of Bahrain
30 Nov	Six Hours of Sao Paulo (Bra)