

FINE-TUNING THE CHIRON PUR SPORT ON THE TEST TRACK



Bugatti engineers provide an exclusive insight into their development work.

A deep bubbling roar emerges from the bend, followed by a loud hissing sound. A black Bugatti Chiron Pur Sport¹ turns into the start-finish straight, shoots past the pits at full throttle shortly afterwards — and disappears into the next bend. Fast, powerful and spectacular. After weeks of COVID-19 lockdown, Bugatti engineers can finally test the hyper sports car on a circuit again. “This is crucial for development because the Chiron Pur Sport is set up for maximum performance and lateral dynamics. The laps on the test tracks are incredibly important here,” says Stefan Ellrott, Head of Development at Bugatti. They are essential for fine-tuning the chassis, handling, damper control, steering, tyre wear and gearbox, as well as for testing all new engine components on the way to series production. The overall impression

of the vehicle in all load conditions and at all speeds is also repeatedly checked and fine-tuned during the tests: “With the Chiron Pur Sport, we’re pursuing a more extreme and radical development approach. It’s the perfect car for all those drivers who enjoy cornering at the limits and want to feel a connection with the road,” explains Ellrott. The philosophy behind the Pur Sport is in line with that of the company's founder, Ettore Bugatti, who himself placed great emphasis on creating a special vehicle to suit every purpose.

CHALLENGING TRACK

9 right turns, 10 left turns. 44 crests and dips. 20 percent uphill and 26 percent downhill grades with a change in elevation of 70 metres over 4,207 metres. Bilster Berg is a circuit located at the heart of the Teutoburg Forest, Germany — and for three days in May it is the test track for the new Chiron Pur Sport. In compliance with local legal regulations, the engineers are wearing safety helmets and fireproof clothing. Their task is to measure and analyse precise data in a very short time and to apply the results to the vehicle. Eight engineers — among them Head of Development Stefan Ellrott and Head of Chassis Development Jachin Schwalbe — rattle off the test kilometres in two pre-series Pur Sport prototypes. The team is reduced in size so as to comply with all current safety regulations and not endanger the health of the employees.

The vehicles return to the pits after a few fast laps. Warm air rises from the wheel arches, while the 16-cylinder engine babbles quietly at idling speed. Data is read out, tyres are changed. In the paddock, several sets of Michelin Pilot Sport Cup 2 R tyres are ready and waiting in the pits, while the impact wrenches of the three mechanics hum incessantly. “It’s a tight programme that we’ve planned. But we’ve made use of every day to further fine-tune the Pur Sport. Given the challenging, three-dimensional topography and the well-secured track here with its ample run-off zones, we can push the Pur Sport to its physical limits,” says Stefan Ellrott.

NEW CHASSIS REQUIRES EXTENSIVE TUNING

Again and again, the engineers stand together in their fireproof racing suits, maintaining a safe distance from each other as they bend over their laptops with the columns of figures and discuss the values. In addition to the new, significantly firmer chassis with modified camber, newly developed tyres and a shorter gear ratio, they also have to re-tune the engine with its turbocharger and safety components. “Every system has to function perfectly on its own, but also in conjunction with the entire vehicle, of course. And it has to do so at all speeds and for all movements,” explains Jachin Schwalbe. Especially in the new driving mode. For the first time, ESC Sport+ enables experienced drivers to move the Chiron easily into controlled drifts on race tracks, controlling the rear end with the accelerator pedal before the ESC brakes the hyper sports car. “Even for our engineers who are very familiar with the Chiron, this is so much fun they don't want to get out of the car. The Chiron Pur Sport makes you a better driver,” explains Jachin Schwalbe.

The flat front end with the dynamic design and the massive rear wing instantly demonstrate the hyper sports car's yearning for bends. The technical data match the look: the Pur Sport has lost around 50 kilograms of weight compared with the Chiron², while the downforce has been increased, and the chassis is firm, agile and tuned for the most demanding roads with varying bends. Added to this is a newly developed gearbox with a 15 percent shorter gear ratio and an increased maximum engine speed. “The W16 engine with 1,500 PS and 1,600 newton metres of

torque now feels like it revs up even faster, providing a significantly more tangible and emotive driving experience,” says Stefan Ellrott. The gears run through the seven-speed dual-clutch transmission at ultra-fast pace at full load.

“Thanks to the new suspension geometry, the softer Michelin tyres with even better grip and the enormous rear wing, the acceleration of the Pur Sport out of corners is even more brutal. It’s simply a pure, uncompromising driving machine,” says Jachin Schwalbe enthusiastically. As a result, the Chiron Pur Sport accelerates in sixth gear from 60 to 120 km/h almost three seconds faster than the already extremely fast Chiron. All in all, the elasticity values are 40 percent higher than those of the Chiron. Bugatti is due to start series production of the Chiron Pur Sport, limited to 60 units, in the second half of 2020. The net price is 3 million euros.

Further tests on race tracks will follow in the weeks to come, including the famous Nürburgring Nordschleife with its rollercoaster ride over 20.83 kilometres. There too, the aim will be to test, test and test again — until all components are perfectly matched and the Chiron Pur Sport offers the best possible performance. And Bugatti customers who have already ordered the Chiron Pur Sport will soon be able to experience it for themselves.

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¹ Chiron Pur Sport: WLTP fuel consumption, l/100 km: low phase 44.56 / medium phase 24.80 / high phase 21.29 / extra high phase 21.57 / combined 25.19; CO2 emissions combined, g/km: 571.64; efficiency class: G