



# Bugatti Chiron Pur Sport – A lap in the new hyper sports car

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“I NEVER WANT TO GET OUT AGAIN.” – AROUND BILSTER BERG WITH SVEN BOHNHORST.

The rear end breaks out slightly into a controlled drift, the tires start to squeal. Sven Bohnhorst reacts with lightning speed, countersteers briefly and keeps his foot on the accelerator. Drifting – with a smile on his face.

The engineer works at Bugatti as a chassis setup engineer and is testing the new Chiron Pur Sport<sup>1</sup> at the limits of its handling dynamics. The aim is to improve the vehicle even further and to tune the chassis, steering and dampers even more precisely. His starting point is in the area of fine nuances and minute details. These are almost imperceptible individually, but will later convey the complete picture of a perfect driving experience to customers. After weeks of lockdown due to the COVID-19 pandemic, he and his colleagues were finally able to return to testing the new Chiron Pur Sport on a race track at the beginning of May.

“The track at Bilster Berg with its very own topographic relief is challenging and demands a high level of concentration. It’s a technical circuit with varying radii, fast and slow sectors and severe elevation changes. A genuine challenge for us chassis developers,” explains Sven Bohnhorst. The track goes up and down, making the Chiron Pur Sport lighter in some places, and pressing it down into the dips with significant spring compression. These are ideal conditions for fine-tuning the running gear and safety systems. This is where engineers can test and take the Chiron Pur Sport to its limits. Particularly suitable for this purpose: the new ESC Sport+ driving mode. Experienced drivers can activate this mode when driving on race tracks in the Chiron Pur Sport. For this first time, this mode allows larger drift angle with much easier controlled drifting – the driver is able to stay on the throttle much longer to control the rear end before the ESC kicks in. This turns the Chiron Pur Sport into an extreme Chiron<sup>1</sup> derivative at the other end of the performance spectrum, a model with very active driving characteristics that is made for cornering. A model that pushes the limits even further out, but where handling remains very easy to control and predict. Targeted and precise.

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SVEN BOHNHORST, BUGATTI CHASSIS SETUP ENGINEER

“The combination of an uncompromisingly sporty and harder chassis setup, new tires with a softer rubber compound geared towards lateral dynamics, and the shorter transmission ratio make it possible to maneuver the Chiron Pur Sport out of any corner safely and at lightning speed. An incredible feeling at the wheel that makes the adrenalin flow,” says Sven Bohnhorst enthusiastically. The new hyper sports car is much firmer,

dynamic and direct to drive than the Chiron. It generates more grip, understeers less and provides neutral handling even in fast corner combinations. "It's a car for drivers, for all those who have petrol in their blood. I never want to get out again," says Sven Bohnhorst happily.

Even though Bugatti usually tests on longer race circuits like the handling track in Nardo or on the Nürburgring Nordschleife, Sven Bohnhorst feels at home at Bilster Berg: 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 meters over 4,207 meters. It only took the engineer a few laps to get to know the circuit. "I now know exactly how to drive around the track. Because the Pur Sport offers such confident handling, it is easy to familiarize yourself with the special characteristics of the track," explains Sven Bohnhorst. The 8.0-liter W16-cylinder engine with 1,500 PS and 1,600 newton meters of torque serves as the power unit. During test drives, engineers are not primarily focused on lap times. Instead, they want the Chiron Pur Sport to handle perfectly even in extreme situations. The vehicle must offer customers in particular more clearly perceptible and purer driving pleasure. "In terms of development we are close to reaching our goals – the Chiron Pur Sport is very precise and extremely agile to drive, even on such a tight handling course," adds Sven Bohnhorst.

He and his chassis colleagues complete lap after lap, usually an initial warm-up lap followed by two fast laps and a cool-down lap to finish. Regardless of the task at hand, this procedure guarantees a reproducible driving impression and makes objective assessments possible while combining all driving modes and systems. A challenging task.

During fast laps, Bohnhorst pays attention to the overall handling, but also to how the steering, dampers and other chassis systems such as traction control and all-wheel drive react. He also observes the interaction of fundamental chassis components such as spring rates, anti-roll bars and tires. "Ultimately, the tires are the crucial component that link the car to the road surface as the only contact with the ground. As chassis engineers, we need to find the ideal setup as a combination of power transmission in longitudinal and transverse directions," says Bohnhorst. He pays attention to characteristics such as temperature, wear of the softer tires and a clean wear pattern. Development is also shaped by the reaction of the vehicle as a whole and by the steering response, for instance whether this provides accurate feedback. What is the wheel slip at the rear wheels like? Can it be controlled with the accelerator? Is the road-holding of the vehicle consistent and harmonious? Sven Bohnhorst pays attention to how the Chiron Pur Sport reacts when racing over crests and into dips when the springs are severely compressed, makes sure the suspension doesn't bottom out and that the rear end doesn't drift out excessively. "The beautiful thing about the Chiron Pur Sport is that it continuously provides sensitive feedback. It remains extremely controllable, also thanks to the interaction of a mechanically finely-tuned basic setup, and is enhanced by coordination with electronic control systems to prevent any unexpected events," he explains. Perfectly adapted mechanical systems are crucial during development so that the electronic systems are forced to intervene only in emergencies. "This creates natural, very powerful handling, nothing artificial. It is important to me that I am the one in control of the car, not the other way around," states Bohnhorst.

Afterwards, the data is read out from the computer and discussed. "The chassis setup does not just have to please me, it has to also satisfy all other colleagues. The Chiron Pur Sport has been perfectly set up only once we all agree. The final result is clearly a team effort – and the focus is always on the driving experience for our customers," says Sven Bohnhorst. This has resulted in a completely new driving concept within the Chiron family. "The Chiron Pur Sport will spark a passion in all those customers that enjoy dynamic driving. This new model makes it possible to get the most out of corners, right up to the limits of what is physically possible," explains Sven Bohnhorst. "The Pur Sport handles even faster, with better performance and greater safety on narrow roads with plenty of bends."

It may have taken fundamental and complex technical modifications, but they have paid off. The Chiron Pur Sport offers a unique, unadulterated driving experience that can be directly experienced on race tracks. And it will soon also be available to customers. The Bugatti Chiron Pur Sport is available to order now. Production of this derivative, limited to 60 units, will start in the second half of 2020. The net price will be three million euros.

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<sup>1</sup> CHIRON PUR SPORT: This model is not subject to Directive 1999/94/EC, as type approval has not yet been granted.

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