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CHIRON SUPER SPORT 300+ AND CHIRON PUR SPORT — BUGATTI'S BROAD SPECTRUM OF PERFORMANCE



With the Chiron Pur Sport and Chiron Super Sport 300+ Bugatti offers two extreme hyper sports cars. These two extraordinary vehicles have come together for the first time for development test drives at the Nardò Technical Center.

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The circular track, 12.6 kilometers long and four kilometers in diameter. The outer edge tilts towards the centre by more than 12 degrees — ideal for top speeds. The Nardò proving ground in Apulia, Italy, is considered the fastest vehicle circuit in the world — making it the ideal test site for the Bugatti Chiron Pur Sport[1] and Chiron Super Sport 300+[2] hyper sports cars. The circuit theoretically enables speeds over 400 km/h and test drivers need not steer up to 240 km/h. Due to its low parabolic profile, the centrifugal force is compensated and drivers have the sensation of driving in a straight lane.
The infield of the high-speed circular track accommodates a 6.2-kilometre handling course — designed for adaptations to the vehicles' dynamics and suspension. 70 kilometres of track are available for extensive testing across an area covering over 700 hectares. For the first time, the two extremes of Bugatti's performance spectrum are meeting at a test track.

''The Nardò test track with the high-speed circular track and the handling track is ideal for us. Here we can extensively enhance the Chiron Pur Sport and Chiron Super Sport 300+ at different speeds — and at high temperatures,'' says Stefan Ellrott, Head of Development at Bugatti. ''Our hyper sports cars must not only operate flawlessly at moderate speeds and temperatures, but also at speeds beyond 300 km/h, as well as in cold and hot conditions.''

OVER 20,000 TEST KILOMETRES

Bugatti goes to great efforts for this: 37 staff members from several departments are developing eight Bugatti vehicles in Italy over a period of four weeks, from sunrise to sunset. All in all, four Chiron Super Sport 300+ and four Chiron Pur Sport pre-series vehicles are covering a total of over 20,000 kilometres. Engineers record data with their computers on every lap, sometimes only modifying minor details to check the result on the next lap. Nine gigabytes of data were generated for tuning the engine control unit alone, which was then evaluated after the tests. This is a job that requires a high level of concentration from all staff members. ''The time frame is tight, which is why we are using every minute to be able to carry out our driving tests around the track,'' explains Christian Mohr, Bugatti engine test engineer.

In addition to the Pur Sport, the development phase of the Chiron Super Sport 300+, the new longitudinal dynamics force within the Chiron[3] family, is also in full swing. Derived from the record-breaking vehicle, which was the first series-production car to reach speeds over 300 miles per hour, at 304.773 mph (490.484 km/h), in summer 2019, the engineers are developing a very fast special edition limited to just 30 vehicles. Bugatti only electronically limits its top speed at 440 km/h.

Visually speaking, the fastest series-production Bugatti ever built differs from the Chiron and Chiron Pur Sport with elements such as an extended and aerodynamically optimised body designed for high-speed driving. The elongated rear, known as the longtail, allows the laminar flow to pass over the vehicle for longer and thus significantly reducing the aerodynamic stall. Air curtains on the side next to the air intakes direct the air from the front to the rear to force it along the side of the vehicle. Nine outlet air slots on each wing prevent air pressure from building up in the wheel arches as a result of the wheels' rotation. Thanks to the modified body, the vehicle reacts differently at high speeds compared with previous Chiron models.

CHIRON SUPER SPORT 300+ MOST POWERFUL BUGATTI EVER BUILT

With an output of 1,176 kW/1,600 PS, the Chiron Super Sport 300+ exceeds the Chiron's output by 100 PS, making it the most powerful Bugatti ever built. To boost performance, the engineers in Nardò are developing a new thermal management system for the engine and gearbox, checking temperatures on the body and testing the thermal behaviour of all components. ''In addition, there are new thermal components and new gearbox parts, as well as software developments and adjustments to the engine, gearbox, powertrain and turbocharger,'' Christian Mohr explains. Every change needs to match the other components and must therefore be tested. For safety reasons, the test engineers ''only'' drive the vehicle to 300 km/h. ''At this development stage, we are slowly working our way towards higher speeds in order to be able to react to every detail at every speed and to precisely adjust the components,'' Christian Mohr explains. The first vehicles will be delivered to customers in late 2021 at a net unit price of EUR 3.5 million.

CHIRON PUR SPORT QUICKLY APPROACHING SERIES PRODUCTION

In the almost series-production-ready Chiron Pur Sport, engineers are checking the engine control software, thermal management, turbocharging and gearbox functions. The lateral dynamics specialist is also being given the finishing touches in terms of chassis, suspension and brake system in Nardò. In addition to tests on the high-speed oval, this also involves fast laps on the handling course. ''We have consistently geared the Chiron Pur Sport towards agility so that it races around bends exceptionally quickly and precisely,'' Jachin Schwalbe, Head of Chassis Development, explains. ''The uncompromisingly sporty chassis offers incredible levels of grip on the handling course. Adding to this are sensational acceleration figures and extremely precise handling thanks to a shorter gear ratio.'' A hyper sports car for customers who like to experience cornering at the limits of lateral dynamics. Bugatti will soon be starting production of the Chiron Pur Sport, which has been limited to 60 vehicles and comes with a price tag of EUR 3 million (net).

The two models are unique and handle completely differently. ''The Chiron Pur Sport with its shorter gear ratio and large rear wing feels very at home on the tight handling course. The focus of the Chiron Super Sport 300+ is on top speed and it does so very smoothly and precisely. The Chiron Super Sport 300+ handles completely differently as a result of the elongated rear alone,'' Christian Mohr explains. These are just two extremes in the broad spectrum of Bugatti's performance.

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[2] Chiron Pur Sport: WLTP fuel consumption, l/100 km: low phase 44.6 / medium phase 24.8 / high phase 21.3 / extra high phase 21.6 / combined 25.2; CO2 emissions combined, g/km: 572; efficiency class: G

[2] Chiron Super Sport 300+: WLTP fuel consumption, l/100 km: low phase 40.3 / medium phase 22.2 / high phase 17.9 / extra high phase 17.1 / combined 21.5; CO2 emissions combined, g/km: 487; efficiency class: G