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BUGATTI CHIRON PUR SPORT — A PURE DRIVING MACHINE



Fast in corners, voracious on country roads — that's the new Chiron Pur Sport

Flat front end, dynamic design and impressive rear spoiler — it's clear from the outset that the new Bugatti Chiron Pur Sport[1] yearns for corners and challenging country roads. Pure and unadulterated. A genuine thoroughbred.
Bugatti has been producing sports cars homologated for public roads for over 110 years. In the past, vehicles such as the Type 13 and Type 35 have claimed countless victories at international hill climbs and road races. The Chiron Pur Sport[1] is no exception to this long-standing tradition. The new model is an uncompromising hypersports car for exactly those winding roads — a new aerodynamic configuration generates more downforce while the lower weight increases agility. Even travelling at average speeds will stimulate all the senses thanks to a close-ratio transmission, high-performance tyres with a new material mix geared towards extreme grip as well as an agile chassis and suspension setup. By contrast with the Chiron Super Sport 300+, the record-breaking car that exceeded the threshold of 300 miles per hour for the first time, the

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Chiron Pur Sport focuses on extraordinary, tangible performance throughout the entire range of speeds.

''We spoke to customers and realised they wanted a vehicle that is geared even more towards agility and dynamic cornering. A hypersports car that yearns for country roads with as many bends as possible. An unadulterated, uncompromising driving machine. Consequently, the vehicle is called Chiron Pur Sport[1]'', explains Stephan Winkelmann, President of Bugatti. ''By cutting the weight by 50 kilogrammes while simultaneously boosting the downforce and configuring an uncompromising, sporty chassis as well as suspension setup, the Chiron Pur Sport[1] boasts incredible grip, sensational acceleration and extraordinarily accurate handling. It's the most uncompromising yet agile Bugatti of recent times.''

EXTRAORDINARY DESIGN

The Chiron Pur Sport's concept has been geared towards agility in every sense of the word. The Design Development department's focus was to lend the Pur Sport a confident appearance. As a result, the front end is dominated by an intentionally dynamic expression. Very wide air inlets and an enlarged horseshoe panel at the bottom serve as perfect radiator air outlets. The vehicle's striking splitter generates maximum downforce by protruding considerably at the front while also making the vehicle seem wider. Primary lines run across the air outlets on the front wing like tendons on a muscle, radiating the design image of a well-honed athlete.

A new optional split paintwork design has been developed for the Chiron Pur Sport[1]. The entire bottom third of the vehicle features exposed carbon fibre to make the vehicle seem even lower. From the sides these dark surfaces merge with the colour of the road surface and make the Pur Sport appear even flatter.

The rear of the Pur Sport proudly carries the vehicle's rear spoiler spanning 1.90 metres to generate serious amounts of downforce, and the striking diffuser also significantly boosts the vehicle's aerodynamics. In this process, angled wing mounts form a large X in conjunction with the rear apron, a feature that is inspired by elements of science fiction and motorsport . The design is rounded off by the extremely lightweight and highly temperature-resistant exhaust tailpipe made of 3D-printed titanium. This production method gives the components very thin walls, thus helping to save weight where it really matters.

The vehicle interior is deliberately sporty and raw, and has been reduced to the absolute minimum. Large surfaces have been upholstered with Alcantara to save weight. Dynamic patterns have been lasered into the Alcantara door trim panels featuring contrasting fabric highlights with a metal look. Alcantara guarantees an ideal grip on the steering wheel and improves the side support on seats — even at extreme lateral acceleration levels. All trim and controls are made exclusively of either black, anodised aluminium or titanium. Contrasting cross-stitching adds colour highlights, as do the steering wheel's 12 o'clock spoke and the blue centre spine.

SOPHISTICATED AERODYNAMICS AND EXHAUST SYSTEM

A large diffuser and fixed rear spoiler generate plenty of downforce at the back end, while also helping to boost agility. At the same time, doing away with the hydraulic component of

the otherwise automatically extending spoiler reduces the weight by ten kilogrammes. Rear wing mounts and diffuser form an aggressive and sporty X-shaped design. ''We focussed particularly on the agility of the Chiron Pur Sport[1]. The vehicle generates more downforce at the rear axle while the large, front splitter, air inlets, wheel-arch vents featuring optimised air outlets and a reduced vehicle height strike a clean balance at the front'', Frank Heyl, Head of Exterior Design and Deputy Head Designer at Bugatti, explains.

NEW WHEEL DESIGN

Frank Heyl and the Technical Development department teamed up to devise a magnesium wheel design featuring optional aero blades for the Pur Sport. Arranged in a ring, the blades guarantee ideal wheel ventilation while also boosting aerodynamics. While the vehicle is in motion the rings fitted to the rim extract air outwards from the wheel where it is immediately drawn towards the rear. This invention prevents adverse turbulence in the wheel area and also improves the flow across the side of the vehicle. A special cover on each of the five wheel nuts minimises turbulence and adds a final visual touch to the wheel's design. Cutting the weight by a total of 16 kilogrammes results in a lower unladen weight and also reduces the unsprung masses of the already ultra-light Bugatti wheels. ''All of the modifications make the Pur Sport's handling more accurate, direct and predictable. Lower unsprung masses result in improved grip because the wheel maintains contact with the road surface more easily. Anyone behind the wheel will immediately feel its lightweight character through bends'', Jachin Schwalbe, Head of Bugatti Chassis Development, adds. An accomplished interpretation of ''form follows performance''.

NEW TYRE DEVELOPMENT

Bugatti and Michelin developed the new and exclusive Bugatti Sport Cup 2 R tyre in 285/30 R20 dimensions at the front and 355/25 R21 at the rear to match the new Aero wheel design. Thanks to a modified tyre structure and a rubber mix that creates more grip, this combination boosts the vehicle's lateral acceleration by 10% to additionally increase its cornering speed.

UNCOMPROMISING CHASSIS AND SUSPENSION SETUP

Bugatti specifically configured the chassis and suspension to be uncompromising on winding roads — without any detrimental effect on comfort. A new chassis setup featuring 65% firmer springs at the front and 33% firmer springs at the rear, an adaptive damping control strategy geared towards performance as well as modified camber values (minus 2.5 degrees) guarantee even more dynamic handling and added agility in bends. Carbon-fibre stabilisers at the front and rear additionally minimise roll. ''This setup makes the Chiron Pur Sport[1] steer more directly and accurately through bends and maintains the grip levels for a very long time — even at high speeds. In conjunction with 19 kilogrammes of weight reduction of the unsprung masses the Pur Sport almost glides across roads'', Jachin Schwalbe explains. In addition to the wheels' weight reduction totalling 16 kilogrammes, titanium brake pad base panels cut the vehicle's weight by a further two kilogrammes while brake discs strike yet another kilogramme off the total weight. ''These 19 kilogrammes fully contribute towards the performance. Less weight results in more grip and tangibly more comfort, as adaptive dampers are forced to deal with lower masses to thus be able to maintain the wheels' contact with the road surface more easily'', Jachin Schwalbe adds. Engineers have guaranteed more direct contact with the road surface

by making the connection between chassis, suspension and body 130% firmer at the front and 77% firmer at the rear.

Apart from the four familiar EB, Motorway, Handling and Sport drive modes, the Chiron Pur Sport[1] features the new Sport + drive mode to make this enhanced performance more emotionally tangible. In contrast to Sport mode, the traction control system kicks into action on dry race tracks at a significantly later point in the new mode aimed at more skilled cornering experts, making it possible for drivers to change their personal driving style even more than before from razor-sharp ideal lines to drifts, also through fast corners.

NEW TRANSMISSION DEVELOPMENT

A new transmission featuring an overall gear ratio that has been configured 15% closer together guarantees even more dynamic handling and further improves the power distribution of the 8.0-litre W16 engine generating 1,500 horsepower and 1,600 newton metres of torque. The vehicle now unleashes its full power at 350 km/h. ''We were forced to reduce the speed as a result of the vastly increased downforce, generated by the new rear spoiler'', Schwalbe explains. 80% of the transmission has been revised while the entire gear set including four shafts and seven forward gears has been adapted to the new conditions. ''We reconfigured each gear and calibrated new ratios despite this iconic engine boasting an abundance of power. The gears are closer together now to enable shorter gear jumps and also benefit performance. Most of all when coming out of corners the Chiron Pur Sport[1] accelerates even more aggressively in conjunction with the added grip as well as the more direct chassis and suspension'', Gregor Gries says as the Head of Major Assemblies at Bugatti. At the same time Bugatti has increased the maximum engine speed of the W16 unit by 200 rpm to 6,900 rpm. In conjunction with the closer overall gear ratio this creates significantly better elasticity. As a result, the Chiron Pur Sport accelerates from 60 to 120 km/h almost two seconds faster than the already lightning-fast Chiron[2]. All in all the elasticity values are 40% better compared with the Chiron[2].

PRODUCTION OUTPUT AND COST

2020 will be a special year for Bugatti. The French manufacturer based in Molsheim will be delivering the first Bugatti Divo[3] vehicles this year, a creation showcased at Pebble Beach in 2018, as part of a limited small-scale series totalling 40 units. Production of the Chiron Pur Sport[1] will start in the second half of 2020. Limited to 60 units at three million euros excluding VAT. ''With the Chiron Pur Sport[1] we are showcasing an outstanding vehicle that makes your heart race shortly after having started the engine to push the limits of driving physics even further to the limit than any vehicle ever has done before. This means we have come full circle, back to the good, old Bugatti tradition'', Stephan Winkelmann adds confidently.

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[1] 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