Bugatti expands product range with Bugatti Veyron 16.4 Grand Sport (Studio photos)

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The world's most significant celebration of the automobile takes place annually in Monterey, California. This year, it will see some of the most elegant, exclusive, and valuable vehicles ever produced in over 100 years of motoring, with Bugatti set to play a prominent role. On the evening prior to the Pebble Beach Concours d'Elegance, the highlight of the event, the marque renowned for impeccable automotive solutions, aesthetics and driving dynamics will unveil a second model to the world - the new Bugatti Veyron 16.4 Grand Sport with a unique removable roof.

In response to customer demand, significant modifications have been made to the vehicle's complex structure to make possible open-top driving, thereby adding a new dimension to this high-performance sports car. Incorporating a host of new and innovative safety and equipment features, it is the world's fastest and most exciting roadster. It is immediately recognizable as a result of its slightly higher windscreen, stylized daytime running lights, and lightweight, transparent polycarbonate roof.

The main challenge in developing the new Bugatti Veyron 16.4 Grand Sport with removable roof resulted from the unique structure of the fixed-roof Bugatti Veyron. An optimum combination of rigidity and lightweight engineering ensures the monocoque passenger cell of the original model is extremely strong while weighing an absolute minimum - it is a central element of the vehicle's structure. As the roof is an integral part of this, removing it meant the load paths had to be completely redesigned to maintain the vehicle's rigidity and crash safety, and to offer additional protection from side impacts and rolling.

As a result, the monocoque structure has been reinforced around the side skirts and the transmission tunnel. The B-pillars have been cross-stiffened using a carbon fibre support, and a central carbon plate has been positioned beneath the transmission tunnel to ensure the vehicle suffers from less torsional flexing than any other roadster.

The doors of the new Bugatti Veyron 16.4 Grand Sport are made of carbon fibre, and house an integrated longitudinal beam.

In the event of an accident, this transfers the load from the A to the B-pillar, thereby dissipating impact energy. Furthermore, the two redesigned air intakes for the 16-cylinder mid-engine now feature 10-centimetre wide carbon-fibre elements to offer protection should the car roll.

Along with moisture-resistant, backstitched leather, a range of new equipment features has been added to the interior, including a reversing camera with 2.7-inch monitor in the rear-view-mirror, and the "Puccini" sound system with digital signal processor.

When the roof is closed, the Bugatti Veyron 16.4 Grand Sport can reach 407 km/h, while speeds of up to 360 km/h are possible with roof off. Should it rain, an innovative folding roof stored in the luggage compartment can be opened up like an umbrella at any time. When this folding roof is in place, the car can travel at up to 130 km/h.

Assembled by hand at the company's headquarters in Molsheim, Alsace, the Veyron 16.4 Grand Sport will be available from March 2009 at the price of 1.4 million euros (excluding tax). Just 150 examples will be made, with the first 50 of these going exclusively to registered Bugatti customers. The first vehicle is certain to be highly sought after, and Bugatti has taken the decision to donate this specific car to charity. It will be sold to the highest bidder at the Pebble Beach Auction presented by Gooding & Company.