

2008 Shelby GT500KR Chassis

For performance enthusiasts, the new 2008 Ford Shelby GT500KR's driving dynamics should be as big of an eye-opener as its acceleration, torque, horsepower and stopping performance.

The new model features an array of enhancements designed to give it the same poised and predictable handling at 120 mph as it has at 60 mph, according to the performance engineering team at Ford SVT in collaboration with Shelby Automobiles. The team has created the fastest production Mustang ever. This Mustang can take curves at speed.

The new GT500KR's handling is the result of a clever combination of chassis engineering and aerodynamic honing, proven by its 1.0g lateral acceleration skidpad capability.

"The new GT500KR handling story is all about balance," said Jamal Hameedi, chief engineer of Ford SVT.

"That's the big result with new GT500KR dynamically," agrees Gary Patterson, Shelby Automobiles chief test driver. "Its balance makes this car very confident and predictable to drive, even on the limit."

Sharp Aero

Just as on the race track, aerodynamics has played a major role in shaping the dynamic capabilities of the 2008 GT500KR.

"Our objective was to build on the GT500 to give the new model more dynamic balance, reflecting its higher power output," said John Pfeiffer, SVT product design engineering specialist. "We focused our efforts on creating even downforce levels front and rear. That meant finding more frontal downforce than the previous model."

Extensive engineering work was devoted to deliver more front downforce, starting with the most obvious aerodynamic feature on the new car – its slick carbon-fiber front splitter.

The new splitter is an all-new profile, more aggressive than that of the GT500. It is deeper and consistently full in shape, mirroring the shape of the leading edge of the hood and bumper above it for design coherence. Its lateral edges, which kick up small aero wall shapes at the wheel arches, are a clear statement of performance intent.

The thinner splitter aids with approach angle clearance, but downforce is its primary role helping achieve a 31 percent improvement.

The splitter structure creates a flat floor shape under the front portion of the bumper shape to the leading edge of the front wheels. Enclosing this area provides a significant downforce enhancement.

The splitter underside also incorporates an integral brake cooling feature, with molded shapes inspired by NACA ducts.

At the rear, the new GT500KR has a less prominent spoiler, a design to balance front-to-rear downforce variances. That's an important part of its balance and poise at speed.

"You have to experience the new KR at speed in a curve to feel the difference," Pfeiffer said. "It has an absolutely minimal aero moment of just 54 lb.-ft. at 120 mph, a 92 percent improvement versus the GT500. That is central to its confident handling ability. Because it's just as happy at 120 as it is at 60, the GT500KR is a very special performance car."

'Only' 40 More Horsepower?

KR's slick new aero has another special impact on performance feel.

"If you drive the GT500 and new KR back to back, you might accuse Ford SVT and Shelby of sandbagging because the car feels like it has more than 40 extra horsepower," says Patterson.

"That's an effect of the aerodynamics," says Pfeiffer. "Our computer model predicts a four-tenths-of-a-second zero-to-150 acceleration effect from the aero alone. That makes the horsepower go farther."

Chassis improvements engineered by Ford SVT and Shelby Automobiles complement the aero enhancements – and not every component is bigger for better performance. In fact, the new car is 22 pounds lighter than the current GT500.

"We reduced the diameter of the rear sway bar for just the right grip under power coming out of a corner," said Kerry Baldori, SVT chief vehicle engineer. "That's just one example of the amount of tuning that went into engineering the KR chassis."

That tuning and the weight reduction are immediately obvious in the GT500KR's light and responsive steering. Impressive given the aggressive size and stickiness of new 18-inch Goodyear tires – 255/45 series in front, 285/40 at the rear – mounted on distinctive, forged and polished wheels.

Powertrain calibration also makes GT500KR 'street friendly' despite its impressive performance credentials. It has a gentle, balanced feel at low speed when cruising around town and an easier launch feel.

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Founded by legend Carroll Shelby, Shelby Automobiles Inc., a wholly owned subsidiary of Carroll Shelby International Inc., (CSBI.PK), manufactures and markets performance vehicles and related products. The company manufactures authentic continuation Cobras, including the 427 S/C, 289 FIA and 289 street car component vehicles. The company also partnered with Ford Motor Company to build the Shelby GT, which is based on the Mustang. For more information about Shelby Automobiles and to see the build of a 2008 Ford Shelby GT500KR, visit www.shelbyautos.com.

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