

2007 Shelby GT500 Chassis

2007 SHELBY GT500: MUSCLE WITH AGILITY

- The most powerful Mustang ever also delivers race-winning handling
- Staggered tire sizes help get all the power to the ground
- Brake system boasts Brembo 14-inch front vented discs with four-piston calipers
- Stiffer front and rear stabilizer bars provide for neutral handling
- Steering upgrades result in increased feel and precision



SVT engineers tested the 2007 Shelby GT500 at racetracks across the United States to design a car worthy of Carroll Shelby's name.

DETROIT, Jan. 8, 2005 – A major goal set for the Shelby GT500 was to raise the handling to a new level. An easy road to success would have been to simply let Ford Special Vehicle Team chassis engineers tweak the critically acclaimed Mustang GT and have motorsports legend Carroll Shelby put his stamp on it.

Easy. Right?

"It all depends on what you're satisfied with," says Tom Chapman, SVT Vehicle Dynamics Supervisor. "If you just want to make the Mustang live a bit more happily with a 60-percent increase in engine output, it's fairly simple to do. If you want it to equal the handling of the Mustang GT despite a larger displacement engine, that takes a bit more work.

"But if you want to hold it up to a whole new set of standards and be worthy of the Shelby GT500 name, then you better be prepared to roll up your sleeves."

The GT500 retains the Mustang's suspension setup. In the front, there are coil-over MacPherson struts with reverse "L" lower control arms made of lightweight I-section steel. In the rear, there's a three-link live axle with coil springs, Panhard rod, outboard shocks and stabilizer bar.

Weight Distribution

Because of its larger engine, the Shelby GT500 coupe has more weight over the front wheels than does the standard Mustang GT coupe. On the GT500, 57 percent of the weight is in the front and 43 percent is in the back. In comparison, on the Mustang GT 56 percent of the weight is in the front and 44 percent is in the back. Weight distribution of GT500 convertible matches the Mustang GT coupe due to the power-top mechanism behind the passenger compartment.

Bar Talk

While a heavier nose generally disposes a car to understeer or "push," the Special Vehicle Team's engineers were able to retain neutral handling with the Shelby GT500 through the use of stiffer stabilizer bars. In addition, the rear bar of the GT500 is larger than that of the Mustang GT.

The GT500 uses a 34-millimeter tubular front stabilizer bar. Coupe versions of the GT500 sport a 24-millimeter rear bar, while convertibles come with a 20-millimeter bar.

"Stiffer stabilizer bars provide reduced roll and deliver a more aggressive handling balance," says SVT Vehicle Dynamics Engineer Dean Martin. "We've also given the GT500 higher spring rates at both ends to handle the greater mass of the car and also to reduce roll."



Brembo brakes and 18-inch wheels and tires control the 475-hp Shelby GT500. 285/40ZR18 tires on the rear.

Stopping Power

The Shelby GT500 sports Brembo front brakes with four-piston calipers and vented 14-inch discs. In the back, GT500 carries over the Mustang GT's 11.8-inch vented single-piston caliper rear-disc setup with unique pad material.

"We choose a friction material that will provide good track-day performance for the customer and still deliver satisfactory parking-brake performance and quiet operation," says Chapman.

Tires Manage Balance of Power

The GT500 sits on four 18-inch x 9.5-inch wheels, wearing 255/45ZR18 tires on the front and larger

"Larger rears help get the engine's immense power to the ground better when accelerating off the line," says Martin. "They also improve handling balance when you're powering away from the apex of a turn on the race track using as much torque and horsepower as the GT500 has."

Putting a Fine Edge on the Steering

The 2007 Shelby GT500 adds a brace that connects the rear lower arm bushings side to side. This was added to improve durability and steering feel.

A unique steering pump is used and the steering gear utilizes a unique torsion bar. Again, these work to improve steering feel and precision.

"We wanted to make sure the changes we made met enthusiast customer demands," Chapman says. "So we took our engineering cars not only to the test track, but to real-world drive routes and race tracks to make doubly sure that the GT500 would live up to the expectations."

SVT tested the 2007 Shelby GT500 at Grattan and GingerMan in Michigan, Nelson Ledges in Ohio

and Las Vegas International Speedway. How long did they run?

"Long enough that we were satisfied," says Chapman. "And long enough to bring a smile to Carroll Shelby's face."