

2005 Shelby GR-1 CONCEPT Safety

The underpinnings of the Shelby GR-1 concept start with a modified version of the aluminum chassis from the rear-engined Ford GT. The bulk of the rear structure is made from slightly modified Ford GT components, including the large, trellis-like cast aluminum suspension nodes, the rear rails and bumper beam, the major cross-member and the brackets that are used to mount the transmission.

The center portion of the spaceframe also borrows liberally from the Ford GT, as the major aluminum extrusions used in the Shelby GR-1 are based heavily on existing pieces. At the front of the coupe, the team incorporated extruded main rails, a steering rack cross-member, special crash-management sections and the bumper beam from the Ford GT.

"Building a concept car with this level of sophistication is much easier when you start with a world-class supercar like the Ford GT," says Phil Martens, group vice president, Product Creation. "This commonality and re-use goes hand-in-hand with our speed and cost efficiency, promising the Ford GT's bang-for-the-buck equation if the Shelby GR-1 goes to production."

HIGH-PERFORMANCE CARS NEED HIGH-PERFORMANCE HEADLAMPS

Driving an exotic, high-performance car at night can be challenging if the vehicle's headlamps can't keep up with the speed of the vehicle. It's a fact that more powerful lighting is a must if spirited nighttime driving is to be done safely in a supercar. To that end, the Shelby GR-1 concept employs a lighting system that is not only more intense, but also more compact than typical headlamps.

The front corners of the Shelby GR-1 are dominated by substantial front wheel wells housing 19-inch wheels and tires and trapezoidal High Intensity Solid State (HISS) headlamps that float above the wheel arches. This highly technical lighting package provides a brighter, more powerful light beam in a very compact package, allowing freedom of design without sacrificing nighttime driving visibility.

TIRES THAT "TALK" TO YOU

No matter how much power and handling ability is built into a supercar, all of the vehicle's performance potential has to be delivered to the pavement through its tires. A driver who knows that all four tires are performing within safe limits can wring the most potential out of the vehicle.

The Shelby GR-1 concept sits on 19-inch, 12-spoke milled aluminum wheels and features Goodyear 275/40R-19 high-performance tires in the front and 345/35R-19 tires in the rear – but all four come equipped with Goodyear's unique Tire IQ™ system that allows the driver to monitor precise information on tire temperature and pressure as well as other key vehicle dynamics such as cornering G forces. The centrally mounted Tire IQ™ display is a sophisticated driver's aid designed to inform about tire conditions, warn of low pressure or impending deflation – even entertain by supplying performance data. The Tire IQ™ readout gives the driver and passenger an animation of vital tire temperature and pressure statistics through sensors in the tire, along with other key vehicle dynamics such as cornering G forces through an onboard accelerometer.

MORE GO NEEDS MORE STOP

A vehicle with enhanced power for high-performance acceleration without enhanced braking ability poses a big safety risk. So, with more than 600 horsepower available through the Shelby GR-1 concept's throttle, its brakes had to be equally powerful. That's why the team set braking distance targets comparable with today's best supercars and turned to the Ford GT braking system for suitable components.

On the Shelby GR-1 concept, Brembo "monoblock" one-piece aluminum brake calipers with four pistons each grab cross-drilled, vented discs at all four wheels. The discs are a massive 14 inches in front and 13.2 inches in the rear, for consistent fade-free stopping power.