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2014 GMC Sierra

GM Calls Its Pickups Fit as a Fiddle, Strong

It's an age-old problem for motor vehicles – losing body weight without losing the strength needed for the vehicle to operate as designed.

GM spokesman Tom Wilkinson likens the problem to athletes who burn fat and build muscle to become more competitive.

And, said Wilkinson, the 2014 Chevrolet Silverado 1500 and the GMC Sierra 1500 have strategically replaced traditional steel with lightweight, high-strength steels for improved

capability, safety and fuel efficiency.

High-strength and ultra-high-strength steels make the Silverado and Sierra's fully boxed frames and cabs lighter and stronger, helping the trucks deliver the best fuel economy of any V8 pickup, up to 23 mpg highway, Wilkinson said. They also have, he said, class-leading towing capability of up to 12,000 pounds when equipped with the available 6.2L V8.

Similarly, making the most of

mass also enables Silverados and Sierras equipped with the 4.3L V6 to tow up to 7,600 pounds, the highest for any standard V6 in the segment, with EPA highway fuel economy of up to 24 mpg, Wilkinson said.

"Our customers tell us they want better fuel economy, but only if it doesn't come at the expense of capability," said Jeff Luke, executive chief engineer of the Silverado and Sierra.

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Buick Regal with 2.0L Turbo 'Torque-Rich, Fuel-Efficient'

The revamped 2014 Buick Regal now arriving in dealerships features the sport sedan's most powerful standard engine ever – and increased fuel efficiency, said Buick spokesperson Katie Bjork.

Producing an SAE-rated 259 horsepower and 295 lb.-ft. of torque from just two liters of displacement, the Regal has more standard horsepower and torque than the Acura TSX, Audi A4, Lexus IS 250, Mercedes-Benz CLA 250, Volkswagen CC, and Volvo S60, Bjork said.

The new turbo four-cylinder engine incorporates an improved twin-scroll turbocharger and a host of other advancements that result in a smoother, quieter en-

gine with improved power and efficiency, Bjork said.

Buick staffers consider these vehicles to be the Regal's "natural competition," he said.

"Cars like the Acura TSX and the Audi A4 are what the Regal is compared to, not only internally, but in the media," Bjork said. "It's interesting to see what the Regal is doing for the brand. It was launched with enthusiasm and is being compared to vehicles like the Audi A4. A lot of people still think Buick is making cars that we no longer make. Our oldest model is the Verano and it was launched in December of 2011."

What company research is showing, Bjork said, is that people are buying the Regal based

on its design, but they also like the performance and horsepower and value it provides. "And Buick's efforts to be known as a less stodgy brand is paying off."

Bjork added, "The average industry car buyer is between 54 and 56 years of age. But the

average age of the Regal buyer is 43. This means our efforts to make the Regal attractive to younger buyers is paying off. That's a good indicator that the Buick demographic is changing."

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2014 Buick Regal

Continental's Touchpad Helps Reduce Driver Distractions

It's a tough question. How does a company make all the latest safety and convenience features in a vehicle easy to operate so that the driver is distracted as little as possible?

Officials at Auburn Hills-based Continental Automotive Systems say they think they just might have the answer.

Its experts in the human-machine interface (HMI) in vehicles are currently pursuing a new path.

The company has developed a touchpad with active haptic feedback, which is an input device with a touch-sensitive surface. Its primary purpose is to control screen menus. This touchpad feature confirms a driver's action with tactile pulses – similar to what you would experience with a button.

"We see a lot of potential in touch control," said Eelco Spoelder, manager of the Continental business unit Instrumentation and Driver HMI during the recent "Driver in the 21st Century" conference held in Braun-schweig, Germany, on Nov. 8.

"Together with active haptic feedback, the touch principle is particularly efficient, which is confirmed in a test study carried out at the University of Kassel."

In the U.S. alone, The National Highway Traffic Safety Administration (NHTSA) estimates that there are at least 3,000 deaths annually from distraction-affected crashes – crashes in which drivers lost focus on the safe control of their vehicles due to manual, visual, or cognitive distraction. And, it estimates nearly an additional 400,000 are injured in related crashes, said Spoelder.

"The touchpad with active haptic feedback demonstrated a

significantly positive effect in the study," said Prof. Ludger Schmidt, head of the Human-Machine-Systems Engineering Group in the Mechanical Engineering Department at the University of Kassel.

"On average, a driver's gaze is diverted away from the traffic 23 percent less when haptic feedback is switched on. And the control tasks set were performed on average 33 percent quicker than without active haptic technology."

These values were investigated using a driving simulator. The 32 study subjects had to perform standardized lane-change ma-

neuvers in accordance with ISO 26022, Spoelder said.

At the same time, the drivers were expected to call up and activate functions from the screen menu using the touchpad. Performing secondary tasks at the wheel can significantly affect driving safety, the study determined.

According to the study, the longer the driver's gaze is directed at the screen, the longer the vehicle is being "driven blind." The detailed results of the study were presented at the 10th Berlin Human-Machine Systems Workshop in October.

The touchpad with active hap-



Haptic touchpad

tic feedback was positioned low down within reach of the right hand. Its purpose is to operate a

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Lincoln Adds New Turbocharged Infant to Vehicle Family

Talk about good things in small packages.

The 2015 Lincoln MKC is an all-new vehicle with an all-new engine. At least, that was the message when the 2015 Lincoln MKC small premium utility was unveiled Nov. 13.

It adds a key new option to The Lincoln Motor Company lineup of premium vehicles, an available all-new engine – a 2.3-liter EcoBoost turbocharged four-cylinder powerplant, said Jim Farley, executive vice president of Ford Global Marketing, Sales and Service and Lincoln.

"Core to the Lincoln reinvention is creating new vehicles that are unique not only to the brand, but also to the premium automotive market," Farley said. "The 2.3-liter EcoBoost helps us achieve that in the all-new 2015 MKC by setting a new standard in the balance of performance and efficiency."

The 2.3-liter EcoBoost four-

cylinder offers best-in-class performance even when measured against competitors' six-cylinder engines, Farley said. The 2.3-liter EcoBoost offers projected best-in-class horsepower per liter and best-in-class torque per liter, generating 275 horsepower at 5,500 rpm and 300 lb.-ft. of torque at 3,000 rpm, according to preliminary test data.

The 2.0-liter EcoBoost, standard on MKC, generates 240 horsepower at 5,500 rpm and 270 lb.-ft. of torque at 3,000 rpm, according to preliminary test data, Farley said. The 2.3-liter EcoBoost was specifically engineered for higher performance.

Two factors pivotal to the success of the newest entry in the benchmark EcoBoost engine lineup are a three-port integrated exhaust manifold cylinder head and a twin-scroll turbocharger.

"The three-port IEM design is the key driver for performance because it improves airflow and

optimizes exhaust energy pulses through the turbocharger," said Pete Pandolfi, 2.3-liter engine supervisor for Lincoln. "The three-port IEM and twin-scroll turbo design really opened us up to have outstanding power and refinement."

The exhaust flows from the inner and outer pairs of cylinders are kept separate as they go

through the three ports into the two scrolls of the turbocharger. Separating the exhaust pulses until they hit the turbine wheel minimizes the backflow into the next cylinder that fires, preserving energy to help spin up the turbo, Pandolfi said.

Turbo lag is virtually eliminat-

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2015 Lincoln MKC

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