

Repair Insights

FOR INDEPENDENT BODY SHOPS

ACDelco

Genuine **GM** | **Parts**

January–March 2010

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The E-ROD from GM Performance Parts— A Revolution in Hot-Rodding



GM PERFORMANCE PARTS

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Product Update

YOU CAN'T
MANAGE
What You Don't
MEASURE

COMPUTERIZED FRAME MEASUREMENT CAN HELP UNLOCK SHOP EFFICIENCY.

Success in today's collision repair industry requires a laserlike focus on quality repairs and cycle time.

Modern frame-measuring systems can help you do just that – literally. The newest generation of computerized laser measuring systems produce the highly reliable frame measurements that allow repairs to proceed quickly and accurately.

A successor to the standard manual systems that use clunky mechanical gauges, plum bobs and tape measures, the computerized systems are becoming an almost essential gateway product for shops wanting to take their business to the next level. Without the advanced capabilities those systems provide, shops can be at an extreme disadvantage dealing with demanding insurers and customers.

That's the calculation of ever more collision repairers, even as they may fret over the initial cash outlay required to step up to the new technology. Consequently, many are turning to proven computerized measuring systems made by companies like Chief Automotive Technologies and Blackhawk Collision Repair, and available through General Motors Dealer Equipment (www.gmdesolutions.com).

Cost may have been a concern when Roberts Collision Center, Clearwater, Fla., bought its first laser-based system a decade ago. But in hindsight, says general manager Tom Layton, buying it was the right move to help get the shop on track to becoming a nearly \$5 million business.

"The stuff makes you money," says Layton of Chief Automotive Technologies' Velocity computerized frame-measuring system. "You put the vehicle up on the frame machine, take the measurements, get it off, hang the sheet metal and everything just falls into place without having to do any repulls. The system can't be beat."

With five frame machines and three Velocity systems, Layton says the shop has the capability to handle the high volume, and by extension the cycle time, that insurers increasingly demand of repairers. Accurate measurements, he says, translate to a full cataloguing of damage, complete parts orders and speedier repairs of higher integrity.

"If a customer or insurer comes back with a problem we're able to produce supporting documentation of how the vehicle came in and how it left," he says. "That's becoming more important because customers are getting a lot more picky. They want their vehicles fixed to exactly the way they were."

As computerized measuring systems steadily improve in such ways, and the demand for accuracy, speed and repair documentation grows, Holland says more mechanical pulling systems will likely be replaced.

"We're finding that shops of virtually any size can justify this equipment now," he says. "It's becoming almost standard equipment."



Product Update (cont'd.)

GOING **FAST,** GOING **GREEN**

Now, with the expanding lineup of E-ROD crate engines, so named for their efficiency, environmental consciousness and emissions-compliance, enthusiasts will be able to power up in an environmentally responsible way and fully enjoy the fruits of their labor.

On the outside, the '55 Chevy looked little different from all the other painstakingly restored classics of the same iconic vintage. Even under the hood, the LS3 6.2L V-8 engine resembled the kind that restorers commonly use to bring vehicle performance into the modern era.

But this Chevy, on display in the GM Performance Parts (GMPP) booth at last November's SEMA (Specialty Equipment Manufacturers Association) show in Las Vegas, actually represented the next frontier in "resto-modding," the wedding of modern engine technology to classic vehicle restoration.

That's because its engine was the first generation of a revolutionary new line of E-ROD high-performance engines engineered by GMPP to slash emissions, improve fuel-

GM Performance Parts E-ROD emissions compliant engines deliver speed and power with reduced emissions.

efficiency
and become
both more



environmentally friendly and street legal in the process.

The classic Chevy on display marked the official unveiling of the E-ROD line, GMPP's response to the challenge restorers and performance enthusiasts face when they want to take to the road in their creations. As more states follow California's lead in blocking the licensing of "specially constructed vehicles" that are not emissions compliant, many restored vehicles can be consigned to the garage.

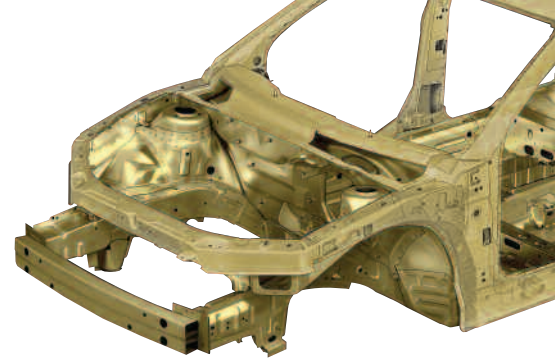
All it takes is an E-ROD crate engine system, which in addition to the base LS engine, includes components to make it emissions-legal. They include catalytic converters; an engine wiring harness; an engine control module with emissions-legal calibration; exhaust manifolds; oxygen sensors and sensor bosses; a fuel tank evaporative emissions canister; an air filter; mass airflow sensor and sensor boss; and an accelerator pedal. On top of the kit, builders also must source a transmission and other application-specific components related to fuel, air induction, exhaust and front-end drive systems.

Once properly installed, an E-ROD crate engine system will turn virtually any classic GM rebuild into a powerful, "clean" car that rivals the modern performance and emissions profile of contemporary GM muscle cars.

To locate, price, or purchase an E-ROD, contact your GM dealer or call the GM Performance Parts customer assistance center at 1-800-450-4150. Or, visit www.gmperformanceparts.com.



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2. Follow the rebate submission steps .
3. Mail the printed online claim confirmation page with copies of the dealer invoice and your repair order and/or a copy of the estimate* to: GM Collision Parts Fast-Cash, 2604 NE Industrial Dr. #230, N. Kansas City, MO 64117.
4. Submit a claim for each unique invoice for qualifying GM Collision Parts.

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*GM dealers only need to submit their printed confirmation pages and copy of estimates.



Repair Industry News & Updates

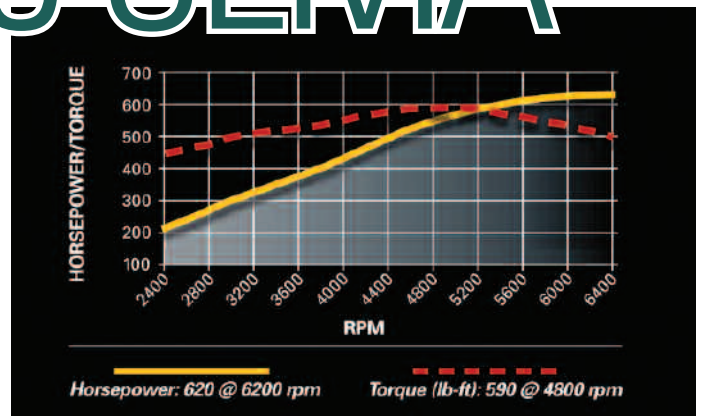
GM asserts its custom solutions bona fides at **2009 SEMA**

Showing that it's a force to be reckoned with in the dynamic specialty automotive market, GM Powertrain and Genuine GM Parts unveiled a host of products, parts and concepts at last November's Specialty Equipment Manufacturers Association (SEMA) show.

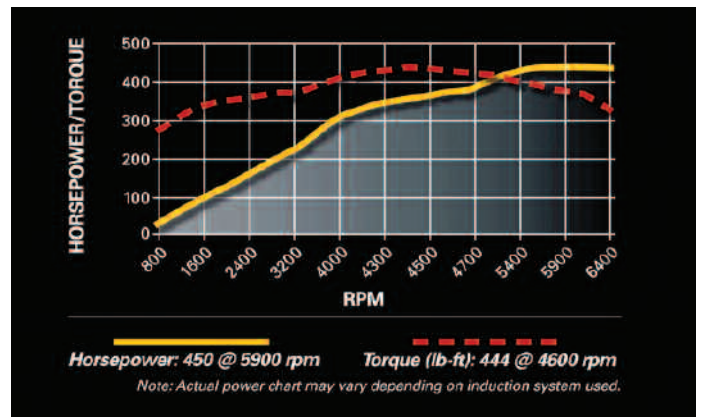
From souped-up GM classics to new performance engines to environmentally friendly powertrain solutions, GM demonstrated a clear commitment to helping restorers and performance enthusiasts express themselves through their vehicles in new and exciting ways.

Demonstrating that its new stock Chevrolet Camaro, as hot as it is, is only a starting point, GM paraded five Camaro concept cars. Each was lavishly accessorized to the designer's vision with a varied mix of readily available Genuine GM Parts and Powertrain components.

Vehicles like the twin-turbocharged V-6 built for Jay Leno, the current stock and future accessory-indulgent Camaro Chroma and the sophisticated, tailored-looking Camaro Dusk showed just what can be done with an artistic flair and ready access to GM Parts and accessories.



LSX 454 Dyno Chart



LSX 376 Dyno Chart

"Chroma" Camaro



"Dusk" Camaro



"Synergy" Camaro



The five Camaros on display were selected from a field of 132 proposals sent in by leading custom vehicle makers.

“The best shops in the world came there with their best blend of redesign and powertrain upgrade ideas,” says Dr. Jamie Meyer, GM Performance Parts marketing manager.

Joining the Camaros in the lavish GM display at SEMA were a customized 2010 Grand Sport Corvette and an off-road ready “Raptor Fighter” Chevrolet Silverado outfitted with an LS7 crate engine.

Not to be overshadowed, GM Performance Parts showed off its two new powerful crate engines, the LSX 454 and the LSX 376, both built on the famed LSX Bowtie Block.

“Those are boost-ready LSX crate engines that are drawing a lot of interest,” Meyer says.

But the biggest GM news to come out of SEMA had to be GMPP’s new E-ROD crate engine system. Showcased there in a classic 1955 Chevy, the new emissions-friendly, yet powerful LS engine is envisioned as the answer to restorers’ challenge of doing a “resto-mod” project that can also be street-legal.

“The E-ROD was the big story coming out of SEMA,” Meyer says. “There were 300 members of the press at the rollout and we were able to formally introduce this to some local classic car clubs. We think the E-ROD is going to revolutionize how the big custom car builders go to market in the future.”



“Grand Sport” Corvette on display in the GM Exhibit at SEMA

Quality At Risk

Parts patent law reversal could spawn race to the bottom.

Choice is great when it comes to buying the things you must have. But more choice for its own sake isn’t an unqualified positive. If the act of choosing causes you to be less confident in your options, or heightens the risk of a regrettable decision, it may be a mirage.

That’s the unfortunate scenario collision repairers could face if legislation that effectively increases the chances of being enticed to buy more substandard collision parts becomes law.

Under the “Access to Repair Parts Act” introduced in Congress last year, automakers would lose patent protection on OE collision parts. Aftermarket suppliers would be freed to produce ever more cheaper parts copies that ultimately may or may not be of the same OE quality.

In the words of The Quality Parts Coalition (QPC), which is lobbying for the legislation, the bills, H.R. 3059 and S. 1368, would amend U.S. patent law “so that it would not be an act of design patent infringement to make or distribute alternative repair parts (i.e., bumpers, fenders and hoods) used for the purpose of repairing a vehicle to its original appearance.”

In evaluating the proposed legislation, the operative word may well be “appearance.” GM and other OE collision parts suppliers, represented by The Alliance of Automobile Manufacturers (AAM), argue that making replacement parts that restore appearance isn’t the same as making parts that perform. Yet, if patent protection on key parts OE manufacturers deem necessary to protect is eliminated, that’s exactly what might happen: a flood of aftermarket parts that look the part, but aren’t made to rigorous OE design and manufacturing standards.

Repair Industry News & Updates (cont'd.)

ASA Opposes the Legislation

That's one of the reasons AAM is part of a coalition assembled by the influential Automotive Service Association (ASA) to oppose the legislation, whose chief backers are some leading aftermarket parts suppliers that make up the QPC. In a recent letter to congressmen, the ASA coalition argued that opening up more high-volume replacement parts to an aftermarket industry that must contend with a loose patchwork of standards, quality control and testing regimens is an invitation to trouble.

Automotive collision repairers are very concerned about the quality of replacement crash parts," says ASA. "Permitting this intellectual property infringement also exposes consumers to significant safety, performance or durability risks."

That's already the case to varying degrees in the aftermarket parts industry, where OE parts, many produced overseas, are routinely copied using techniques like reverse engineering. With more advanced computer-aided design tools, the process of designing the parts tooling has become vastly simplified. Yet the industry still struggles to make parts that can consistently match OE quality, argues Ron Doerr, portfolio manager-industry integration, for GM Service & Parts Operations.

Doerr characterizes QPC's legislative initiative as a way to try to head off mounting evidence that the aftermarket parts industry is skirting the boundaries of legal and ethical commercial behaviors. In the wake of a 2006 federal judicial ruling that found several aftermarket collision parts suppliers violated several Ford Motor Co., parts patents, Doerr says the industry may be working, after the fact, to protect its business model.

"It's a very real issue for them to try to legitimize what they're doing today," he says. "They've been dodging a bullet on this issue, and they know they may be in trouble if the OEM community gets more aggressive in protecting its property rights. So it seems they're looking for relief in the form of a statute that will allow them to continue to do what they've been doing."

It's a curious approach, says Doerr, in that it seems to be an acknowledgement that the industry could be violating existing patent law. Moreover, he says, eliminating patent protections would also extend to any proprietary parts designs aftermarket suppliers might develop. "We're very interested in the logic stream they're presenting with this legislation, and we have very grave concerns about this catching track with lawmakers," Doerr says.

Jay Leno Camaro at SEMA.

During the annual SEMA Convention, the popularity of a new car can be easily judged by the number of 'tuner' versions used by various companies to showcase their latest products; and the Camaro was the runaway hit this year, with countless examples displaying everything from mild styling accessories to wild performance modifications.

Concept car squeezes 425-hp out of the 3.6L V-6.

But one that stood out from the rest was a **race-ready, twin-turbocharged V-6** Camaro concept car built for talk show host and auto enthusiast Jay Leno on display at the GM exhibit.

Powered by a twin-turbocharged version of the 3.6L direct injected V-6 that is standard in



2010 GM 3.6L V-6 VVT DI (LLT) for the Camaro LS and LT

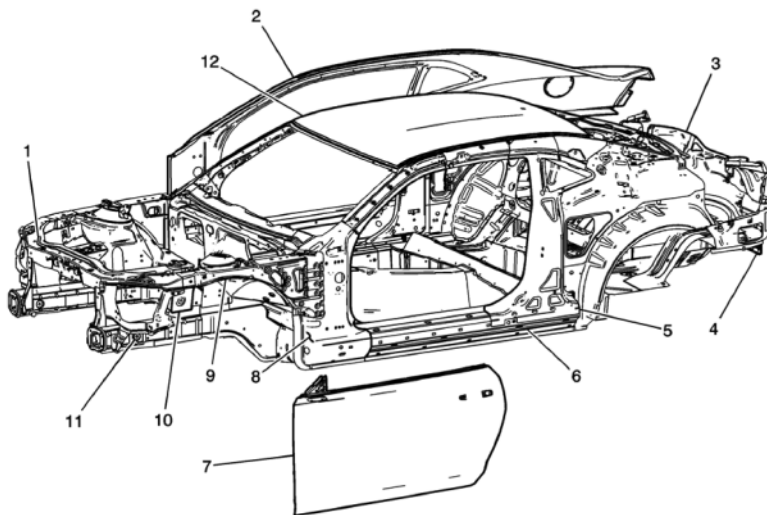
The Technical Side

Camaro LS and LT models, Leno's Camaro blends high performance with surprising efficiency in a racing-ready package. A pair of Turbonetics T-3 turbochargers blows through a custom air-to-air intercooler, force-feeding the engine about seven pounds of boost and lifting its horsepower level to about 425. That's about 40 percent greater than stock and in normal driving (when the turbochargers aren't making boost), there's virtually no penalty in fuel economy over the non-turbocharged 3.6L engine.

Jay Leno Camaro



Body Structure Identification for the 2010 Camaro



Even though the 2010 Chevy Camaro is a new vehicle, extensive service and repair information resources are a click away at www.gmtechno.com – *Electronic Service Information*. Technicians and shop owners can log on to the site to gain access to subscription services for service procedures and repair manuals. A complete Service Manual is accessible 24/7 through a subscription to the site. Free collision repair procedures will soon be available by going to www.genuinegmparts.com and clicking on *GM Technical Repair Information*.

Number	Description	Material	Procedure
1	Front End Upper Tie Bar Replacement	Mild Steel	Front End Upper Tie Bar Replacement
2	Outer Bodyside Panel	Mild Steel	<ul style="list-style-type: none"> • Front Hinge Pillar Body Sectioning • Rocker Outer Panel Sectioning
3	Rear End Panel	Mild Steel	Body Rear End Panel Replacement
4	Rear Frame Rail	High Strength Low Alloy Steel	Rail Replacement – Rear Section
5	Center Pillar Reinforcement	High Strength Low Alloy Steel	Door Frame Reinforce Sectioning – Center Pillar
6	Rocker Inner Panel	Ultra High Strength Steel	Rocker Inner Panel Reinforcement Replacement

continued on next page

The Technical Side (cont'd.)

Body Structure Identification for the 2010 Camaro (cont'd.)

Number	Description	Material	Procedure
7	Front Outer Door Panel	Mild Steel	Front Side Door Outer Panel Replacement
8	Front Body Inner Hinge Pillar	High Strength Low Alloy Steel	Body Hinge Pillar Extension Panel Replacement
9	Front Side Rail	High Strength Low Alloy Steel	Front Compartment Upper Side Rail Replacement
10	Front Wheelhouse	Mild Steel	Front Wheelhouse Panel Replacement
11	Front Compartment Lower rail	High Strength Low Alloy Steel	<ul style="list-style-type: none"> • Front Compartment Inner Side Rail Replacement • Front Compartment Inner Side Rail Sectioning • Underbody Outer Front Side Rail Sectioning
12	Roof Outer	Mild Steel	Roof Outer Panel Replacement

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No More Gentle Giant Shop owner gives HUMMER a Diesel makeover.

Like a patient on a waiting list for a life-saving organ, Darren Reed perked up when the wrecked Chevy 2500 HD pickup came into his repair shop. And his eyes lit up and the wheels began turning when he learned the owner's insurance on the vehicle had lapsed.

"When I saw it come in I knew it was the one," he says. "He didn't have the resources to fix it, so I offered him \$5,000 for the truck and he took it."

Reed, owner of Lafayette Collision Center, in Lafayette, La., was suddenly the proud owner of a five-year-old truck with a substantially damaged front end. But despite his shop's ample collision repair skills, he wasn't at all interested in putting it back together.

Instead, he wanted it for what it could do for a close friend that had become too demanding, a little sluggish and, frankly, in need of a facelift. Yes, Reed's stock 2004

Hummer H2, as powerful and imposing as it looked, was getting to be a burden.

What it needed, Reed figured, was what the Chevy pickup had: a Duramax Diesel 6600 V8 with an Allison Heavy Duty 5-speed transmission and selectable 2wd/4wd transfer case. Reed had heard about such conversions, and had even looked into hiring the project out to conversion specialists.

But with pros asking upwards of \$40,000, and unwilling to share any information with a

Business of Repairs

do-it-yourselfer on some of the trickier parts of the process, Reed knew he'd have to find a donor vehicle and do the work himself.

And that's what he did. Six weeks after buying the Chevy pickup, removing its engine, transmission and transfer case, and painstakingly transplanting it in the Hummer, Reed essentially had himself a tank with the personality of a race car and the environmental consciousness of a hybrid.

"I'm getting 20 miles per gallon now, compared with 13 to 15 before, and its diesel engine has a lot more power in comparison to the old Hummer gas engine," he says. "It's not fast from the stop, but once you get going it pins you to your seat like a racecar. The stock Hummer doesn't have that kind of power."

It's a good thing that Reed is getting a kick out of his new hot-rod Hummer, one of a rare breed of conversions he's discovered exists only in certain pockets around the

country. The conversion job, one he tackled after hours and on weekends, was a challenging one, though not too daunting for someone who knows the basics.

Still, tasks like making a new transmission and shift cable mount, changing out fuel lines, making an upper tie bar, installing the radiator and fashioning a new harness proved tedious and time-consuming.

"The painstaking part was the wiring; it makes my head hurt just thinking about it," he says. "Once you start digging into that it took a lot of focus and concentration. One mess up with that and you've got trouble."

Instead, what Reed ended up with is "trouble" of a different sort. A reinvigorated Hummer H2 that stalks the streets of Lafayette, itching for an opportunity to show that there's power and performance under a veneer of toughness.

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