Tech Center News

WARREN, MICHIGAN

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Silverado's Design Reduces Cost of Repair

Collisions can happen any- of repair at a lower cost is very to buyers. time, anywhere, and the resulting body damage frequently results in complicated - and expensive repairs. Not so much the 2015 Chevrolet Silverado, which was designed to save time and cost during body shop visits.

"Designing automobiles to be both durable and light weight is a challenge for the automotive industry," said John Van Alstyne, president and CEO of I-CAR, an international organization focused on sharing new repair procedures among automotive repair professionals. "Advanced materials may deliver both qualities, but automakers need to still ensure vehicles are still designed for affordable reparability."

When development work began on the current generation Silverado several years ago, General Motors' engineers incorporated several features that allow technicians to efficiently repair collision damage, said GM spokesman Tom Wilkinson.

"When we design trucks, we don't only consider what features our consumers demand from a full-size truck," says Mark Szlachta, a GM serviceability design engineer. "We also approach the process with our technician hat on, ensuring we engineer a truck that is straightforward and cost-effective to repair."

Tom Wilkinson said that ease

important when it comes to pickups

"The average age of the a pickup on the road is about 11 years," Wilkinson said. "People love their trucks and want to keep them going. It's also very important for farmers and small business people, like contractors, who use their trucks to make a living. For them, total cost of ownership, which includes repair costs over the lifetime of the vehicle, become an important deciding factor when it comes to choosing a truck."

By keeping that fact in mind from the very beginning of the and development design process, GM is able to keep costs of repair down, Wilkinson said. And that helps sell the Silverado

The Silverado reparability features include.

• Front frame rail section. Because of the way Silverado's front frame rails are engineered, minor impacts don't necessarily equate to substantial repair bills. Depending on the severity of the impact, technicians may be able to repair a leading section of the truck's frame instead of replacing the entire chassis. If so, the damaged section can be cleanly cut away at a specific location, and a new service section - shipped fully assembled - can be welded in place.

• Structural front fenders. On many passenger vehicles, unbolting a damaged front fender re-

CONTINUED ON PAGE 3



The 2015 Silverado was designed with the cost of repairs in mind.



This Malibu display shows how driving safety standards are recorded.

2016 Malibu to Offer Safety **Report Card for Teen Drivers**

car to a teenager for their first drive alone.

Parents know that coaching a teenager on how to learn safe driving skills is vital, said GM spokesman Chad Lyons. According to the Insurance Institute for Highway Safety, in the United States, the fatal crash rate per mile driven for 16- to 19-yearolds is nearly three times the rate for drivers ages 20 and over.

The new 2016 Chevrolet Malibu will debut the Teen Driver, a system that provides parents with a tool to help encourage

It's hard to hand the keys of a safe driving habits for their kids, even when they are not in the car with them.

Teen Driver supports safe driving habits by muting the audio of the radio or any device paired with the vehicle when front seat occupants aren't wearing their safety belts, and it gives audible and visual warnings when the vehicle is traveling faster than preset speeds, Lyons said.

This feature is the first in the industry with a built-in system that lets parents view on a dis-

CONTINUED ON PAGE 7

2016 Focus RS Set for New York Auto Show

It's been said if you can make it in New York, you can make it anywhere. The new Ford Focus RS is set to debut on U.S. soil at the 2015 New York International Auto Show.

Focus RS pioneers innovative Ford Performance All-Wheel Drive delivering "blistering" cornering speed for excellent performance and "unbridled driving enjoyment for enthusiasts in North America for the first time.' said Ford spokesman Aaron Miller.

The high-performance road car introduces advanced performance technologies, and is the first Ford RS equipped with selectable drive modes - including industry-first drift mode as well as launch control, Miller said

The third-generation high-performance hatch features a 2.3-



el that will be produced for all markets at Ford's Saarlouis, Germany, manufacturing plant beginning late this year, with sales in North America beginning in spring 2016

The Focus RS Mk I debuted in October of 2002 and was Ford's return to the RS (Rally Sport) badge. This iteration used a 2.0

litre Ford Zeta engine and was rated at 212 horsepower. The development of the RS happened at Ford's Tickford Engineering site in Milton Keynes, Britain.

Nair said the Focus RS is able leverage innovative Ford Performance All-Wheel Drive with

SAE World Congress Readies For 2015 Session in Detroit

by Jim Stickford

Come this April, Congress will be in session in Detroit. The Society of Automotive Engineers (SAE) World Congress, that is.

Gretchen Stokes, conference director for the SAE, said this year's Congress takes place at Cobo Center in downtown Detroit between April 21 -23.

"This year's theme is how engineers are leading mobility innovation," Stokes said. "Every year the Congress has a 'executive lead' company. It's Honda in 2015. And then there's a Tier I strategic partner, which is Continental. These two companies lead the way in deciding themes

for that year's particular Congress."

Stokes said that the SAE has been holding its World Congress in Detroit for more than 80 years. The "first" Congress was actually a gathering of five engineers.

"They didn't present papers or anything," Stokes said. "But these five people decided to come back and meet in a year."

That's how the Congress got its start, Stokes said, and that happened more than 80 years ago.

Starting in 2009, SAE made some changes as to how the Congress presented speakers and in-

Debut of 2016 Ford Focus RS

liter EcoBoost engine delivering well in excess of 315 horsepower, along with the most powerful Ford RS braking system ever. Its dramatic exterior design offers optimized aerodynamics and cooling, with 9 percent less drag over the previous model.

"Customers have begged for the Focus RS to come to the United States for years," said Raj Nair, group vice president, Global Product Development, Ford Motor Company. "And now we can say that they are getting one of the most innovative, powerful and best-looking RS cars ever. That is special.

The RS line has a proud history of technical breakthroughs," Nair added. "It's a great example of our passion for innovation through performance, and creating vehicles that make people's hearts pound."

This Focus RS is the first mod-



WABCOs new facility in Rochester Hills

Local Supplier Expands Lab, **Invests in SE Michigan**

technologies that improve the safety and efficiency of commercial vehicles, has recently expanded its engineering capabilities in North America.

The company opened a new commercial vehicle development and testing facility in Rochester Hills to help develop the nextgeneration safety and efficiency technologies for trucks, buses and trailers, said WABCO spokeswoman Laura Oliveto.

WABCO has invested \$1.5 million and built an advanced 4,400square-foot site to support the work of more than 50 engineers involved in the innovation and development of new products and systems for commercial vehicle

WABCO, a global supplier of manufacturers and fleet operators in North America, Oliveto said.

> "We continue to invest in our manufacturing and engineering capabilities in North America to better serve our customers in the region," said Nik Varty, WAB-CO President, Americas. "The new facility in the Greater Detroit Area enables us to offer seamless support to design, develop and test breakthrough technologies that further commercial vehicle safety and efficiency in the U.S. and around the globe."

> This investment is just one several that WABCO is making for its North American facitlities. The company is also investing \$17 million to build a new facility in Charleston, S.C., Oliveto said.

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2016 Camaro "All New" from Grille's Bowtie to Rear Spoiler

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Choral Group Sets Schedule For Spring

The Spring schedule for the Motor City Chorale has been set.

The organization, which got its start in 1933 as the General Motors Employees' Chorus (GMEC), was a fully GM-sponsored employee activity with membership limited to GM employees and retirees, said Chorale publicity chairwoman Carol Milligan.

In 1978 (during an economic downturn), GM ended its support and funding for all their employee extracurricular organizations. Rather than disband its membership, members of GMEC chose to reorganize and become a self-supporting organization.

"When we did this, our purpose of promoting the General Motors Corporation was amended to also include bringing quality vocal music and music education to audiences who might not otherwise be able to obtain it," said Milligan.

"We do not sell tickets or charge a fee for our performances. Instead, we ask for a free will offering during our concert performances at churches and community venues.

"Whatever is collected – regardless of the amount – we accept as a donation. When we perform at senior centers, for charitable organizations and/or charity events, we will accept a donation if one is offered but will gladly perform for free if one is not."

The schedule:

• Friday, April 10, 7:30 p.m., St. Clare de Monte Falco Catholic Church, 1401 Whittier, Grosse Pointe Park;

• Sunday April 12, 7:30 p.m., St. Margaret of Scotland, 21202 East 13 Mile, St. Clair Shores;

• Friday, April 17, 7:30 p.m., First Presbyterian Church of Warren, 3000 East 12 Mile, Warren;

• Sunday, April 19, 3 p.m., Northminster Presbyterian Church, 633 Big Beaver, Troy;

• Sunday, April 19, 7:30 p.m., Cana Lutheran Church, 2119 Catalpa, Berkley:

 Friday, April 24, 7:30 p.m., Joint concert with Lincoln High School Choirs, Lincoln High School, Warren – Admission \$3;
Sunday, April 26, 3 p.m.; American Lutheran Church, 38795 Mulberry, Clinton Township; The Gen 5 Camaro has been a most huge success, both in terms of sales and looks. But it's five years old and when the Gen 6 makes its debut in May, it will have to be new enough to excite the public, yea while getting the response "yes, that's a Camaro" from longtime ple,

fans. When GM calls the 2016 Chevrolet Camaro "all-new," the company isn't engaging in advertising hyperbole, said Chevrolet spokesman Monte Doran. The 2016 Chevrolet Camaro will be a truly all-new car – from the grille's bowtie to the rear spoiler.

In fact, only two parts carry over from the fifth-generation model: the bowtie emblem on the taillamp panel and the SS badge.

The Gen 6 Camaro is based on General Motors' Alpha architecture, Doran said. Designed to compete with premium European brands, Alpha offers exceptional driving dynamics and refinement, as well as a balance of mass and stiffness necessary for a world-class performance car.

"Our global engineering team is incredibly passionate about Camaro, and they sweated all the details to make Gen 6 the best Camaro we could possibly put into the hands of our customers," said Mark Reuss, GM executive vice president, Global Product Development. "Alpha provided a strong foundation, but more than 70 percent of the components are unique to the Gen 6 Camaro, including exterior and interior dimensions, an all-new interior, front and rear suspension, and powertrain components. The minute you see - and hear - the Gen 6, you know it's a Camaro, from the stance to the driving experience to the sound of the Small Block V8.3

From the strong Alpha foundation, the Camaro team made the

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most of every component to create a worthy successor for the Gen 5 Camaro, which has been America's best-selling performance car for five consecutive years.

The front structure, for example, was developed specifically for Camaro. It is lengthened, to create the dash-to-axle ratio necessary for car's iconic profile, and widened to provide the desired track width for stable, confident cornering. In addition, 20 percent of the 6.2L LT1 V8 engine has been tailored to fit the Camaro's packaging, including new, tubular "tri-Y"-style exhaust manifolds.

Chevrolet will introduce the all-new, 2016 Camaro on Satur-

day, May 16, during a special public event at Detroit's Belle Isle park, Doran said. Anticipation for the new Camaro is strong.

"Let me put it this way," Doran said. "The new Camaro Web sites went up at 12:01 a.m. Detroit time on March 16. People could sign up to attend the May 16 event. By 8 a.m., all of the more than 1,000 consumer spots for the event were taken and there were 2,400 people on the waiting list. We will have about 80 journalists there and we had to turn down requests from a lot of reporters. That's how much people want to see the Gen 6 Camaro."

And with this interest comes expectation, Doran said. The Camaro has been successful in both sales – 500,000 Gen 5 sold – and appearance.

"The Camaro is like the Corvette or the Mustang or the Wrangler," Doran said. Jeep "They have an iconic look that helps define the brand. About 63 percent of Gen 5 Camaro sales were conquest sales, meaning that the buyer was either trading in a vehicle from another automaker, or was new to GM. What we've seen is that a lot of Camaro buyers didn't need another car, but they had to have a Camaro. That means the Gen 6 Camaro has to maintain that strong sales without having several years of a Camaro hiatus helping build up demand, which is an advantage the Gen 5 enjoyed."

Millennials Plug In to Shop for Their Cars

When it comes to car shopping, it's not uncommon for young adults to turn to their parents for experienced tips and advice. But a new study from car buying platform Edmunds.com suggests that the younger, techsavvy generation is quickly becoming a more educated and self-sufficient group of buyers due to their prolific use of mobile devices during the car shopping Edmunds process. said spokesman Aaron Lewis.

According to the study commissioned by Edmunds in early 2015, 73 percent of Millennials (age 18-34) said that they believe they are savvier car buyers than their parents. More than half of Millennial respondents also said they actively advise friends and family on the car buying process, compared to 37 percent of older Americans.

One major reason for this is Millennials' proficiency in using mobile devices to research before buying. The study found that Millennials especially turn to mobile devices for critical car shopping activities such as reading vehicle reviews – 41 percent of Millennials vs. 20 percent of all other adults, locating vehicles for sale – 34 percent vs. 20 percent – and researching vehicle prices - 33 percent vs. 21 percent.

Edmunds' research concluded that 80 percent of Millennials used their mobile devices to help them with at least one car shopping task, compared to just 46 percent of people age 35 and over.

"Millennials today are informed car buyers," said Avi Steinlauf, Edmunds.com CEO. "They're making the most out of the volume of information available at their fingertips, and it's helping them to make a smarter car purchase. And since a smart car buyer is a quality car buyer, it all points to an optimistic and healthy future for the auto industry."

While Millennials use mobile devices during the car shopping experience, the study also pointed out that this group still heavily values the in-dealership experience. The study found that 64 percent of Millennials said that they prefer face-to-face interaction with dealers.



Learn How To Get The Most From Your Retirement Savings

• Sunday, April 26, 7:30 p.m., Holy Innocents, 26100 Ridgemont. Roseville.

To learn more about the chorale, visit motorcity-chorale.org.





Tech Center News

MARCH 30, 2015

COVERS THE TECH CENTER AND THE IMMEDIATE AREA

2016 Malibu Hybrid Shares Volt Technology

fool you. The new hybrid Malbu by Chevrolet, is no joke. The vehicle will have its public premiere at the upcoming New York auto show.

announcement of its all-electric vehicle based on the Bolt EV concept. as well as the introduction of the 2016 Chevrolet Volt, will be joined by a strong hybrid version of the next-generation Malibu.

Using technology from the 2016 Chevrolet Volt propulsion system, Malibu Hybrid will offer an estimated combined fuel economy rating exceeding 45 mpg, higher than the combined mileage ratings of the Ford Fusion, Toyota Camry and Hyundai Sonata hybrid variants, said GM spokesman Chad Lyons.

The 2016 Malibu Hybrid will offer impressive fuel economy, exceptional driving characteristics and gorgeous styling," said Jesse Ortega, Chevrolet Malibu chief engineer. "Besides leveraging innovation from the Chevrolet Volt, the Malibu Hybrid also

and lower grille air shutters to improve airflow and a reduced ride height, all of which help reduce fuel consumption.'

An all-new direct-injection 1.8L Chevrolet's recent production 4-cylinder engine mated to a twomotor drive unit slightly modified from the 2016 Chevrolet Volt drive unit powers the Malibu Hybrid. The drive unit provides additional power to assist the engine during acceleration, for 182 horsepower of total system power.

engine also features The Chevrolet's first application of Exhaust Gas Heat Recovery, or EGHR, technology, which uses exhaust heat to warm the engine and cabin. EGHR improves engine warm up and assures consistent fuel economy performance in cold weather. Additional fuel economy benefits come from Exhaust Gas Recirculation, or EGR.

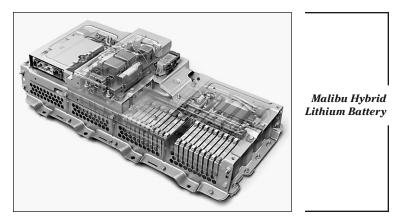
An 80-cell, 1.5 kWh lithium-ion battery pack provides electric power to the Hybrid system. The advanced lithium-ion based chemistry can power the Malibu has unique features that help im- hybrid at up to 55 miles per hour

Don't let the April 1 debut date prove aerodynamics, like upper on electricity alone. The gasoline-powered engine will automatically come on at higher speeds and high loads when necessary to provide additional power.

> Malibu Hybrid also shares power electronics from the 2016 Volt and a blended regenerative braking system, which provides maximum kinetic energy recovery during braking to be stored into the battery system to help maintain charge, Lyons said.

> 'This is exciting news for us," Lvons said. "But the development of this Malibu makes sense because it leverages technology we've developed with the Volt. This is not a plug-in hybrid, however.'

> That means that, unlike the Volt, drivers of the Malibu won't



charge the car by plugging it in to an electrical charging station. Rather the vehicle's battery is charged while it drives and this energy can be used to power the electrical drive system.

The way the Malibu will work, Lyons said, is that it pulls energy from the vehicle's drive unit and stores it in the batter when the vehicle is being operated at speeds below 55 mph.

"We have not announced the price points yet," Lyons said.

The Malibu Hybrid will be manufactured in Kansas City, Kansas, at the Fairfax Assembly plant from globally sourced parts. It is due in Chevrolet dealer showrooms in spring 2016.

Silverado's Design Reduces Cost of Repair

CONTINUED FROM PAGE 1

moves only the outer skin, leaving behind additional structure welded to the cab. If that structure is damaged, technicians then need to drill out welds in order to remove the panel. On the Silverado, the front fenders incorporate both outer sheet metal and the supporting inner structure, allowing simple unbolting of the entire assembly.

· Bond-on body panel procedures. When it comes to replacing non-structural body panels, including outer roof panels or

outer door panels, technicians can use an ultra-strong structural adhesive to bond the panels onto the vehicle. This helps avoid welding and possible corrosion issues later while speeding the repair.

• Pre-prepared roof panels. Technicians can get replacement panels that essentially plug-andplay, thanks to pre-installed studs and pre-drilled holes for accessories.

 One-piece body side outers. If damage occurs to the outer panels of the cab, technicians can order a complete body side outer, shipped as a single, complete assembly, allowing technicians to cut out and replace only the damaged area instead of the entire assembly. "Our goal is to only have weld seams where we absolutely need them," Szlachta said.

• Flexible bed repair options. If the Silverado's pickup bed or outer bedside should ever be significantly damaged, owners won't necessarily need to purchase an new pickup box. Depending on the damage, the outer bedside or the bedside assembly can be replaced from the bed floor out.

Library Has Money Classes

what better time than now to learn about the best ways to handle money.

To that end, the Warren Public Library is holding a "Money Smart Week" in April

Different classes will be held at different branches of the Warren library.

"Created in 2002, Money Smart Week is a public awareness campaign designed to help consumers better manage their personal finances through free, noncommercial, educational events," said Warren librarian Kathleen Faba. "The program has grown each year through national part-

Tax time is almost upon us, so nerships with the American Library Association and the Financial Planners Association."

On April 20, from 6 - 8 p.m., the Civic Center branch of the library hosts "Find Work You Love: Five ways to Transition from an Ordinary Job to an Extraordinary Career." The Miller Branch of the library is holding a class called "Family Financial Planning for Adults and Kids" from 6:30 - 7:30 p.m., also on April 20. The Civic Center branch is holding a class titled "Marriage & Money" by Heide McCarroll of Primerica on April 22, from 6 - 8 p.m. For more information, call 586-574-4564.







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2016 Cadillac

Cadillac Brings Power, Finese and Tech to its CT6 Engine

Cadillac has created a new generation of V6 engines, led by an exclusive Twin Turbo V6 that will be one of the industry's most advanced six-cylinder gasoline engines.

It leverages the latest technology to balance efficiency, performance and refinement in the upcoming, top-of-the-range CT6 luxury performance sedan, said GM spokesman Tom Read.

The new Cadillac 3.0L Twin Turbo is designed to achieve new thresholds of refinement and specific output for the brand's new prestige luxury sedan, Read said, which makes its world premiere March 31, at the New York International Auto Show. Production begins late this year at General Motors' Detroit-Hamtramck Assembly Plant.

Peak output is estimated at 400 horsepower and 400 lb-ft of torque, making it one of the most power-dense V6 DOHC engines in the world, developing 133 horsepower per liter.

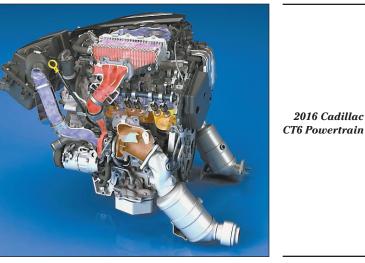
The 3.0L Twin Turbo is the only six-cylinder engine to combine turbocharging with cylinder deactivation and stop/start technologies to conserve fuel, Read said.

Cadillac expects the combination to enhance fuel economy up to an estimated 6 percent.

Cylinder deactivation temporarily deactivates two of the cylinders in light-load driving conditions to enhance efficiency and seamlessly reactivates them when the driver demands full power.

With the stop/start system, the 3.0L Twin Turbo is shut down in certain driving conditions such as stop-and-go city driving to reduce fuel consumption, automatically restarting when the driver takes his or her foot off the brake pedal

"Cadillac's elevation on the world stage is driven in great



part by its advanced powertrain technology and the all-new 3.0L Twin Turbo powers past the traditional segment leaders with higher degrees of the performance and refinement their reputations were built on," said Rich Bartlett, assistant chief engineer.

The highly-acclaimed Hydra-Matic 8L90 eight-speed automatic transmission transfers the 3.0L Twin Turbo's power over to the CT6.

Similar to the turbo system in the track-capable Cadillac ATS-V. the new 3.0L Twin Turbo features turbochargers with lightweight, low-inertia titanium-aluminide turbine wheels and an efficient, patented low-volume charge-air cooler, which contribute to optimal boost production and more immediate power delivery.

The advanced, low-inertia turbochargers enable the engine to sustain peak torque from 2,500 rpm to 5,000 rpm, giving it a broad torque curve that is conveyed to the driver through a feeling of responsive, sustained power across the entire rpm band.

"Torque is the pulling power of an engine and the new 3.0L Twin Turbo delivers it with confidence-inspiring smoothness and progression," said Bartlett. "In fact, the potency of the torque across the rpm band is matched only by the satisfaction of the horsepower created as those revs climb quickly to 6,500 rpm."

The 3.0L Twin Turbo's estimated 400 horsepower and 133 hp per liter is 27 percent greater than the BMW 740Li's 3.0L turbocharged I-6 (315 hp and 105 hp/L) and 29 percent more than the Audi A7's 3.0L supercharged V6 (310 hp and 103 hp/L), Bartlett said.

Cadillac's new 3.0L Twin Turbo is part of a new generation of technologically advanced V6 engines developed by GM, which includes a new version of the award-winning 3.6L naturally aspirated engine employed for years across the brand's model range

Each features all-new structural and combustion elements designed to complement higher performance and greater efficiency with exceptional quietness and smoothness.

The 3.0L Twin Turbo is up to 5 dB quieter than the Audi 3.0L TF- SI engine, while the 3.6L is up to 4 dB quieter than the Infiniti 3.7L V6.

Features shared by the 3.0L Twin Turbo and 3.6L include:

• Stronger, stiffer aluminum block with increased structure in the bulkheads for superior rigidity.

• Tough, refined rotating assembly with a stiff forged-steel crankshaft, friction-reducing polymer-coated pistons and strong high-copper-content, sinter-forged connecting rods.

• New four-cam phasing system with intermediate park technology that enhances efficiency by enabling late inlet valve closing in certain conditions.

• New, patented "targeted" cooling system that provides strategic cooling of the engine's hottest areas while simultaneously fostering faster warm-up, which enhances efficiency.

• New cylinder heads that enhance combustion performance and include direct injection and feature integrated exhaust manifolds.

• Revised, simplified timing drive system with cushioned chain sprockets contributing to quieter engine operation.

• All-new oiling system moves the pump inside the block for quieter operation. The two-stage oil pump also enhances efficiency.

"This new architecture leverages the best of Cadillac's proven, awarded V6 engine technology and takes it farther with a finer focus on refinement and durability to match its benchmark output and efficiency," said Bartlett.

Both of Cadillac's new V6 engines will be produced at General Motor's Romulus Powertrain Operations assembly facility, which received a \$540-million investment to retool in order to build the next-generation V6 engines for GM.

SAE Set to Open **World Congress April 21-23**

CONTINUED FROM PAGE 1

formation, Stokes said.

Instead of having someone speak to a whole bunch of people in a giant room, speakers now give their presentations in an special area called the "tech hub," Stokes said.

This area is has several smaller venues where presenters speak for about 20 minutes on their various topics. Instead of hundreds of listeners, there are. maybe, a 100 other participants who can then ask questions about the topic at hand.

"The idea is to create short informative presentations that allow for more engagement between the speaker and the audience," Stokes said. "The seating for each presentation will only be for about 100 people. What we are trying to get away from is an environment where it's like a classroom, with everyone sitting and looking at teacher. We want to remove the barriers between speaker and audience.'

Each day will have a different theme. On day one, there will presentations on lightweighting of vehicles. On day two, the presentations will be about the future of the connected consumer and the role that the modern motor vehicle will play in that connection. On day three, presenters will talk about the combination of virtual reality and 3D printing, including efforts to get a real 3D-printed car on the road, Stokes said

Stokes said that the SAE will also focus on attracting and keeping young people who want to be engineers in the automotive industry. Afterall, it's never too early to groom the next generation of leaders.



2016 Focus Debuts in NY

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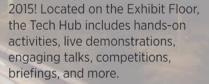
Dynamic Torque Vectoring to deliver a new level of handling capability and driver enjoyment combining outstanding traction with unmatched agility and cornering speed.

The system is based on electronically controlled twin clutch packs on each side of the reardrive unit. The control unit continuously varies front-to-rear and side-to-side torque distribution to suit the driving situation monitoring inputs from multiple vehicle sensors 100 times per second. A maximum of 70 percent of the drive torque can be diverted to the rear axle. Up to 100 percent of available torque can be sent to each rear wheel delivering the torque-vectoring capability that has a dramatic impact on handling and corner-

namics, Ford Performance All-Wheel Drive is calibrated alongside the car's advanced Electronic Stability Control, in particular, the brake-based torque-vectoring system that works in parallel with torque-vectoring all-wheel drive, Pericak said.

Other exclusive chassis features include a sport suspension with stiffer spring rates and more efficient bushes and antiroll bars than those found in Focus ST. and two-mode switchable dampers, which offer a firmer setting for track use. Specially tuned electric power-assisted steering, in combination with an optimized front suspension knuckle design and shorter link arms delivers connected and responsive steering with outstanding feel.

Ford worked with Michelin to develop a choice of high-performance 235/35R-19 tires to complement the driving dynamics Focus RS offers – a standard Pilot Super Sport for everyday use and, for the first time, an optional Pilot Sport Cup 2 for enhanced dynamics at the track, Miller said. "This is the ultimate Focus stunning to look at and entirely fit for its purpose," said Joel Piaskowski, Design director, Ford of Europe. "RS models have always been striking, high-performance cars where function is paramount, and Focus RS is true to that heritage.' Since the first Ford RS models took to the road, the marque has been an essential element of Ford DNA - delivering technological innovation and performance for road and track. Piaskowski said. Dating back to the early days of the company's success in Rallye Sport, the first models established the RS reputation for advanced technology and driving exhilaration.









Helmut Matschi Executive Board Member Continental



sae.org/congress



The Power of Dreams

Tier One strategic partner:



ing stability.

In cornering situations, the rear-drive unit pre-emptively diverts torque to the outer rear wheel based on steering wheel angle, lateral acceleration, yaw and speed. This torque transfer has the effect of "driving" the car into a bend - achieving improved turn-in and stability while virtually eliminating understeer.

The system is tuned to deliver exceptional grip – with lateral acceleration exceeding 1 g – along with exciting cornering speed and acceleration out of a bend, Nair said.

"This all-wheel-drive system is a breakthrough technology - capable of delivering supreme cornering and handling at the limit," said Dave Pericak, director, Global Ford Performance. "We ripped up the rulebook that says allwheel-drive hatchbacks aren't fun to drive, and created a car that will surprise and reward in equal measure."

To deliver optimum driving dy-

PAGE 5

UAW Contract Talks to Center Around Hourly Tier Wages

DETROIT (AP) - The leader of received hefty annual profit sharthe United Auto Workers union ing checks. Williams didn't adhas rejected a third tier of lower wages for members who make auto parts.

Speaking March 25 at the union's national bargaining convention in Detroit, President Dennis Williams said the UAW already has too many tiers of lower wages.

Williams was responding to reports that General Motors Co. and Ford Motor Co. may propose a third tier of pay. He already is under pressure from union members to end a second tier of wages that's about half the \$28 per hour made by longtime workers

He told delegates that he heard people talking about the third tier, which would pay less than the \$15.28 starting wage for second-tier workers, on their way in to the convention center Wednesday morning.

"I'm thinking they got too many damn tiers now," said Williams, who received a standing ovation.

Actually, a third tier of wages already is in place at several General Motors factories in the Detroit area for a small number of workers who build battery packs and place parts in the right sequence to be assembled on cars. Without the lower tier, the work may have gone to countries with lower labor costs. Williams told members about bridging the gap in wages, an apparent reference to the first and second tiers. But he also said they're competing in a global economy.

Many at the convention spoke in favor of pay raises for veteran workers. Longtime UAW workers have not had an hourly pay raise since 2007, although they have dress pay raises in his speech, but has said in the past that there are ways to give raises and keep the companies competitive.

In his speech, he said workers shared in getting the auto companies through bad times and we must equally share in the good times.'

Contract talks with between Fiat Chrysler, GM, Ford and the UAW start this summer. The union represents about 137,000 workers at the three companies. The current contract expires in September.

This year's talks are the first to come after the auto industry fully recovered from the Great Recession, and could be contentious as the union seeks a slice of the industry's billions of dollars in profits.

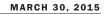
Auto companies, mindful of the recession, are reluctant to increase U.S. labor costs and once again be at a cost disadvantage to foreign companies. They actually want to reduce labor expenses, contending that their costs already have grown above competitors.

An analysis done by the Center for Automotive Research, a think tank based in Ann Arbor, Michigan, shows that to be true, at least for General Motors and Ford. GM's total hourly labor costs, including wages and benefits, total \$58 per hour, followed closely by Ford at \$57. Both are more than \$8 above Honda and Toyota, whose costs are below \$50 per hour, the analysis found. Chrysler, with costs totaling \$48 per hour, is below Honda and equal to Toyota, but higher than Nissan, Hyundai, BMW and VW, according to the analysis.











* Tax, title, license and dealer fees extra. No security deposit required. 30,000 miles with approved lease. Mileage charge of \$.25 per mile over 30,000 miles. Lessee pays for excess wear and tear charges. All applicable rebates to dealer. Photo may not represent actual vehicle. ATS, CTS, XTS & SRX must show proof of current lease of a 2004 or newer GM vehicle and lease eligible new 2014 Cadillac. MRSP's: ATS \$38,240, ATS Coupe \$41,440, CTS \$48,340, XTS \$45,595, Escalade \$82,245, SRX \$38,600. Due at signing ATS \$3,059, ATS Coupe \$3,819, CTS \$4,109, XTS \$3,179, Escalade \$3,974, SRX \$1,729. See dealer for details. Take delivery by 3/31/2015.

BorgWarner Brings a New Two-Speed Fan to Market

BorgWarner's new DuroSpeed to engage repeatedly. BorgWarntwo-speed fan drive is hitting the market this May. er's pneumatically actuated DuroSpeed two-speed fan drive

The system is specifically designed to deliver reliable cooling for severe operating and vocational truck applications such as construction vehicles and municipal trucks, said BorgWarner spokeswoman Erika Nielsen.

While on/off models provide superb durability and fuel efficiency for over-the-road applications, BorgWarner's DuroSpeed fan drive significantly reduces fan engagements for greater reliability and less noise in severe service applications, Nielsen said. The modular design allows any BorgWarner Kysor on/off fan drive to be easily converted to a DuroSpeed fan drive. BorgWarner will begin supplying this product in May 2015.

"Dump trucks, refuse haulers and other vocational applications experience severe service and have very different cooling needs than line haul trucks. At BorgWarner, our engineers listened to the voice of the customer to develop a simple, efficient design built for durability and serviceability," said Daniel Paterra, president and general manager, BorgWarner Thermal Systems. "Our testing shows the DuroSpeed fan drive's innovative flux ring design enables this clutch to run 70 degrees Fahrenheit cooler than competitive offerings. The cooler internal operating temperature increases bearing and liner durability, allowing nearly twice as many engagements over its lifetime.'

In severe-duty applications, on/off fan drives are continually engaging and disengaging. When disengaged, engine temperatures rise quickly, causing the clutch to engage repeatedly. BorgWarner's pneumatically actuated DuroSpeed two-speed fan drive is designed with a higher disengaged fan speed to prevent engine temperatures from rising too quickly.

Because the fan drive engages and disengages less often, clutch life increases, noise decreases, dust buildup in the radiator is minimized and more horsepower is available, allowing the vehicle to achieve higher work output. Compared with competitive models, the DuroSpeed fan drive has no spinning air connections to wear, inspect or service, and is designed to operate at lower temperatures for longer bearing five to 10 pounds less, and using 11 fewer components than comparable units, BorgWarner's DuroSpeed fan drive also helps deliver better fuel economy, Nielsen said.

To reduce complexity and minimize upgrade costs, BorgWarner's modular design uses the same clutch unit for all applications. Any Kysor on/off fan drive can be easily retrofitted to a DuroSpeed fan drive with a conversion kit consisting of only two add-on components.

UAW-Ford Hosts Display of Art

DETROIT (AP) – The United Auto Workers union is hosting an exhibition of 90 artworks created by Ford Motor Co. employees across the country.

The inaugural "Art Collaborative" was on March 27 at the UAW-Ford National Program Center in Detroit. It featured works created by 44 hourly and salaried workers of Ford.





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New 2016 Malibu To Offer Safety 'Report Card'

CONTINUED FROM PAGE 1

play how their teenager drove the vehicle. Maximum speed reached, distance driven and number of times active safety features were engaged all can be confirmed.

"We developed this system so parents could use it as a teaching tool with their kids – they can discuss and reinforce safe driving habits," said General Motors safety engineer MaryAnn Beebe. "As a mother of two, I know anything that has the potential of keeping one's family safer is of great value to parents."

Malibu can keep track of the following:

• Distance driven;

• Maximum speed traveled;

- Over-speed warnings issued;
- Stability control events;
- Antilock brake events;
- Forward Collision Alerts, if

equipped; • Forward Collision Braking

events, if equipped. To use Teen Driver, a parent needs to enable the feature by creating a PIN in the Settings menu of their available MyLink system, which then allows them to register their teen's key fob. The system's settings are turned on only to registered key fobs.

When active, Teen Driver automatically mutes the radio until front safety belts are fastened. Additionally, the radio system's maximum volume can also be set to a lower level. If the vehicle is equipped with active safety features like Forward Collision Alert, they are automatically turned On. Parents can select a maximum speed (between 40-75 mph), which, if exceeded, activates a visual warning and audible chime.

If equipped, these are the safety features that are automatically turned On and incapable of being manually turned off when Teen Driver is activated:

- Stability Control;
- Front and Rear Park Assist;
- Side Blind Zone Alert;
- Rear Cross Traffic Alert;
- Forward Collision Alert;

• Daytime Running Lamps/ Automatic Light Control;

- Forward Collision Braking;
- Traction Control;

• Front Pedestrian Braking. "The first step with this technology is to make sure that all drivers and passengers within the car are safe," said Steve Majoros, Chevrolet car marketing director. "In addition to innovative safety technologies like this,

you will see efficiency, advanced

connectivity and stunning de-

sign in the 2016 Malibu." Teen Driver is not a subscription-based service, Lyons said, so it remains with the vehicle permanently and will be standard on the Premier trim and optional on LT models if equipped with the Convenience Package and up-level radio. The 2016 Malibu debuts at the New York Auto Show in early April and is expected to go on sale at the end of 2015.



BorgWarner to Expand Facility

BorgWarner expanded its manufacturing facility at its campus in Ramos-Arizpe, Mexico, to meet increasing demand for emissions technologies in North America.

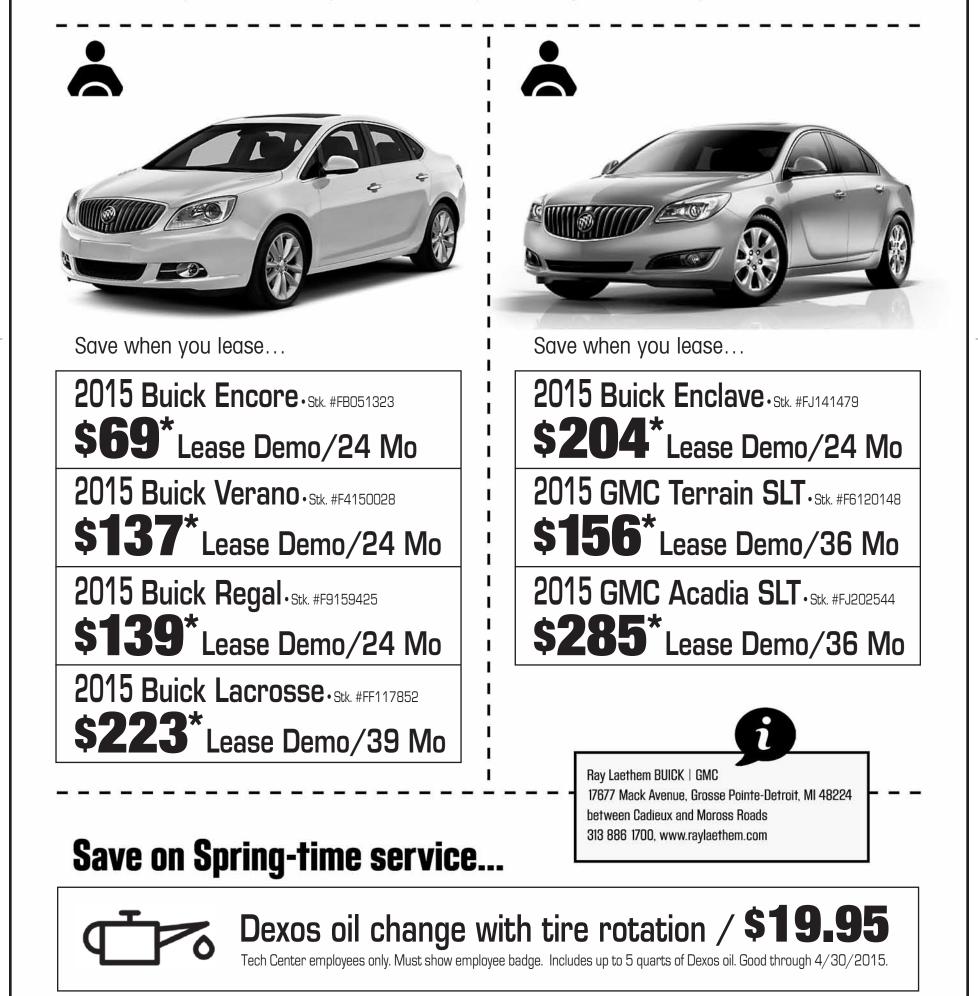
The expanded facility will produce exhaust gas recirculation (EGR) modules, ignition coils and coolant control valves for use in gasoline- and diesel-powered passenger cars, minivans and light-duty trucks in the North American market.

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