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## **Growing Sales Of F-150 Pickups Drive Ford to Add 900 Employees**

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• F-Series sales increased 22 percent in the January-to-July period, compared with the same seven months last year;

• F-Series sales were at 60,449 in July, representing the best July sales month since 2006 and a 23 percent increase over 2012;

 Based on July U.S. sales results, F-Series sales now have increased for 24 consecutive months.

F-150 leads in a variety of fields, including:

• 68 percent market share in hazardous materials work;

• 67 percent share in the oil pipeline industry;

 62 percent share in road and highway maintenance.

With the additional crew at the Kansas City Assembly Plant, Ford has reached 75 percent of its goal to create 12,000 hourly jobs in the U.S. by 2015.

Ford has added 2,335 hourly jobs and 1,500 salaried jobs in the U.S. this year alone.

### **Ultrasonic Welding Aids in Cadillac ELR's Battery Quality** atures or joining material such as CONTINUED FROM PAGE 1

ment that is becoming pervasive in today's world-class vehicles."

General Motors' Brownstown Battery Assembly plant, near Detroit, uses ultrasonic welding to join metal electrode tabs on ELR's advanced 16.5-kWh lithium-ion battery system, and does it with a proprietary quality monitoring process.

Brownstown uses an automated system to execute millions of these welds each year, Darovitz said.

Ultrasonic welding uses specialized tools called an anvil and horn to apply rapid mechanical vibrations to the battery's copper and aluminum electrodes. This creates heat through friction, resulting in a weld that does not require melting-point temperadhesives, soldering or fasteners, Darovitz said.

An integrated camera vision system is used to shoot a reference image of the weld area before the operation to achieve pinpoint accuracy, he said. Quality operators check electrode tabs before and after welding, and the system monitors dozens of signal processing features during each weld.

The battery-specific welding process is a result of collaboration among General Motors' Manufacturing Systems Research Lab, Advanced Propulsion Center and the Brownstown plant.

GM first applied the process on the award-winning Chevrolet Volt - its groundbreaking extended-range electric vehicle - and further refined it for

the Cadillac ELR, Darovitz said. "This effort is an outstanding example of teamwork between

research and manufacturing engineering," said Catherine Clegg, GM vice president of Global Manufacturing Engineering.

"It has helped integrate the use of highly technical, complex technology into a sustainable manufacturing process, which means we can consistently deliver high-quality batteries to our customers for the Cadillac ELR."

She said the ELR's T-shaped battery pack is located along the centerline of the vehicle, between the front and rear wheels for optimal weight distribution. The 5.5-foot-long, 435-pound pack supplies energy to an advanced electric drive unit capable of 295 lb.-ft. of instant torque to propel the vehicle. Using only

the energy stored in the battery, the ELR will deliver a GM-estimated range of about 35 miles of pure electric driving, depending on terrain, driving techniques and temperature.

Charging the ELR's battery can be done with a 120V electrical outlet or a dedicated 240V charging station.

The vehicle can be completely recharged in about 4.5 hours using a 240V outlet, depending on the outside temperature, Clegg said.

The Cadillac ELR is built at GM's Detroit-Hamtramck Assembly Plant, one of the few high-volume electric vehicle manufacturing facilities based in the U.S. Its battery pack is built from cell to pack at Brownstown and shipped to Detroit-Hamtramck for assembly into the vehicle.

# College Contest Set to Encourage Work in Auto Industry

Why would you want to work in the automotive industry?

If college students can answer that question in the form of a oneor two-minute video, they have a chance of winning a \$5,000 firstplace prize. Second prize is \$3,000 and third is \$1,000.

Students must highlight the diverse aspects of the industry that "make it an attractive, or 'cool,' industry to work in."

Submissions must address one of three themes - green, technology or design - and present the industry in a positive and "cool" manner.

The contest is supported by the SAE International and is open to all students currently enrolled in a university in the U.S. or Canada. No specific currriculum is required - "just enthusiasm and creativity," say the organizers.

The Original Equipment Suppliers Association (OESA), with the support of Deloitte, is launching the contest to encourage college students to pursue careers in the automotive industry.

The contest is termed, "Generation Auto" (#GenerationAuto).

The automotive industry is high-tech, fast-paced and exciting," said Neil De Koker, president and CEO of OESA. "We just need to get more students to hear this message and learn that automotive is a cool place to work.

'We think having this contest will create buzz with the next generation of talent."

Video submissions can be uploaded to http://platform.votigo.com/fbcontests/profiletab/Generation-Next-Automotive-is-Cool through Oct. 25, when site visitors can vote for their favorites.

The 25 videos with the most votes on Oct. 25 will move on to the second round of judging. In round two, a panel of industry and local leaders will rate the selected videos on a set of criteria, including message, accuracy and creativity.

For the final round of judging, the three videos with the highest ratings will be viewed and voted on by those attending the OESA

Nov. 12. Winners will be announced at the conclusion of the conference.

"Deloitte has interviewed hundreds of manufacturing CEOs and other senior leaders in support of our initiatives exploring what enhances the ability of manufacturers to compete on a global scale," said Craig Giffi, vice chairman and U.S. Automotive sector leader at Deloitte.

"Consistently, those leaders tell us that talent-driven innova-

Annual Outlook Conference on tion is the most important factor driving the competitiveness of their organizations.

"Yet, those same leaders also express concern with their ability to find highly skilled workers armed with strong STEM knowledge and creative problem-solving skills.

"Programs like OESA's video contest help dispel old perceptions of the industry, and are critical to encouraging students to consider rewarding, long-term career opportunities in today's high-tech automotive sector.'

## To Increase Tigershark Engine Output, Chrysler Will Invest \$52M in Michigan

CONTINUED FROM PAGE 1

paying jobs," said General Holiefield, UAW vice president and director of the Chrysler Department. "This is what can happen with dedication, commitment and a focus on delivering quality products to our customers.

tions in May 2011, but Chrysler Group announced a \$114 million investment a month later to repurpose nearly 400,000 square feet of the plant to produce core components for the Pentastar engine produced at its sister plant, Trenton South, Harlow

engine and the Tigershark (I-4)

engine. Trenton North is also building the 3.2-liter Pentastar engine for the all-new 2014 Jeep Cherokee.

The Dundee Engine Plant, built in 2004, is owned by Global Engine Manufacturing Alliance (GEMA), a wholly-owned subsidiary of Chrysler Group that was formerly a joint venture between Mitsubishi Motors Corporation, Hyundai Motor Company and DaimlerChrysler Corporation. Harlow said.

In December 2009, Chrysler Group announced a \$179 million investment to launch production of an advanced-technology, fuelefficient 1.4-liter engine for the North American market, a collaboration between Chrysler Group and Fiat powertrain groups.

Harlow said Chrysler announced in October of 2010 an additional \$150 million investment to expand capacity and prepare the plant for production of future engines.

# **Millmun Takes Vari-Form Development Role**

Business Development Director -China for Oakland County-based Vari-Form. In this role, Millmun is spearheading the development of new business opportunities throughout Asia.

Mr. Millmun brings more than 30 years of industry knowledge to Vari-Form globalization initiatives," said Terry Nardone, head of Sales and Business Development. "His well-developed business and operational expertise has opened doors and built lasting relationships with partners in North America, China, Germany and Japan. These skills are of great value as we expand sourc-

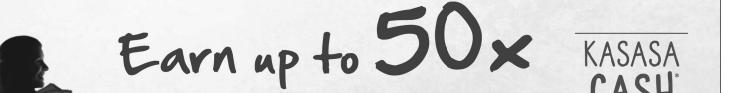
GM to Add \$167M

Dan Millmun has been named ing of our patented Pressure-Sequence Hydroforming technology among automotive manufacturers and suppliers in China, Asia and around the world."

Prior to joining Vari-Form, Millmun was director of Sales with the Cosma International Group of Magna International, where he specialized in working with both traditional and non-traditional customers.

Applying its proprietary hydroforming process, Vari-Form is manufacturing engine cradles for two high-volume Chinese-built midsize sedans. The company has also announced an expanded relationship with Ultra Parts Inc., an exclusive supplier sales agency with offices in the U.S. and China. Nardone said Vari-Form is also strengthening its European and Asia-Pacific businesses by pursuing merger, acquisition and strategic partnership opportunities on a number of global fronts.

said.



Trenton North ceased opera-

Trenton North began producing the Pentastar engine in January 2012. In November 2012, the automaker announced an additional \$40 million investment to add a flexible production line that can run both the Pentastar

## For 2 Tennessee Vehicle Projects CONTINUED FROM PAGE 1

top quality for our customers."

Located 40 miles south of Nashville, GM Spring Hill Manufacturing operates as a flexibleassembly plant, capable of building a variety of products on a range of platforms, Grotz said. The facility is designed to supplement production for plants being retooled for new products or add production to meet sales spikes in real time.

**Chevrolet Equinox production** began at the site in the third quarter of 2012 to meet growing consumer demand and support GM's Canada operations, Grotz said. GM Spring Hill Manufacturing, home to the former Saturn brand from 1990 to 2007, operates as a fully integrated complex.

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