

# Tech Center News™

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Campaign sign: 92 degrees outside can equal 117 degrees in a car.

## GM Foundation Donates \$200K to Aid 'Never Leave Your Child Alone in a Car'

As summer temperatures continue to climb, so does the risk of child injuries and deaths due to heatstroke.

To help raise awareness of this issue, the General Motors Foundation is providing \$200,000 to Safe Kids Worldwide to support the organization's "Never Leave Your Child Alone in a Car" campaign.

"We are committed to raising awareness regarding how dan-

gerous a car can become for a child left alone in a vehicle for even a few short minutes," said Mike Robinson, GM vice president of Sustainability and Global Regulatory Affairs and a member of the GM Foundation board of directors.

"Passenger safety is a priority for our company and we're proud to partner with Safe Kids

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## Ultrasonic Welding Key to Cadillac ELR's Consistent Quality for All Battery Packs

Ultrasonic welding, a high-tech manufacturing process used in the aerospace and medical industries, is helping ensure high quality for the new Cadillac ELR extended-range electric luxury coupe that goes on sale in North America in early 2014.

Ultrasonic welding's key advantage is exceptional and predictable quality and performance from one battery pack to the next, said David Darovitz, GM Manufacturing manager. Every ELR battery, for example, has close to 200 ultrasonic welds. Each is required to meet stringent quality requirements, enabling Cadillac to offer an eight-year/100,000-mile battery system warranty.

Short cycle times, low capital costs and manufacturing flexibility through the use of automation are other advantages of ultrasonic welding, Darovitz said.

"Ultrasonic welding is a far superior joining technology in applications where it can be deployed," said Jay Baron, president and CEO of the Center for Automotive Research in Ann Arbor. "Cadillac's innovative process will produce batteries with superior quality compared with traditional methods - and do it more efficiently. This is one

example of technology development 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 fric-

tion, resulting in a weld that does not require melting-point temperatures or joining material such as adhesives, 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 pin-point 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' Man-

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Ultrasonic welding uses specialized tools that eliminate adhesives.

## Big 3 Adds to Investing as Sales Continue to Set Records

### GM to Add \$167M for Two New Projects For Tennessee Mid-Size Vehicle Build

General Motors increased to \$350 million its planned spending for new vehicles to be produced at its Spring Hill, Tenn., assembly plant.

The new investment adds \$167 million to a previously announced \$183 million pledge and is expected to create or retain about 1,800 jobs, said Bill Grotz, manager of manufacturing and labor communications for GM.

The new investment is for two projects:

- An additional \$40 million added to the earlier announced \$183 million investment to support a future mid-size vehicle program, bringing the new total investment to \$223 million. This program is expected to create or retain approximately 1,000 jobs;
- A second mid-size vehicle

program with an investment of \$127 million that will create or retain approximately 800 jobs.

Timing and product specifications for both programs will be shared closer to the start of production.

Grotz said the new programs will add to existing manufacturing operations at the site that include vehicle assembly, stamping, engine and component parts production.

"Today's announcement recognizes the commitment of Spring Hill employees and leadership," said Mark Reuss, president of GM North America.

"As a team, they draw upon the plant's unique heritage and dedicated workforce to deliver

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

Ford is adding a third crew of 900 new hourly employees at its Kansas City Assembly Plant to meet "surging customer demand" for the Ford F-150, said Mike Levine, Ford Truck Communications manager.

Ford F-150 is part of the Ford F-Series lineup, the nation's best-selling vehicle for 31 years and the best-selling truck for 36 years.

"Ford F-Series sales are the strongest since 2006, and we are increasing production to meet this demand," said Doug Scott, Ford Truck Group Marketing manager. "This is an important indicator that our economy is growing again. We are proud that Ford trucks are helping more and more of our customers get back to work."

The additional production crew is Ford's first step in bringing more than 2,000 jobs to the Kansas City Assembly Plant to meet growing truck demand and to launch production of the all-new Ford Transit van early next year, Levine said.

Over the past year, Ford has announced it will increase capacity by 600,000 units in North America to meet surging demand for its cars, trucks and utilities.

Levine said customer demand for Ford F-Series continues to strengthen and noted:

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

Chrysler plans to invest \$52 million in its engine plants in Trenton and Dundee to increase capacity of the Tigershark engine, creating nearly 298 new positions at the Trenton plant.

"With the growing demand for our products, we are constantly evaluating how to best meet powertrain production requirements," said Brian Harlow, vice president and head of Powertrain Manufacturing.

"In this case, we are fortunate that we had an existing facility that could accommodate the additional capacity needs for Tigershark and one that has the know-how to support that additional production."

Trenton North will receive \$11.5 million to add an assembly

line for the four-cylinder Tigershark engine, Harlow said. With a \$40.5 million investment, Dundee will convert a line to machine cranks, heads and blocks to support Tigershark production at Trenton.

The Dundee Engine Plant will continue to assemble the Tigershark engine, alongside the 1.4-liter FIRE engine and the World Gas Engine.

The new Trenton Tigershark line and the Dundee line conversions are expected to begin production by the end of the third quarter, Harlow said.

"The UAW is pleased that Chrysler Group continues to invest in its facilities and add good

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GM is expected to create or retain about 1,800 jobs at Tennessee plant.



Chrysler is creating 298 new positions at its Trenton Engine Plant.

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