

# *autotech* daily™

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## **FORD UPGRADES ROUGE COMPLEX FOR FLEXIBILITY...**

Ford Motor Co.'s \$2 billion investment in its Rouge manufacturing complex in Dearborn, Mich., promises to transform the outdated facility into the automaker's most flexible and efficient production center.

The cornerstone of the project is the 2.5 million-sq-ft Dearborn Truck Plant that will be capable of building nine different models off three platforms with an annual capacity of 250,000 vehicles, starting with the new F-150 pickup in early 2004. Ford says half its North American body shops, trim and final assembly operations will implement flexible production methods by mid-decade, with another one-fourth converting by 2010. The company estimates it will save 10% in initial tooling costs and another 50% as new vehicles are introduced in such facilities.

The new Dearborn truck plant will feature in-line vehicle sequencing to better coordinate parts delivery from suppliers with customer orders. It also will focus on team-based processes that empower line workers to identify and resolve quality issues in their area. To make the job easier, Ford is installing overhead safety walkways and special team rooms.

The Rouge renovation started in 1999. It also includes a new paint shop and stamping presses, plus upgrades to engine and fuel tank assembly plants.

Ford had contemplated shuttering the 85-year-old complex once heralded for its ability to produce virtually every vehicle component except the tires. Over the years, the Rouge has given life to such fabled models as the Model A, Thunderbird, Galaxie and Mercury Comet. The Mustang has been built at the facility since its introduction in 1964, but this will end in the 2004 model year when that area of the complex is demolished. Ford hasn't announced where it will move production, but the Mazda plant in Flat Rock, Mich., is considered a leading candidate.

## **...AND GREEN MANUFACTURING**

The refurbished Rouge center also will feature advanced methods for storm water management, energy usage, air quality and soil restoration. The company says the facility

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has been designated a wildlife habitat by the Wildlife Habitat Council for its innovative environmental initiatives.

One of the most interesting features is the roof of the Dearborn Truck Plant, which will be covered with sedum grass. Described by Ford as the world's "largest living roof," the insulated structure is expected to reduce the plant's energy costs by 5%. It also is designed to reduce storm water runoff, convert carbon dioxide into oxygen and is expected to last 40 years—twice as long as a conventional roof. The plant also will include 10 huge windows and 36 skylights to help save on lighting costs.

The grounds of the 600-acre complex will include ditches lined with grasses and plants that mimic the cleaning action of natural wetlands. Other plants will be used to create a phytoremediation process to help remove lingering polyaromatic hydrocarbons generated from years of steel manufacturing.

#### **NISSAN DEVELOPING ALERT SYSTEM FOR TIRED DRIVERS**

Nissan Motor Co. is working with Computer Convenience, a Japanese software developer, and the University of Occupational and Environmental Health on a new sensor technology to determine if a driver is becoming sleepy, reports *Auto Asia*. It says the system is built into the steering wheel and measures wave pulses on the palm of a driver's hands.

#### **DENSO CO<sub>2</sub> AIR CONDITIONER BOWS IN TOYOTA FUEL CELL VEHICLE**

Toyota Motor Corp.'s FCHV fuel cell vehicle launched this week in the U.S. and Japan is the first "production" vehicle to use carbon dioxide refrigerant in its air-conditioning system. The automaker developed the system with Japan's Denso Corp., which also claims to be the leading producer of conventional R-134a systems.

Denso says the CO<sub>2</sub> system's contribution to global warming is 0.08% that of a hydro-fluorocarbon-based 134a air conditioner. Automakers began using 134a in the early 1990s when ozone-depleting chlorofluorocarbon refrigerants were banned in most countries. Despite being a greenhouse gas, CO<sub>2</sub> has a relatively small impact on global warming and is considered harmless to the ozone layer.

Toyota also uses CO<sub>2</sub> to warm the FCHV's passenger compartment. Instead of using engine heat, the Denso system runs CO<sub>2</sub> through a heat exchanger, which the supplier reasons makes it especially attractive for fuel cell and hybrid-powered vehicles that don't have conventional powerplants.

Because the operating pressure for a CO<sub>2</sub> system is 10 times that of an HFC system, virtually every HVAC component was redesigned. This includes a new heat exchanger, different materials for hoses and gaskets and a compressor that can handle



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**AUTOTECH DAILY**

is a publication of  
Hampton AutoBeat LLC,  
Box 33068  
Bloomfield Hills, MI  
48303-3068

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Denso says it is working to improve the performance and reliability of the CO<sub>2</sub> system and to reduce its cost and weight to make it viable for traditional vehicles, but declined to detail its efforts. The supplier also plans to work with industry and government agencies in various markets to help develop a CO<sub>2</sub> infrastructure. It notes that CO<sub>2</sub> is relatively easy to produce by purifying and distilling gas discharged from chemical plants.

Denso plans to discuss further refinements and address potential hybrid vehicle applications at next March's SAE conference in Detroit.

## **ROUSH AND GREENING TO TEAM ON BRAKE TESTING SERVICES**

Roush Industries Inc. and Greening Testing Laboratories Inc. are preparing to offer joint brake development and testing services. The companies currently are submitting quotes to several potential customers and will allocate joint resources on a project-by-project basis.

Brake work, especially friction material analysis and other performance issues, accounts for the bulk of business for Detroit-based Greening now. To date, Roush's brake capabilities, which represent less than 10% of its business, have been geared toward noise, vibration and harshness issues and overall vehicle performance.

Customers will be able to benefit from their combined strengths, the companies reason, and Livonia, Mich.-based Roush expects to double its brake business as a result of the partnership. However, each company will continue to offer their own brake testing and development services.

Greening also conducts dynamometer testing of engine and transmission components. Roush specializes in powertrain development, engineering services and systems integration for specialty vehicles and race cars.

## **CHEVY SSR TO STAY ON TRACK BY ACCESSORIZING**

General Motors Corp. is planning a star-studded rollout for its Chevrolet SSR sports truck and aims to keep the momentum going by offering a host of new accessories every year. It will start with about 15 features next year and expects this to jump to close to 50 within four years.

GM says the key to the plan is a series of four "tracks"—two on the cargo area floor and one on the upper side of each cargo bed sidewall—that will allow a variety of components to be easily added to the vehicle, a cross between a pickup truck and a roadster.

Initial offerings will include running boards, side-saddle storage boxes that attach to the floor and side tracks, customized floor mats, a European-style towing package and a variety of cargo compartment features. An auxiliary instrument package that integrates voltmeter, real-time fuel consumption and transmission oil temperature gauges also will be available. Future products may include a cargo-area speaker system, custom head and taillight treatments, power remote cargo cover and engine beautification packages.

The accessories were developed in tandem with the SSR by a cross-functional team that includes representatives from engineering, marketing, service, design and suppliers. They will be sold through Chevy dealers and include a 36-month/36,000-mile warranty when installed prior to vehicle delivery. Packages bought after delivery will be covered for 12 months or 12,000 miles.

Volume production of the vehicle is due to begin next summer. But a special allotment of 25 Signature Series SSRs will be produced over the next five months and used in a variety of promotional events—including motorsports, Hollywood, art, music and news media—before being auctioned to the public. These vehicles will feature special badging and accessories, including custom paint, as well as a customized scrapbook of their adventures.

GM plans to keep the first of the 25 vehicles, which bears the signatures of CEO Rick Wagoner, Vice Chairman Bob Lutz, North America President Gary Cowger and Design Vice President Wayne Cherry.

The second vehicle will be donated to the Society of Automotive Engineers, which will auction it off to raise funds for the Heinz C. Prechter Scholarship for Automotive Excellence. The SSR features a retractable roof designed by ASC Inc., which Prechter founded, and was one of the last vehicles he was involved with before he died last year.

### **SUPPLIER TOUTS LOW-COST AUXILIARY GENERATOR FOR BIG RIGS**

Energy & Engine Technology Corp. says its new AXP 1000 generator for Class 8 trucks weighs and costs half as much as competitive units. The device provides power for HVAC and other electrical devices, eliminating the need for engine idling during driver downtime.

The company says the system will help long-haul operators comply with new U.S. regulations intended to reduce diesel exhaust emissions by limiting the number of non-driving hours a truck's engine may idle. Drivers often sleep in their rigs and equip them with a variety of electronic features, including televisions and premium audio systems.

The 4.5kW system supplies 35 amps/120 volts to a self-contained HVAC unit and is connected to a charging circuit to keep the truck's battery fully powered. Fitted to the frame rails behind the cabin, the device measures 15x17x22 inches and weighs 160 lbs.

Cost, including installation, will be about \$4,500. The cost should be recouped in less than a year, according to the Plano, Tex.-based supplier, which cites a recent U.S. Dept. of Energy study that estimates reduced idling will save a trucker nearly \$5,300 per year in fuel and maintenance costs.

Energy & Engine Technology currently is road testing the system and aims to begin production next month. It is targeting both OEM and retrofit applications. Sales are expected to total just over 4,000 units next year, mostly for new trucks, and grow to 12,000 in 2005.

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