

autotechdaily™

WEDNESDAY
DECEMBER 2, 2009
PAGE 1 OF 3

new product

2011 AUDI A8 BREAKS COVER

Volkswagen AG's Audi unit took the wraps off the 2011 A8 sedan at a special event this week in Miami. The fourth-generation model will be launched next fall.

The new A8 adds two inches in wheelbase and width over its predecessor, and overall length has expanded by three inches to 202 inches. Audi says the vehicle



The new Audi A8

will be the largest in its class, topping the BMW 7 Series and Mercedes S-Class.

Despite the increased size, the new A8 is lighter than the outgoing model. This is partially achieved by employing new composite alloys in the car's aluminum structure that saves 14 lbs.

Audi says the new A8 has 25% greater static torsional stiffness. The suspension also has been overhauled, with the struts supported directly by the wheel carrier so that the dampers respond with greater sensitivity. All-wheel drive is standard; a sport differential, which splits torque between the rear wheels, is optional.

A new safety system called pre-sense will be introduced on the A8. When the brakes are fully applied, the system activates the hazard lights, closes the windows and sunroof and pre-tensions the seatbelts. Another new safety feature is a night vision system with thermal imaging that helps detect pedestrians. The car also sports LED headlights.

The satellite-based navigation system is linked to the cruise control and lighting units. If heavy traffic is detected ahead, vehicle speed will automatically be slowed. The length of the light beam will be adjusted based on the road ahead.

The interior is all new, including an electronic gear selector that is modeled after the thrust lever on a powerboat. The control system has been moved from the center console to the fascia and now features a touchpad panel that allows users to write on the screen to enter phone numbers or navigation destinations.

The base engine is a 4.2-liter V-8 that makes 372 hp and 328 lb-ft of torque. Mated to an eight-speed automatic transmission, the car is expected to be 15% more fuel efficient than the current A8. In Europe, a 4.2-liter V-8 diesel that generates 345 hp and 590 lb-ft also will be available, and a 3.0-liter V-6 diesel will be added later next year.

Several derivatives of the A8 also are said to be in the works. These include a long wheelbase version, a high-performance S8, a hybrid and a V-12-equipped model.

WEDNESDAY
DECEMBER 2, 2009

PAGE 2 OF 3

Talk Back

Click [HERE](#) to respond to this week's reader question:
What should General Motors do with Saab?

product planning

ALFA FACING ITS OMEGA?

Fiat SpA CEO Sergio Marchionne has ordered a review of the company's Alfa unit to determine what to do with the slumping brand, *Automotive News Europe* reports. The options include freezing new product spending or using Chrysler platforms to replace older Alfa models.

A decision on the brand's future is expected early next year, when Fiat discloses its 2010-2014 business plan. Fiat acquired Alfa 23 years ago. Demand for the 99-year-old brand's vehicles has dropped from its peak of 203,000 sales in 2000 to fewer than 100,000 cars last year. A source tells *ANE* that Alfa has lost between \$300 million and \$600 million per year for the past decade.

Marchionne concedes it will take considerable effort to revive Alfa. He tells *ANE* the brand already has undergone too many "reinventions" that failed to have any prolonged positive effect. He says Alfa's hope rests on building and marketing the brand's traditional sporty premium characteristics.

Marchionne says the company is evaluating the business case for using Chrysler platforms for future Alfa D- and E-segment sedans to replace the current 159 and discontinued 166 flagship car. If approved, the new Alfa models would get unique styling and be built in North America for sale worldwide.

Even if Fiat halts future product development for Alfa, the brand likely will still introduce the upcoming Giulietta low-medium car next year as a replacement for the 147 hatchback, *ANE* says. But the 166 replacement would essentially be killed. Most of the rest of the lineup—the Brera and GT coupes, 159 sedan and Spider—is aging, and the Brera coupe and Spider are expected to go out of production in 2011. The MiTo small car, which was launched in mid-2008, is the brand's newest model.

hybrids

TURBINE SUPPLIER SHOWS EXTENDED-RANGE HYBRID PROTOTYPE

Capstone Turbine Corp., which claims to be the world's largest supplier of microturbines, debuts its CMT-380 extended-range series hybrid vehicle this week at the Los Angeles auto show. The Chatsworth, Calif.-based company says it will use reaction to the concept to determine whether to move forward with limited production plans.

The new car is based on the Factory Five Racing Inc.'s GTM kit car, which is derived from the Chevrolet Corvette C-5. The GTM features a mid-engine design and composite body shell. The car uses a General Motors Co. V-8 engine and suspension parts mated to a Porsche 911 transaxle.

The CMT-380 derivative teams a lithium-polymer battery and electric motor with a diesel-fueled microturbine. The car can run on electric power for as much as 80 miles. When the batteries reach a pre-determined state of discharge, the microturbine partially recharges the batteries to extend driving range to about 500 miles.

The CMT-380 can sprint from zero to 60 mph in 3.9 seconds and boasts a top speed of 150 mph, according to the developers.

Capstone's 30-kW microturbine, which can run on diesel or biodiesel, features an electric generator and turbine components mounted on a single shaft that are supported by air bearings, which require no lubricants.

A continuous combustion process and lean premix operation keeps exhaust emissions

WEDNESDAY
DECEMBER 2, 2009

PAGE 3 OF 3

AUTOTECH DAILY

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

Bill Hampton, Publisher
(248) 540-2530
bill@autotechdaily.com

SUBSCRIPTIONS:

Yvonne Lopetrone
(888) 771-6430
yvonne@autotechdaily.com

ADVERTISING:

Paula Doan
(313) 908-7165
paula@autotechdaily.com

NEWS:

Steve Plumb
(610) 917-2276
steve@autotechdaily.com

to a minimum, according to Capstone. A patented recuperator (air-to-air heat exchanger) boosts efficiency by extracting energy from the exhaust stream and recycling it to preheat air coming into the combustion chamber. Capstone says the system is designed to meet California's more stringent clean air requirements without any aftertreatment devices.

Producing between 30 kW and 5 megawatts of energy, microturbines operate at speeds up to 96,000 rpm, enabling a very high power-to-weight ratio. Capstone has been producing such devices for buses, trolleys and other public transport vehicles since 1988. It worked with video game developer Richard Hilleman on converting the GTM car into the CMT-380. Earlier this year it worked with the U.K.'s Langford Performance Engineering Ltd. on a similar project involving a Ford S-Max MPV.

batteries

NISSAN DEVELOPING HIGH-CAPACITY LITHIUM-ION BATTERY

Nissan Motor Co. is working on a new lithium-ion battery system expected to double the driving range of electric vehicles to about 185 miles per charge, *The Nikkei* reports. Citing unnamed sources, the newspaper says the new battery is about five years from commercialization.

Engineers are using nickel and cobalt in addition to manganese in the battery's positive electrode, which plays a big role in performance. This will allow the device to store about twice as much electricity as batteries with traditional manganese-based electrodes. Cost and durability are expected to be similar to current lithium-ion batteries, according to *The Nikkei*.

fuels

FUEL SIMULATION GROUP ADDS VW TO ITS ROSTER

Volkswagen AG has become the first German automaker to join the Model Fuels Consortium. Launched four years ago by San Diego-based Reaction Design Inc. (RDI), the group's charter is to develop advanced simulation methods and chemical representations to improve engine and fuel design.

VW says it is interested in the consortium's efforts to model the combustion of traditional fuels and those of next-generation blends. Other members include ConocoPhillips, l'Institut Francais du Petrol, Mazda, Oak Ridge National Laboratory, PSA Peugeot Citroen, Saudi Aramco, Suzuki and Toyota. Several other automakers, including Ford, General Motors, Honda, Mitsubishi and Nissan, previously were members.

RDI says the second phase of the group—now referred to as Model Fuels Consortium II—aims to expand its combustion fuels database and add new fuel types. The database, which is accessible only by members, uses detailed combustion simulations to predict fuel emission characteristics. This includes developing an accurate model of soot particle growth from gas-phase precursors, providing prediction of particle size and number distributions as fuel and engine conditions vary.

Tasks completed this year include detailing the chemical reaction mechanisms for two new cycloparaffins: cyclohexane and decalin. RDI notes that there are significant quantities of cycloparaffins in conventional fuels and even greater levels in developmental fuels, such as those derived from oil sands.

The group says researchers also have made advances in speeding the coupling of chemistry with computational fluid dynamics flow simulations and advanced automated mechanism reduction.