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Fuel cell engines are nearing serial production

Xcellsis awards Opcon Autorotor AB an important extra order for the air system used in fuel cell engines

DaimlerChrysler, the majority owner of Xcellsis, has revealed its two new fuel cell cars – the NECAR 5 (Mercedes-Benz A class) and the Jeep Commander. The presentation was attended by Germany's Chancellor, Gerhard Schröder, a clear sign of the importance that is being attached to replacing the traditional combustion engine.

Xcellsis is now ordering an extra 20 compressors from Opcon Autorotor as the development of the fuel cell engine enters a new phase – moving from individual prototypes to the pre-serial stage. The delivery is set for December and is part of the development programme that Opcon Autorotor has agreed with Xcellsis, but it has now become significantly larger.

"We are now discussing and planning larger deliveries for the pre-series programme next year," reveals Roland Årlebäck, Managing Director of Opcon Autorotor AB, which is based in Nacka, near Stockholm.

Xcellsis manufactures fuel cell engines and the company is owned by Ford, DaimlerChrysler and Ballard. An Xcellsis fuel cell engine, featuring an Opcon Autorotor AB air system, powers the new NECAR 5 – the fifth generation of Mercedes-Benz fuel cell vehicles and the same model as the well-known A Class. Chrysler has selected the same solution for its Jeep Commander. At the demonstration of the two new cars it was pointed out that the world has suffered from two oil crises, that a third oil crisis must be avoided and that fuel cells are a realistic complement to the hegemony of petrol over the long term.

DaimlerChrysler believes that the technology behind the fuel cell engine is now complete and ready for roll-out, but that the technology will be introduced in phases. In a press release the company announces that it will deliver the first city centre buses powered by fuel cells in 2002. Cars will follow in 2004. The real breakthrough, forecasts DaimlerChrysler, will come with the mass launch of fuel cell engines fuelled by methanol, which can be converted into hydrogen. The debate surrounding fuel cells has often focused on the supply of hydrogen and storing the gas in the vehicle. Today there is no infrastructure for filling cars with hydrogen. If methanol is used, it can be converted into hydrogen using a reformer in the fuel cell engine. This would mean that today's petrol stations could be used to supply methanol.

"Methanol can also be produced from bio-fuel, which means that vehicles will not emit greenhouse gases. More energy can be stored in liquid form compared to gas," explains Roland Årlebäck. Årlebäck believes that in the long term methanol can be replaced with hydrogen, which can also be extracted from water, when new technology has been developed for storing and handling hydrogen.

It appears that engine manufacturers are in agreement that fuel cell engines will be the next generation of engines for various types of vehicle. This is because manufacturers must meet stricter environmental legislation and the general public demands more environment-friendly forms of transport. Fossil fuels such as oil are also a limited natural resource. Fuel cells generate energy from a reaction between hydrogen and oxygen. The only emission is water.

The car industry is devoting a lot of resources to fuel cell projects and Opcon Autorotor's air system features in most of them.

"Our technology is a world leader. We have been developing air systems for fuel cells for eight years and this has given us a vital head start," says Roland Ärleback.

The air system is used to supply the oxygen that is needed to generate electricity in the fuel cell. Furthermore, the higher the air pressure, the more power generated by the cell. The air system must be highly efficient so that there is no energy loss.

"Our double screw compressor for mobile use has proved to be superior to other compressors," says Ärleback. "When we began focusing on air systems for fuel cells, Ballard was our only customer. Now we work with other leading companies, including Ford, General Motors, Chrysler, Volkswagen, Volvo, Renault, Nissan, Xcellsis and Ballard. We are developing air systems for over 20 customers and new ones are appearing regularly. Opcon Autorotor currently has more orders than ever before and production is at full capacity until year-end. In order to meet growing demand we are looking to employ new designers and operators.

"We see increased demand for prototypes and pre-series in coming years. On top of that, serial production of fuel cell engines for city-centre buses is expected to begin in 2002 and for cars in 2004," concludes Roland Ärleback.

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Information about DaimlerChrysler can be found at: www.daimlerchrysler.de

Opcon's business concept is to develop, manufacture and market systems and products that help to generate clean and environment-friendly power. The Group's products are used in ignition systems and engine management systems, electro-mechanical devices, compressors and transformers. The Group's customers are mainly in the auto, small engine and engineering industries.

The Opcon Group has around 340 employees and has its head office in Åmål, Sweden. Opcon AB has been listed on the O list of the Stockholm Stock Exchange since 1998.

