

# MAN commercial vehicles implements AutoForm software

**M**AN Commercial Vehicles Group, which is one of the leading international manufacturers of commercial vehicles and employs more than 34,000 employees, has chosen AutoForm software for sheet metal forming optimisation in its Gustavsburgs plant. Developed by AutoForm Engineering, the software, according to industry sources

in Europe, is expected to bring about a big change at MAN, which sold more than 63.300 commercial vehicles as well as 6.100 buses and bus chassis, generating a turnover of Euro 7.4 billion.

According to Bernd Güntzel, Head of Production at MAN Commercial Vehicles in Gustavsburgs, “we use the forming simulation software for the

entire product range that we produce: stamped parts with sheet gauge thickness from 0.8mm to 12mm”. Güntzel adds, “AutoForm software is used especially during the planning phase when the process layout is defined and to support the design of die faces. The software solution convinced us because it fulfills all our requirements for process layout and design of die faces”.

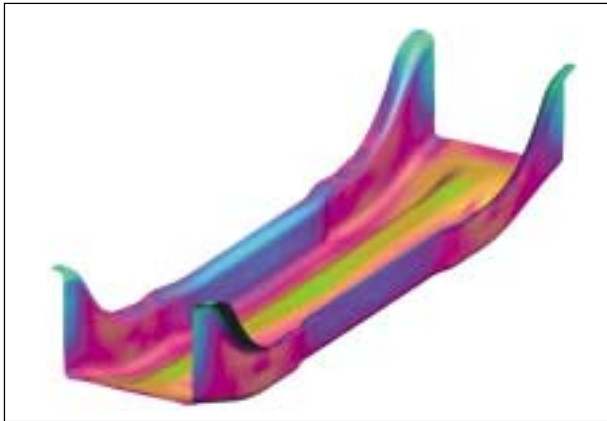


Courtesy of MAN

At Gustavsburgs plant, 714 employees produce a broad range of high-quality parts and components for MAN Commercial Vehicles, as well as for other vehicle manufacturers. The production programme covers driver cab and panel parts made of thin sheets, chassis parts and frame profiles made of thicker, high-strength sheet metals, as well as forming and pressing tools.

AutoForm was implemented at MAN Commercial Vehicles after the software was benchmarked against two competitive products. The AutoForm software solution was particularly impressive for a challenging, 5 mm thick chassis part made from high-strength steel, which has been in production for a long time at the Gustavsburgs plant. An important new feature in

AutoForm software, the new shell element formulation, was a decisive factor. In addition, the software's ease-of-use was convincing. AutoForm Engineering was able to provide the



most complete software package for appropriate simulation technology in their field. The application of simula-

tion technology by automobile manufacturers is currently the state-of-the-art. The same technology is expected to be applied by the commercial vehicle industry. MAN Commercial Vehicles purchased the following AutoForm software modules: OneStep, DieDesigner, Incremental, Trim, Nest, Report-Manager and ProjectManager. "An important criterion for our decision was to purchase a single simulation system, which can be used both for frames and stamped body parts, etc., both for thin and thick sheets. This requires a high level of precision in the simulation. AutoForm software ensures the manufacturability of formed parts already during process layout, and reduces tooling tryout costs", says Bernd Guntzel. ■

## Nuvera, Fiat Powertrain Technologies and Centro Ricerche Fiat sign fuel cell engine partnership

Nuvera Fuel Cells, a leading designer, developer and manufacturer of fuel cell power systems, announced recently that it reached a multi-year agreement with Fiat Powertrain Technologies and Centro Ricerche Fiat to research and develop a high-efficiency hydrogen fuel cell propulsion system for fuel cell vehicles. Together, the partners will be the exclusive supplier of the new fuel cell powertrain to the Fiat Group, which includes Fiat Auto, IVECO, and Case New Holland. The partnership shall also be open to discuss possible supplies to OEMs worldwide.

The goal of this wide-reaching program is to enable Nuvera, Fiat Powertrain Technologies and Centro Ricerche Fiat to further develop a fuel cell powertrain system that will allow automakers to develop a technically, economically and environmentally viable fuel cell vehicle in the near future. The system will combine the recently released, highly advanced Nuvera Andromeda II stack with the specific plant and control system developed by Fiat Powertrain Technologies and Centro Ricerche Fiat which includes all necessary

auxiliaries satisfying automotive standards, including a low pressure and high efficiency air compressor. According to Centro Ricerche Fiat and Fiat



Powertrain Technologies technical experience, and after several years of work with Nuvera and benchmarking with other fuel cell stack providers, the Andromeda II technology represents one of the most promising fuel cell stacks available today.

This technology, along with Nuvera's low cost, non-coated metallic stack architecture and Centro Ricerche Fiat's simplified plant architecture, would allow OEMs to introduce viable fuel cell vehicles more quickly than once thought possible. Centro Ricerche Fiat underlines that the hydrogen fuel cell propulsion system has been developed with an air delivery system that was

specifically designed to match the requirements of the fuel cell stack. By designing the air system completely around the fuel cell stack, the purpose-built compressor delivers exactly what the fuel cell system requires across the entire operating range, allowing the highest efficiency and lowest cost, compared to other currently available compressor technologies.

This is a major milestone for Nuvera and the future of fuel cell vehicles," said C. Roberto Cordaro, President and CEO of Nuvera Fuel Cells. "This new development, which further demonstrates Nuvera's leadership in transportation fuel cells, will allow Nuvera to provide both fuel cell stacks and entire fuel cell systems to our partners and potential customers to help accelerate the development - and introduction - of fuel cell vehicles."

The new fuel cell system operates at low pressure and without external humidification, which allows simplification of the plant's architecture. The reduction in parts also reduces parasitic power losses and simplifies the control of the system, resulting in higher efficiency and enhanced reliability.