Industrial Sheet Metal Processing Company

salvagnini

## Salvagnini Chooses RecurDyn for Multibody Analyses

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With over 7,000 installations in 76 countries, the largest panel bender factory in the world, and more than 50 years of experience and expertise, Salvagnini is a reference in applying intelligence to sheet metal working and has selected RecurDyn software for its multibody analysis requirements, becoming the 500th commercial customer of FunctionBay Inc.

Giorgio Pilati, numerical simulation specialist in Salvagnini Italia's R&D department, explains, *"Our objective was to improve the capabilities of our simulation systems, so we asked our*

partners, EnginSoft, to assist us with a joint pilot project to carefully evaluate the capability of the RecurDyn software solution. This test period fully satisfied our needs, also thanks to the competence of EnginSoft's technical staff. For this reason, we decided to choose RecurDyn since it proved to be a good fit for our needs for performance and usability."

Salvagnini has been working in the field of flexible automation and industrial machinery for sheet metal working for more than fifty years. The company owns five production plants, and twenty-three offices dedicated to sales and customer service worldwide.
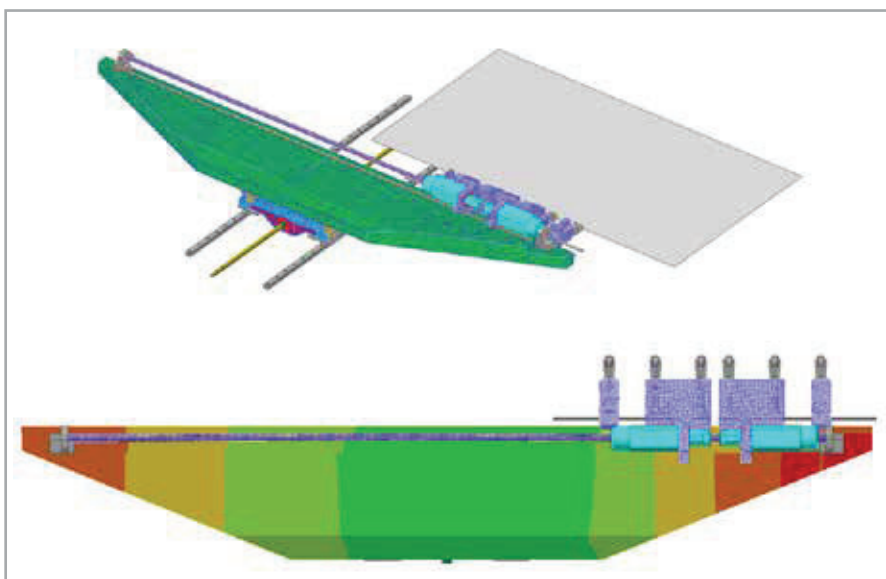
The forward-thinking spirit of the international Group, its innovative culture and pioneering technology are reflected in innovative solutions of high-quality, such as punching/shearing systems, combined machines, panel benders, press-brakes, fiber lasers, integrated FMS/FMC, automatic storage systems, Automatic Job Shops (AJS™) and IMAS integrated factories. The management of automated devices and proprietary software completes Salvagnini's Industry 4.0-compliant solutions.

Salvagnini's technical department uses state-of-the-art technologies not only for the processing phase (bending, cutting,
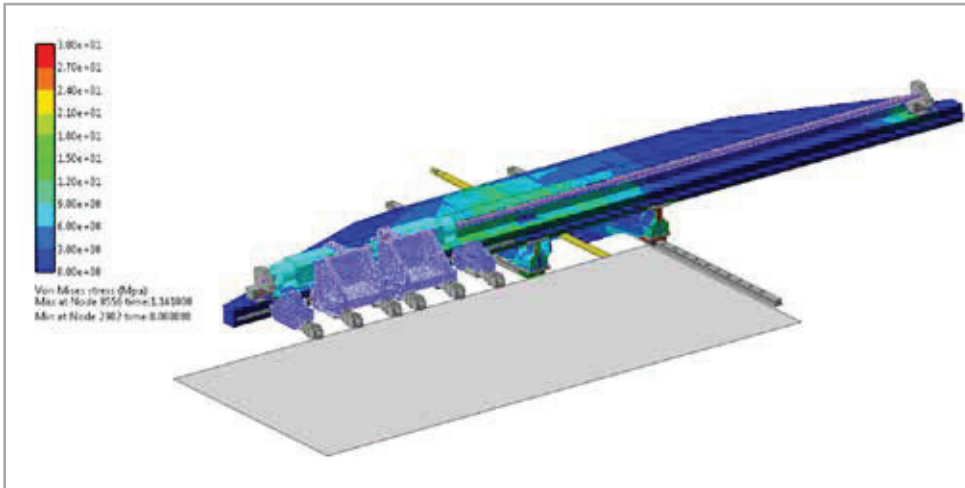
the flexibility of the entire machine is taken into account without the need for powerful HPC infrastructures and without any convergence problems. At the same time, the powerful RecurDyn expression editor is used to develop an analytical model that represents the interaction between the metal sheets and their supporting entities in terms of both frictional and viscous damping."

In addition, Salvagnini has decided to acquire the RecurDyn Machine Toolkit, which allows the company to automatically create the features representing linear guides and ball screws.

Thanks to dedicated functions, the toolkit can be effectively used to represent the flexibility of these components and also to correctly represent their local interactions.

"We are confident that with the use of this tool we can accurately simulate multi-body analysis, and this will allow us to reduce product development time, enabling us to evaluate many more design alternatives, improve the quality and performance of our projects, and reduce costs," Pilati adds.

He concludes: *"We are absolutely certain about our decision and that it will prove to be the best solution, in line with Salvagnini's policy, which has always been to invest in the best technologies."*

punching), but also for the handling and moving operations, since the machines are fully automated to reduce risks for the operators. All the company's products must satisfy two opposing requirements: handle large payloads with high precision while operating at high speed to increase the capacity of the machine.

In addition, the market is constantly demanding better-performing designs in terms of increased payloads, higher precision and shorter cycle times.

The design of the handling mechanisms must take into account the dynamic effects caused by the coupling of the inertial load with the structural flexibility. During acceleration and deceleration, the machine structure undergoes small deformations that can cause oscillations at the end of the movement, especially with higher payloads.

To achieve an excellent result during the processing operation, the metal sheets must have been accurately positioned in advance and they must be kept in position without any oscillation.

Fabiano Maggio, Chief Technology Officer at EnginSoft's System Dynamics Team, explains, *"Multi-flexible-body simulation provides a robust tool for efficiently creating and analyzing virtual prototypes capable of reproducing the dynamic behavior of the machine under different operating conditions. In this way it is possible to compare different solutions during the early stages of design to single out the best one, reducing the need for physical prototypes. To perform these simulations Salvagnini has chosen to acquire RecurDyn, a best-in-class tool to perform multi-flexiblebody simulations."*

Maggio continues, *"Thanks to the RecurDyn Reduced Flex approach,*

For more information
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