

Cool solution for a hot process

Customer expertise and Siemens technology in compact and high-precision laminating / edge-folding machines without sliders

Laminating and edge folding in one machine

In the very south of Bavaria, Vesper GmbH & Co. KG develops and manufactures tooling and engineering solutions for the automotive industry. The company's portfolio includes sliderless laminating/edge-folding machines used in the manufacture of high-quality automotive parts such as headrests. The machines can laminate and fold the cover material in a single step without a slider – “simply unbelievable,” in the words of one potential customer. During lamination, a reactive adhesive is applied to the cover material – for example, leather or textile – and then heated with infrared radiators and pressed onto the carrier material. During edge folding, the cover material is folded to fit the 3D shape of the carrier and pressed onto the carrier. All edges and corners are closed and glued in position without a seam – and without a slider. This results in a very compact machine design.

When the adhesive is cured, the bonding is permanent and cannot be modified. Consequently, the process requires not only a large amount of heat but exactly the right amount of heat. For the machine automation, including the control of the infrared radiators, Vesper relies on a solution with Totally Integrated Automation components from Siemens.

Growing functional and safety requirements

Each heating cabinet in the machine contains up to 100 infrared radiators as well as pyrometers for temperature monitoring and multiple process safety components: safety doors, light barriers, safety valves, and belt systems for the upper tool in the machine. Vesper has been using Siemens systems and components for monitoring and control for many years. “Our customers require a fully automatic machine that delivers an optimum process quality as well as easy and safe operation, and that provides all the relevant information to the production staff,” explains Michael Vesper, CEO of



A compact and high-performance solution: Vesper can integrate a great deal of functionality in a small space thanks to a SIMATIC ET200SP controller (top) and an HCS heating control system



„A key benefit is the integration of the systems.“

Michael Vesper, CEO, Vesper GmbH & Co. KG (left), and
Jochen Kelzenberg, Head of Construction, Vesper GmbH & Co. KG

Vesper GmbH & Co. KG. „As a result, the electrical part of our machines has been growing steadily over the years. In our machines, we have to be able to always be in full control of the complexity, so we need an automation solution that is state of the art on the functional level and that is easy to handle for our teams. Plus, Siemens is a well-established and globally recognized brand in the automotive industry.“

An integrated and efficient basis for the automation solution

In its laminating/edge-folding machines, Vesper uses a SIMATIC ET 200SP controller with an S7-1510F CPU. This controller controls and monitors both the process and the safety systems. All components communicate via PROFINET with PROFIsafe. For controlling the heaters with up to 2,000 watts of heating power, the company uses HCS heating control systems. The operator can monitor and operate the process and each individual radiator via a TP1200 touchpanel. All systems are engineered in TIA Portal as a common engineering environment. „Moving from the previous system generation was the logical choice for us. A key benefit is the integration of

the systems, as it helps us use our resources most efficiently,” says Vesper.

Compact and flexible

Jochen Kelzenberg, head of construction at Vesper, also recognizes the benefits of the integrated system environment and especially praises the versatility of the components: „We can implement more requirements using the same space with the SIMATIC ET 200SP controller and the HCS. The output power can be adapted by plugging in various modules, we can integrate the safety systems, and we save a lot of time during development with the integrated engineering and excellent diagnostics.“

Futureproof system for even greater transparency

Kelzenberg is looking confidently toward the future: „As part of our digitalization strategy, we plan to connect smart sensors via IO-Link to provide even more information to the machine operator.“ With the SIMATIC platform, Vesper is well prepared for this next step.

Featured products

SIMATIC ET 200SP

Vesper can install this compact and modular controller with the central modules in small cabinets. Additionally, the integrated F technology saves wiring.

SIPLUS HCS4200/HCS4300

The flexible HCS4200 heating control system is ideally suited for space-saving installations in the cabinet. For the US market, Vesper typically uses the HCS4300 I/O system.



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