JENNIFER LIEB

Design Instead of Wooden Benches: Laser cuts Tubes into Sustainable Classroom Furniture

Royal Ahrend shows how sustainability works. In its factory in the Netherlands, people with limited access to employment manufacture durable and thoughtfully designed school furniture – and recently started using an automated laser tube cutting machine from TRUMPF.

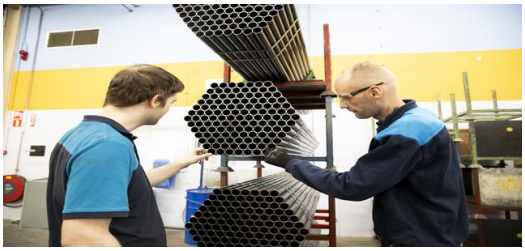
School furniture endures more than most products: it carries generations, survives moves and turbulent school breaks, and withstands countless lessons. The long-established company Gispen has been manufacturing such furniture for around 120 years – well-designed and made to last. Gispen and Ahrend are part of the internationally active Royal Ahrend Group. Currently, 30 to 40 percent of the chairs in Dutch elementary schools come from the factory in Arnhem, the Netherlands. Anthony Goossens is in charge of production there. It is a special kind of production facility: "Around 190 people work here, a good half of whom face barriers to employment. These are people who, for various reasons, struggle to gain a foothold in the labor market." Here, these individuals mainly take care of the final assembly of the furniture and keep the manufacturing processes running with preparatory and supporting tasks. "We very consciously take responsibility for these employees; they're an integral part of our team," emphasizes Goossens.

The manufacturing facilities of Ahrend and Gispen employ people who, for various reasons, have difficulty finding a foothold in the job market. It was particularly important to Anthony Goossens that the TruLaser Tube 5000 be easy to operate.

Chairs that last longer

This philosophy is anchored in the sustainable values that shape the business activities within the Royal Ahrend Group. The same commitment extends to product design: "We are pioneers in the field of sustainability and circular design," explains the operations manager. "All our furniture is modular, making it easier to repair, reuse, and recycle." CO□ emissions are also reduced because Gispen school furniture is manufactured exclusively in the Netherlands and is mainly sold there, which avoids long transport routes. Sustainable materials are used wherever possible. The latest example is the Gipsen WIZZ chair. The seat shell of this brightly colored chair is made from recycled plastic fruit crates. "It grows with the child – from the beginning to the end of their school years – because with different models and sizes of seat shells and frames, the chair is designed for lifelong learning," says Goossens. "All these measures are essential components of our brand identity and product strategy. They're good for the environment and good for society as a whole."

Designed to last throughout a student's school years: Chairs like the Gispen WIZZ chair are sturdy and durable. They also add a touch of color to the school day.



Stainless steel tubes form the basis for the chairs by Ahrend and Gispen. They are usually round, rectangular, or oval.

Gispen manufactures all its components in the Netherlands and sells most of its school furniture there. This reduces long transport distances and CO₂ emissions.

Perfect match in production

The base of Gispen and Ahrend chairs is made of stainless steel tubes. These typically have diameters ranging from 12 to 80 millimeters and come in a variety of shapes – round, rectangular, or oval. Before they are bent and powder-coated, the laser cuts them to the appropriate size and provides them with all the necessary cutouts. Until recently, this step presented Goossens and his team with challenges. The previous system had reached its limits due to its age and could no longer keep up with the increased production volume. Goossens set out to find a replacement. His criteria were that the new system should be easy to operate and to automate: "We want to reduce manual routine work and make processes more efficient. At the same time, we need more capacity for future growth."

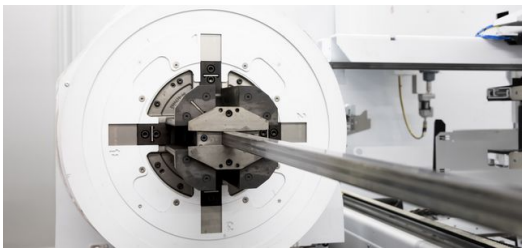
We can always count on TRUMPF's service.

Anthony Goossens, Production Manager at Gispen

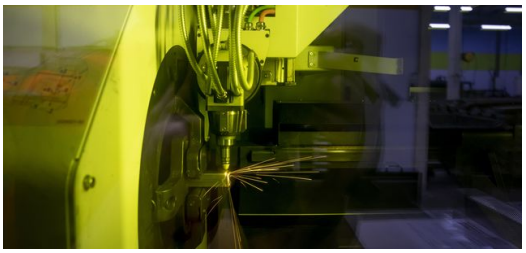
His colleagues from another production facility reported positive results with their new TruLaser Tube 3000, so he decided to purchase a laser tube cutting machine from TRUMPF as well: a TruLaser Tube 5000 equipped with customized automation. The LoadMaster Tube from TRUMPF takes care of the fully automatic feeding of profiles up to six meters long. Thanks to Smart Profile Detection, the machine recognizes the angle and orientation of the tube and automatically positions the clamping system. This saves a lot of manual work. After processing, a longitudinal conveyor belt from TRUMPF takes the finished profiles and feeds them to the unloading station of TRUMPF partner transfluid®. There, pushers guide the cut tubes in a controlled motion from the conveyor belt onto two movable supports with support surfaces. These place the parts on two belts, where they are collected, combined into a product bundle, and loaded into a transport box. With this setup, employees can also use the system unattended.

For the furniture manufacturer, automation is a decisive step toward making production more efficient and future-proof. Anthony Goossens emphasizes: "Automation allows us to keep growing. It frees our employees from monotonous, repetitive tasks, allowing them to focus more on activities that add value. At the same time, the automated material flow ensures smooth production processes."

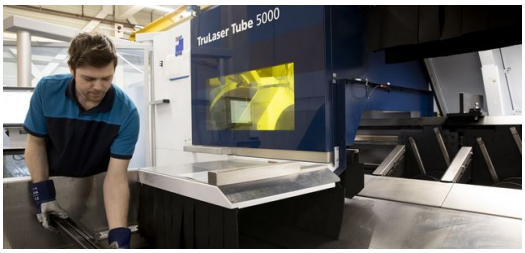
Numerous automation components ensure efficient processes. The TRUMPF LoadMaster Tube feeds profiles up to six meters long fully automatically.



Smart Profile Detection detects the pipe's angular position and orientation and automatically positions the clamping mechanism.



The TruLaser Tube 5000 laser tube cutting machine cuts all the necessary openings in the tube.



The TruLaser Tube 5000 can be unloaded manually, but it can also operate without an operator. In that case, an unloading station from TRUMPF partner transfluid® takes over this task.

Summer slump? Not here!

Goossens is particularly pleased that the new tube cutting machine is so easy to operate: "We're consciously creating an inclusive work environment here, where the focus is on our employees. This means that we don't need laser experts to operate the system. The TruLaser Tube 5000 is therefore a perfect fit for us." This also ensures a motivated production team. Whereas employees used to be reluctant to work on the old system, they now enjoy using the new technology. "For us, it's the complete package," says Goossens. For him, this also includes the service – especially in the summer: "July and August are the most important months for us, so everything has to run smoothly to ensure that the furniture arrives in the schools on time after the holidays," he explains. "We need a reliable partner who can provide us with quick support, even during the holiday season. We can always rely on TRUMPF's service." And that's how things will continue for the Dutch students of the future. Gispen's well-designed furniture make learning fun!

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