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CATHARINA DAUM

High degree of automation pays off!

When purchasing a punch laser cutting machine, Sander Mutsaers, general manager at Roxal Nederland BV in the Netherlands, made no compromises.

It was as long as two years ago that Sander Mutsaers began toying with the idea of getting a TRUMPF TruMatic machine equipped with a solid-state laser. But the machine available at that time was only able to handle medium-sized formats – and that was not an option for the work to be done at Roxal. When TRUMPF unveiled the TruMatic 6000 fiber, which is also available as a large-format version, at the Euroblech 2014, the decision was immediate. Mutsaers bought the fully automatic punch laser cutting machine equipped with a 3 kilowatt solid-state laser and all the available supplementary functions and smart functions. "The high degree of automation in this machine was decisive for me, because it guarantees us the flexibility and the productivity we need, in view of the wide range of materials we use," Mutsaers reports. The machine has been on Roxal's shop floor since May of this year and Mutsaers' enthusiasm continues unabated. "This is not just the first TruMatic 6000 fiber in the Netherlands, but indeed the first in all of Europe to have this degree of automation. Even now we can see that our expectations in regard to the savings potentials, in terms of both time and money, will be fully satisfied."

Freedom in materials

Roxal, located in the Dutch village of Best, was founded in 1994 and is a family-run sheet metal manufacturing company with 18 people on the payroll. Roxal services customers from several industries such as aviation, consumer electronics, furniture makers and design and art, to name just a few. For them the company supplies individual parts as well as complete assemblies and turnkey projects. "We machine stainless steel and aluminum in the main, but also deal with more unusual materials like copper and bronze and even titanium, a metal so important to the aviation industry," Mutsaers explains.

» After this short period in use we have been able to reduce by 40 percent the time needed to manufacture the front panel of a pay-and-display machine, made of aluminum and stainless steel.

The solid-state laser in the TruMatic 6000 fiber is the best choice for handling this wide range of materials. The nitrogen cutting technology guarantees the best edge quality even with non-ferrous materials, and precise dimensioning thanks to reduced heat distortion. In addition, the TruDisk laser also makes it possible to achieve reliable processing for all types of materials in spite of reflections.

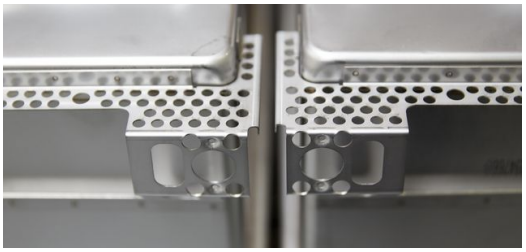
Everthing on a single machine

Flexibility is in demand at Roxal not only when processing differing materials. "Our production runs number from one to several thousand per year. Typically the mid-sized lots are handled in single-shift operations," says Sander Mutsaers. Optimal utilization of the equipment on hand and minimizing non-productive times are in the limelight for him.

"Even after this short period in use we have been able to reduce by 40 percent the time needed to manufacture the front panel of a pay-and-display machine, made of aluminum and stainless steel. The separate working phase at the press brake for small bendings is eliminated because the new punch laser cutting machine already takes care of the necessary bends," he tells us. Formed areas – like brackets, threads and hinges – are now made up quickly and easily on the TruMatic 6000 fiber. Four TRUMPF press brakes are used when processing larger parts and assemblies.

"Automating our machines eases the work for the employees. Instead of tedious and troublesome loading and unloading operations, they can devote their attention to other tasks during production operations," Sander Mutsaers explains. (Picture: Claus Langer)

The front panel of a pay-and-display machine. (Picture: Claus Langer)



Formed areas – like brackets, threads and hinges – are now made up quickly and easily on the TruMatic 6000 fiber. (Picture: Claus Langer)

The SheetMaster is entrusted with loading and unloading the machine. It sorts the parts and lays them on the cart or pallet. (Picture: Claus Langer)

Dynamic combination

The businessman is also impressed by the productivity of the TruMatic 6000 fiber, especially since speed is a deciding factor in many of his projects. Thus, for example, in a major project that Roxal handled last year. "We manufactured all the interior fittings for a hotel – including the lamp fixtures, tables, counters, the bar – and in so doing we worked through the entire sheet metal processing chain. The biggest challenges there were time pressures. "Because that is more likely to be the rule than the exception, I put my faith in investments for machines that accelerate processes – like the punch laser machine," he explains.

The TruDisk 3001 with three kilowatts of power in the punch laser machine makes possible cutting speeds of up to 34 m/min, at the best cutting quality – even when cutting sharp corners and small curves. The laser output control automatically

matches laser power to the cutting speed.

When punching, too, the TruMatic 6000 fiber sets benchmarks with 180 kilonewtons of punching power, 1,000 strokes per minute and highly dynamic drives. The rotating punching head also contributes to lowering the set-up and non-productive times. In this way a tool can be rotated as desired and used in various orientations. Whenever a tool change is required, the punching head draws the next tool from the linear magazine in just seconds. "Our large-format machine is equipped with four clamps and thus 21 tool positions," Mutsaers explains.

The machine is laid out to cut sheet metal up to 6.4 millimeters in thickness. At Roxal, the machine has already processed 0.5 millimeter aluminum and stainless steel up to 3 millimeter stainless steel.

Automatically better

In addition to good performance for the price, careful support right from the component design stage, and superb service – Sander Mutsaers is banking on quality to convince his customers. And that quality, he notes, can be improved considerably with automation. The TruMatic 6000 fiber at Roxal is equipped with numerous smart functions, including the smart load and smart unload features. They both improve part quality and increase process reliability. Smart load positions the sheet metal precisely on the machine, even if it had been misaligned on the stack of sheet metal. Smart unload lets the machine recognize a part hanging in the scrap skeleton – and solve the problem without human intervention.

The SheetMaster is entrusted with loading and unloading the machine. It sorts the parts and lays them on the cart or pallet. Small parts are discharged through brush-equipped parts flaps, directly into pre-positioned boxes. The descending die also makes for movement of the material free of marring. There is no contact with the die while the sheets are being positioned on the machine. A laser presser foot with its own NC axis augments gentle handling, too.

Automating our machines not only improves parts quality, but eases the work for the employees.

Roxal has also selected another automation component, the conveyor belt for small parts: On two conveyor belts below the processing station, the finished parts are ejected from the machine. The soft surface of the conveyor belts ensures gentle handling of the finished parts. The operator can also remove the parts during processing. "Automating our machines not only improves parts quality, but eases the work for the employees. Instead of tedious and troublesome loading and unloading operations, they can devote their attention to other tasks during production operations," Mutsaers explains.

The TruMatic 6000 fiber is still running only during the day shift. Utilization at night is planned and Sander Mutsaers is confident that it will soon be started. "Our machine is fully equipped. Right from the very beginning I figured it was a question of all or nothing. We will be expanding its use in coming months and will certainly use this unit to its fullest potential."

Who

Roxal Nederland BV, Best, Nederland. Founded 1994. 18 employees. www.roxal.nl

What

Family-run sheet metal manufacturing company. Roxal services customers from several industries such as aviation, consumer electronics, furniture makers and design and art, to name just a few.

How

TruMatic 6000 fiber, 2 x TruBend Cell 5000

TRUMPF

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https://www.trumpf.com/bg_BG/newsroom/stories/high-degree-of-automation-pays-off/