

Rolleri Re-Shapes Metal Sheet Fabrication with Stratasys FDM Additive Manufacturing

Founded in 1985, [Rolleri S.p.A](#) is a leading Italian supplier for sheet metal fabrication, specializing in the design, development and manufacture of tools and fixtures for press brakes and punching machines. The company serves a wide range of sectors, including aerospace, automotive, construction, home furniture, household appliances, and maritime, to name just a few.

Thanks to a dedicated R&D team and around 2% of annual revenue reinvested into this activity, Rolleri has progressively driven innovation to continually expand its product portfolio and ensure a solutions offering that meets the requirements of its global customer base.

“Our primary goal is to maintain Rolleri’s prominent position at the forefront of the sheet metal fabrication industry, so it’s vital we deploy the most advanced technologies available to quickly and effectively fulfill the specific needs of the various market segments in which we operate,” says Daniele Marzaroli, Sales and Marketing Director at Rolleri.



Daniele Marzaroli next to the Stratasys Fortus 380mc 3D printer at Rolleri, serving the needs of both the production floor and the R&D department.

“

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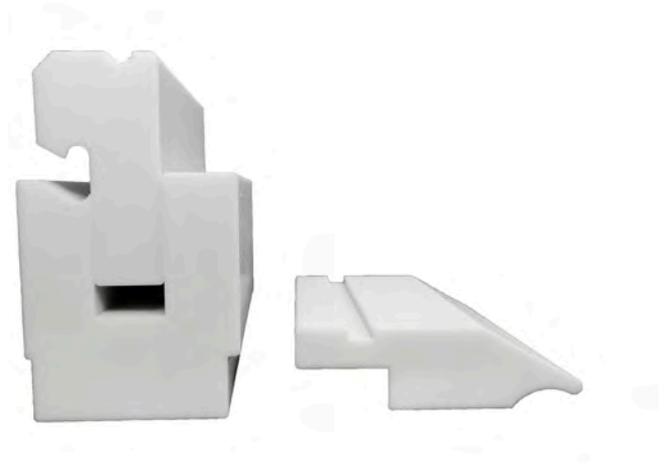
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To meet this objective, Rolleri has adapted its manufacturing processes to meet evolving customer requirements. “The sheet metal fabrication industry is quite niche and conservative – it is fair to say that there have been no substantial changes in production methods during the last 40 years or so,” explains Marzaroli. “However, over the last few years the requirements have changed, with customers expecting significantly reduced lead times and an increased desire for tooling with customized geometries.”

Breaking the Mold to Improve Customer Service

Around three years ago, Rolleri evaluated its technological capabilities to identify ways to innovate and find solutions to shifting customer requirements. In a bid to future-proof its technology offering, the company focused on additive manufacturing. With a need to produce robust parts with complex geometries, Rolleri tested a number of additive manufacturing technologies, measuring part quality, reliability and repeatability. The team singled out Stratasys’ FDM®-based [Fortus 380mc™ 3D printer](#) as the solution of choice, purchasing the system via Stratasys’ local partner, [Energy Group](#).

Once installed, the Fortus 380mc was immediately put to work and running two shifts every day. It is now a staple workhorse serving the needs of both the production floor and the R&D department. One of its main applications is production of mold insert prototypes for tools designed to form complex metal sheets. Made with tough polycarbonate thermoplastics – Stratasys’ [PC](#) and [PC ISO™](#) – the 3D printed



A complete 3D printed mold comprising both punch and die, enabling a three-sequence fold of metal sheets for household applications such as door hinges.

mold inserts are highly durable, enabling Rolleri to test their functionality in timeframes not previously achievable with its traditional suppliers.

“Integrating FDM additive manufacturing into our mold tool production process has drastically reduced our lead times from three to four weeks to just two or three days,” Marzaroli explains. “Importantly, this enables us to accelerate the testing process and find the optimum tool for our customers much faster. Should any late design changes to the final tool be required, we can do so quickly and cost-effectively before our customers commit to the costly manufacture of the final aluminum tool. From a cost-perspective, we have made savings of around 30% on every order compared to developing the same item with traditional methods, which has increased our profit margins.”

The Fortus 380mc also helps Rollerri overcome the traditional constraints of producing mold tools with complex geometries. “Whether it’s standard v-die press brake tooling or custom metal form tooling with complex geometries, such as flares, offsets and ribs, we have been able to offer 3D printed polycarbonate alternatives to traditional metal tools, which was previously unthinkable in this industry,” Marzaroli explains. “We have proved the viability of tough 3D printed thermoplastics as a cost-effective and profitable solution to many of the challenges we face with traditional tool production.

“We are no longer forced to decline orders due to capacity limitations as we now have the capability and bandwidth to accept each of them and deliver them within shorter lead times. Overall, it’s just much easier for us to create and test new tool designs for customers, which has enabled us to increase our product portfolio by 4-5%,” he adds.

Maximizing ROI

The company is also leveraging its Fortus 380mc to produce a variety of manufacturing tools to drive efficiencies across its own internal production operations. Previously, the high cost of outsourcing molds from external suppliers made low-volume tool production unviable with traditional manufacturing methods, forcing operators to manage with what they already had. The versatility and cost-efficiencies afforded by the Fortus 380mc have overcome these constraints and enabled Rollerri to create customized tools on demand. According to Marzaroli, this value is exemplified by the tools used to produce the company’s range of clamping systems.

“In addition to supporting the requirements of the customer, we’re getting even more ROI from the Fortus 380mc by using it to boost our own internal production efficiencies,” he says. “The clamping systems are a prime example. Previously, we would outsource these tools to be machined, which is costly and requires long lead times. When we needed to modify the design, we had to go through the same costly cycle again. With our 3D printer, we can iterate the design of the mold as much as we want and 3D print them on-demand, which has transformed the way our operators work and given them the confidence to be creative with their tool design.”



A 3D printed mold designed to produce a V-fold. The mold is currently in use within Rollerri’s customer’s production floor.



A 3D printed die used for specialized molds that eliminate the risk of unsightly marks on the metal sheets.

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Pressing Ahead and Changing Mindsets

With its 3D printer, Rolleri has invested not only in its current processes, but also in the future of the business. This is demonstrated by its latest move to develop ad hoc 3D printed applications designed specifically to improve its customer service offering even further. In this particular case, it means combining additive manufacturing with traditional production processes – something the company refers to as ‘hybrid solutions’, says Marzaroli.

“When it comes to industries like home furniture and household appliances, it is crucial that the metal surface of goods is aesthetically perfect, with no unsightly marks,” he explains. “This

was an issue in the past, so we came up with the idea of using the 3D printer to produce customized covers in ASA and ABS material to protect metal surfaces during transit, which has completely eradicated the problem.

“This is just one example of our team finding new opportunities to optimize the use of FDM additive manufacturing to further add value to our business. I strongly believe that it will continue to serve as an essential technology for our industry, impacting the way we work and changing the mindset of our teams when it comes to designing and developing future applications,” he concludes.

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