

Götz Maschinenbau

H350 Use Case – End of Arm Tool



Customer Profile

Götz Maschinenbau is a family-owned mechanical engineering company based out of Germany. Their primary focus is specialized machining which utilizes CNC turning and CNC milling. Götz also manufactures prototypes and customized parts for small to medium-sized production. In addition to traditional manufacturing methods, Götz leverages additive manufacturing inclusive of the H350™ 3D printer.

Challenge

Philipp Götz, CEO of Götz Maschinenbau, aimed to find a solution for the manufacturing robot in his own facility. He wanted to create grippers that would accurately attach and properly grasp items. He began with a standard gripper design, but it was too heavy for the robot. He needed to incorporate a material that was lightweight, along with parts that could be produced in a short period of time. Götz also chose to create a gripper with an unconventional geometry so this required a specifically shaped part.

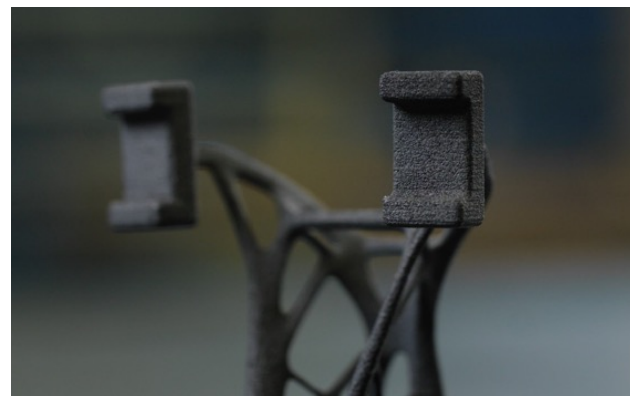
Solution

Götz chose topology optimization to estimate the material layout within the determined design space. To print the parts as precisely as possible, he utilized SAF™ technology on the H350 3D printer. Götz created functional, production-grade gripper parts that are consistent, repeatable and have high isotropic properties. SAF is free from the constraints of traditional tooling and guarantees reproducible part quality on fine feature details and complex parts. This allowed Götz to achieve the exact structure he envisioned for the gripper.

In terms of material, Götz selected PA11 to use in conjunction with SAF since it supports high ductility and impact resistance. Parts printed with PA11 polymer powder are also lighter than traditional materials such as metal. This is necessary for the gripper since it must execute high mechanical performance and not weigh down the robot.

Impact

Due to the quick turnaround of the H350 and the fact that it is tool-less, Götz completed production in only two days. This allowed him to begin utilizing the gripper almost immediately in his facility. With the gripper properly attached to the robot, he can easily manipulate items and optimize his internal processes. Additionally, based on the nature of PA11 polymer powder, Götz's gripper weighs 75% less than a traditionally manufactured gripper.



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