From rapid prototyping to output at scale, two metal 3D printing systems are announced

April 27 2017, by Nancy Owano

(Tech Xplore)—We have been hearing wonderful things about what designers and engineers are doing via the use of 3-D printers and plastics. But what about 3-D printing using metal parts? Safety and cost issues have been key hurdles. Those hurdles have not stopped Massachusetts-based Desk to Metal from working on advances that could rev up metal 3-D printing.

"Until now, metal 3-D printing has failed to meet today's manufacturing needs due to high costs, slow processes and hazardous materials," said Ric Fulop, CEO and co-founder of Desktop Metal.

They announced this week two new metal 3-D printing systems for (1) prototyping and (2) [mass production](#).

The Desktop Metal Studio, for prototyping, delivers the advantage of 3-D metal printing at the office level. This is positioned as a relatively affordable offering for engineers and designers.

This system is described as considerably less expensive than existing technology. The [Studio](#) system is up to ten times cheaper than comparable laser-based systems, said Desktop Metal.

Safety is another advantage that the company is highlighting. "We eliminated lasers and powders to make the Studio system safe for any facility." What is more, "Changing materials in laser-based systems poses safety risks and can take a week or more. The Studio printer was designed with safe-to-handle, swappable media cartridges and quick release print heads for seamless material changes."

The Desktop Metal Studio system's printer is compared with the Fused Deposition Modeling (FDM) process. The printer extrudes bound metal rods, similar to how a plastic FDM printer works.

Each stage of the process is automated. The Studio system uses cloud-based software; the system makes it easy to go from CAD to part. The system supports many different metal alloys.

The Desktop Metal Studio system is $120,000. A sintering furnace comes with the [printer](#). Again, the team highlighted safety features. They said the furnace can automatically detect levels and gas type; if there is an issue, notifications are sent. All in all, they made the system to be safe for use on the shop floor.

Keeping with their "office-friendly" highlight, the sintering furnace was

sized to fit through an office door.

Their other offering is their Production system. Capable of manufacturing metal 3-D printed parts at scale, this is a 3-D printing system purposed for mass production.

Looking at what's next, the DM Studio System is being made available to reserve in May and shipping starts in August. The price is $120,000. The DM Production System is available to reserve in May for shipping beginning in 2018.

Alex Knapp in *Forbes* pointed out that "Metal 3-D printing is of particular interest to industries like aerospace." In its current state, however, CEO Fulop remarked in *Forbes* that metal 3-D printing was slow and expensive, and he told Knapp "part of the motivation for starting his company in 2015 was 'out of frustration.'"

 More information: www.desktopmetal.com/ www.desktopmetal.com/news/pres … tal-is-manufactured/

© 2017 Tech Xplore