



Ford Tests Large-Scale 3D Printing with Light-Weighting and Personalization in Mind

- Ford Motor Company is testing 3D printing of large-scale car parts using the [Stratasys Infinite Build 3D printer](#)
- Ford, the first auto company to trial this technology with Stratasys, is exploring potential applications for future production vehicles, including Ford Performance products, as well as personalized car parts
- Increasingly affordable and efficient, 3D-printing large automotive parts, like spoilers, could benefit Ford's business and its customers; printed parts can be lighter in weight than traditionally manufactured parts, and may help improve fuel efficiency

DEARBORN, Mich., March 6, 2017 – Ford Motor Company is exploring how large-scale one-piece auto parts, like spoilers, could be printed for prototyping and future production vehicles, as the first automaker to pilot the [Stratasys Infinite Build 3D printer](#).

Capable of printing automotive parts of practically any shape or length, the Stratasys Infinite Build system could be a breakthrough for vehicle manufacturing – providing a more efficient, affordable way to create tooling, prototype parts and components for low-volume vehicles such as Ford Performance products, as well as personalized car parts. The new 3D printer system is housed at Ford Research and Innovation Center in Dearborn.

“With Infinite Build technology, we can print large tools, fixtures and components, making us more nimble in design iterations,” said Ellen Lee, Ford technical leader, additive manufacturing research. “We’re excited to have early access to Stratasys’ new technology to help steer development of large-scale printing for automotive applications and requirements.”

An emerging technology for manufacturing

Wider adoption of 3D printing has been driven by recent technology advances, new areas of application and government support, according to Global Industry Analysts. By 2020, the global market for this emerging technology is expected to reach \$9.6 billion, the organization reports. As 3D printing becomes increasingly efficient and affordable, companies are employing it for manufacturing applications in everything from aerospace to education to medicine.

3D printing could bring immense benefits for automotive production, including the ability to produce lighter-weight parts that could lead to greater fuel efficiency. A 3D-printed spoiler, for instance, may weigh less than half its cast metal counterpart.

The technology is more cost efficient for production of low-volume parts for prototypes and specialized race car components. Additionally, Ford could use 3D printing to make larger tooling and fixtures, along with personalized components.

How it works

With 3D printing, specifications for a part are transferred from the computer-aided design program to the printer's computer, which analyzes the design. The device then goes to work, printing one layer of material at a time, then gradually stacking layers into a finished 3D object.

When the system detects the raw material or supply material canister is empty, a robotic arm automatically replaces it with a full canister. This allows the printer to operate unattended for hours – days, even.

Benefits of 3D printing

Using traditional methods to develop, say, a new intake manifold, an engineer would create a computer model of the part, then have to wait months for prototype tooling to be produced. With 3D printing technology, Ford can print the intake manifold in a couple of days, at a significant cost reduction.

3D printing is not yet fast enough for high-volume manufacturing, but it is more cost efficient for low-volume production. Additionally, minus the constraints of mass-production processes, 3D-printed parts can be designed to function more efficiently.

About Ford Motor Company

Ford Motor Company is a global company based in Dearborn, Michigan. The company designs, manufactures, markets and services a full line of Ford cars, trucks, SUVs, electrified vehicles and Lincoln luxury vehicles, provides financial services through Ford Motor Credit Company and is pursuing leadership positions in electrification, autonomous vehicles and mobility solutions. Ford employs approximately 203,000 people worldwide. For more information regarding Ford, its products and Ford Motor Credit Company, please visit www.corporate.ford.com.