PRESS RELEASE

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FOR IMMEDIATE RELEASE

Protolabs Launches Copper 3D Printing Service for Automotive Industry

Digital manufacturer Protolabs has moved to meet the needs of the growing electric and hybrid automotive sector with the launch of a new 3D printing service for copper parts.

The introduction of copper alloy to its portfolio will allow engineers to design, prototype and produce low volume copper parts in complex geometries that were not previously possible, such as internal channels or weight saving honeycomb structures.

Andrea Landoni, Product Manager for Protolabs, said: "Copper is a vital material for automotive manufacturers and the move towards electric and hybrid vehicles will only increase this need. While a traditional car uses about 25Kg of copper, this will rise to about 75Kg for electric and hybrid vehicles.

"It means that there is a huge demand to design and test new copper parts. Until recently a designer's best option for prototyping or low volume production was CNC machining. 3D printing offers them a different option and means that their designs are no longer limited by the technology producing them.

"We are constantly searching for new applications and materials and recognise that the automotive industry is one of the most important sectors in Europe. It is also one that is facing new challenges, so the demand for rapid prototyping and testing new part designs is high."

The company uses a low alloyed copper material for its 3D printing, CUNi2SiCr, which combines good mechanical properties and corrosion resistance with high thermal and electrical conductivity. It opens up opportunities for engineers to develop parts rapidly for harsh environments where pure copper is not a feasible option.

More…

Protolabs utilises direct metal laser sintering (DMLS) technology to 3D print copper parts. This uses a fiber laser system that draws onto a surface of fine metal powder, welding it into fully dense metal parts. Each layer is just 20 microns thick, which produces a smoother surface than other suppliers of 3D printed copper parts can manage.

Landoni added: "While additive manufacturing allows more complex designs to be realised, it is not the best answer for every project. At Protolabs we also produce copper parts using CNC machining. If you need higher volumes or to produce a relatively simple geometry, then CNC machining could be a better solution. We offer the best technology for both options, which means our application engineers are ideally placed to advise."

Depending on the quantity and part geometry 3D printed copper parts can be produced as fast as one working day, while for CNC machining the company claims to be the fastest supplier in the world with delivery times also possible in a day.

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Caption: Copper DMSL heat exchanger

ABOUT PROTOLABS

Protolabs is the world's fastest digital manufacturing source for custom prototypes and low-volume production parts. The technology-enabled company uses advanced 3D printing, CNC machining and injection moulding technologies to produce parts within days. The result is an unprecedented speed-to-market value for product designers and engineers worldwide.

Aspects:

- An automated quoting system and proprietary software translate digital 3D CAD models into instructions for high-speed manufacturing equipment. The result is parts that are shipped in 1 to 15 days.
- The company is anchored by three flagship services: injection moulding, CNC machining and 3D printing (additive manufacturing).
- Injection moulding is used for quick-turn prototyping, bridge tooling and low-volume production of up to 10,000+ parts. More than 100 thermoplastics resins, metal and liquid silicone rubber are offered.
- Protolabs uses three and five-axis milling and turning to machine engineering-grade plastic and metal prototypes and functional end-use parts in quantities of less than 200.
- Additive manufacturing employs advanced 3D printing technologies that can create extremely accurate prototypes with complex geometries. Additive parts are built by stereolithography, selective laser sintering, Multi Jet Fusion, PolyJet and direct metal laser sintering processes, and in a range a plastics and metals.

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