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Desktop Metal Qualifies Titanium for Manufacturing with the Studio System 2

Delivering Titanium with Better Than Wrought Elongation and Tensile Strength Exceeding Industry Standards, Desktop Metal Is the First Company to Commercialize Titanium for Bound Metal Production of High-Strength, Lightweight Components

BOSTON--(BUSINESS WIRE)-- Desktop Metal (NYSE:DM), a leader in mass production and turnkey additive manufacturing solutions, today announced it has qualified the use of titanium alloy Ti-6Al-4V (Ti64) for the Studio System 2™, an accessible metal 3D printing platform that offers customers the easiest way to print high-performance metal parts in low volumes for pre-production and end-use applications. With plans to begin shipping Ti64 next month, Desktop Metal will be the first and only company to make the material commercially available for extrusion-based bound metal additive manufacturing technologies.

This press release features multimedia. View the full release here: https://www.businesswire.com/news/home/20210804005651/en/

This machine bracket has been designed using a gyroid lattice infill and titanium in place of 17-4PH stainless steel to reduce weight and material while maintaining the required functional strength and stiffness. The resulting geometry would be impossible to produce using conventional manufacturing processes due to its complexity. 3D printing this new design on the Studio System 2 in Ti64 reduces the part weight by 59 percent. (Photo: Business Wire)

Ti64 is the most widely used titanium alloy and is characterized by its high tensile strength, corrosion resistance, and biocompatibility. With a high strength-to-weight ratio, Ti64 is considered an ideal material for high-performance production applications in industries such as aerospace and defense, automotive, and oil and gas. In addition, its biocompatibility makes it particularly desirable in medical applications, such as with surgical devices and implants.

The Studio System 2 produces Ti64 with exceptional mechanical properties. Tensile

properties include 730 MPa yield strength, 845 MPa ultimate tensile strength, and 17 percent elongation. These mechanical properties exceed those set by ASTM F2885-17 standards for metal injection molded surgical implant applications.

“Titanium has been a challenging material for bound metal 3D printing because it is both extremely reactive in powder form and difficult to sinter,” said Jonah Myerberg, co-founder and CTO of Desktop Metal. “We are excited to be the first to commercialize the most common titanium alloy, Ti64, for 3D printing through our Studio System 2 solution, opening the door to more accessible production of high-performance titanium parts.”

“3D printing with titanium is incredibly valuable in industries like aerospace because of the material’s ability to support complex and lightweight designs,” said Steve Wozniak, co-founder of Privateer Space, a new satellite company focused on monitoring and cleaning up objects in space. “With the Studio System 2, the team at Privateer Space will be able to achieve the affordability and lightweighting capabilities needed to pave the way for our satellite design and launch. This technology is truly a differentiator in helping companies to accelerate innovations in space and, through the material advancements that Desktop Metal is making, we have an amazing opportunity to collaborate and keep space accessible for future generations.”

Titanium - Key Applications

With the Studio System 2, Ti64 parts demonstrate excellent mechanical properties and corrosion resistance on a more accessible platform than legacy powder bed fusion 3D printing alternatives. Examples of key uses cases include:

- **Machine Bracket**
  This machine bracket has been designed using a gyroid lattice infill and titanium in place of 17-4PH stainless steel to reduce weight and material while maintaining the required functional strength and stiffness. The resulting geometry would be impossible to produce using conventional manufacturing processes due to its complexity. 3D printing this new design on the Studio System 2 in Ti64 reduces the part weight by 59 percent.

- **Telescope Focus Ring**
  Small telescope focus rings hold lenses in place on a mobile telescope, which has multiple motors that are used to position and focus the lenses. 3D printing the rings in titanium ensures that all components are lightweight, allowing the use of smaller motors, reducing the wear on the components and the overall cost of the assembly. Typically this part is produced in low volumes, which would require investing in expensive tooling or custom fixturing using conventional manufacturing processes. The Studio System 2 supports printing up to six focus rings in less than 24 hours, which would be ready for installation in a matter of days.

- **Drone Coupling**
  A drone coupling is used to fasten two assemblies together on a drone frame. One of the main challenges with drones is battery life, which is predominantly determined by the weight of the drone. Producing the coupling in titanium enables significant weight reduction while maintaining the structural integrity required for the drone frame. The Studio System 2 supports low volume production of this part in quantities of 15 to 25

per week before moving it into mass production, all without any tooling or machining necessary.

- **Fuel Injector Nozzle**
  Fuel injector nozzles are critical for safe and reliable operations in the aerospace industry, where they are responsible for driving fuel into a burner for propulsion. This part features internal channels that can result in enhanced burner performance but would be impossible to create using conventional manufacturing processes. Titanium is an essential material for this application as the nozzle needs to be able to withstand extreme temperatures and pressures while remaining lightweight. With the Studio System 2, engineers can test many design variations of the nozzle in just days with as many as four versions of the nozzle printed in less than 24 hours.

The Studio System 2 - Office-Friendly Metal 3D Printing

The Studio System 2 is an office-friendly metal additive manufacturing system that leverages Desktop Metal's proprietary Bound Metal Deposition™ (BMD) technology to produce parts. The easy, two-step process provides a nearly hands-free experience, while eliminating loose powders and dangerous lasers commonly associated with metal 3D printing. Consisting of a printer and furnace, the Studio System 2 simplifies in-house low volume production of a wide range of complex geometries with outstanding surface finish and high-performance mechanical properties.

The Studio System 2 is compatible with 316L stainless steel and Ti64 as well as all materials previously supported by the Studio System, including 17-4PH stainless steel, 4140 low-alloy steel, H13 tool steel, and copper. A broad portfolio of additional materials that take advantage of the Studio System 2's streamlined, two-step process is in active R&D with new releases slated to roll out this year.

Ti64 for Studio System 2 is expected to ship September 2021. To learn more about the Studio System 2 and applications for titanium, visit www.desktopmetal.com.

About Desktop Metal

Desktop Metal, Inc., based in Burlington, Massachusetts, is accelerating the transformation of manufacturing with an expansive portfolio of 3D printing solutions, from rapid prototyping to mass production. Founded in 2015 by leaders in advanced manufacturing, metallurgy, and robotics, the company is addressing the unmet challenges of speed, cost, and quality to make additive manufacturing an essential tool for engineers and manufacturers around the world. Desktop Metal was selected as one of the world's 30 most promising Technology Pioneers by the World Economic Forum and named to MIT Technology Review's list of 50 Smartest Companies. For more information, visit www.desktopmetal.com.

Forward-looking Statements

This press release contains certain forward-looking statements within the meaning of the federal securities laws. Forward-looking statements generally are identified by the words "believe," "project," "expect," "anticipate," "estimate," "intend," "strategy," "future," "opportunity," "plan," "may," "should," "will," "would," "will be," "will continue," "will likely result," and similar expressions. Forward-looking statements are predictions, projections and

other statements about future events that are based on current expectations and assumptions and, as a result, are subject to risks, uncertainties. Many factors could cause actual future events to differ materially from the forward-looking statements in this document, including but not limited to, the risks and uncertainties set forth in Desktop Metal, Inc.'s filings with the U.S. Securities and Exchange Commission. These filings identify and address other important risks and uncertainties that could cause actual events and results to differ materially from those contained in the forward-looking statements. Forward-looking statements speak only as of the date they are made. Readers are cautioned not to put undue reliance on forward-looking statements, and Desktop Metal, Inc. assumes no obligation and does not intend to update or revise these forward-looking statements, whether as a result of new information, future events, or otherwise.

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