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HRE WHEELS PARTNERS WITH GE ADDITIVE TO CREATE FIRST 3D-PRINTED TITANIUM WHEEL

HRE and GE Additive's AddWorks team have used Electron Beam Melting (EBM) technology to create a new prototype wheel made from an advanced titanium powder, unveiling the first automotive wheel to be made with this process.

Vista, Calif. (November, 2018) – HRE Wheels and GE Additive announced a partnership agreement today and unveiled the first titanium wheel created using EBM technology (a type of 3D printing). Known as "HRE3D+", this new prototype wheel shows what the future of wheel technology will bring and how advanced materials like titanium can be harnessed to create complex designs.

The goal of the "HRE3D+" project was to test the capabilities of additive manufacturing in a practical application and to create a highly-sophisticated wheel design with titanium. With a traditional aluminum Monoblok wheel, 80% of material is removed from a 100-pound forged block of aluminum to create the final product. With additive manufacturing, only 5% of the material is removed and recycled, making the process far more efficient. Titanium also has a much higher specific strength than aluminum and is corrosion resistant, allowing it to be extremely lightweight and to be shown in its raw finish.

There was an intensive design collaboration between the Vista, California based team at HRE and the GE AddWorks team out of Ohio. Using design queues from two existing models of HRE wheels, the two companies worked together to create a stunning example of what is possible with additive manufacturing. The wheel was produced on two Arcam EBM machines - Q20 and a Q10 in five separate sections, then combined using a custom center section and bolted to a carbon fiber rim using titanium fasteners.

"This is an incredibly exciting and important project for us as we get a glimpse into what the future of wheel design holds," said HRE President Alan Peltier. "Working with GE Additive's AddWorks team gave us access to the latest additive technology and an amazing team of engineers, allowing us to push the boundaries of wheel design beyond anything possible with current methods. To HRE, this partnership with GE Additive moves us into the future."

Robert Hanet, senior design engineer, GE Additive AddWorks stated ,"HRE prides itself on its commitment to excellence and superior quality in the marketplace. It was a natural fit for AddWorks to work on this project with them and really revolutionize the way wheels can be designed and manufactured."

The “HRE3D+” wheel will be on display from November 13-16 on GE Additive’s booth (D30) at the formnext tradeshow in Frankfurt, Germany. For more information on HRE Wheels, visit www.hrewheels.com.

About HRE Performance Wheels:
HRE designs, engineers and manufactures 3-piece and 1-piece forged aluminum alloy wheels for Racing, Performance & Luxury cars and SUVs in their San Diego, California-based, TÜV-approved facility. HRE’s built-to-order wheel sets offer a customized choice of offsets, widths and finishes, resulting in a uniquely personal style and performance solution for each customer’s application. HRE wheels are sold through select high-end car dealerships, specialty retailers and performance companies worldwide. For more information, visit www.hrewheels.com or call an HRE wheel expert at (760) 598-1960.

About GE Additive:

GE Additive – part of GE (NYSE: GE) is a world leader in additive design and manufacturing, a pioneering process that has the power and potential to transform businesses. Through our integrated offering of AddWorks additive experts, advanced machines and quality materials, we empower our customers to build innovative new products. Products that solve manufacturing challenges, improve business outcomes and help change the world for the better. GE Additive includes additive machine providers Concept Laser and Arcam EBM; along with additive material provider AP&C.

EBM machines create dimensionally accurate parts quickly and efficiently by using a high-power electron beam for high melting capacity and productivity. The EBM process takes place in vacuum and at high temperature, resulting in stress-relieved components with material properties better than cast and comparable to wrought material.