Caracol Unveils High-Throughput xHF Extruder at JEC World 2025, Revolutionizing LFAM with Unmatched Speed and Multi-Material Capabilities

New solution to empower manufacturers to scale production with unprecedented efficiency and quality

**AUSTIN, TX / MILANO, Italy – [26 February 2025]** – Caracol, a global leader in large-format additive manufacturing (LFAM), today announces the launch of its latest innovation, the high-throughput xHF Extruder, premiering at JEC World 2025 in Paris, France. This new end-effector is now a component to configure to Caracol’s composite[Heron AM LFAM platform](https://www.caracol-am.com/technologies/heron-am), boosting productivity with an extrusion rate of up to 75kg/h (165 lb/h), while enhancing precision, and multi-material capabilities. The new solution can process two materials simultaneously thanks to a double chamber and custom nozzles, marking a significant leap forward in extra large-scale 3D printing for the aerospace, marine, construction, and architectural sectors.

The xHF (Extra Flow) Extruder – engineered and patented to maximize throughput, precision, and material flexibility, with advanced plasticization and thermal control – delivers:

* **Minimized component stress and enhanced durability** due to dual-motor torque distribution
* High-volume production of large-scale parts, thanks to **exceptional speed and precision**
* **Superior material plasticization** with four thermal control zones per each extrusion chamber
* **Compatibility with high-performance composites** thanks to an operating temperature up to 450°C (842°F)
* A **compact size**, with a balanced center of gravity, ensuring an **agile machine setup** and high movement speed, with a **maximized print volume**

The xHF offers a uniquecombination of productivity and flexibility. By printing bi-material layers, the Heron AM platform can produce high-performance composite parts in a more flexible and convenient way – combining, for example, a cost-effective core material surrounded by a technical outer skin of high-performance thermoplastics. This innovative feature cuts costs on macrostructures and maximizes the unique advantages of each material used.

By equipping Heron AM with the xHF (Extra Flow) Extruder, specifically engineered for extra-large applications, Caracol is delivering the ideal solution for manufacturing ultra-large components in several industries, such as:

* **Construction & Architecture:** Prefabricated structures and units, sustainable housing, and urban infrastructure
* **Marine & Aerospace:** Large-format molds, models, and functional components like boat hulls
* **Industrial Manufacturing:** Tooling, jigs, and custom-designed composite extra-large structures

Set to debut at JEC World 2025

Visitors to JEC World 2025 (March 4-6, Paris, France) can see Heron AM live printing a lightweight and durable mold for composite tank lamination, while discovering more about the xHF extruder at **Caracol’s booth M92 – Hall 5**.

Caracol’s team of experts will be available to discuss how the xHF extruder integrates smoothly into its advanced robotic LFAM systems, empowering manufacturers to scale their production capabilities with unprecedented efficiency and quality.

“With this launch, we’re redefining what’s possible in large-scale additive manufacturing,” comments Giovanni Avallone, Chief Innovation Officer and Co-founder of Caracol. “Working within the industry as both a service bureau and a technology provider, we recognize the gap in the market for this high-speed extrusion and advanced multi-material capabilities combination. This extruder will enable manufacturers to produce ultra-large, high-performance composite parts with greater efficiency and precision than ever before, opening up the benefits of AM to more industries without compromising on quality or material flexibility.”

CARACOL

CARACOL was founded in 2017 in Milan, Italy, with the vision of pushing the limits of additive manufacturing in terms of scale, efficiency, and sustainability. The company accomplished this by developing an integrated technological platform, including both hardware and software, to produce advanced large-scale components. Through the integration of a patented extrusion head, the development of dedicated software - Eidos Manufacturing, and the use of robotic arms as movement support, Caracol offers an additive manufacturing technology for advanced components for customers in industries such as aerospace, marine, energy, design, and architecture. Heron AM manufactures parts such as jigs and molds for aircraft components, finished parts for yacht and boat superstructures, or revolutionary projects to initiate virtuous circular economy processes for the energy or design sectors. Vipra AM is the latest launched LFAM system to produce large-scale metal applications in the most demanding industries such as aerospace, energy, construction and shipbuilding. Today, the company has opened the largest LFAM production center in Europe, a production facility in Austin (TX), USA opened in August 2023, and a commercial office in Dubai, has a core team of over 80 international professionals with highly specialized competences, in areas such as mechanical engineering, automation, computational design, design for additive, and advanced manufacturing processes.

For more information, please visit the Caracol website: <https://www.caracol-am.com/resources/news-events/3d-printing-composites-at-jec-2025>

**Press Contact:**

Violetta Nespolo - Chief Marketing & Strategy Officer

[marketing@caracol-am.com](mailto:marketing@caracol-am.com)

**Incus Media - PR Representatives**

[Caracol@incus-media.com](mailto:Caracol@incus-media.com)

+44 (0) 1737 215 200