

With KraussMaffei: Increased efficiency for world-class bicycles

- TIME Bicycles is teaming up with KraussMaffei to modernize composite bicycle manufacturing
- HP-RTM High Pressure Resin Transfer Molding for carbon frames
- Sophisticated automation

(Parsdorf, May 22, 2023) TIME Bicycles, one of Europe's most prestigious cycling brands, have been raced to victory in the Olympics, many stages of the Tour de France and multiple world championships. TIME bicycle frames are made of multi layer, braided carbon sleeves and are elaborately handcrafted using the resin transfer molding process (RTM), even for models used by ambitious recreational riders. With the help of KraussMaffei, the manufacturing process is now being optimized from a technical standpoint. To achieve this, the largest carbon bicycle factory in the US is being built in Spartanburg County (South Carolina).

Spartanburg has made a name for itself as a high-tech region for the automotive and aerospace industries, providing it with the infrastructure and a workforce to support the planned 105 new jobs. At the same time, the region's mountains and trails make it highly appealing for cyclists.

The \$6.5 million investment includes a 120,000-square-meter site with an existing factory (13,000 square meters in area). This is being upgraded to expand the capacity of the TIME location in Europe (Gajary, Slovakia) starting in winter 2023. For TIME, production of bicycles in the US had already been in the plans for two years.

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Cooperation for more efficiency

To increase efficiency even more, the company is cooperating with experts from KraussMaffei, Clemson University, and the SC Fraunhofer USA Alliance, which is a collaboration between the South Carolina Department of Commerce and Fraunhofer USA. At Clemson, the new manufacturing process is being developed on an existing KraussMaffei system. The goal is to transform TIME's proven, albeit manual resin transfer molding technology into a high-pressure RTM process with a high degree of automation. Tony Karklins (TIME CEO) notes: "TIME was the pioneer of carbon in professional bicycles. Now we look forward to producing the most advanced carbon frames in the entire industry."

The intention is to produce high-end racing bikes as well as e-bikes, which are also becoming increasingly popular in the US. David Judge (Business Development Manager at KraussMaffei) assures: "We are combining efficiency and price appeal with a product that historically has been handmade. For us, it is a wonderful endeavor to industrialize and automate this process without compromising TIME's tremendous commitment to quality."

The schedule aims to have clarity on the technology details by the middle of the year and then move on to the actual system design.

KraussMaffei is the only company in the plastics industry to manufacture machines for all processing methods in-house (reaction process machinery, injection molding, extrusion) - which may also be of interest for other components of TIME bikes. David Judge explains, "We expect to be involved in all optimization processes." In addition to classic resin transfer molding, KraussMaffei can leverage its surface expertise, such as the ColorForm process and its self-healing polyurethane surfaces, to help ensure that frames come out of the machine ready to go and do not need to be laboriously reworked. Overall, this will take bicycle manufacturing at TIME to a new level of production.

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More about TIME Bicycles

TIME Bicycles was founded in France in 1987 by Roland Cattlin and has been active in professional racing ever since. Tour de France champions such as Pedro Delgado and Greg LeMond were sponsored by TIME. The brand's bikes have won Olympic gold and world championships. Cardinal Cycling Group (Little Rock, Arkansas), founded in 2020, acquired TIME from Groupe Rossignol in 2021.

Captions:

1 KM_RPM_20230522_Alpe d'Huez Disc.jpg: TIME's top selling model, the 2023 Alpe d'Huez Disc

2 KM_RPM_20230522_ADH_Disc_Carbon.jpg: TIME's top selling finish showing the beauty of the nude carbon structure

Photos: TIME Bicycles

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KraussMaffei – Pioneering Plastics

KraussMaffei is among the world's leading manufacturers of machinery and systems for the production and processing of plastics and rubber. Our brand stands for cutting-edge technologies – for more than 185 years. Our range of services covers all areas of injection molding machinery, extrusion technology and reaction process machinery. In 2022 we added additive manufacturing to our portfolio. This broad range of technologies gives KraussMaffei a unique selling point in the industry. With the high innovative power of our standardized and individual product, process, digital

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and service solutions, we can guarantee customers sustained additional value over the entire value-adding chain. Our range of products and services allow us to serve customers in many sectors including the automotive, packaging, medical and construction industries, as well as manufacturers of electrical and electronic products and household appliances. KraussMaffei employs around 4.700 people all over the world. With more than 30 subsidiaries and over 10 production plants, as well as about 570 commercial and service partners, we are represented internationally close to our customers. The company was founded in 1838 in Munich.

In April 2016, China National Chemical Corporation Ltd. ("ChemChina") became the majority shareholder of KraussMaffei Group. In December 2018, ChemChina listed the KraussMaffei Group as KraussMaffei Company Limited in Shanghai. The listing opened up access to the Chinese capital market and local investors. Now ChemChina is part of Sinochem Holdings Corporation Ltd., one of the world's leading chemical conglomerates with over 220,000 employees.

For more information: www.kraussmaffei.com

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