



By appointment
to Her Majesty The Queen
motor car manufacturers
Bentley Motors Limited
Crewe Cheshire



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BENTLEY

Press Information

MULLINER DEVELOPS 22" CARBON FIBRE WHEEL FOR BENTAYGA

- **22" Mulliner carbon wheel will be the largest carbon wheel in production**
- **Weight saving of 6 kg per wheel, unsprung mass, compared to aluminium**
- **Developed in conjunction with leading composite manufacturer, Bucci Composites**
- **Five years of engineering delivers first carbon wheel to pass TÜV testing**
- **Innovative processes ensure repeatable high quality components utilising RTM (Resin Transfer Moulding) technology**
- **Increased impact safety due to material weave dispersing air loss**
- **Improved stiffness equivalent to 1° in camber per 1G of force**
- **Reduced tyre wear due to stiffness of wheel**
- **Available to order through Mulliner later this year**

(Crewe, 26 July 2021) After years of development with one of the world's leading composite suppliers, Bentley is today announcing a new carbon fibre wheel developed specifically for the Bentayga. The 22" carbon wheel, engineered with renowned specialists Bucci Composites, is to be the largest carbon wheel in production in the world and offers a vast range of benefits beyond the initial 6 kg improvement in unsprung mass per wheel.

The new carbon wheel has been subjected to the exceptionally rigorous TÜV (Technischer Überwachungsverein - Technical Inspection Association) standards, and is the first carbon wheel ever produced to pass all tests. The newly developed rim has undergone the most rigorous testing for non-metallic wheels according to the new TÜV standards including biaxial stress testing, radial and lateral impact testing for simulating potholes and cobblestones, tyre overpressure, and excessive torque tests exceeding the permitted limits.

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One of the most severe tests of the TUV requirements – the impact test - has shown how the carbon rim is extremely safe in addition to the performance benefits. After a severe impact which would crack or shatter an aluminium wheel, causing the tyre to collapse explosively, the carbon fibre rim allows a slow tyre deflation thanks to the intelligent layering of fibre weaves, allowing the vehicle to come to a controlled, safe stop.

For the final sign off stage, the wheel was put through its paces on one of the most famous tracks in the world - the Nürburgring Nordschleife.

The Technological Benefits of Composite Wheels

Carbon fibre not only provides a significant weight saving, but also offers the additional benefits of increased strength and stiffness. This leads to a number of fundamental benefits:

- **Increased safety** – when the rim receives a high impact, the weave pulls apart leaving openings to allow gradual air loss rather than instant deflation like an aluminium rim.
- **Increased steering agility** – the 6 kg weight saving and the high stiffness afforded by the properties of carbon fibre mean a more stable and consistent steering platform. In comparison, a forged aluminium rim can lose up to a degree of camber due to wheel flex, reducing grip and agility.
- **Improved and more responsive braking** thanks to the decrease in unsprung mass.
- **Reduced tyre wear** - Since the stiffer carbon rim does not suffer from the same amount of bending, it allows for greater tyre stability and a more consistent contact patch thanks to a larger tyre support surface.

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Innovative Production Processes

One of the main innovations lies in the rim manufacturing process, which involves the application of innovative concepts (covered by patents) combined with the use of high pressure RTM (Resin Transfer Moulding). The materials and production parameters have been carefully studied to ensure the repeatability of the product without affecting its quality.

The process involves the cutting of carbon fibre cloth into prescribed shapes. The weave segments are then stacked, heated and draped into a mould to create three-dimensional preforms. The preforms are collated and arranged into a larger mould before resin and hardener is injected throughout. After curing time at temperature, the component assembly is removed from the mould, and the final surfaces are machined to the correct finish, before polishing.

New Mulliner Products for the Future

This collaboration with a world leading composites supplier underlines Mulliner's key principle in offering Bentley's customers new and unique features. The new 22" carbon wheel is the perfect complement to Bentley's existing carbon fibre products, including the highly sought-after Styling Specification which adds a carbon front splitter, sill extensions and rear diffuser to the Bentayga, and the option of high gloss carbon fibre veneer to the interior.

The new wheel will be available to order late 2021.

- ENDS -

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Notes to editors

Bentley Motors is the most sought-after luxury car brand in the world. The company's headquarters in Crewe is home to all of its operations including design, R&D, engineering, Mulliner and production of the company's three model lines, Continental, Flying Spur, and Bentayga. The combination of fine craftsmanship, using skills that have been handed down through generations, alongside engineering expertise and cutting-edge technology is unique to UK luxury car brands such as Bentley. It is also an example of high-value British manufacturing at its best. Bentley employs around 4,000 people at Crewe.

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