



TOYOTA WEAVES PAST GLORIES INTO FUTURE TECHNOLOGY

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KEY POINTS

- Unique Lexus carbon fibre technology on show at London's Design Museum
- Display and video presentation demonstrates how Toyota's weaving heritage continues to play a role in its advanced vehicle manufacturing
- Circular Lexus Carbon Loom designed specifically to produce raw material for CFRP, the ultra-strong, lightweight material used to make the LFA supercar
- Museum show, *The Future is Here: A New Industrial Revolution*, continues until 29 October

Weaving is where it all began for Toyota in the 19th century and it still has a place in the company's latest technology advances, as its contribution to a new Design Museum show demonstrates. It has contributed raw carbon fibre material, formed vehicle parts and a video presentation about the Lexus Carbon Loom, a new machine developed specifically to produce carbon fibre for the Lexus LFA supercar, to *The Future is Here: A New Industrial Revolution*, which opened at the Thames-side museum this week.

Sakichi Toyoda, the founding father of today's Toyota Motor Corporation, designed his first loom in 1890 and went on to patent a world class automatic weaving machine in 1924. This hugely successful invention helped bring in the funds his son Kiichiro needed to realise his ambitions of entering the auto industry in the 1930s. Some of this money was sourced through the sale of patents to a British firm, Platt Brothers of Oldham.

Today Toyota's weaving and advanced vehicle manufacturing interests have been brought together in the company's development of carbon fibre as a versatile, strong and lightweight material that can be used to make car parts and bodywork. The Lexus Carbon Loom was designed to produce carbon fibre for the new CFRP (carbon fibre reinforced plastic) material used for key elements of the LFA, including its floor panel, roof, bonnet and transmission tunnel. Unlike conventional looms, it is circular, so the material produced can be treated and formed directly into components, such as the steering wheel and reinforcement members.

Not only is CFRP four times stronger than aluminium, helping deliver an exceptionally stiff chassis, it is also considerably lighter, helping the LFA deliver true supercar handling and performance. Toyota successfully developed this new materials technology in-house, and went on to design a simple method for joining CFRP with metal parts without compromising strength.

The work of the Lexus Carbon Loom is included in the Design Museum's presentation to show

how digital fabrication methods are being introduced for mass production. The exhibition continues in the first floor gallery until 29 October, sponsored by the Technology Strategy Board.

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