World première: Braided carbon wheels

18/08/2017 Porsche has become the world's first vehicle manufacturer to offer lightweight wheels with braided carbon fibre. They are available now as an option for the Porsche 911 Turbo S Exclusive Series.

Carbon, the characteristically black high-tech material, can be fully appreciated with a protective layer of clear lacquer. Together, the innovative wheels weigh around 8.5 kilograms less than standard alloy wheels, which is a reduction of 20 per cent. They are also 20 per cent stronger. With a reduced unsprung weight, the tyres trail the surface of the road better and are perfectly optimised for absorbing longitudinal and lateral forces. Lower rotating masses mean more spontaneity both in acceleration and braking. The result is increased driving dynamics and driving pleasure.

Manufactured entirely from carbon fibre reinforced polymer (CFRP), the wheel is essentially comprised of two components. The wheel centre is made from carbon-fibre fabric. This involves cutting and assembling over 200 individual components. The second component is the rim base made from braided carbon fibre by what is currently the world's largest carbon fibre braiding machine with a diameter of

approximately nine metres. The wheel centre is then braided into the rim base. The assembled wheel is impregnated with resin and pre-hardened at high pressure and high temperatures. The finished wheel is hardened at high temperatures followed by a long cooling process. The central lock is then inserted into the finished wheel and the wheel is protected with clear lacquer.

Porsche is the first company in the global automotive industry to use this extremely complex technology. The braiding technology offers key advantages over the more conventional method of manufacturing pre-impregnated carbon-fibre fabric: This production technique makes the material structure of the carbon considerably denser and more compact. This increases rigidity. Using the material more efficiently also produces less waste. The new carbon wheel is made from a total of 18 kilometres carbon fibre or eight square metres of carbon-fibre fabric.

From the beginning of 2018, the new carbon wheels will be available as an option for the 911 Turbo S Exclusive Series in the dimensions of 9 J x 20 for the front axle and 11.5 J x 20 for the rear axle. In Germany, the price will be EUR 15,232 including VAT.

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