# BMW pioneers large-scale 3D printing in automotive manufacturing



The BMW Group is embarking on a pioneering venture in automotive manufacturing, with plans to introduce one of the largest 3D printed polymer components in a commercial vehicle. Scheduled for production in 2027, this innovative centre console carrier recently made headlines by winning the SPE Central Europe Automotive Award in June 2024, marking a significant milestone as it is the first 3D printed part to receive such recognition.

The new design is notable for its efficiency, consolidating what was previously a seven-part assembly into a single, streamlined component. Measuring 300 × 300 × 1,000 mm and weighing approximately 4 kg, the centre console incorporates two air ducts that traditionally required separate tooling-based moulding processes. This innovative approach is expected to significantly simplify the manufacturing workflow.

To bring this project to fruition, BMW has partnered with Hans Weber Maschinenfabrik, which will supply the robotic 3D printing systems essential for the in-house production of these components. Each console will take approximately three hours and forty minutes to print, utilising Weber’s advanced DXR platform MEX or LSP systems with a single-screw Weber AE 20 extruder.

The material chosen for this significant automotive component is Akro-Plastic’s Akromid PA11, a product characterised by its sustainability, consisting of 40% recycled carbon fibre and renewable raw materials. This choice aligns with BMW's commitment to reducing vehicle weight; the new design results in a 30% reduction in weight when compared to the conventional assembly method, thus enhancing vehicle efficiency.

In terms of production scale, BMW anticipates rolling out approximately 18,000 centre console carriers annually through this method. The amalgamation of design optimisation, selection of eco-friendly materials, and a forward-thinking manufacturing approach is projected to lead to a cumulative carbon reduction of approximately 70 kg per vehicle relative to traditional manufacturing techniques.

The implications of BMW's initiative signify a substantial shift in automotive production, where advancements in 3D printing technology are increasingly becoming integrated into mainstream manufacturing processes, showcasing potential future trends in the industry.

Source: [Noah Wire Services](https://www.noahwire.com)

## Bibliography

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* <https://www.ptonline.com/articles/bmw-group-vehicle-to-adopt-3d-printed-center-console-2> - Details the new design's efficiency in consolidating a seven-part assembly into a single component and the incorporation of two air ducts.
* <https://www.ptonline.com/articles/bmw-group-vehicle-to-adopt-3d-printed-center-console-2> - Explains the partnership with Hans Weber Maschinenfabrik and the use of their robotic 3D printing systems for in-house production.
* <https://www.ptonline.com/articles/bmw-group-vehicle-to-adopt-3d-printed-center-console-2> - Provides information on the printing time and the specific systems used, such as Weber’s DXR platform MEX or LSP systems with a single-screw Weber AE 20 extruder.
* <https://www.ptonline.com/articles/bmw-group-vehicle-to-adopt-3d-printed-center-console-2> - Describes the material chosen, Akro-Plastic’s Akromid PA11, and its sustainability features, including 40% recycled carbon fibre and renewable raw materials.
* <https://www.ptonline.com/articles/bmw-group-vehicle-to-adopt-3d-printed-center-console-2> - Details the weight reduction and enhanced vehicle efficiency resulting from the new design.
* <https://www.ptonline.com/articles/bmw-group-vehicle-to-adopt-3d-printed-center-console-2> - Mentions the anticipated annual production scale of approximately 18,000 centre console carriers.
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* <https://www.press.bmwgroup.com/usa/article/detail/T0322288EN_US/industrial-scale-3d-printing-continues-to-advance-at-bmw-group?language=en_US> - Details BMW's use of generative design and various 3D printing technologies, such as laser beam melting and selective laser sintering, in their manufacturing processes.
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* <https://3dprinting.com/news/bmw-adds-3d-printed-center-console-to-production-vehicle/> - Please view link - unable to able to access data