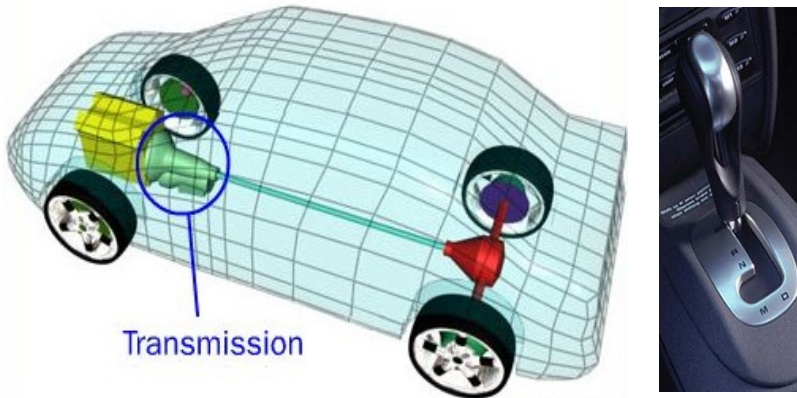


Auto Manufacturer sees Major Improvements in Automatic Transmission Performance

Result of New Carbon Fiber Product

auto case study

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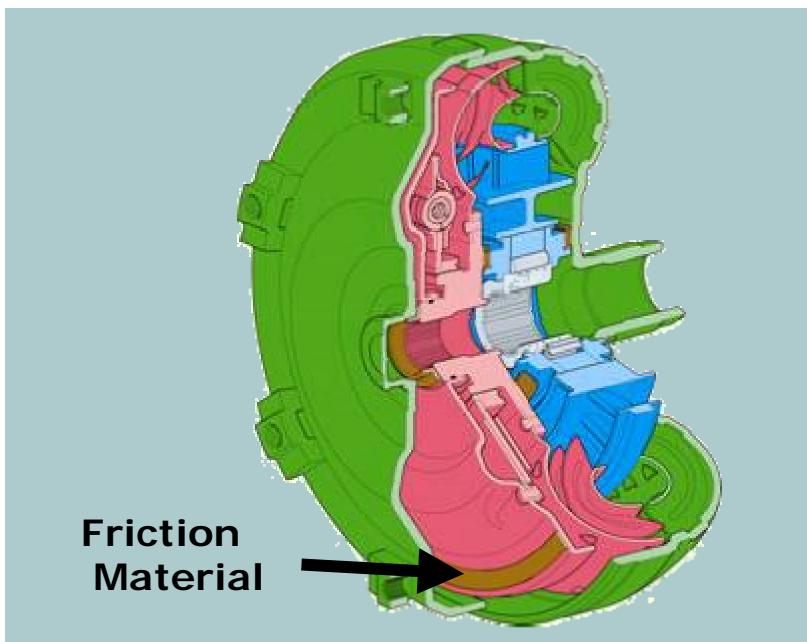


“The new material created substantial performance advantages, saving fuel and reducing engine ‘shudder’ in the transmission.”

A groundbreaking innovation by The Powertrain Group of a leading automobile manufacturer, has led to the use of carbon fiber in an innovative new way to achieve major performance improvements in automatic transmissions. The Torque Converter Clutch (TCC) is a dinner plate size component in the heart of the torque converter that transfers torque from the engine to the wheels.

The Powertrain Group, consisting of engine and transmission operations, has a specialized plant that is the major producer of TCCs for this manufacturer's automatic transmissions worldwide. During the 1990's the plant considered outsourcing TCC production. However, in 1995, auto manufacturing engineers, working with Ballard material products, developed a new friction material and bonding process for the TCC that would result in a number of improvements.

Engineers replaced the thin disk of paper-based friction material that was bonded onto the pressure plate inside the torque converter clutch with a new carbon fiber material - AvCarb™. This exceptionally durable woven carbon fiber product has unique friction properties that allow the torque converter clutch to remain engaged yet continuously slip. This new material created substantial performance advantages, saving fuel and reducing drive train “shudder” in the transmission; a performance issue that was especially important for trucks. This new technology also won a prestigious award within the automotive company.



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