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### How Is 3D Printing Used In The Automotive Industry

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3D printing is perhaps one of the most significant inventions in this century, as it gives manufacturers the chance to create virtually anything and everything, including machine components, homeware, device casings, weaponry, prosthetic limbs, and even automotive parts. The automotive industry has found a beneficial use for this technology, and car manufacturers have a new way of making innovative products and solutions for their consumers.

This article covers everything about the use of 3D printing in the automotive industry.

#### Applications of 3D Printing in the Automotive Industry

In the automotive industry, 3D printing is also referred to as additive manufacturing, and it has various applications.

##### 1- **Prototyping and Designing Concepts**

Car manufacturers have entire teams of designers who keep coming up with new and unique designs for their vehicles every day, and there is no better way to visualize any design than by 3D printing it. Moreover, it also allows those design teams to build their designs to scale so that they can be examined as a real car is. Additionally, these models can also be used for various testing processes that take place in the design phase.

##### 2- **Performance Testing**

Additive manufacturing also makes it possible for car manufacturers to build a prototype for various performance parts and components of their vehicles, which can then be used for performance testing and validation. It saves the manufacturers a lot of time and money since they don't need to build every part from scratch to have it tested. Ford is known to make use of this application by using 3D printing to design parts and components for their 2020 Shelby GT500, and the technology helped to make it one of the most aerodynamically advanced vehicles created by the popular carmaker.

##### 3- **Constructing Tools and Molds**

Another important and useful application of 3D printing in the automotive industry is the construction of molds and tools that can be used to manufacture numerous parts quickly. For instance, car manufacturers would build a mold for each of the four vehicle doors, and this would help them build doors in bulk quantity and in much lesser time. Plus, they can also develop tools and fixtures that are used to assemble the cars.

##### 4- **Customized Parts for Vehicles**

Additive manufacturing is also leveraged by car manufacturers to customize the parts or components of a specific vehicle, especially if they want to introduce a unique design or lower the overall weight of the car. In some cases, 3D printed parts are also known to be much more durable and suitable than the preinstalled or stock options that come with most cars.

Some companies, like Porsche, are utilizing 3D printing technology for designing and manufacturing seating for sports cars, which are more driver-specific and customizable now.

There are numerous such applications of 3D printing in the automotive industry, and car manufacturers keep coming up with new and innovative ways to implement the technology into their product manufacturing lifecycle. Not only does it bring about cost savings, but it will also lead to cars being more lightweight, eco-friendly, and energy-efficient.