



Making the Impossible, Possible

Italdesign Uses the J Series to 3D Print Marble-Effect Interior Parts for DaVinci Concept Car

Founded in 1968 in Moncalieri, Italy, [Italdesign](#) is best known for its automotive design work for both concept and production cars. At the Barcelona division, the R&D team has built a strong reputation for its creative design techniques and deployment of innovative technologies to bring their concepts to life.

In order to push the boundaries of innovation for every vehicle designed, the R&D team leverages a number of technologies – with Stratasys additive manufacturing at the forefront. This includes a wide range of PolyJet™ and FDM® 3D printers.

Having been a satisfied customer for over eight years, Italdesign recently approached Stratasys local partner, [Comher](#), to purchase a [J Series](#) – a full color, multimaterial 3D printer. The added capabilities have made an immediate impression.

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Mr. Daniel Agulló

General Manager, Italdesign Giugiaro Barcelona



The full-color, multimaterial Stratasys 3D printers.



“At Italdesign, we are always looking at ways to innovate to ensure we meet the extremely high expectations of vehicle design,” said Daniel Agulló, General Manager, Italdesign Giugiaro Barcelona. “The automotive industry is ever-changing, and the particular concepts and complex design iterations we have to create need to reflect this. With the addition of the J Series and its unique capabilities, we have been able to expand our offering even further and undertake completely new interior design concepts with ultra-realistic appearance, feel and textures for our automotive customers that would simply not be possible with any other technology.”

Turning Impossible Concepts Into Reality

Agulló and his team were challenged to construct the company’s 2019 concept car, the [Italdesign DaVinci](#), in time for its inauguration at the Geneva Motor Show. The idea behind the DaVinci car is to revive the best of Italian elegance, integrating different luxury materials and textures within the interior that reflect the avant-garde style of the outer body.

Having explored a number of the ways in which this material sophistication could be achieved, the

use of marble had strong appeal due to its elegant appearance and finish. However, producing such parts in time for the show using the traditional stonemasonry process was not possible.

“We identified the key areas of the vehicle interior we wanted to produce in marble – the central console, air conditioning diffusers and door inlays – but quickly realized that we couldn’t use traditional techniques to achieve the marble finish in the remaining timeframe we had ahead of the Geneva Motor Show,” explained Agulló.

To overcome these obstacles, Italdesign looked for technology alternatives capable of providing an ultra-realistic imitation marble, including the color nuances and feel – all within the tight deadline. Having tested several possible solutions, the team turned to the J Series and its unique capability to 3D print marble effects and textures directly onto parts. To achieve this, the team designed each part via CAD and using a render software, digitally overlaid the marble texture onto the part to deliver the desired effect. Once the design was validated, the final file was uploaded to [GrabCAD Print™ to enable printing](#).

The Italdesign DaVinci concept car.



3D printed air conditioning diffuser with marble effect, made with a Stratasys 3D printer.



“Without the Stratasys 3D printer, it simply would have not been possible to produce the marble parts for the DaVinci,” said Agulló. “Using the Stratasys 3D printer, we were able to rapidly 3D print high quality marble-effect parts that were the same each and every time, offering us much better repeatability than the conventional process.

“Instead of several weeks of work, in just over a weekend we were able to produce four air conditioning diffusers, two door inlays and the central console,” he continued. “Everyone was taken aback by the results, both in terms of the resolution accuracy and material quality – so much so that no design iterations were required. In fact, we started 3D printing on the Friday and by Monday morning, the final parts were ready to be presented to the Italian headquarters for validation.”

Reimagining the Cars of Tomorrow

Italdesign intends to use its 3D printer to influence future car designs in a similar vein to the marble effects implemented within the DaVinci concept car.

“For us, the Stratasys 3D printer has opened our eyes to the possibilities of ultra-realistic prototyping. The possibilities are endless, giving our designers the full freedom of imagination, knowing that we can bring their ideas to life.”

Agulló concluded: “We have participated in Stratasys beta programs for several years now. Working closely together with Comher and Stratasys, not only have we been able to learn how to fully optimize the use of our 3D printers for a wide range of automotive design applications, but we’ve also been able to identify and validate new applications within the vehicle in which additive manufacturing can replace traditional methods. This has given us the confidence to explore new ideas and innovate our design process, which has helped us to attract new business opportunities.”



3D printed central console with marble effect.



Stratasys Headquarters

7665 Commerce Way,
Eden Prairie, MN 55344
+1 800 801 6491 (US Toll Free)
+1 952 937-3000 (Intl)
+1 952 937-0070 (Fax)

stratasys.com

ISO 9001:2015 Certified

1 Holtzman St., Science Park,
PO Box 2496
Rehovot 76124, Israel
+972 74 745 4000
+972 74 745 5000 (Fax)

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