

CASESTUDY

AT A GLANCE

Company: Tescoma

URL: www.tescoma.com/en

Location: Zlín, Czech Republic

Industry: Kitchen utensils for home and professional catering

Challenges

- > Find a 3D printing system that enables printing of multiple materials with unique characteristics in one build process
- > Define a methodology for performing accurate testing of both design and ergonomic validation aspects of products
- > Create parts that can withstand real-world physical and functional testing
- > Enable designers to perform concept modeling using multiple materials
- > Create detailed 3D models of new products to send to manufacturing partners as patterns for manufacturing

Solution

- > Connex™ 500 multi-material 3D printing system from Objet Geometries

Results

- > Tescoma is able to print multi-material parts in a single build, in-house
- > Testers can physically interact with 3D product models and interfaces to validate design and ergonomic product characteristics
- > Parts are used for real-world physical and functional testing, standing up well to handling and use
- > Accurate 3D models are used by manufacturing partners as product patterns, reducing cost of errors
- > Smooth surface of 3D prototypes minimizes part grinding
- > Increased flexibility to use wide range of model materials – facilitates close simulation of almost any end product
- > Simultaneous printing of models with multiple materials enables designers to fully explore their creative ideas, resulting in more innovative products
- > Combination of in-house testing and significantly fewer post-production modifications saves time and cost



“ Thanks to the accuracy of the 3D models printed on the Connex 3D printer, we have almost-real products in our hands which we test and use the same way as end products

”

Ladislav Škoda
Chief Designer

Tescoma shapes new trends with help of Connex 3D printing system

Tescoma, a leading Czech company with a global customer base, focuses on creating truly original designs for its high-quality kitchen utensils. The best young Czech designers work with cutting-edge technologies to design Tescoma's products and all employees play an integral part in ensuring the products meet stringent quality and functional requirements.

Tescoma's range of brand products includes more than 2,000 utensils for domestic and professional catering. These items are made of top quality traditional materials, including high-grade stainless steel, thick-wall porcelain, resistant plastics, high-quality hardwoods, and contemporary materials such as heat-resistant silicone, transparent plastics and crystal. Many Tescoma products combine multiple materials to provide the ideal functional and ergonomic performance.

The design and creation of such a wide range of products using multiple materials requires highly accurate concept modeling and functional testing. To facilitate the creation of detailed 3D prototypes for this purpose, Tescoma depends on the Connex500™ 3D printer system from Objet Geometries. Based on Objet's innovative, market-proven PolyJetMatrix™ Technology, this advanced printing system offers the unique ability to print parts and assemblies made of multiple materials, with different mechanical or physical properties, all in a single build. This cannot be done with any other RP technology and is difficult and expensive to do with tooling.

"The ability to create multi-material models in a single build process allows our designers to fully explore creative ideas by simultaneously modeling and testing multiple variations of their designs," explains Pavel Skřivánek, design engineer at Tescoma. "Moreover, with the Connex 3D printer, we can create our product models to combine parts with varied physical properties, such as rigid surfaces, soft surfaces and non-slip handles, so that our engineers can accurately test all ergonomic aspects of our products. And, all of this can now be done in-house, which means major time savings and only minor preproduction changes."



Stepping up to multi-material jetting and high resolution parts

The concept of 3D printing is not new to Tescoma as the company has been using a number of in-house 3D printers for several years. Recently, when Tescoma was looking for more advanced technology that could be used to create prototypes for concept modeling, packaging testing and final testing of multi-material products, it decided to purchase the Connex500 3D printer.

"Our goal at Tescoma is to create original designs with top-quality materials. Tescoma brand products are designed for the widest possible range of applications, offer multifunctional use and are supplied in multiple sizes and colors," says Skřivánek, "All of these characteristics are taken into account whenever we purchase new equipment and they led us to the Connex500 3D printer. We selected this machine because of the multi-material capabilities, fine details, smooth surfaces, and high resolution of its printing."

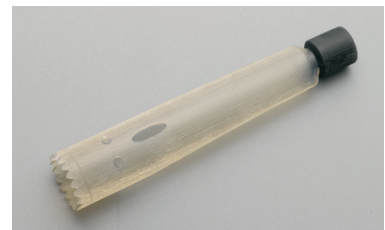
We can now create 3D prototypes of our products with unmatched precision and simulate closer-than-ever, tactile and visual replicas of our end products to send to manufacturing partners as patterns for product production."

The Connex500 3D printing system offers unprecedented return on investment (ROI) by producing high-quality, 3D models quickly, conveniently and cost-effectively throughout the design-to-manufacturing cycle. Printing with ultra-thin 16-micron, high-resolution layers with high accuracy, the Connex500 produces parts with extremely smooth and durable surfaces, exceptionally fine details and an outstanding surface finish. It supports a wide range of materials, including the FullCure® photopolymer model and support materials, and on-the-fly composite materials known as Digital Materials™. The high quality output and unique multi-material printing capabilities of the Connex500 are of particular importance to Tescoma as its products answer to high aesthetic and ergonomic standards. The ability to closely emulate the look, feel and function of a combination of varied product parts such as non-slip handles and rigid surfaces is essential.

Commitment to quality and excellence

The success of Tescoma is based on its ongoing pursuit of excellence and quality, which led to Tescoma's achievement of the Certificate of Excellence in the field of Development, Design and Sale of Name Brand Kitchen Utensils. All Tescoma products are subjected to stringent testing, which requires the use of prototype materials that closely mimic the materials used in the final design. This ensures that functional testing returns accurate results.

Printing multi-material parts and mixed trays with the Connex500 3D printer enables Tescoma to cost-effectively model products at the earliest of stages, and create accurate end product models to be used as patterns for manufacturing. This reduces time and cost by facilitating in-house testing and product modeling, and dramatically reduces the risk of error.



About Objet Geometries

Objet Geometries Ltd., the innovation leader in 3D printing, develops, manufactures and globally markets ultra-thin-layer, high-resolution 3-dimensional printing systems and materials that utilize PolyJet™ polymer jetting technology, to print ultra-thin 16-micron layers.

The market-proven Eden™ line of 3D Printing Systems and the Alaris™30 3D desktop printer are based on Objet's patented office-friendly PolyJet™ Technology. The Connex™ family is based on Objet's PolyJet Matrix™ Technology, which jets multiple model materials simultaneously and creates composite Digital Materials™ on the fly. All Objet systems use Objet's FullCure® materials to create accurate, clean, smooth, and highly detailed 3D parts.

Objet's solutions enable manufacturers and industrial designers to reduce cost of product development and dramatically shorten time-to-market of new products. Objet systems are in use by world leaders in many industries, such as automotive, electronics, toy, consumer goods, and footwear industries in North America, Europe, Asia, Australia, and Japan.

Founded in 1998, Objet serves its growing worldwide customer base through offices in USA, Europe and Hong Kong, and a global network of distribution partners. Objet owns more than 50 patents and patent pending inventions. Visit www.objet.com.

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