

Breville uses 3D printing to simulate components for its coffee machine for design verification before mass production.



“Stratasys’ 3D printing technology has revolutionized our R&D process, giving us a competitive edge.” by Gerard White - Breville Design Manager

CASE STUDY

Ingredients for success

GAINING COMPETITIVE ADVANTAGE WITH 3D PRINTING

INDUSTRY | Consumer Goods

TECHNOLOGY | PolyJet

The Breville brand is a household name in Australia, renowned for its quality small kitchen appliances. A Sydney-based company, Breville achieved international acclaim with the introduction of its iconic sandwich toaster in 1947. Breville has since expanded its coverage to over 50 countries, offering a broad range of small kitchen appliances including blenders, juicers and steamers.

Breville prides itself on innovation coupled with its simple and stylish designs. The Breville Research and Development Centre was established in the 1960s to offer the best quality products. Collections of new products are launched every year. Despite its success, Breville soon realized it faced challenges within its R&D department that would hinder future growth.

EMBARKING ON A CHANGE JOURNEY

The R&D team found that its traditional way of creating prototypes with CNC milling was not efficient enough to cope with the growing variety of designs. Moreover, designers and engineers needed tools that would allow more flexibility in product designs. The team urgently looked for alternative solutions to accelerate the whole product development process to minimize time to market for new products.

After conducting in-depth research and reviewing customer references, Breville decided on an Objet® Eden™ 3D Printer from Stratasys®. Using PolyJet™ technology, the Eden 3D Printer can print models with layer thickness as thin as 16 microns, creating accurate prototypes with smooth surface finish. With the aid of 3D printing, Breville can now 3D print different designs and multiple parts concurrently, accelerating the product development cycle.

“Our designers would sometimes make variations of a design for testing purposes. We need to test all prototypes at the same time to evaluate which design is optimal, lookwise and function-wise,” said design manager Gerard White. “Previously, it took two to ten days to create a model with CNC milling and they were made one by one. With 3D printing, we can print different parts in one tray much faster.”

EXPANDING THE INNOVATION HORIZON

Following the success of the first Eden 3D Printer, Breville added another Eden 3D Printer to enhance its product development capabilities. An unanticipated benefit gained from 3D printing is the proliferation of more complex designs. Designers are now more confident to try new ideas and concepts as the cost for printing a prototype is much lower than before, and can be created more quickly.



Prototypes created with 3D printing, like this one, save Breville days compared to traditional CNC milling.

Previously, prototypes such as hangovers were especially challenging to create; however, these parts can now be printed easily with a high degree of accuracy and smooth surfaces. These qualities are key for functional tests like snap fit and fixture tests on buttons and levers for coffee machines and mixers. At the time of interview, the Breville design team mainly prints their prototypes with Vero White™, a clear material, to simulate parts of their coffee machine and validate the design before mass manufacturing.

The Breville design team mainly prints its prototypes in VeroWhite™, a clear Rigid Opaque photopolymer. VeroWhite simulates parts, like those on the pictured coffee machine, for design verification before mass manufacturing.

Breville remains a leading player in the highly competitive home appliance market, and 3D printing plays an integral role on its R&D front. White has lost count of the number of prototypes that are created using 3D printing technology. “We use the 3D printers on a daily basis and the end results are always satisfying. Stratasy’s 3D printing technology has revolutionized our R&D process, giving us a competitive edge,” White said.



Designers at Breville feel more confident to try new design ideas and concepts for its small kitchen appliances with its in-house 3D printer.

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