



A Clean Sweep

IRIS OHYAMA USES MULTIPLE 3D PRINTING PLATFORMS TO SPEED UP PRODUCT DEVELOPMENT

“Using the Dimension® and the Objet® 3D Printers for distinct purposes, we can respond to any design requirements with accuracy and speed.”

– Hiroshi Oizumi, IRIS Ohyama

CASE STUDY



IRIS Ohyama created this new cyclone cleaner using its Objet 3D Printer.

Founded as a small blow molder in eastern Osaka in 1958, IRIS Ohyama is a major consumer products manufacturer with annual sales totaling approximately \$1.1 billion. The company introduces more than 1,000 new items every year, including gardening tools, health care products, pet care items, home and office furniture, LED light bulbs and home appliances.

Since constant introduction of new products is a crucial, engineers needed to find a way to make composite mechanical products quickly. IRIS Ohyama started using Stratasys® 3D Printing technology in 2006, and now uses two kinds of 3D printers to help boost its product development.

Prototypes Clean up Errors

The research and development (R&D) department of IRIS Ohyama began using 3D printers when the company entered the home appliance business, which required more complex designs, meaning more work for the engineers but with the same deadlines.

Hidekatsu Hara, manager of the R&D department, said, “We chose to use 3D printing to accelerate design. Design iteration can be made in a shorter time with prototypes.”

Hara said that 3D printing has provided several benefits to IRIS Ohyama, including time savings. “We can now make multiple prototypes in a day, whereas outsourcing a prototype had taken days. Also, because it can be done on our own, we can control priorities: If a model needs to be available today, it will be ready.” He added that the on-site 3D printer speeds up error correction as well: “When you see and feel a real model, you can intuitively tell what needs improvement, whether it may be mechanical functions or fitting of an assembly. You can identify tiny design flaws on a real model that could be missed on a PC display.”

Two 3D Printing Technologies

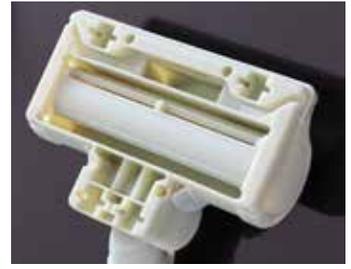
IRIS Ohyama first purchased a Dimension 3D Printer that uses Fused Deposition Modeling™ (FDM®) technology. “Prototypes made by an FDM printer are suitable for modification because of the real thermoplastic materials (ABS) it uses,” said Hiroshi Oizumi, assistant manager for the R&D department. “ABS models have high durability and long-term stability.”

In 2013, IRIS Ohyama added two Objet 3D Printers. These printers use PolyJet® technology, which creates models through ultra-thin (16 microns) layers to achieve an even smoother finish. Also, the PolyJet printers provide a variety of material choices – including high-temperature durable, transparent, and rubber-like – to attain the authentic look and feel of a model.

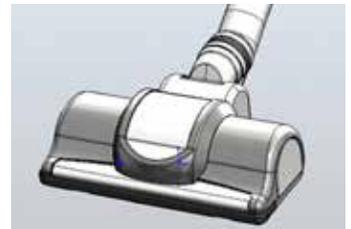
“We chose the Objet because it offered the highest precision in the market,” said Oizumi. “Fitting home appliances is sometimes so tight that there’s almost no clearance at all.” To give an example, he held up the head assembly of a new cyclone cleaner. “Performance of this cleaner fully depends on the fitting of components. The suction part, the rotary brush, support walls and casters must be precisely and optimally adjusted. If we fail, its cleaning efficiency will fail.”

The effective combination of the two technologies works for Oizumi’s team. “Using the Dimension and the Objet 3D Printers for distinct purposes, we can respond to any design requirements with accuracy and speed,” said Oizumi.

Hara said that incorporating 3D technology into IRIS Ohyama’s business strategy has helped the company succeed in a volatile market. As a result of its market strategy, IRIS Ohyama has seen its revenue in home appliance sector double from 2012 to 2013 – a one-year growth of 200%. Hara said, “In order to keep this momentum, we’ll continuously enhance our ability in product development by adopting new technologies. No one wants to miss a great opportunity like this.”



The Objet’s precision afforded IRIS Ohyama to create a complex prototype (top) of the cyclone cleaner head to better arrive at the final product (bottom).



IRIS Ohyama used a CAD file (top) to 3D print the prototype (middle) of the cyclone cleaner head with its Objet30 Pro® to create the final product (bottom).

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