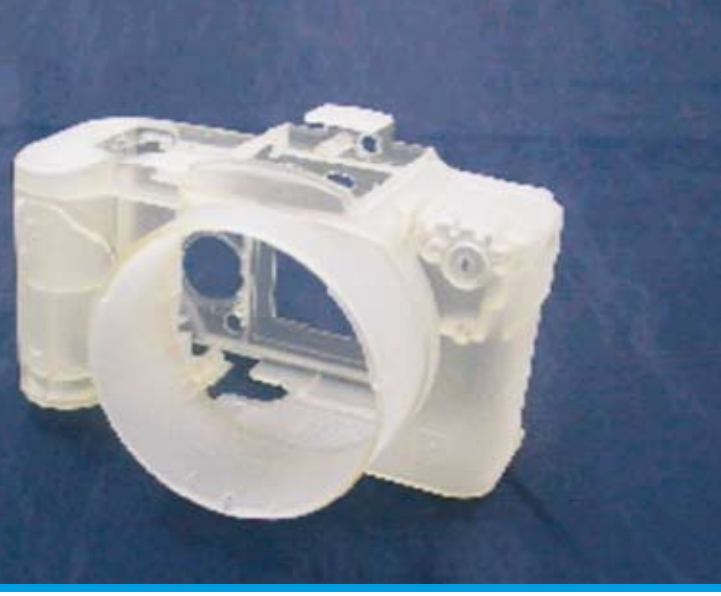
"The fact that the Eden delivers highly accurate models is very important to us"

Motoyoshi Tsujino,
Technical Specialist Production Engineering Center



Case Study

Eden Machine Helps Matsushita AVC Cut Prototyping Time, Improve Model Quality

At a Glance

Company: Matsushita AVC Networks Company, one of 14 business domain companies of Matsushita (Matsushita Electric Industrial Co., Ltd.)
Location: Osaka, Japan
Industry: Manufacturer and marketer of digital audio-visual products – TVs, video cameras and more

Challenges

- An existing optical molding-based prototyping was considered not fast enough to support the very short development cycles demanded by the Digital AV market.

Solution

Computer-aided prototyping using Objet's Eden260 3D Printing System

Results

- Significantly faster model making
- Smoother curves
- Near-elimination of post molding polishing
- Models that more closely resemble targets

Matsushita AVC Networks Company, one of the business domain companies of Matsushita (Matsushita Electric Industrial Co., Ltd.), operates in a particularly fast-moving market – digital audio-visual products. Competition for consumer spending on TVs, video cameras, movie cameras, and other AV products is fierce, with frequent new product introductions. This means that development cycles are extremely short.

The Production Engineering Center is responsible for fabrication for the company. It has contributed a great deal to the acceleration of new product introductions to the market by providing the product development departments with a wide range of prototypes. However, it is under constant pressure to support ever-shorter timeframes. In the standard product development process, which moves from concept through design and prototyping to pre-mass production changes, prototyping is a vital, but time-consuming step. This means that reducing the time needed for prototyping can significantly reduce time to market.

Growing into new needs

The optical molding machine that had been installed in the fabrication center in 2001 played a principal role in Matsushita AVC's prototyping, enabling what was then the shortest possible turnaround time for models. The Production Engineering Center established a development routine in which it received the data for a specific model in the evening and delivered the prototype the following afternoon.

However, with the increasing prevalence of vertical product development and simultaneous worldwide launches, the team found it needed to speed up product development even more.

Diverse prototyping capabilities

Challenged to find the best and quickest way to deliver numerous consumer products, the Production Engineering Center looked for a solution that could offer diverse protot ype fabrication capabilities. In line with the growing popularity of 3D design and prototyping, the following capabilities were identified as most urgent:

- Enhanced speed - to enable the team to reduce turnaround from one day to hours

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- Improved precision - to promote the use of 3D prototyping for various parts of the mechanism
- Ability to work with a variety of materials – to enable models that are closer in look and feel to the mass production target

Eden260 Chosen for its speed, precision and versatility

Matsushita AVC selected Objet's Eden solution for its first steps into 3D prototyping due primarily to its fast molding speed and easy water jet-based support removal process. Aside from the ease of use factors, having a straightforward, clean support removal saves time, further speeding turnaround.

The Production Engineering Center found that Objet's 3D printer provided exceptionally smooth curves, due to the high degree of precision in building the required shapes and to the fact that post-build polishing is usually unnecessary. This is particularly important to Matsushita AVC because current design trends feature a lot of curves, and it is highly likely that the continuing use of curves will in turn raise demand for mold prototyping.

In addition, the Center noted that with materials easily changed using self-contained, sealed cartridges, the Eden allowed them to change materials in an instant to support varying needs. They expect that Objet's ongoing development of new materials will further enhance the Center's versatility.

Item			EDEN	Optical molding device
Speed	Sample mold	A	480 min	720 min
	//	B	120 min	300 min
	//	C	150 min	360 min
Pre-treatment	Support design		Automatic	Semi-automatic
	Slice treatment		Automatic	Semi-automatic
Post-treatment	Support removal		Easy	Time-consuming
	Finish		Unnecessary	Time-consuming
Resin change	Time		–	~1 day
Resin vessel	Capacity		2 kg / cartridge	265 L
Precision	Hole pitch	X	0.03 mm	0.02 mm
	//	Y	0.03 mm	0.02 mm
	Height	Z	0.04 mm	0.05 mm

Summary of Eden verification results

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 Education, Medical / Medical Devices & Dental, Consumer Electronics, Automotive, Toys, 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, Mexico, Europe, Japan, China 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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