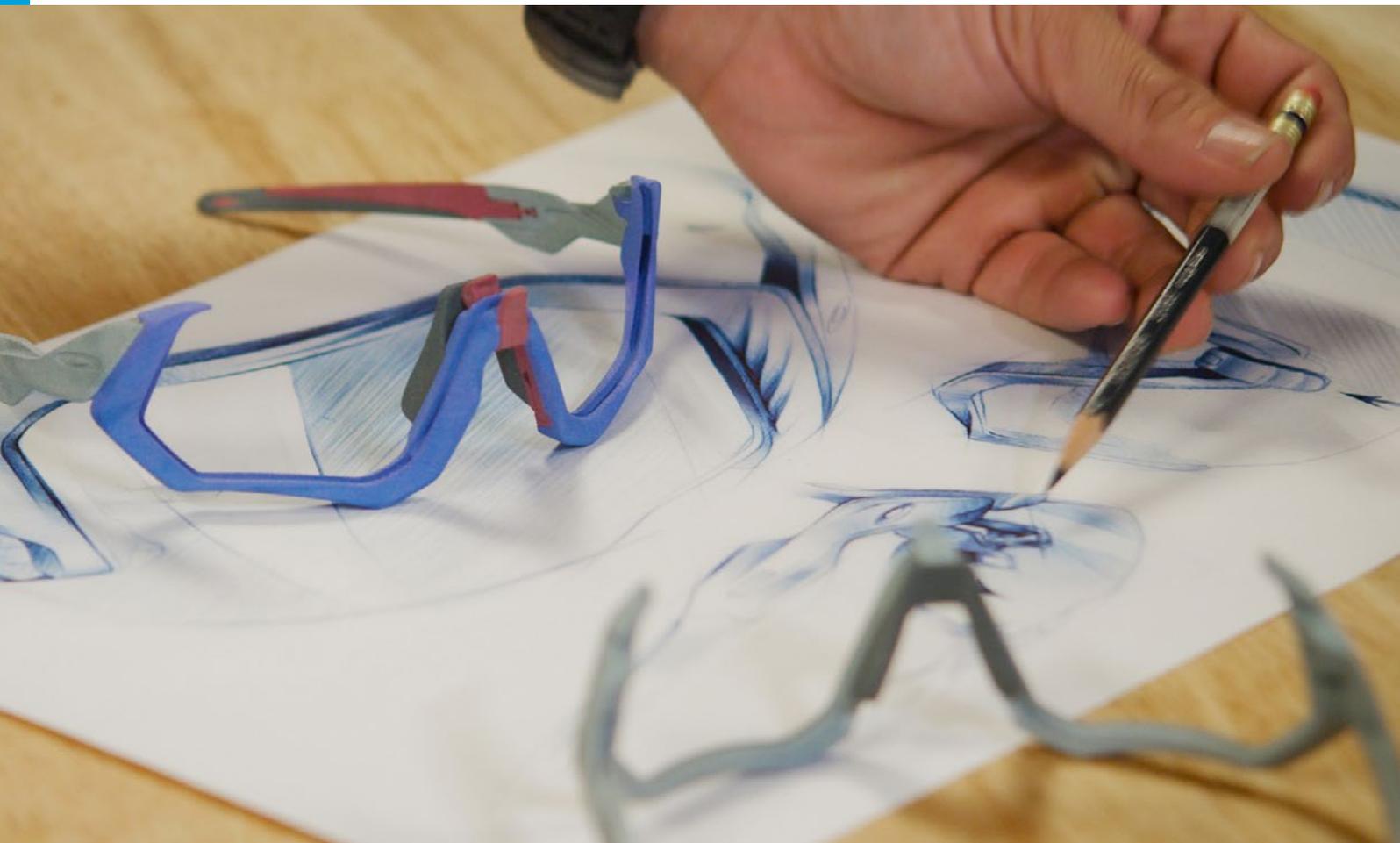
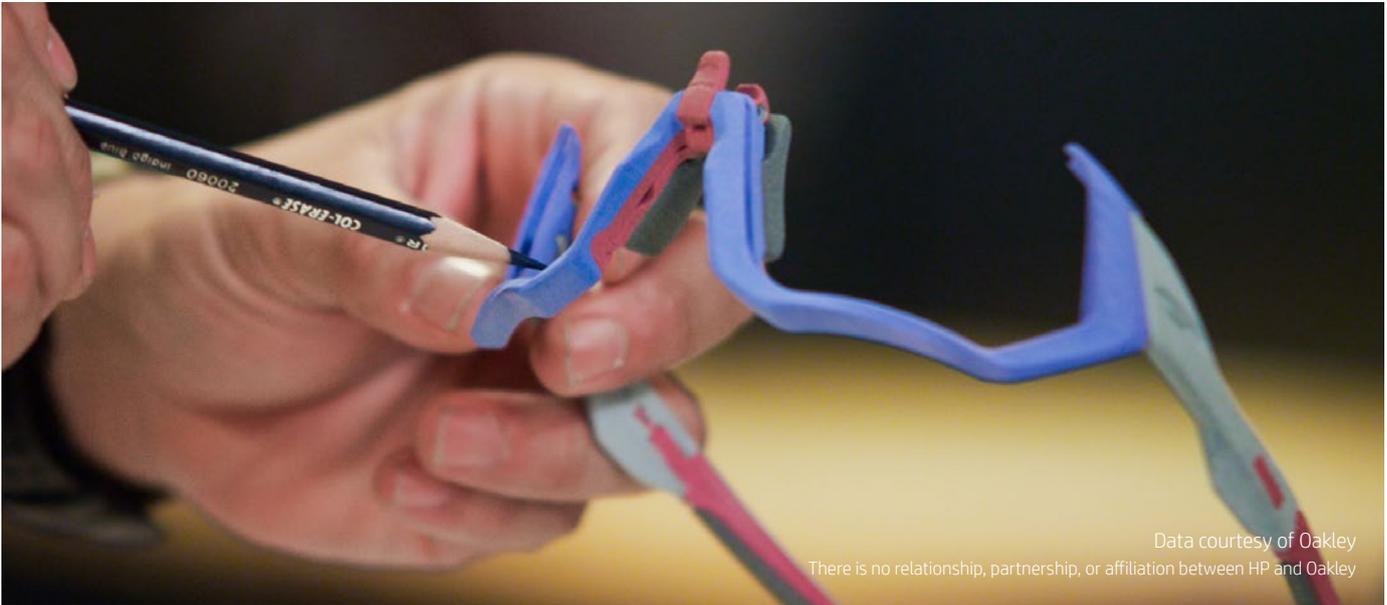


CASE STUDY | OAKLEY

Oakley drives designs further with HP Multi Jet Fusion technology



With the HP Jet Fusion 580 Color 3D Printer, **Oakley** can iterate faster and test full-color prototypes



Data courtesy of Oakley
There is no relationship, partnership, or affiliation between HP and Oakley

Introduction

Established in 1975 and headquartered in Southern California, Oakley is one of the world's leading product design and sports performance brands. The holder of more than 800 patents, Oakley is a culture of creators, inventors, idealists, and scientists who are obsessed with using design and innovation to create products and experiences that inspire greatness.

This philosophy has made Oakley one of the most iconic and

inimitable brands on the market, with products that world-class athletes around the globe depend on to compete at the highest levels.

Oakley has since extended its position as one of the world's leading sports eyewear brands into apparel and accessories. Oakley has men's and women's product lines that appeal to sports performance, active, and lifestyle consumers.

- **Industry**

Consumer goods and electronics

- **Sector**

Fashion and wearables

- **Objective**

To streamline prototyping and production processes and find new avenues for creativity.

- **Approach**

The versatility of the HP Jet Fusion 580 Color 3D Printer allows Oakley to experiment with designs and amaze their customers with innovative products.

- **Technology | Solution**

HP Multi Jet Fusion technology, HP Jet Fusion 580 Color 3D Printer

- **Material**

HP 3D High Reusability (HR)¹ CB PA 12

1. HP Jet Fusion 3D Printing Solutions using HP 3D High Reusability CB PA 12 provide up to 80% powder reusability ratio, producing functional parts batch after batch. For testing, material is aged in real printing conditions and powder is tracked by generations (worst case for reusability). Parts are then made from each generation and tested for mechanical properties and accuracy.

Challenge

With a consistent focus on design-driven products to help their customers enhance their recreational or professional performance, Oakley continuously searches for the latest and best technology for their prototyping and production needs. Cutting down the time it takes to create first iterations of both prototypes and final parts is one aspect of 3D printing technology that drew Oakley into the process.

“I think when we talk about rapid prototyping, 3D printing gets us to a final resolution a lot quicker than it would if you were doing it by hand,” said Nick Garfias, Senior Design Director at Oakley.

In 1992, as early adopters, Oakley first began integrating 3D printing into their design process, which transformed the design process and the silhouette of their sunglasses.

Recognizing the value of 3D printing, but still experiencing a delay of two to three days to achieve a finished product with other technologies, Oakley decided to leverage HP Multi Jet Fusion technology, knowing the brand as an industry leader.

During an on-site interview with HP 3D Printing, Oakley team members explained their processes and needs in order to decide whether HP’s Multi Jet Fusion technology would be a good fit. Initially Oakley wanted to explore the technology for prototyping purposes, but as they experimented with the capabilities of HP Multi Jet Fusion, they moved onto manufacturing for things like jigs and fixtures.

Solution

“When we looked at different [3D] printing technologies, we were looking for something that would complement current technologies that we have here and globally...and being able to print in nylon, the speed, the cost, and everything altogether [with HP Multi Jet Fusion technology] was a good complement to the rest of our technologies,” said Jonathan Clingenpeel, Design Model Shop Manager at Oakley.

The strength of HP 3D HR CB PA 12 material led Oakley to create a helmet prototype, a model that was lighter and more durable than when created with other technologies, and with material properties that are similar to those that Oakley plans to use in production.

“One of the things that [our] design [team] would use 3D printing technology for is for an aesthetic review,” Clingenpeel said. **“The durability of the parts and also the speed of the machine allows us to review all sorts of design complexities, from our simple frame to our most complex sports performance frame.”**

The ability to print parts in color is another key advantage of HP Multi Jet Fusion. With the HP Jet Fusion 580 Color 3D Printer, Oakley was able to differentiate features on prototypes. With color parts, Oakley can show breakups in parts (e.g., metal parts vs. plastic parts) to get a better idea of what they will see in a final part.



Data courtesy of Oakley

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Result

The versatility of the HP Jet Fusion 580 Color 3D Printer lends itself to experimentation with design, functionality, and fun.

Designers at Oakley can iterate quickly with HP Multi Jet Fusion, which allows them to streamline some of their processes. **“Here at Oakley, we are constantly reinventing and pushing for new and better,”** Clingenpeel said. **“So being able to iterate and see things quickly is one of our main goals. We can build 100 to 500 pieces overnight, or even something as big as a helmet, we can see it the next day.”**

“It’s instant,” Garfias said. **“Instant gratification is great, especially if you’re working on a design that’s really exciting and you just have to see it. Now we can get two to three iterations in the time that it took us to get one part before.”**

Oakley uses the HP Jet Fusion 580 Color 3D Printer for various purposes, from differentiating pieces among 20 to 30 different parts to creating trophies for employee events.

“I like to look at the proportions of a model first and sometimes you want to block out a mechanical area and it’s better just to see the center frame...so we’ll print the center frame in a darker color and the rest of the model in a lighter

color,” Garfias said. **“Sometimes it’s for functional and part differentiation. You want to know exactly how many parts a model has by breaking it up into color. We can change the color, break up the material in the model and then print it at different colors and really see what we’re looking at.”**

Oakley also uses the color 3D printing capabilities to have a bit of fun: **“The color option with HP Multi Jet Fusion is nice to have not only for our mixed material frames but also for trophies,”** said Clingenpeel. **“We do all sorts of trophies for company events, so we get to use [the technology] for fun, too.”**

Since adopting HP Multi Jet Fusion technology, Oakley sees the sky as the limit with this “must-have” technology: **“I think it’s no longer a luxury to have it; it’s a must,”** Garfias said.

Clingenpeel adds: **“We hold our standards to the highest possible, and the parts that we get out of HP Multi Jet Fusion are ones that we can rely on.”**

“HP has allowed us to make things in a cheaper, faster, stronger and lighter versions than what we used to make before. It’s just better all around.”



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Connect with an HP 3D Printing expert or sign up for the latest news about HP Jet Fusion 3D Printing hp.com/go/3Dcontactus

Learn more about HP Multi Jet Fusion technology at hp.com/go/3DPrint

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