

A photograph of a dark grey industrial building with a white sign that reads "VALIANT TMS". There are some bushes and a tree in the foreground.

VALIANT TMS

How Valiant TMS and the Origin One **Keep Pace With Customer Needs**

A close-up photograph of a yellow industrial robotic arm holding a large, complex metal part, likely a car engine component.

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Pete Naysmith

Valiant TMS Director of Spare Parts and Sellable Services

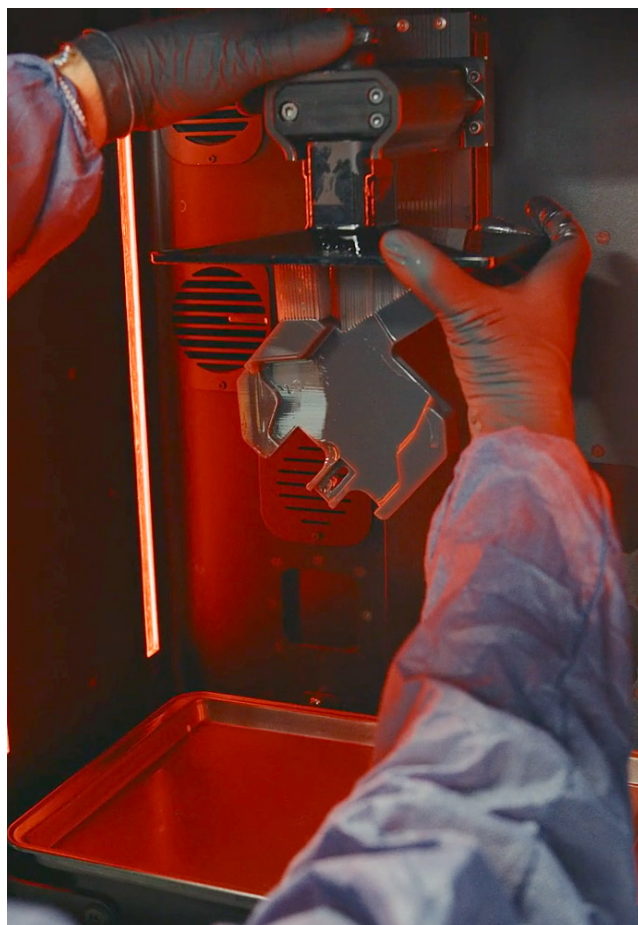


You don't win supplier-of-the-year awards from blue-chip auto and aerospace companies by being complacent. Nor do companies like Ford, Boeing, and General Motors hand them out to just anyone. These awards are granted for a good reason, and Valiant TMS has been the recipient multiple times. If the name isn't familiar, that's not unusual with suppliers to major OEMs. Despite the anonymity, Valiant TMS is an unseen but essential partner, providing intelligent factory automation solutions to companies that make cars, aircraft, and off-road machinery.

Better Results Through Additive Manufacturing

Being a primary supplier of intelligent production automation systems to major manufacturers means doing the right things to maintain and grow those business relationships. That includes consistently delivering high-value products and continually improving. To help achieve that goal, Valiant TMS uses additive manufacturing (AM) technology. The company established the Valiant TMS Additive Manufacturing Lab, which serves as an AM center of excellence. It serves customers by providing better alternatives – things like improved tooling and replacement parts that offer significant benefits.

In one example of this capability, Valiant TMS leveraged AM's digital nature to fulfill a customer order that exceeded its local printer capacity. Working with TriMech, a 3D printing solutions provider 400 miles away, Valiant TMS shared the part file information and, between the two companies, produced the required parts to the same standards. The collaboration is a powerful endorsement of AM's distributed manufacturing capability. "This allowed us to beat other people to market and produce larger quantities using the network with my supplier of the equipment, to be able to produce for our customer," says Pete Naysmith, Valiant TMS Director of Spare Parts and Sellable Services.



Expanding from FDM to the Origin One

Since establishing the additive manufacturing lab, Valiant TMS has supplied customers with manufacturing solutions using metal and polymer AM, which includes FDM® technology. Among other applications, Valiant TMS uses FDM to produce tooling that stands up well in the factory floor environment. But since some of these tools are handled by operators, Valiant TMS considered expanding beyond FDM into photopolymer AM solutions that produce very smooth finishes for greater user comfort. After researching several options, Valiant TMS settled on the Stratasys Origin One™ printer, which uses an advanced form of DLP (digital light processing) technology.

Adrian Pop, Valiant TMS Additive Manufacturing Liaison, shared an example of how they put the Origin One to work, making the handle of a larger tool used in the auto industry. According to Pop, the tool is used by an operator eight hours per day, so ergonomics play a significant role, including weight and finish. “Weight, it’s a big thing in manual tools. We created this part using (Loctite® 3D) 3172, which is a high-impact resistant material. It provides a good surface finish,” he says. It’s another reason the Origin One appeals to manufacturers – in addition to producing a finish similar to injection molding, it prints with a wide range of photopolymers.

Print speed is another Origin One attribute, a vital benefit in meeting customer expectations. Pop continues, “In comparison with traditional manufacturing, you’ll need two days to produce this part using a five-axis CNC machine and one operator. With additive, we can produce this part in a maximum of five hours.” And that includes setup and post-processing.

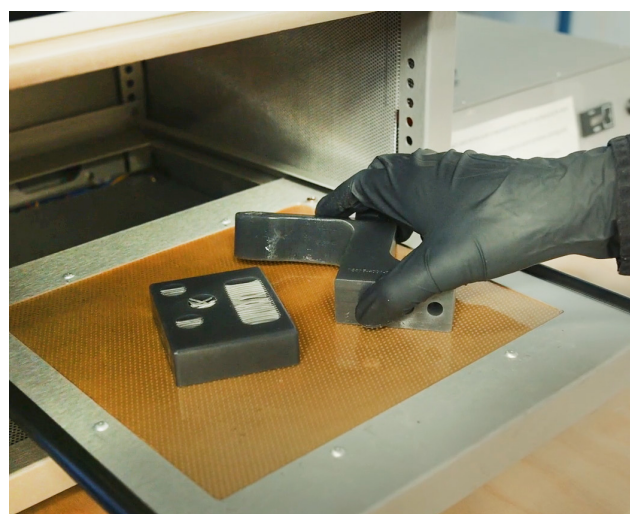
Much of the work like this involves one-of-a-kind parts, which is why AM is the perfect solution. Referring to the work of the AM lab, Pop relates, “We are not a volume-based production here. It’s based on the tool, and all the tools are different from project to project. One other advantage of using additive instead of traditional manufacturing in this situation is we are able to produce this part at a fraction of the cost in comparison to traditional machining.”



The 3D printed main bracket made with Loctite® 3D 3172 resin in the Origin One.



The main bracket shown with embossed printing.



Post-processing parts that have come out of the Origin One printer.

Aligning With Customers to Meet Their Needs

Valiant TMS adopted additive manufacturing because of a keen observation that its customers were already investing in the technology. To stay relevant with customers, Valiant TMS determined that it also should integrate AM into its manufacturing and service capabilities.

“The biggest benefit that 3D printing has brought to Valiant TMS is customer alignment. Our customers have adapted additive manufacturing alongside traditional processes to build products,” says Naysmith. He believes this strategy makes sense, noting that if Valiant TMS didn’t provide AM capability and parts to its customers, someone else would.

Naysmith concludes, “In the process of investigating additive, we initially started out looking at an array of companies but ultimately chose to go with Stratasys because our customers had already made a commitment to Stratasys. And ultimately going into the additive area with Stratasys has allowed us to align with our customers.” In the end, Valiant TMS’ success is really about staying in step with the customers it serves. Additive manufacturing and the Origin One are simply some of the tools that help Valiant TMS do that.



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