



SPORTING GOODS

Making the perfect game possible

Revolutionizing the baseball glove with industrial-grade additive manufacturing

THE CHALLENGE

The baseball glove is one of the most important pieces of equipment in the game, but its core technology has been slow to change. Armed with a mission to revolutionize ball gloves, Rawlings developed the REV1X™, a glove that leverages the [Carbon Digital Light Synthesis™ \(DLS\) process](#) to speed up reaction times and improve gameplay.

Rawlings worked with Carbon to replace traditional foam or wool parts in the glove's thumb and pinky with latticed pieces, made from FPU 50, that are lighter and thinner. The REV1X lattices are tuned with variable stiffness that better conforms to the player's hand, leading to better control of the ball. Additionally, the REV1X is ready for gameplay immediately, and it's more durable and long-lasting than traditional gloves.

Rawlings has been in the baseball business for more than 150 years, outfitting amateurs and professionals alike, and their expertise and reputation for quality are unmatched. Once Rawlings perfected the design for the REV1X, they needed to mass produce a glove that would meet their exacting standards for performance and durability on the field.

The REV1X glove from Rawlings represents a major transformation in an industry that's been slow to innovate.

The close partnership between Rawlings and Fast Radius got this revolutionary glove out of development and onto the diamond.

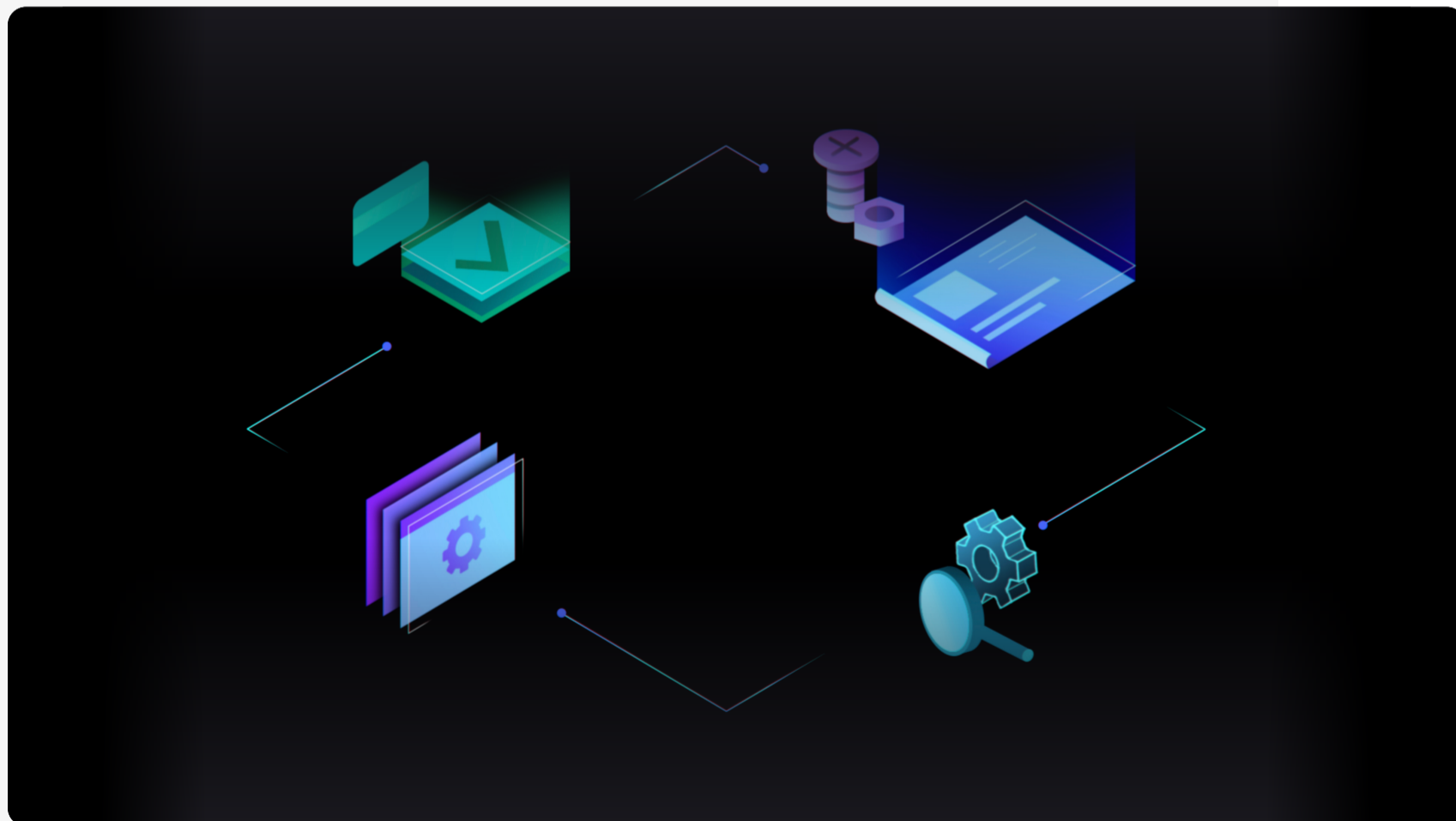


Ramping up to industrial-grade additive production

Rawlings tested and perfected the inserts using the Carbon DLS process, but they needed Fast Radius to scale up production to meet their deadlines for bringing the glove to market.

Fast Radius had the expansive production capacity and skilled manufacturing engineers who were able to adjust the inserts for manufacturability. This expertise was especially valuable in dealing with FPU 50, which provides the perfect level of stiffness for the glove but presents challenges with yield on the finely tuned latticed parts. Well-versed in the unique characteristics of this material, the experts at Fast Radius developed a solution to make sure the parts printed reliably every time.

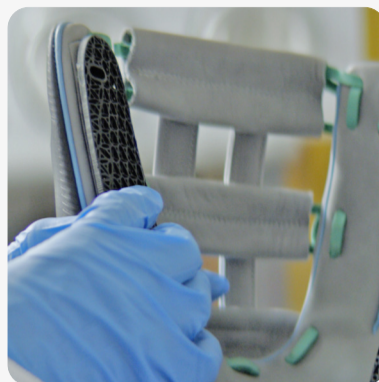
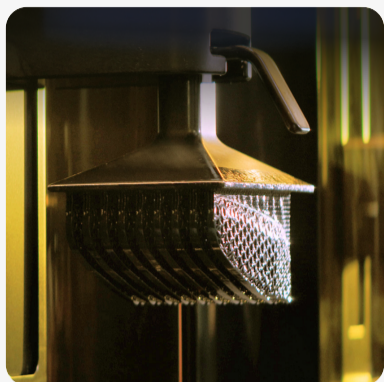
Working closely with Rawlings, Fast Radius quickly developed an extensive plan for manufacturing the inserts. Every piece of information needed to make the parts — from the design files, to custom post-processing methods, to fulfillment instructions — is stored in a build package in the Fast Radius [Cloud Manufacturing Platform™](#) so the parts can be made perfectly today, next week, next year, and beyond.



Aérolus

MAKING IT POSSIBLE

Unrivalled expertise and close collaboration



Scalable infrastructure

The team at Rawlings developed and tested the inserts for the REV1X, but they needed a partner to move into mass production. Fast Radius has the large fleet of Carbon printers and the team of expert manufacturing technicians that Rawlings needed to launch and maintain ongoing production with the option to scale up or down to match demand.

Repeatable, reliable parts

After Rawlings locked their design, Fast Radius engineers optimized the REV1X inserts for manufacturability. Every aspect of the production process is stored in a build package in the Fast Radius Cloud Manufacturing Platform to ensure parts can be made reliably anywhere and any time.



As a premiere member of the Carbon Production Network, Fast Radius has the largest fleet of public-facing Carbon DLS printers in North America. The experts at Fast Radius have vast experience with the DLS platform and a close working relationship with Carbon that ensures Fast Radius is always up to date with the latest in Carbon technology and materials.

Custom solutions

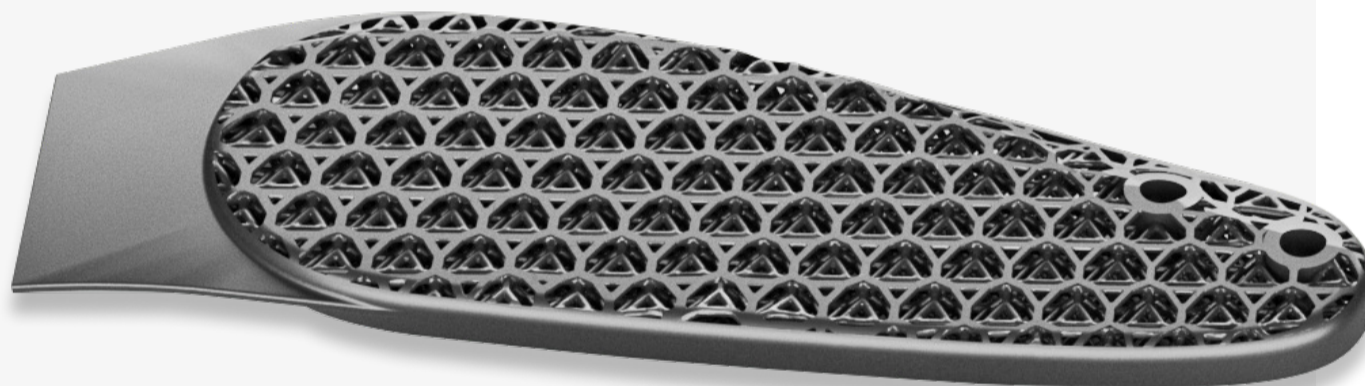
Rawlings determined that FPU 50 would produce the desired performance, but this material can be challenging to post-process. Fast Radius was able to dial in the printing process and develop specific post-processing methods that preserve the tight tolerances needed for the inserts' finely tuned lattice structures. Ultimately, they improved part yield by more than 4x from initial tests.

Frictionless partnership

Throughout the product launch process, Fast Radius worked closely with Rawlings to make sure the glove inserts met their high standards for quality. The two teams also worked together to meet Rawlings' price and timing requirements.

Expedited speed to market

Through the [Additive Launch](#) service, The Fast Radius team made it easy for Rawlings to test, iterate, and move into production immediately. Because the final parts were made on the same Carbon technology used to prototype, Rawlings didn't have to waste time and money creating tooling and redesigning the parts for production.



Consistency was the biggest challenge that we saw when making these components. Fast Radius really knew what needed to be done to ensure that we were getting a consistent, accurate product print after print.

Marc Schmidt
Manager, Advanced Research



A durable, lightweight, responsive glove that gives players an edge

Fast Radius provided the partnership Rawlings needed to get the REV1X onto the hands of elite baseball players everywhere. Thanks to Fast Radius' scalable infrastructure, Rawlings was able to launch the REV1X for commercial sale on time and on budget. The REV1X build package, stored in the Fast Radius Cloud Manufacturing Platform, will allow Fast Radius to scale production for ongoing sales of the glove. For Rawlings and the sporting goods industry, this project heralds a new era of making new things possible with cloud manufacturing.

**Scalable
production capacity**

with Elastic Manufacturing

**Largest
public Carbon factory**

in North America

**4x
better yield**
than initial testing



“With this project, speed was key. Fast Radius went above and beyond to hit our deadlines and deliver the high-quality, consistent parts our athletes expect.”

Ryan Farrar
Senior Director, Ball Gloves

