



Peak Performance with 3D Printed Hardware

Biathletes Achieve Victory-Critical Precision with Customized Rifles



OVERVIEW

For Olympic athletes, the difference between wearing a medal on the podium and merely placing among the field can be less than a second, oftentimes with an athlete's equipment being a factor in this miniscule amount of time. This is especially true with the Biathlon, a combination of cross-country skiing and rifle shooting that is all about speed and precision. After skiing a designated distance around the track, biathletes must demonstrate excellent skill and marksmanship to hit a small target at 50 meters distance. In order to overcome fatigue from the punishing ski circuit, rifle ergonomics are vital to a biathlete's successful performance.

QUICK FACTS

Material:

- Ultrafuse® PP GF30

Technology:

- Fused Filament Fabrication



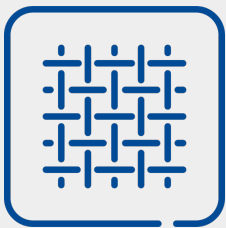
Athletics 3D

Founded in 2017 by Clément Jacquelin, Athletics 3D analyzes the practical experience of high-level sport. Utilizing this knowledge along with cutting-edge skills in the field of industrial engineering and ergonomics, Athletics 3D works with athletes, federations and companies to overcome challenges through the customization, duplication and modification of materials.

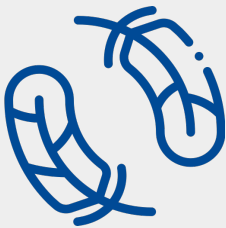
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Superior UV resistance to exposure from solar radiation



Reinforced structure of 30% glass fibers for durability



Low density and lightweight for added speed

Challenge: Develop durable and ergonomic hardware components for top speed and maximum precision

Modern biathlon rifles have a modular construction, meaning hardware can be changed to suit varying conditions and improve performance. Through Additive Manufacturing, Athletics 3D provides athletes with custom rifle design options by utilizing [Ultrafuse® PP GF30](#). This high-performance 3D printing material contains 30% glass fibers, which provide a high-level of reinforcement and durability. Its high UV resistance makes it well suited to withstand exposure to strong solar radiation within harsh environments and it is both low density and lightweight while also maintaining a robust structure over time.

“Biathlon is practiced under both extreme summer and winter conditions. We therefore decided to use Ultrafuse® PP GF30 by Forward AM as it is outstandingly robust, light, and easy to print.”

-- Clément Jacquelin, Sports Engineer, Athletics 3D.



Result: Optimum ergonomic precision between biathlete and rifle

In utilizing the principles of Additive Manufacturing along with Ultrafuse® PP GF30, top biathletes can now choose from a wide range of custom designed and printed components for their individual rifles. Through digital 3D scanning and the integration of the personal needs and preferences of each athlete, a fully customized biathlon rifle with perfect ergonomics is created offering biathletes both increased speed and precision in their quest for Olympic glory.

For more information, read the full Use Case [here](#).

Learn more about Ultrafuse® PP GF30

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