

Waitkus360° adopts HP's technology solution to match high levels of flexibility with productivity and effectiveness





Data courtesy of Waitkus360°

Introduction

With HP Multi Jet Fusion technology, and thanks to the combination of the flexibility of PA11 and the stiffness of PA12GB, Waitkus360° was able to obtain more efficient and lightweight products, that can be precisely tailored for their purposes.

Waitkus360°, founded in 2007, is a limited liability company based in Germany. As technology specialist, they offer a wide range of future-oriented services, as well as comprehensive strategic advice. "Consistent and solution-oriented, as well as customer-centric and at the same time human, down-to-earth, with integrity".

● Industry

Industrial

● Processing and Packaging Machinery

Engineering Companies

● Objective

To produce parts that are both functional and have design freedom with flexibility and effectiveness.

● Approach

Waitkus360° adopted HP Multi Jet Fusion technology to design, validate, test and finally produce efficient parts

● Technology | Solution

HP Multi Jet Fusion technology,
HP Jet Fusion 4200 3D Printing Solution

● Material

HP 3D High Reusability (HR)1 PA 11
HP 3D High Reusability (HR)1 PA 12 GB

Challenge

The main challenge Waitkus360° had to face was not having to compromise between design and effectiveness. Most parts they used to manufacture were obtained through traditional methods, such as machining and injection molding. This obviously constrained their design possibilities, as profiles obtained with low flexibility techniques need to be adapted to the specific circumstances and not the other way around, which isn't just ineffective, but also time consuming.

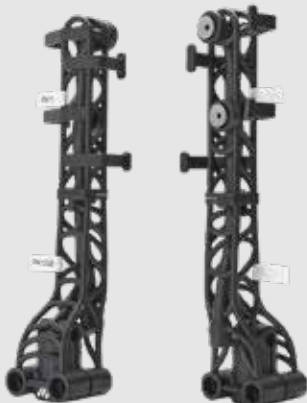
Another feature of Waitkus360° previous manufacturing process was the use of aluminum as a material. Several aluminum parts and pneumatic components were used, resulting in a much more expensive, heavy product, that was not perfectly designed for its use and required some extra assembly time to be manufactured.

Solution

HP Multi Jet Fusion technology was extremely effective in overcoming these pain points. Through the example of three different applications, it is visible how Waitkus360° found a way with HP's technology to balance the high levels of flexibility allowed by additive manufacturing with productivity and effectiveness.

EOAT vacuum cup for the automation industry

Waitkus360° combined the flexibility of HP 3D HR PA11 on the front end and the strength of HP 3D HR PA12GB on the back to create the vacuum end of arm tooling that was previously manufactured in aluminum. During the design process, extensive FEM analysis was conducted to ensure material usage was optimized (less material or strengthening) according to the load areas. By transitioning to 3D printing, Waitkus360° was able to reduce the cost and time to part by 50% while also integrating air channels to the part which eliminated the need for assembly.



Insertion aid

Waitkus360° combined design and function to create the perfect manufacturing aid for its purpose: to insert cartons into roller conveyors.

The interface can be adapted and adjusted for any profile shape to ensure maximum flexibility on the production line. Waitkus360° chose HP 3D HR PA12GB due to its stiffness and surface roughness properties.



Cable holder

Waitkus360° designs and manufactures this cable holder that can easily be attached to robots using a film hinge.

Leveraging the ductility properties of HP 3D HR PA11 material and design capabilities of HP Multi Jet Fusion, Waitkus360° was able to create a design that enables better cable management on the robot operating, enabling easier mounting and better robot arm movement.





Data courtesy of Waitkus360°

Result

Before the introduction of HP's Multi Jet Fusion technology, Waitkus360° used several other manufacturing methods, along with injection molding and machining activity. This was because profiles could easily be adapted and inject-molded, but this implied having to find a compromise between how Waitkus360° would have liked to design the pieces and the low manufacturing flexibility of injection molding. Also, adapting each particular model was time-consuming.

All this resulted in final applications that were much more expensive, made up of many smaller parts, heavy and not perfectly designed for their use.

Switching to MJF helped reduce parts' weight, cost and of course time-to-part. The use of materials was also crucial in the pursuit of Waitkus360°'s objectives: by combining flexibility of PA11 and stiffness of PA12GB in the same part, the product can be made efficient in a way that is not possible with other manufacturing methods.

Assembly times, that were significant before, were also reduced considerably, as applications no longer needed to be manufactured in several different parts and then assembled.

Finally, one important goal for Waitkus360° is now not only to manufacture for their own special machines, but also for their customers: to pass on this knowledge to them and support and accompany their conversion processes from other technologies, such as milling or injection molding, to MJF.

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

Learn more about HP Multi Jet Fusion technology at
<https://www.hp.com/go/3DPrint>

Learn more about Waitkus360° at
<https://3dprint-360.com/>

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