THE FUTURE OF CHOICE.

USE CASE | P.A. AUTOMATION GmbH **iAM Marketplace**

HEXON PA CF expands Markforged 3D printing from prototypes to production-ready parts

Carbon-fiber-reinforced nylon for cost-efficient, stiff and reliable functional components in automation equipment.

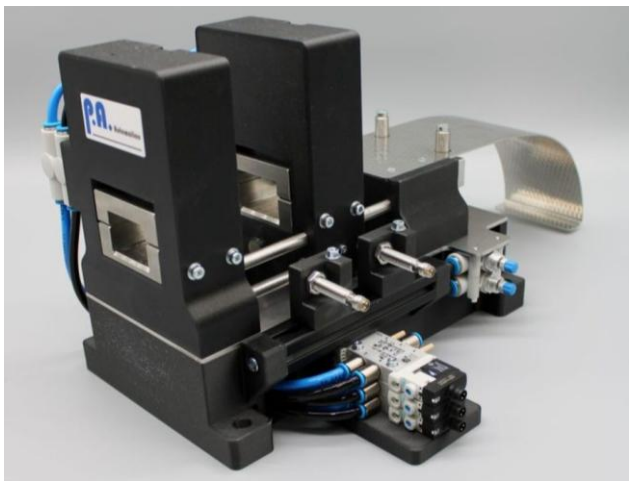
Case summary

P.A. Automation wanted to enhance the performance of its Markforged 3D printers with a material offering higher stiffness, improved mechanical stability and better cost efficiency compared to Onyx. By adopting HEXON PA CF, the company broadened additive manufacturing from selected prototyping tasks to production aids, fixtures and functional end-use components.

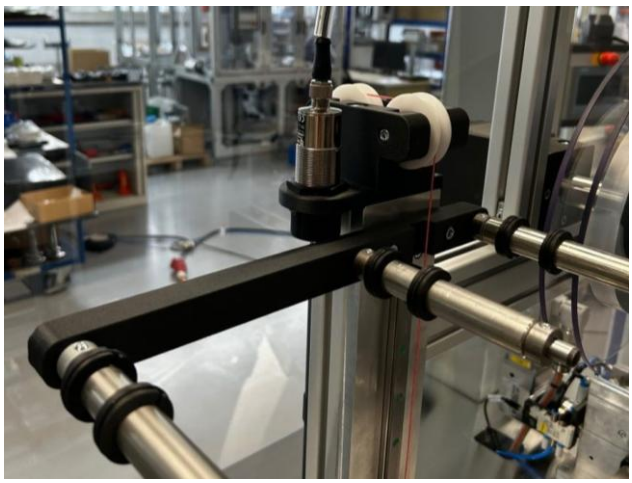
Customer profile

P.A. Automation GmbH
Königsbach-Stein, Germany
Special-purpose machinery, robotics, control technology, fabrication, assembly and system integration; ISO 9001:2015 certified

30%	**Higher**	**Full**	**Broader**
lower material costs	**stiffness**	**Markforged compatibility**	**AM adoption**
vs. OEM filament	often no fiber needed	incl. fiber types	tools & end-use parts



Pneumatic tong-feed / functional assembly component



Sensor bracket / functional automation component

01 THE CHALLENGE

Custom automation equipment requires many individually designed parts in low quantities. Aluminum milling and outsourced 5-axis machining added cost, lead time and supply-chain complexity.

Initial in-house 3D printing improved speed and flexibility, but material costs and moderate performance limited wider use.

02 THE SOLUTION

P.A. Automation adopted HEXON PA CF, a carbon-fiber-reinforced nylon optimized for the Markforged ecosystem.

The material combines stiffness, printability and heat resistance, enabling replacements for many aluminum and Onyx parts.

03 THE RESULT

The company expanded 3D printing beyond prototypes into production aids, jigs, fixtures and functional end-use parts.

Lower material cost plus enhanced rigidity increased everyday AM adoption while maintaining reliable performance.

"While keeping the parts aesthetics equal, HEXON PA CF provides a superior stiffness compared to the OEM material. This reduces the needs to deposit the separate Markforged carbon fiber, while saving 30% of material costs compared to the OEM filament."

P.A. Automation statement

Where HEXON PA CF creates value

Practical application areas for automation teams that need fast, strong and cost-efficient custom components.

Sensor brackets Rigid, dimensionally stable holders for sensors and peripheral devices.	**Protective covers** Durable covers and guards for machinery, handling systems and workstations.
Profile adapters Customized adapters for machine frames and special-purpose equipment.	**Robotic grippers** Lightweight, stiff end-of-arm tooling and gripper components.
Jigs & fixtures Production aids for assembly, inspection, positioning and repeatability.	**End-use parts** Functional components that previously required milling or external sourcing.

Why it works

For engineering & production

- Fast iteration for customized equipment
- Reduced reliance on outsourced machining
- Lightweight designs with high rigidity
- Reliable parts for daily shop-floor use

For Markforged users

- Compatible with Markforged printers
- Works with Markforged fiber types when reinforcement is needed
- Often stiff enough without separate fiber deposition
- Cost-effective alternative for broader AM adoption

Interested in [PRODUCT / SOLUTION]?

Get in contact with iAM Marketplace experts to evaluate your parts, applications and setup.

www.i-am-marketplace.com |
info@i-am-marketplace.com | +49 60338943930 (EN / DE)

Product: iSQUARED HEXON PA CF black
Format: 800 cm^3 / 1.75 mm
SKU: MFPA-CF

Link: https://i-am marketplace.com/hexon/