Kojima Industries Corp.

Industry	Automotive Part Manufacturing
Application	Robotic Tooling & Fixtures
Printer	Mark Two & X7

Kojima Press Industry Co., Ltd. is a major automotive parts manufacturer celebrating its 88th anniversary. With more than 8,000 employees across its global group companies, Kojima operates facilities in Japan, the United States, Thailand, China, and Europe. Leveraging an integrated global supply chain, the company provides one-stop services from development through production with high-volume manufacturing capabilities.

The Challenge

Kojima specializes in the design and production of automotive interior, engine, and exterior components. As the automotive industry continues to evolve through electrification and increased system integration, the company is focused on improving competitiveness through higher-precision, faster, and more cost-effective manufacturing based on Quality, Cost, and Delivery (QCD) principles.

One production process required operators to manually attach non-woven fabric seals. As the number of seals increased, the process became increasingly labor-intensive and time-consuming. To improve efficiency and reduce labor requirements, Kojima pursued robotic automation.

Initially, the robotic hands used in the automation system were manufactured from metal. However, the weight of the metal components required oversized robot configurations, significantly increasing overall equipment costs.



Kojima's manufacturing site in Aichi Prefecture, Japan



KOJIMA INDUSRIAL CORPORATION
Equipment Engineering Div.
A. Manager
Mr. Akira Kashima

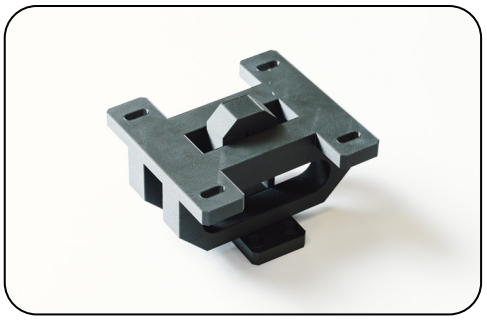
The Solution

To address these challenges, Kojima adopted a Markforged 3D printer to manufacture lightweight robotic hands.

By switching from metal to 3D-printed components, Kojima significantly reduced the weight of the robotic hands while maintaining the strength required for production use. This enabled the company to reduce overall equipment investment by avoiding oversized robotic systems.

Compared to conventionally machined parts, the cost of producing the 3D-printed robot hand components was reduced by 67%.

Producing the parts in-house also dramatically shortened manufacturing lead times compared to outsourcing machined components. In addition, outsourced machining required detailed 2D drawings for production requests. With 3D printing, Kojima could manufacture directly from 3D CAD data, reducing design labor for certain parts by approximately 30%.

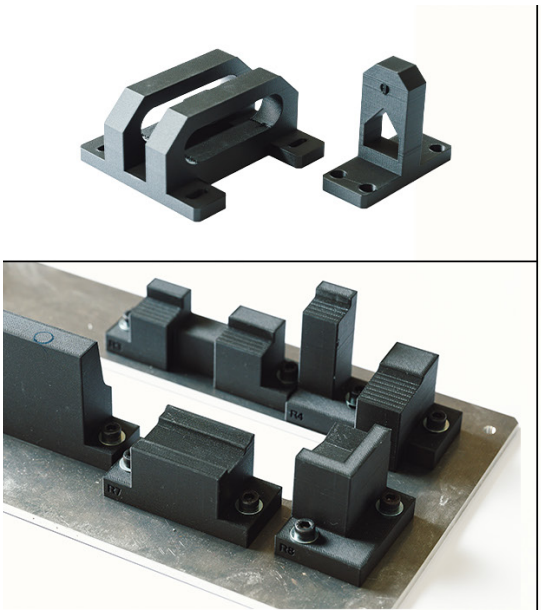


Cylinder Joint
A component used to adjust the angle of the jig base using a cylinder

Manufacturing Lead Time Comparison

14 Days Outsourcing Part Production

1 Day Printing with Markforged



Top: Cylinder Joint. A component used to adjust the angle of the jig base using a cylinder
Bottom: Jig Fixture. A fixture used to hold products in place during the manufacturing process



Sticker Storage
Storage area for rolls of stickers

© Copyright Markforged 2024. Markforged, Inc., Waltham, MA 02451 USA, the Markforged name and logo are registered trademarks of Markforged Inc., in several jurisdictions worldwide. As noticed, other product names may be trademarks of Markforged Inc. A current list of trademarks for Markforged, its subsidiaries or affiliates is available upon request to legal@markforged.com. This document is current as of the initial date of publication and may be amended by Markforged at any time. Not all offerings are available in every country in which Markforged operates. The case studies, performance data, and client examples cited are presented for illustrative purposes only. Actual performance results may vary depending on specific configurations and operating conditions. THE INFORMATION IN THIS DOCUMENT IS PROVIDED "AS IS" WITHOUT ANY WARRANTY, EXPRESS OR IMPLIED, INCLUDING WITHOUT ANY WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND ANY WARRANTY OR CONDITION OF NON-INFRINGEMENT. Markforged products are warranted according to the terms and conditions of the agreements under which they are provided.