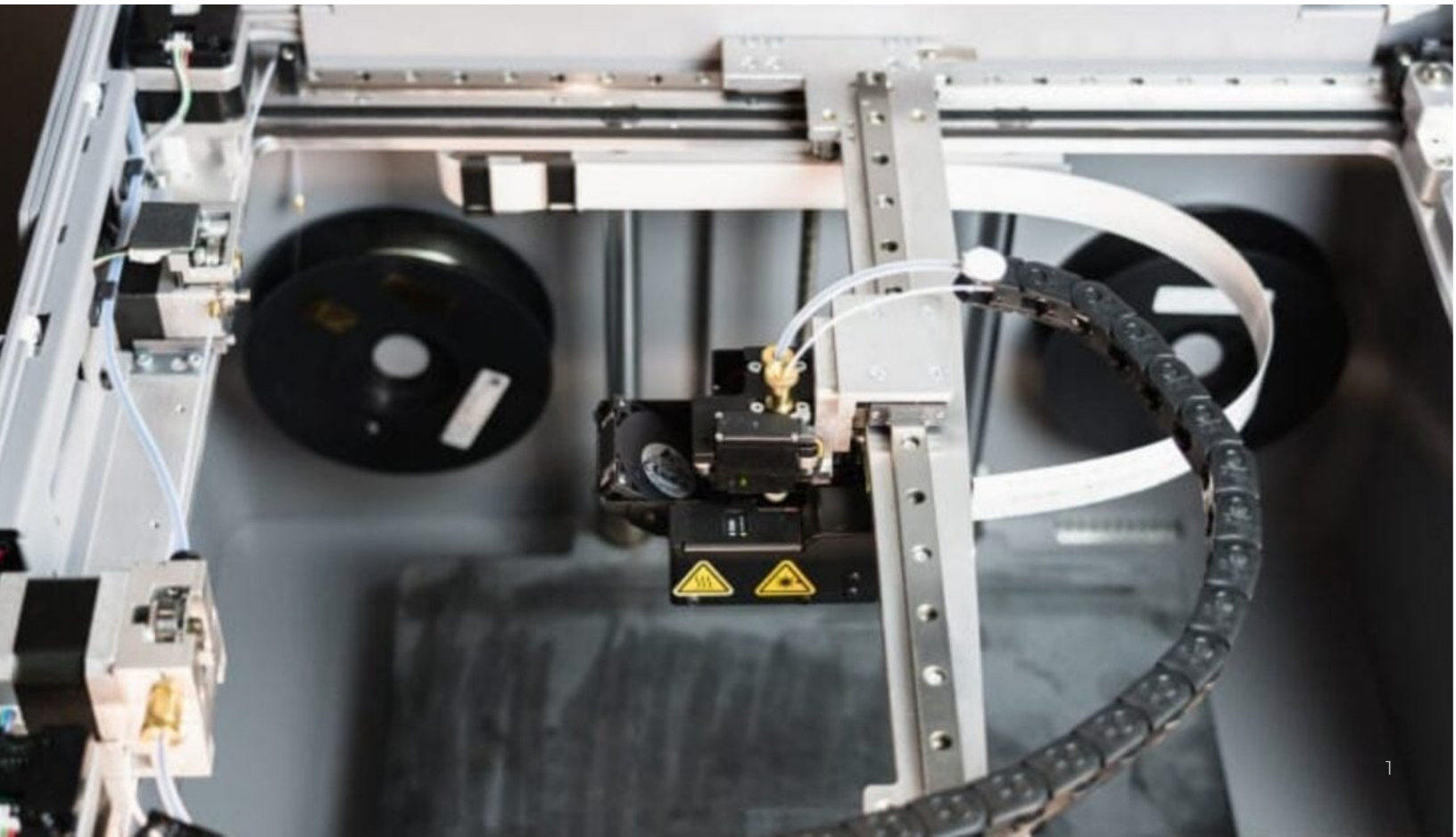
CASE STUDY

Dynamac, Inc. Streamlines Production with 3D Printing

OVERVIEW

Dynamac, Inc., a precision CNC machining shop based in Addison, IL, specializes in producing high-quality custom parts for various industries. To enhance their production capabilities and address specific manufacturing challenges, Dynamac incorporated the Markforged Mark Two 3D printer into their workflow. This enabled them to create custom fixturing, molds, and specialized tooling in-house, ultimately saving time and reducing costs.

This case study explores how the Markforged Mark Two helped Dynamac overcome critical business challenges, including damaged parts during shipping, time-consuming CMM fixturing, and robot downtime.



THE CHALLENGE

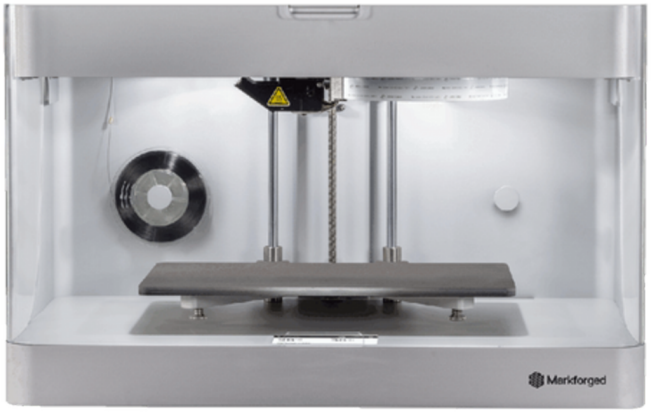
Dynamac faced several challenges that affected their production efficiency and customer satisfaction:

1. **Customer Parts Damaged in Shipping.** They needed a solution to better protect parts during shipping, as damaged components were causing costly delays and rework.

2. **Cumbersome CMM Fixturing.** Creating precise fixtures for Coordinate Measuring Machine (CMM) inspection was time-consuming and required multiple iterations to ensure accuracy.

3. **Robot Downtime.** Downtime on robotic cells due to a lack of precise staging and custom tooling was impacting operational uptime and reducing production output.

These issues required a solution that could deliver high precision, durability, and speed to keep up with the demands of their custom manufacturing processes.



THE SOLUTION

Markforged Mark Two

To solve these issues, Dynamac invested in the Markforged Mark Two 3D printer, a cutting-edge tool designed for creating strong, functional parts with industrial-grade precision.

The Mark Two's continuous fiber reinforcement technology allowed Dynamac to produce parts that were durable enough to withstand the rigors of the factory floor while maintaining tight tolerances for precision applications.

Total Cost: $16,998
Markforged Mark Two Printer: $14,999
Customer Success Plan – Annual: $1,999

Key Applications

Vacuum Form Molds for Shipping Parts

Challenge

Customer parts were getting damaged during shipping, leading to high rework costs.

Solution

Dynamac used the Mark Two to create custom vacuum form molds that provided superior protection during shipping, reducing damage rates significantly.

Precise CMM Inspection Fixtures

Challenge

The time required to create CMM fixturing was impacting inspection and delivery times.

Solution

By printing precise, custom inspection fixtures in-house, Dynamac could iterate quickly, ensuring accurate fixturing for complex parts. This improved inspection efficiency and met customer specifications.

Robotic Cell Part Staging

Challenge

Downtime on robotic cells was caused by the lack of custom, durable part staging equipment.

Solution

Using the Mark Two, Dynamac was able to produce high-strength staging tools that reduced robot downtime, allowing for faster changeovers and increased productivity.

Results and Benefits

Cost Savings

By producing parts in-house with the Mark Two, Dynamac avoided the high costs of outsourcing custom tooling and fixtures, saving money while ensuring better control over production quality and timing.

Precision & Accuracy

With the Mark Two's high-resolution printing capabilities, Dynamac achieved the tight tolerances required for CMM inspection fixtures, ensuring accurate measurements and meeting customer expectations.

Faster Iteration & Production

The ease of use and fast iteration capabilities of the Mark Two enabled Dynamac to quickly prototype and test new designs, leading to faster product development and reduced lead times. The minimal learning curve meant that operators could start using the printer quickly, ensuring that Dynamac was able to maximize the benefits without lengthy training.

Durability & Strength

The Mark Two's strong materials, like Onyx and continuous carbon fiber, allowed Dynamac to produce parts durable enough to handle the factory floor's tough conditions. This included custom fixturing, molds, and robotic staging equipment that could withstand daily wear and tear.

CONCLUSION

The adoption of the Markforged Mark Two 3D printer has transformed Dynamac's production processes, enabling them to produce durable, high-precision parts in-house. This not only helped address critical business challenges, such as protecting parts during shipping, creating precise CMM fixtures, and reducing robot downtime, but also improved overall operational efficiency and cost-effectiveness.

Dynamac's success story highlights the power of Markforged technology to streamline manufacturing processes and deliver tangible results.