



POINT DESIGNS

In-house production of heavy-duty prosthetic fingers for people with partial hand loss

THE COMPANY

Founding
2016

Employees
30

Headquarters
Broomfield, CO

Key competence
manufacturing heavy-duty prosthetic fingers and patient specific fabrication

Point Designs was founded by researchers in the field of upper limb prosthetic design from the Biomechatronics Development Laboratory at the University of Colorado. Professors Richard Weir and Jacob Segil have decades of research experience spanning neural interfaces, myoelectric control algorithms, and upper limb prosthetic design.

Along with co-founders Dr. Levin Sliker and Stephen Huddle, the Point Designs team continues to advance the field of partial hand prosthetic design with expertise in additive manufacturing, mechanical design, and clinical care. Point Designs is a team of dedicated and passionate individuals working together to improve the lives of the people they serve.



Point Designs specializes in high-quality, customized prostheses for individuals who have experienced finger loss. With over 45,000 finger amputations occurring annually in the U.S., the demand for functional and durable prosthetic solutions is critical. The company's goal was to improve production efficiency while maintaining precision, durability, and lightweight design in its prosthetic fingers.

THE CHALLENGE

Point Designs was founded on metal additive manufacturing. As the company grew, the team faced the need to bring production of their durable, lightweight, and highly precise titanium fingers fully in-house.

Their objectives were clear:

- Reduce production costs and lead times
- Gain design flexibility to iterate quickly
- Strengthen control over innovation, intellectual property, and quality

Previously, Point Designs relied on external partners to manufacture these fingers. While this enabled quick market entry, it also created significant challenges in production:



High Production Costs

Outsourcing complex titanium parts was expensive, especially in small batches or when frequent design changes were required.



Long Lead Times

Dependence on third-party suppliers often delayed development cycles leading to increased inventory costs.



Limited Design Freedom

External manufacturing made it difficult to rapidly test or refine new concepts without incurring delays and additional costs.



Reduced Control Over IP & Quality

Producing sensitive designs externally limited the company's ability to safeguard intellectual property.

As Point Designs scaled and pursued more ambitious product development, these limitations became increasingly restrictive. The ability to manufacture fingers internally with speed, reliability, and autonomy became a necessity.

To move forward, they required a solution that would enable series production of highly engineered components—directly on their own premises.

THE APPLICATION

Point Designs produces prostheses to help restore independence for individuals who have lost one or more fingers or thumbs. A critical component of these prostheses is the heavy-duty titanium finger.



Function

The titanium finger components are the main structural and functional elements of the finger system. They enable smooth articulation and a robust locking system.

Requirements for the component

The finger components must be durable, light, and precise to allow for heavy-duty use all day, every day.

Previous production method

The company was relying on an external service provider that printed the finger components for them.

Number of units

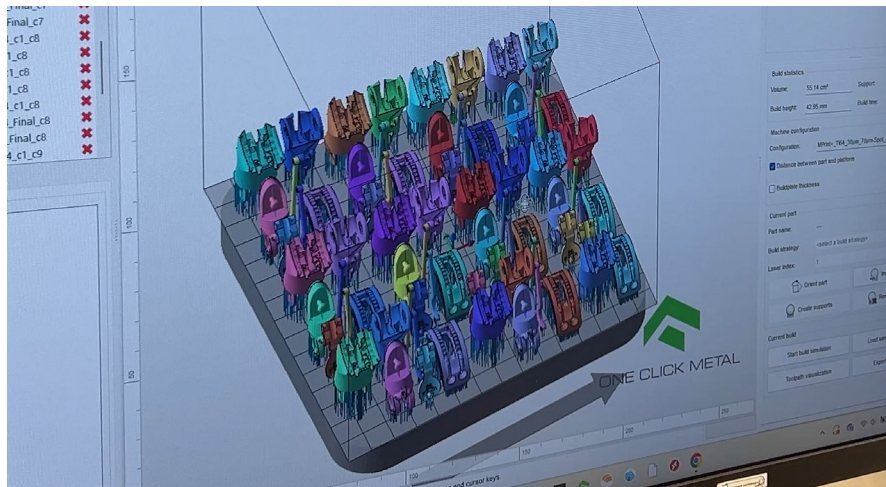
About 1,500 digits and components are required each year.



THE SOLUTION

Point Designs adopted a metal 3D printing system from One Click Metal to bring the production of titanium prosthetic fingers entirely in-house, using Laser Powder Bed Fusion (LPBF) technology.

This investment gave the team the flexibility to manufacture components directly from finalized CAD data without relying on external suppliers. The result: greater control over production, shorter lead times, and stronger protection of intellectual property.



**Significant
cost
reduction**

**50%
faster
lead times**

**Internal
technology
competency**

**More
design
flexibility**

A full build plate with 74 finger components, resulting in 11 assemblies can be printed in just 16 hours. Through intelligent design and optimized part orientation, support structures are kept to a minimum, reducing post-processing and enabling fast, efficient assembly.

The outcome is a series of components that are not only lightweight and precisely engineered, but also mechanically robust, ensuring they withstand the demands of daily medical use. The combination of titanium's superior material properties and the accuracy of metal 3D printing allows Point Designs to meet the stringent functional and durability requirements of prosthetic users.

Why did Point Designs choose One Click Metal?

Point Designs chose the One Click Metal system because it offers a cost-efficient solution with a compact footprint, perfectly suited for small businesses. Since their parts are relatively small, the build plate is an ideal fit for their production needs. In addition, the machine requires minimal infrastructure, aligning well with limited budgets while delivering an excellent return on investment.

THE ADVANTAGES

✓ Significant cost reduction

By moving from outsourcing to in-house production with metal 3D printing, Point Designs was able to eliminate third-party manufacturing fees and associated logistics costs. The One Click Metal system allowed for cost-effective batch printing with minimal waste, significantly reducing overall production expenses without sacrificing quality.

✓ 50% faster lead times

Previously dependent on external suppliers, production delays were unpredictable. With metal 3D printing in-house, the team could rapidly iterate, print, and assemble prosthetic parts within days instead of weeks. This speed advantage enabled faster delivery to patients, improving customer satisfaction and response time.

✓ Design flexibility

Metal additive manufacturing enabled Point Designs to create intricate and organic geometries that are difficult—or even impossible—to achieve with traditional machining. This flexibility allowed the design team to fine-tune the balance between weight, strength, and anatomical fit, improving both the functionality and comfort of the prosthesis.

✓ Better Control Over Innovation and IP

Producing parts internally gave Point Designs full control over their intellectual property and proprietary designs. This eliminated the risk of IP leaks and allowed for faster implementation of product innovations and design updates, all while maintaining the confidentiality of sensitive data.



KEY FACTS SUMMARY

The Challenge

Finding a way to produce durable, lightweight, and precise prosthetic fingers in-house - with the goal of reducing costs and lead times, while also gaining greater design flexibility and improved control over innovation and intellectual property.

The Solution

By investing in a metal 3D printing system from One Click Metal, Point Designs gained the ability to produce finger components quickly and flexibly in-house. Compared to outsourcing, this approach allows for significant reductions in both lead times and production costs, while enhancing design agility and process control.

The Advantages

- ✓ Faster lead times
- ✓ Reduction of costs compared to outsourcing
- ✓ Design flexibility
- ✓ Better Innovation and IP Control

Technical Information

Component function
Heavy-duty prosthetic fingers

Material
Titanium

Technology
LPBF with 200W fiber laser

Layer thickness
30µm

Build time
16 hours



THE COMPANY ONE CLICK METAL

We believe that metal AM technology can be made understandable to everyone and available with one click. Especially technology beginners are our concern. For them, we develop simple and intuitive product solutions.



ABOUT US

Founded in 2019, One Click Metal is an industrial B2B company and a subsidiary of INDEX Werke, based in Tamm near Stuttgart. We believe that technologies can be made understandable and usable for everyone. That's why we simplify our product solutions so that anyone can use them successfully. With our metal 3D printing system, we primarily serve small and medium-sized enterprises and thus ensure that metal 3D printing technologies become accessible to the general public. We are working on this with a strong team and a lot of motivation.



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