



The Digital Forge™

Built for Today — Designed for Tomorrow



Sales | Support | Servicing | Training | Consumables | Additive Consultancy

Platform Overview

Digital Forge- The Intuitive Additive Manufacturing Platform

Software

Markforged software seamlessly integrates 3D printing into your workflow, providing control and visibility on a secure platform.

Hardware

Precision-engineered hardware provides reliable, repeatable results.

Materials

Industrial grade materials let you print a wide variety of robust parts.

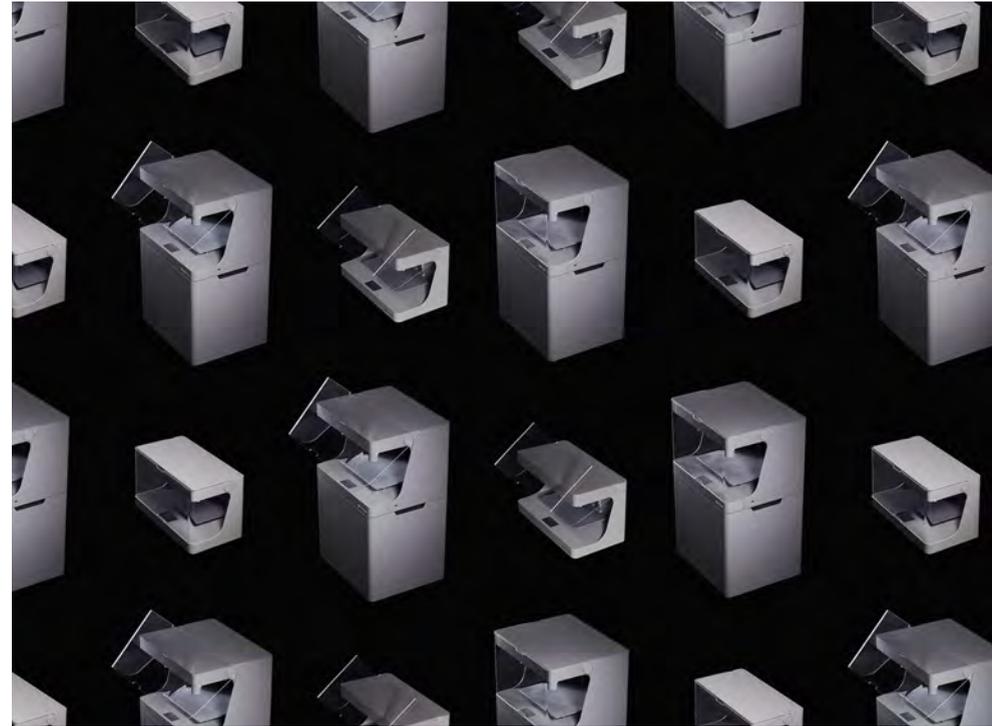
The Digital Forge is the intuitive additive manufacturing platform powering modern manufacturers. It consists of hardware, software, and materials developed to seamlessly get you from design to functional part.

Deliver Value Today

The Digital Forge saves you money from day one by enabling you to get parts in hand faster, cheaper, and with less labor. It achieves ROI quickly and continues producing value for its adopters.

Drive Competitive Advantage Tomorrow

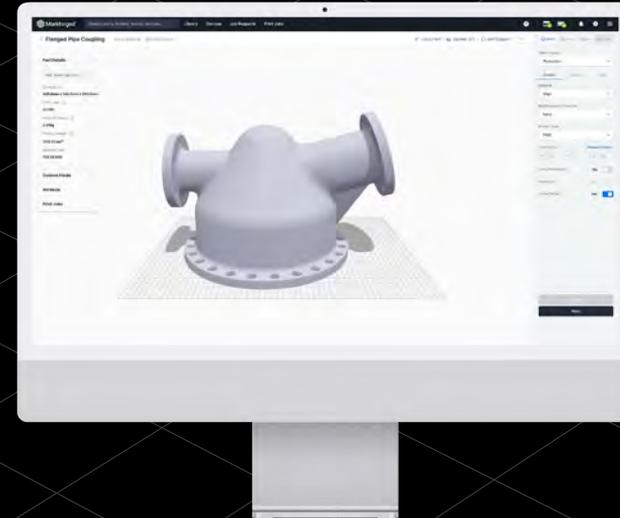
The Digital Forge gives you an advantage over your competitors. Develop and manufacture products faster, mitigate unplanned downtime, and build a more efficient and flexible manufacturing process.



Software

The Digital Forge — Powered by Eiger™ Software

Markforged offers a simple, smart, multifunctional additive manufacturing software solution designed to seamlessly fit into your organization. Built for scale, Eiger software delivers a unified experience across the Markforged portfolio.



Built Secure

Our steadfast commitment to security keeps your data safe throughout the Digital Forge.

- ISO 27001:2013 Certified
- Embedded data encryption for your parts and prints
- Available in both online and offline versions
- STIG-Compliant device operating systems for strict government standards

Inspection

Closed-loop laser inspection and analysis of printed parts enables you to deliver precise, compliant parts faster and at reduced cost compared to traditional methods.

- Rapid and reliable quality control
- Clear pass/fail analysis via automated reporting

Simulation

Supercharge productivity and optimize manufacturing efficiency with groundbreaking and intuitive software for simulating the performance of Markforged printed parts.

- Virtual part testing replaces costly and time consuming physical testing
- Quickly iterate and take the guesswork out of configuring parts

Manage and Integrate

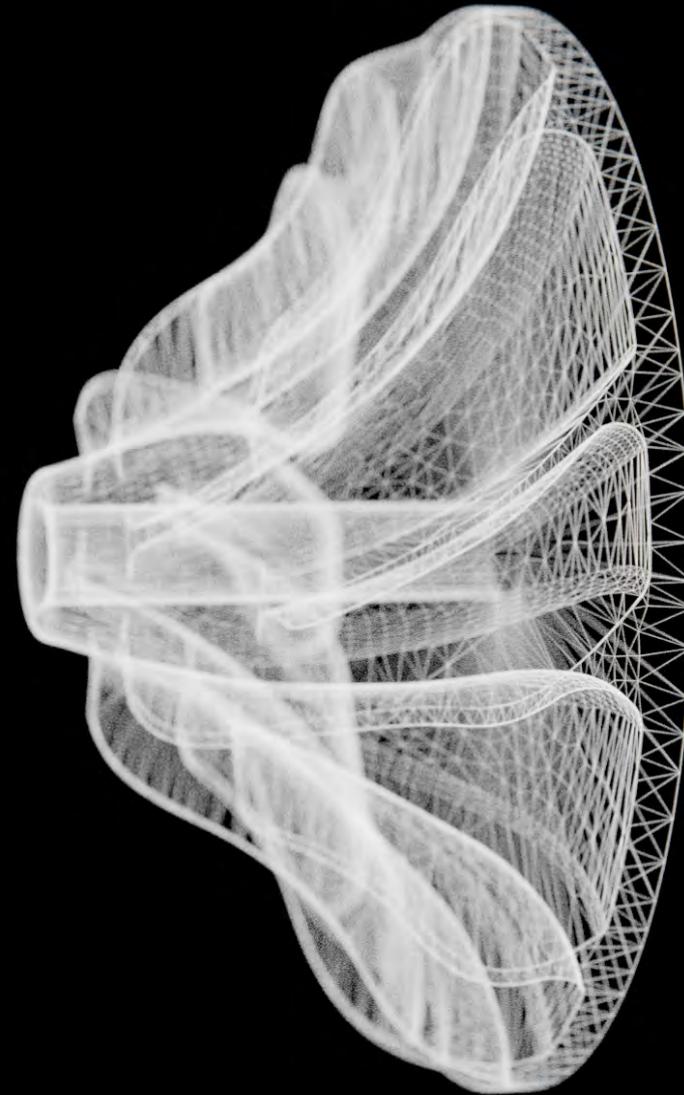
Scale smarter and faster with powerful features designed to help manage your operations with increased efficiency, insight, and control.

- Manage user access to ensure sensitive data can only be accessed by authorized users
- Integrate Markforged data into existing systems (ERP, PLM, MES, etc.) through APIs

Digital Source

Digitize your inventory today

Digital Source is an on-demand parts platform enabling 3D printing of manufacturer-approved parts when and where they are needed, without the cost or hassle of physical inventory.



Digital Source Details

Digital Warehouse

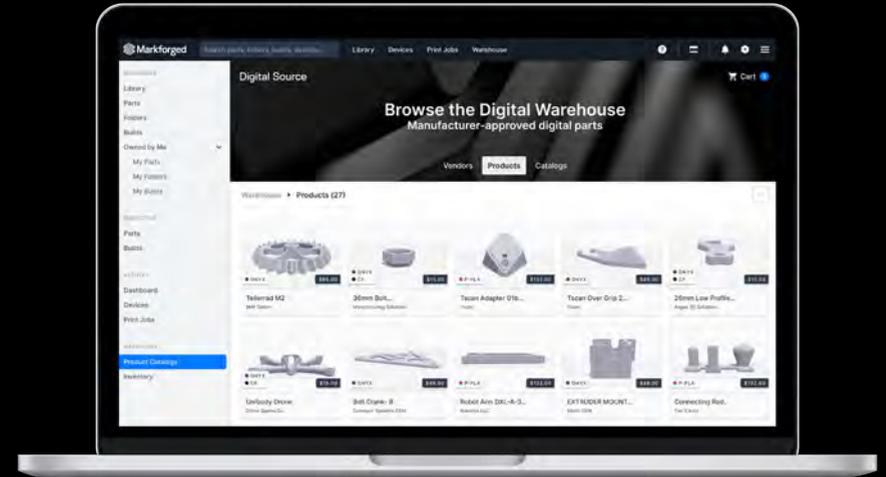
Manufacturers can specify printing process requirements so that customers get manufacturer-approved parts every time. Robust security safeguards digital part files, and encrypted print instructions are sent directly to printers to protect designs. Vendors upload part designs to a digital warehouse, where they can sell print licenses to customers, distributors, and contract manufacturers. Digital Source users can purchase a license to 3D print parts themselves, or can access a network of vetted print services providers to 3D print parts on their behalf.

Factory-Ready Part Quality

A native extension of the Digital Forge, Digital Source offers consistent, reliable, turnkey production for 3D-printed parts. Print accurate, functional parts in metal, polymers, and composites to easily service customers around the world, or just down the road. Markforged develops and integrates our own materials, printers, and software for unrivaled end-to-end process control, simplicity, and reliability.

Growing Network of PSPs

If on-site printers are not available, order directly from a growing distributed network of print service providers, or PSPs. When part demand exceeds local printer capacity, extra capacity offered by a network of approved providers is just clicks away. Digital Source users can access a list of PSPs to order printed parts. Users can filter the list to select PSPs that meet the manufacturer's print process requirements. Once onboarding is complete, customers and PSPs are connected to fulfill part delivery.



Hardware



Composite 3D Printers

Markforged has manufactured and distributed best-in-class industrial and desktop composite printers built around Continuous Fiber Reinforcement (CFR) since 2014 — with more than 12,000 in the field today.

Carbon Fiber Strength

Only Markforged offers CFR: a groundbreaking technology designed to fabricate parts as strong as and capable of replacing machined aluminum today.

Accurate and Reliable

Markforged composite 3D printers reliably yield accurate parts with excellent surface finish. Their precision-machined hardware, advanced sensors, and unique software drive first-class customer results.

Built for Functional Requirements

Whatever your functional requirements — flame resistance, chemical resistance, energy absorbance, precision, or speed — our composite printers have an industrial material or print mode capable of fabricating a functional part for you.

Materials



Industrial Grade Properties

All Markforged materials are designed to be used in manufacturing environments — and some are engineered to satisfy specific part requirements including FST compliance, ESD safety, and hardness.

Continuous Material Development

Markforged continually develops, tests, and launches new materials to enable you to solve more and harder manufacturing problems with The Digital Forge platform.

Traceability

Select Markforged materials — Onyx FR-A™ and Carbon Fiber FR-A — establish lot-level material traceability and pass the test suite necessary for aerospace use under 14 CFR 25.853 for most 3D-printable parts. These materials are purpose built for requirements of controlled industries and are undergoing NCAMP qualification

FX20™

FX20 is a high-temperature, large format 3D printer that brings The Digital Forge platform and Continuous Fiber Reinforcement (CFR) technology to a new realm of parts, problems, and industries. Designed to thrive in some of the most demanding manufacturing industries — aerospace, automotive, defense — FX20 prints bigger, faster, and hotter than any other Markforged 3D printer. Whether your needs are tooling or production parts, FX20 can deliver quality, high performance solutions.



FX20 Details

Massive Builds, Fast

The FX20 pairs size and throughput to print huge builds at incredible speeds, enabling users to get large, functional parts in hand next day.

Functional Parts from Factory to Flight

Built for everything from performance tooling and fixtures to flight-ready production parts — the FX20 can print with both high temperature materials and continuous fibers.

Production Ready Performance

A precision-designed, sensor-driven machine delivers breakthrough reliability and performance with a simple user experience.





FX10™

FX10 is Markforged's next generation industrial composite 3D printer — the result of years of engineering innovation and technological advancement. Built on the success of the Markforged X7, its sole purpose is to deliver strong, accurate parts every print.

FX10 features a new modular architecture that's designed for upgradability and printhead-mounted optical sensors that can verify dimensional accuracy of parts and assess device health and performance. It utilizes automatic calibration and material changeover, yielding a simple, low-touch user experience that mitigates the need for dedicated operators.

FX10 Details

Unlock strong parts on demand

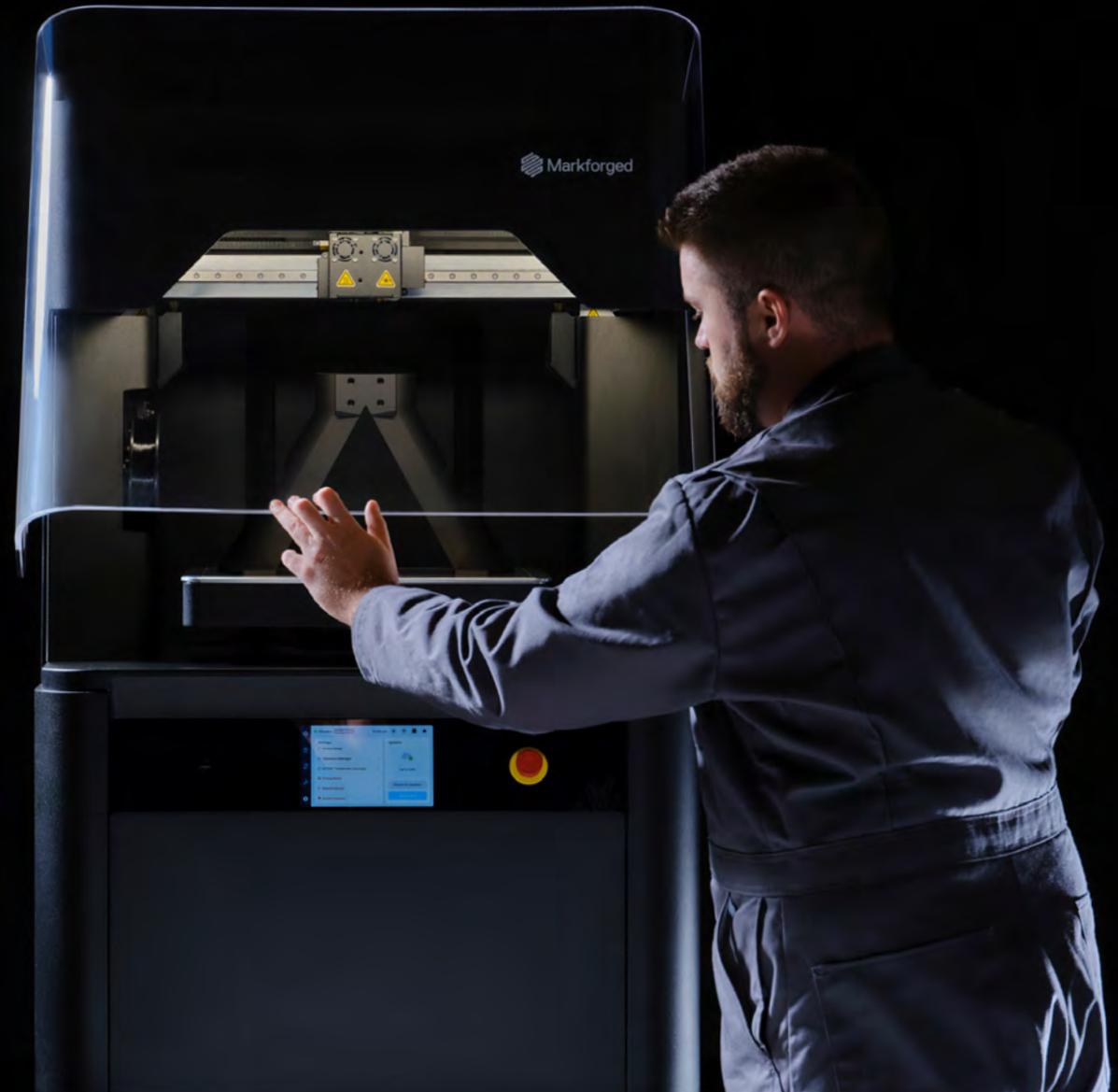
FX10 prints continuous carbon fiber reinforced parts for a wide range of factory floor applications — helping manufacturers increase speed to market, slash fabrication and inventory costs, and de-risk line down events.

Print the right part every time

We designed every aspect of FX10 — from its motion system to the software that powers it — around delivering accurate, strong parts reliably. Backed by Simulation and Inspection software, FX10 can produce verified parts that meet stringent factory floor requirements.

Drive ROI fast, then scale

FX10 operates on the Digital Forge: Markforged's additive platform that features intuitive device and desktop software, training, and built-in cost calculation. You can start generating ROI on day one and effortlessly scale to more teams, machines, and facilities.





Metal X™ System

The Metal X system is an accessible, end-to-end 3D printing solution for delivering metal parts, next day. Metal X is affordable at 5-10 times less than other metal 3D printers. And it requires no dedicated operator or powder management system and minimal PPE. With it you can fabricate functional industrial-grade metal parts for a wide variety of industrial applications and material requirements.

Metal X Details

Safe and Accessible

All in, a Markforged Metal X system costs 5-10 times less than other metal 3D printing systems. It requires no dedicated operator or powder management system and minimal PPE.

Wide Material Variety

From stainless steels to copper, the Metal X enables you to fabricate functional metal parts for a wide variety of industrial applications and material requirements.

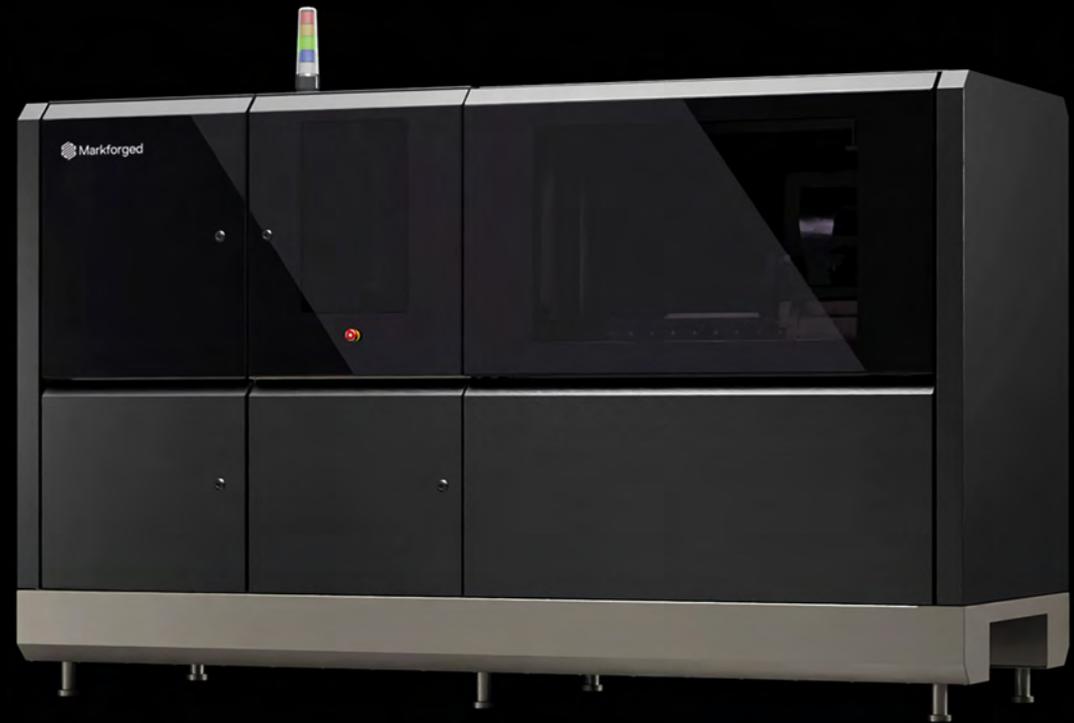
Designed for Great Part Quality

The Metal X is purpose-built for great part quality and a seamless user experience. Markforged combines great software, materials research, and a 5th-generation motion system to deliver industrial-grade parts repeatably.



PX100TM System

The PX100 Binder Jetting system brings a new capability to the Digital Forge: a production system capable of fabricating thousands of complex end-use metal parts. It unlocks high-volume metal production at the point of need, enabling companies to exercise more control over their production process.



PX100 Details

New Markets, New Products

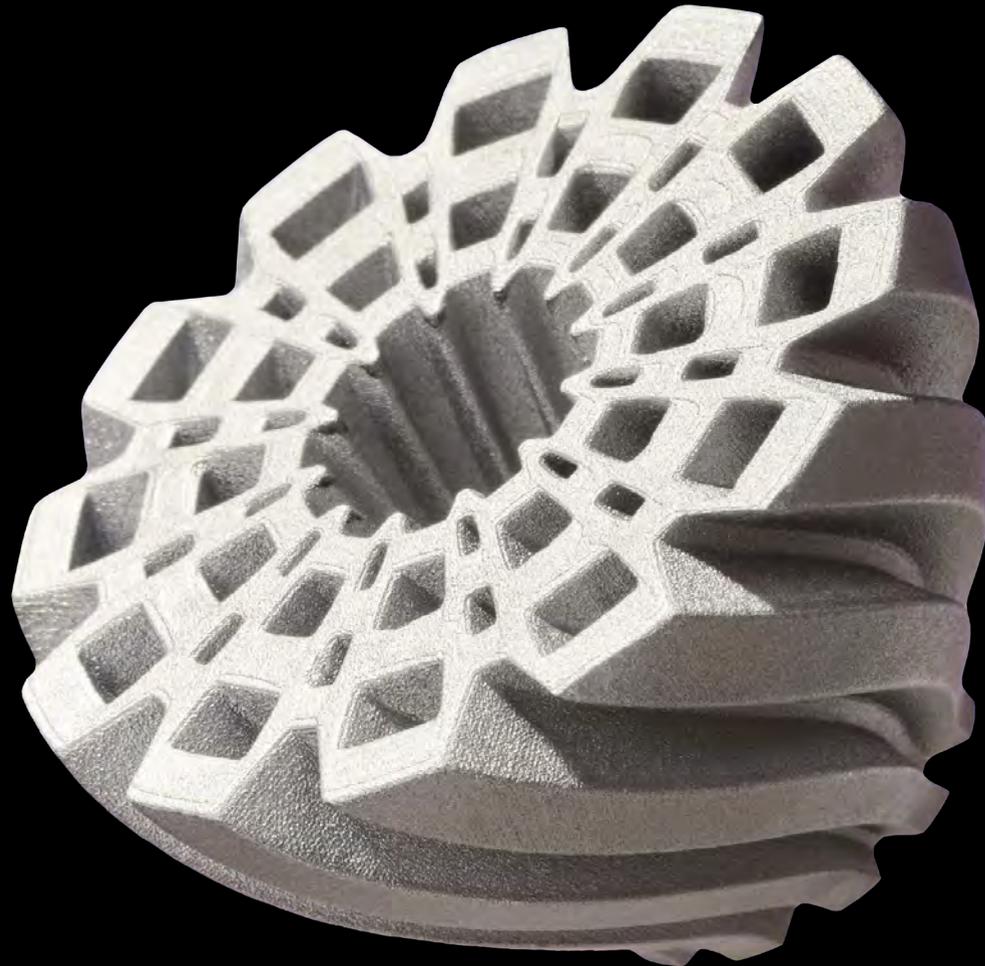
Metal Binder Jetting enables manufacturers to become industry leaders by designing and fabricating previously un-makeable parts and unlocking part customization at scale.

Take Control of Your Supply Chain

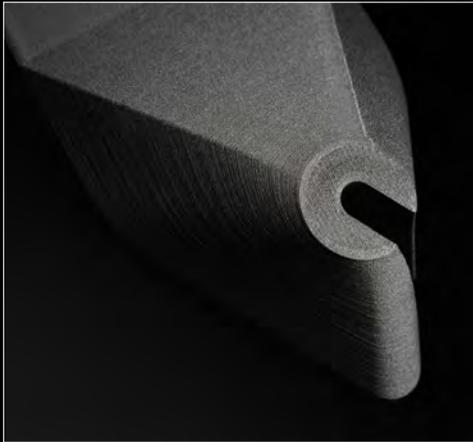
Eliminate the risks and costs that come with 3rd party suppliers by insourcing critical production runs. Swap dependence for control.

Low-Waste Direct Manufacturing

The PX100 is purpose-built for great part quality and a seamless user experience. Markforged combines great software, materials research, and a 5th-generation motion system to deliver industrial-grade parts repeatably.

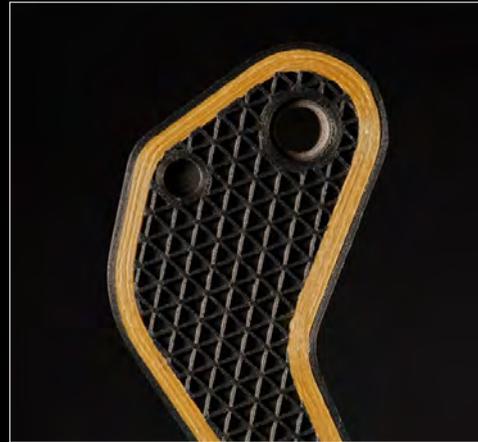


Materials



Engineering Thermoplastic Materials

- Onyx™
- Onyx FR™ (UL94 V0 Rated)
- Onyx ESD™ (ESD Safe)
- Nylon
- ULTEM™ 9085 Filament
- Vega™



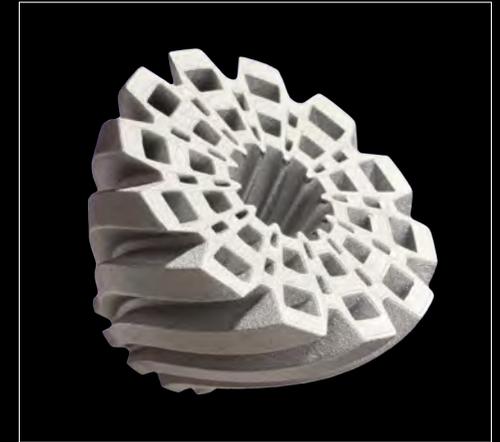
Continuous Fibers

- Carbon Fiber
- Carbon Fiber FR
- Fiberglass
- HSHT Fiberglass
- Aramid Fiber (Kevlar®)



Metal FFF Materials

- 17-4PH Stainless Steel
- Inconel 625
- Pure Copper
- H13 Tool Steel
- A2, and D2 Tool Steel



Binder Jetting Materials

- 316L, and 17-4PH Stainless Steel
- H13, and D2 Tool Steel
- Pure Copper
- 4140 Steel
- Alloy 247, 625, and 718
- Ti6Al4v

Materials



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Optimizing your Investment



Markforged University

Composites and Metals Training Programs teach core and advanced concepts of additive manufacturing and Markforged technologies through advanced application identification and Design for Additive Manufacturing (DfAM). Over 40 self-paced, online courses provide a comprehensive curriculum, enabling you to realize the full potential of your investment in the Digital Forge.

Solution Support

Markforged operates a worldwide network of channel and ecosystem partners. They, working with the Markforged customer success team, provide both remote and "boots on the ground" support for proof of concepts, installations, and technical support.

Users

Empowering your Workforce

Engineers

- Add a powerful tool to your manufacturing toolkit.
- Get functional parts in hand for less.

Manufacturers

- Build more efficient manufacturing processes.
- Reduce the inertia in your manufacturing operation.

Leaders

- Drive competitive advantage and become an industry leader.
- Embrace a connected manufacturing ecosystem.

Innovators and Educators

- Experiment with new materials and technologies.
- Get on the bleeding edge of manufacturing technology.

“Being able to get finished products to market more quickly will keep us on the forefront of the industry.”

ZACH SWEITZER
PRODUCT DEVELOPMENT MANAGER,
SHUKLA MEDICAL

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 Markforged

 **Mark3D**
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