

3D Printing

3D Printing leverages the "digital thread," which enables manufacturers to create a comprehensive 3D model containing all the information required to build, manufacture, and test parts. This digital data can be imported into 3D Printing systems on demand. Manufacturers can use these printers for rapid prototyping, custom fixtures, or even for production quality parts.

Printers are purpose-built around certain materials like metal, plastic, composite materials like fiberglass, and more are emerging. A detailed overview of each type of 3D printing material and common materials can be found at [this link](#).

The selection of a particular material and solution is heavily dependent on the specifics of the application. For instance, aerospace components require lightweight structures that are rigid and durable. For more information and a selection guide to help identify the right solution for a given application, visit [this link](#).

Why 3D Printing?

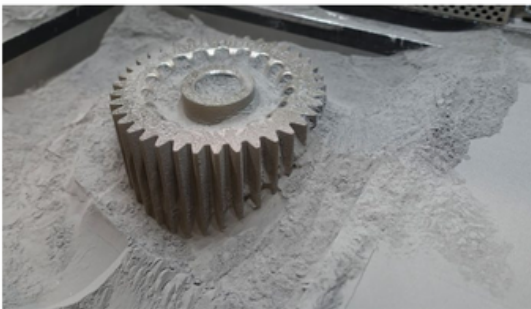
- Rapid prototyping
- Custom manufacturing
- Complex geometries
- Lightweight structures

How is it accomplished?

- "Digital Thread" – print profile derived from 3D [model](#)
- Application specifics determine format and [material](#)

Application Principles

- Metal & composite powders
- Extruded plastic filament
- Liquid polymer
- Mixed materials



Shop Floor Impacts

- Shorten design [cycles](#)
- Reduce inventory [cost](#)
- Reduce material [waste](#)
- Increased flexibility



Thanks to [Go Engineer](#) for their support and samples in highlighting 3D Printing solutions.

Additional Suppliers for 3D Printing



Stratasys manufactures a line of 3D printers focused on [plastics](#), [polymers](#), and [composite](#) materials that are widely used in the aerospace, automotive, dental and medical industries. The materials are well suited to applications requiring lightweight and durable components.

EOS provides fully integrated solutions that simplify deployment and commissioning of systems with a single source. EOS specializes in [direct metal laser sintering](#) printers and [selective laser sintering](#) polymer printers - these technologies meet a wide range of application requirements for dimensional accuracy, surface quality, and stability.



HP provides a line of 3D printers based on proprietary [multi-jet fusion](#) technology that can produce high quality parts at relatively high speeds. This technology is used to produce rigid polymers, flexible and elastomeric polymers, and stainless steel parts that are used in a wide variety of industries and applications including aerospace, consumer goods, transportation, medical, prosthetics and manufacturing support.

Markforged specializes in industrial printers that create strong and functional parts meant for use in final products. They have systems that can produce metal parts in steel, copper, and special alloys; composite plastics; and continuous fibers like Kevlar, fiberglass, and carbon fiber. Their systems are used in a broad range of industries including aerospace, automotive, aerospace, defense, energy, electronics manufacturing, and medical.

