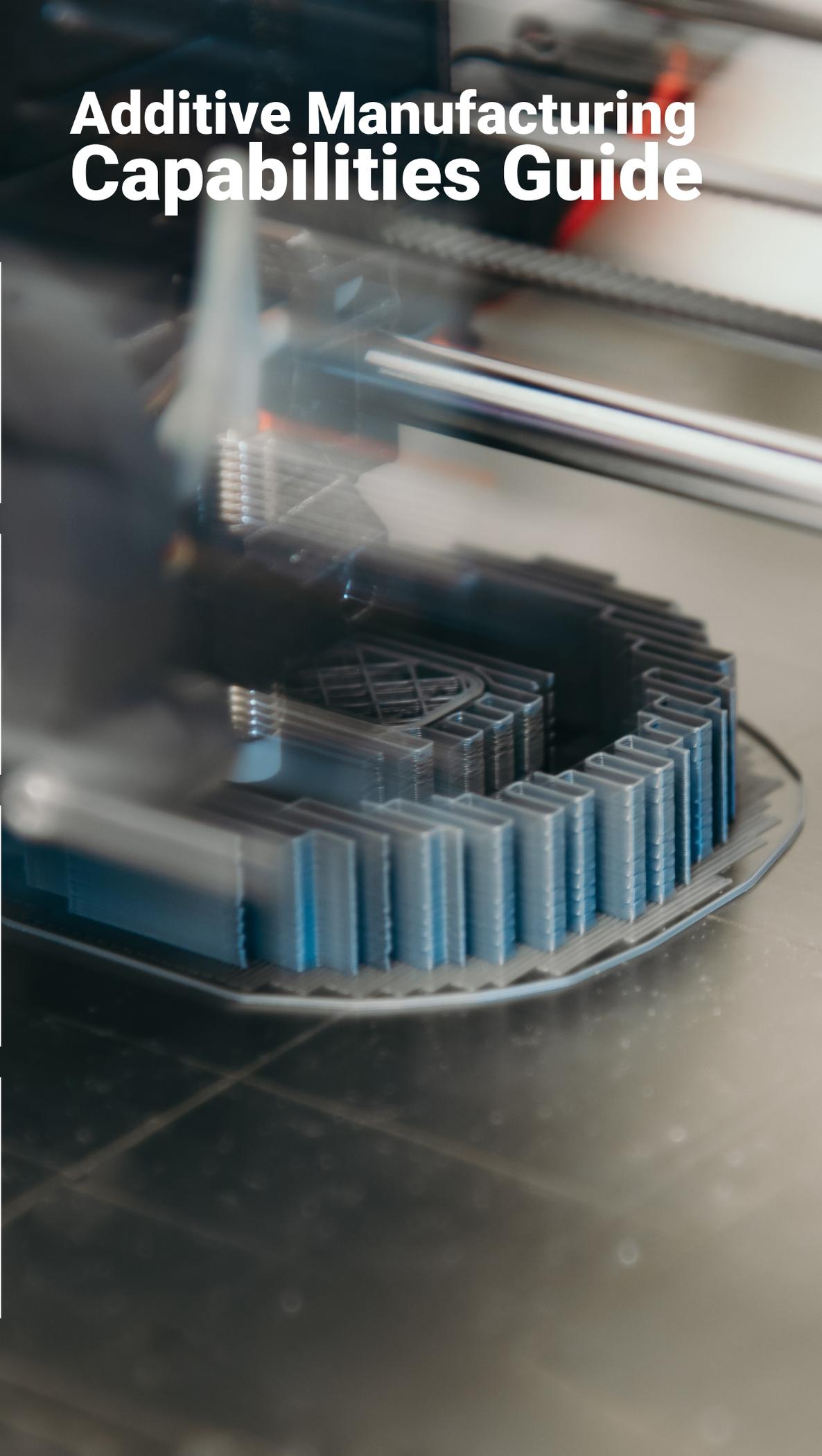
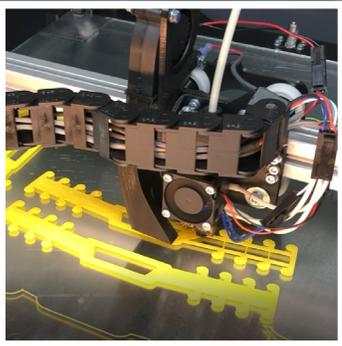




Additive Manufacturing Capabilities Guide



Exploring Additive Manufacturing

Loos is now offering a new type of additive manufacturing service, 3D printing. With this investment, we are able to create complex parts that would require a lot of time to machine or would be expensive to make in small quantities, or using traditional manufacturing methods like molding, machining, casting, etc. Our 3D printing capability is incredibly versatile, meaning that we can print in numerous materials and colors.

3D Printing Benefits

One of the main benefits of additive manufacturing is efficiency. Parts that may require a full day of machining often print in just a couple hours. Multiple nozzle sizes are also available, ranging from 0.4-0.88 mm, to balance printing speed with surface quality. Larger nozzles print faster, but smaller nozzles provide a smoother surface on finished components.

Polylactic Acid (PLA)

- Printable at low temperatures
- Offers high strength capabilities
- Plant-based, biodegradable, & environmentally friendly
- Does not require heated bed for printing

Carbon fiber reinforced Polylactic Acid (PLA)

- Provides stiffness and rigidity after printing
- Offers wear resistance

Additional Capabilities

Add screw threads, threaded inserts, and hex nuts to printed hardware for integration with existing components.

Manufacture live parts, like hinges, that print as one piece but have the ability to move.

Common Materials

- Polylactic Acid (PLA)
- Carbon fiber reinforced Polylactic Acid (PLA)
- NylonX
- Polyethylene Terephthalate (PETG)

Size Constraints

12"x12"x12"

Polyethylene Terephthalate (PETG)

- Provides higher physical strength properties
- Moderately impact-resistant
- Withstands outdoor weathering and sun exposure
- Requires a heated bed for printing

NylonX

- Offers wear resistance
- Chemical and oil resistant



How Does the 3D Printing Process Work?

1. When the need arises for new parts or fixtures, bring the idea to Loos engineering with a drawing or sketch. This will determine what kind of features and materials are required to produce the item based on application, size, quantity, etc.
2. Loos engineering will then draft a digital CAD model of the part.
3. Once a CAD model is made, the software will determine exactly how much material and time is needed to print the finished component.
4. After review and finalization, the part is ready for printing. This may take several hours or days depending on the complexity and scale of its design.



Considerations Before Printing

Before using the 3D printer to copy an existing component, it is important to understand the current cost and availability of a part. This will determine the value of 3D printing designs.

New ideas for hardware or other components for use within our facilities should first be vetted through engineering and production staff.

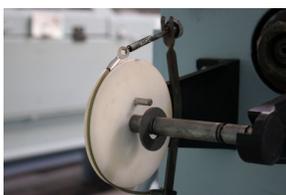
Some designs may require prototyping, testing, and modification to ensure the parts exhibit proper strength and functionality.

Producing complex designs and quick prototyping for customers is the great advantage of additive manufacturing technology.



Product Examples

Bobbin adapters
Machine handles
Wire guides
Gears
& More





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