COLDMETAL FUSION

Industrial Metal 3D Printing Made Scalable

ColdMetalFusion: Scalable. Flexible. Industrial.

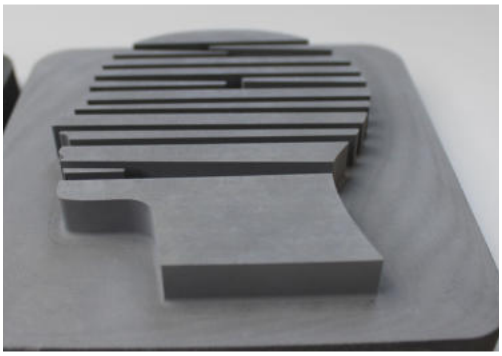
The future of metal AM starts here.

High costs, complex post-processing, and limited scalability have long held back Metal Additive Manufacturing from true industrial production.

Headmade Materials changes that with ColdMetalFusion (CMF), an innovative, sinter-based 3D printing technology designed for the cost-efficient series production of complex metal components made from Performance Metals such as Titanium and nickel-based superalloys.

CMF combines the design freedom of Additive Manufacturing with the reliability and scalability of Powder Metallurgy.

A key advantage of CMF is its green part machining capability, allowing efficient, precise, and energy-saving post-processing before sintering. This not only enhances surface quality but also significantly improves production economics. A real game-changer for serial production in metal AM.



Precision milling of the green part

By combining Performance Metals, process reliability, and industrial scalability, Headmade Material transforms metal 3D printing into a true production technology – paving the way for the industrialization of Additive Manufacturing.

An Open and Proven Ecosystem

ColdMetalFusion operates with an open ecosystem of industrially proven equipment for printing, debinding, and sintering. Users can leverage existing infrastructure and scale production flexibly, from prototyping to high-volume manufacturing, without the need for proprietary systems.

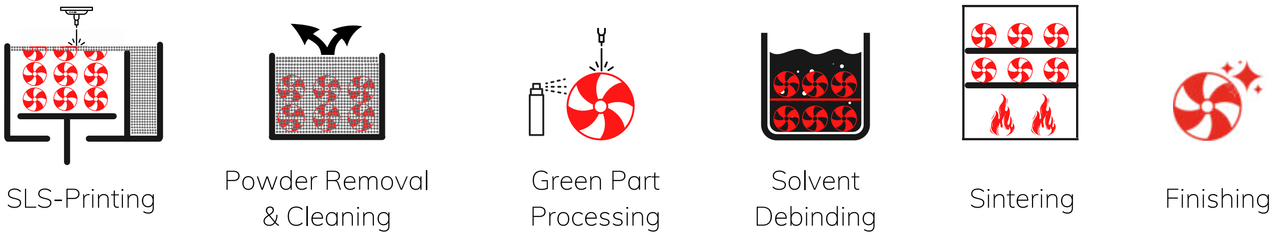
Through close collaboration with leading partners in printing, debinding, sintering, post-processing, and automation, Headmade Materials ensures a smooth implementation and fast production ramp-up.

The Process

ColdMetalFusion unites SLS 3D printing, solvent debinding, sintering, and post-processing in one reliable process chain, bridging the gap between additive flexibility and industrial scalability.

The process is based on a unique feedstock of metal powder and a polymer binder, which can be processed on standard SLS systems. After printing, the parts are debound and sintered, resulting in fully dense metal components with mechanical properties comparable to Metal Injection Molding (MIM).

The result: Metal parts with the performance of conventional manufacturing, produced with the efficiency of additive technology.



Why ColdMetalFusion makes a difference

ColdMetalFusion is based on proven industrial equipment developed over decades. Choose from standard solutions or collaborate with us to design a tailor-made setup for your business needs.

Your advantages at a glance

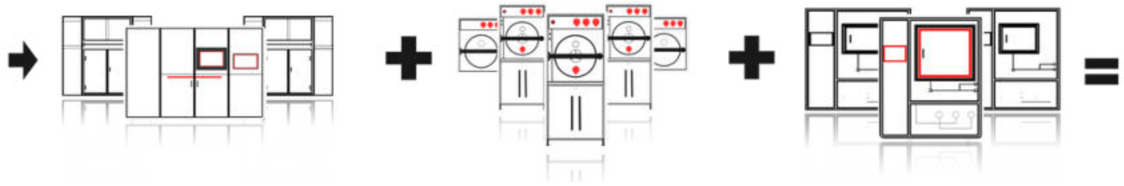
✓ High precision	Dimensional accuracy and surface quality comparable to machined parts
✓ Cost efficiency	Reduced post-processing and lower energy use, as well as initial lower investment costs
✓ Scalability	From small batches up to one million parts per year
✓ Performance Metals	Titanium, Inconel, Stainless Steels, Tool Steel, and more
✓ Seemless integration	Use existing SLS infra-structure, sintering fur-naces and automation solutions

Ready to scale up?

Start your metal production with ColdMetalFusion, from small series production to fully automated, high-volume manufacturing. Just measure your part's build volume, and our experts will help you design your custom production setup and calculate your business case. With CMF, you can produce anywhere from 100 up to 1,000,000 parts economically, thanks to economies of scale.

The minimum setup includes:

CAD File



Metal Parts

SLS Printer

Debinding Station (Solvent)

Sintering Furnace (MIM-Type)

Your next step: Get in Touch

Experience the performance of ColdMetalFusion live.
Request a part analysis or process consultation today.

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