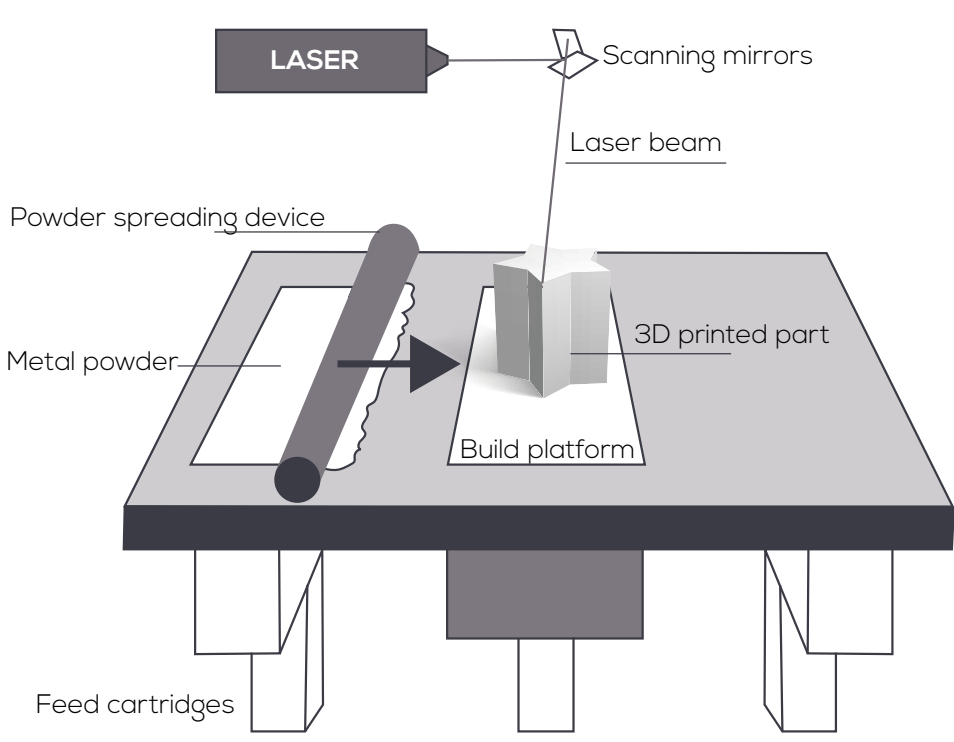


METAL ADDITIVE MANUFACTURING TECHNOLOGY

POWDER BED FUSION

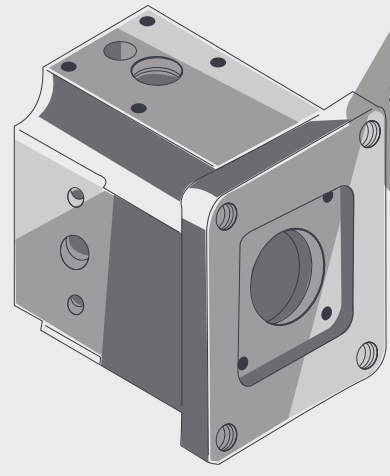
HOW DOES PBF (LASER) WORK?

- 1 The 3D model of the part is sliced in thin layers,
- 2 A layer of metal powder is spread on the build platform,
- 3 An energy source (laser or electron beam) melts the metal where necessary,
- 4 A new layer of metal powder is spread,
- 5 The cycle continues until the part is completed.



WHAT CAN PBF DO FOR YOU?

UNLEASH YOUR CREATIVITY
Complex geometries, customization.



LIGHTEN YOUR PART
Eliminate mechanically unstressed material volumes. Metal saving.

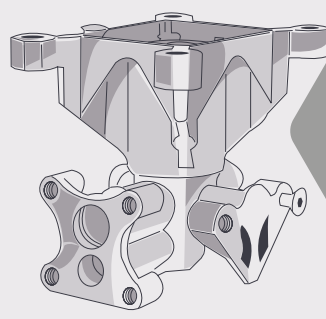
HYDRAULIC MANIFOLD

ADD FUNCTIONS
Create internal & curved channels.



LESS MACHINING
Parts can be 3D printed without support (thin powder) Near net shape.

3D PRINT ONCE, IN ONE BLOCK
Gain of production time. Elimination of sealing and assembly operations between conventional parts.



OPTIMIZE THE PART PERFORMANCE

RESULTS : VOLUME REDUCTION 304 CM³ AND WEIGHT REDUCTION 1.3 KG

MULTI-MATERIAL

& MOST USED

CATEGORIES	PROPERTIES	INDUSTRIES
STAINLESS STEEL	Corrosion resistance Good mechanical properties	Automotive Chemical industry Medical
TOOL STEEL	High hardness High wear resistance Good machinability	Tooling
CHROME, COBALT ALLOY	High hardness High wear resistance Corrosion resistance	High temperature applications Medical
NICKEL ALLOY, INCONEL	High corrosion resistance High mechanical resistance in high temperature Good weldability	Aerospace Aeronautic Power generation Chemical industry Motorsport
TITANIUM	Corrosion resistance Good mechanical properties Good weldability	Aeronautic Medical Aerospace Motorsport
ALUMINIUM	Light alloy Good mechanical properties	Automotive Aerospace Aeronautics Motorsport

PBF REPRESENTS

85%

OF METAL ADDITIVE MANUFACTURING MARKET

Laser Beam Powder Bed Fusion is the most widely used AM technology nowadays

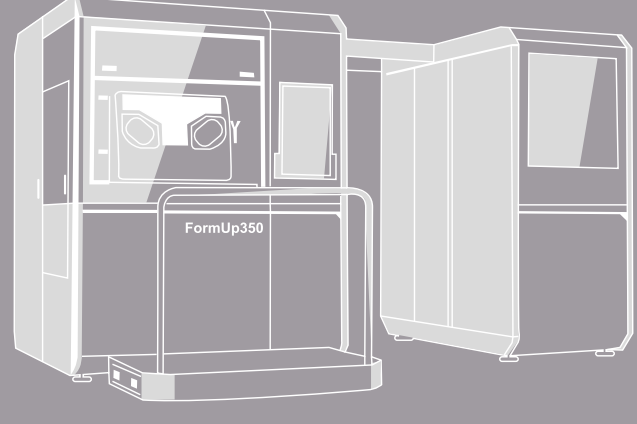
ADDUP PBF TECHNOLOGY

LASER
- multiple laser system 500 W (Yb fiber lasers)
- laser spot size: 70 µm
- high precision 3 axis scanning system

POWDER
- ability to use metal powders from any supplier
- compatible with thin particules (5-25 µm) and large particules (20-63 µm)

RECOATER
Multiple spreading devices available:
- roller for best surface finish and low angles
- blade or brush for productivity

ADDUP PBF CAPABILITIES



34

MULTI OEM POWDER BED FUSION MACHINES

From 1 to 4 lasers - from 400 W to 1000 W