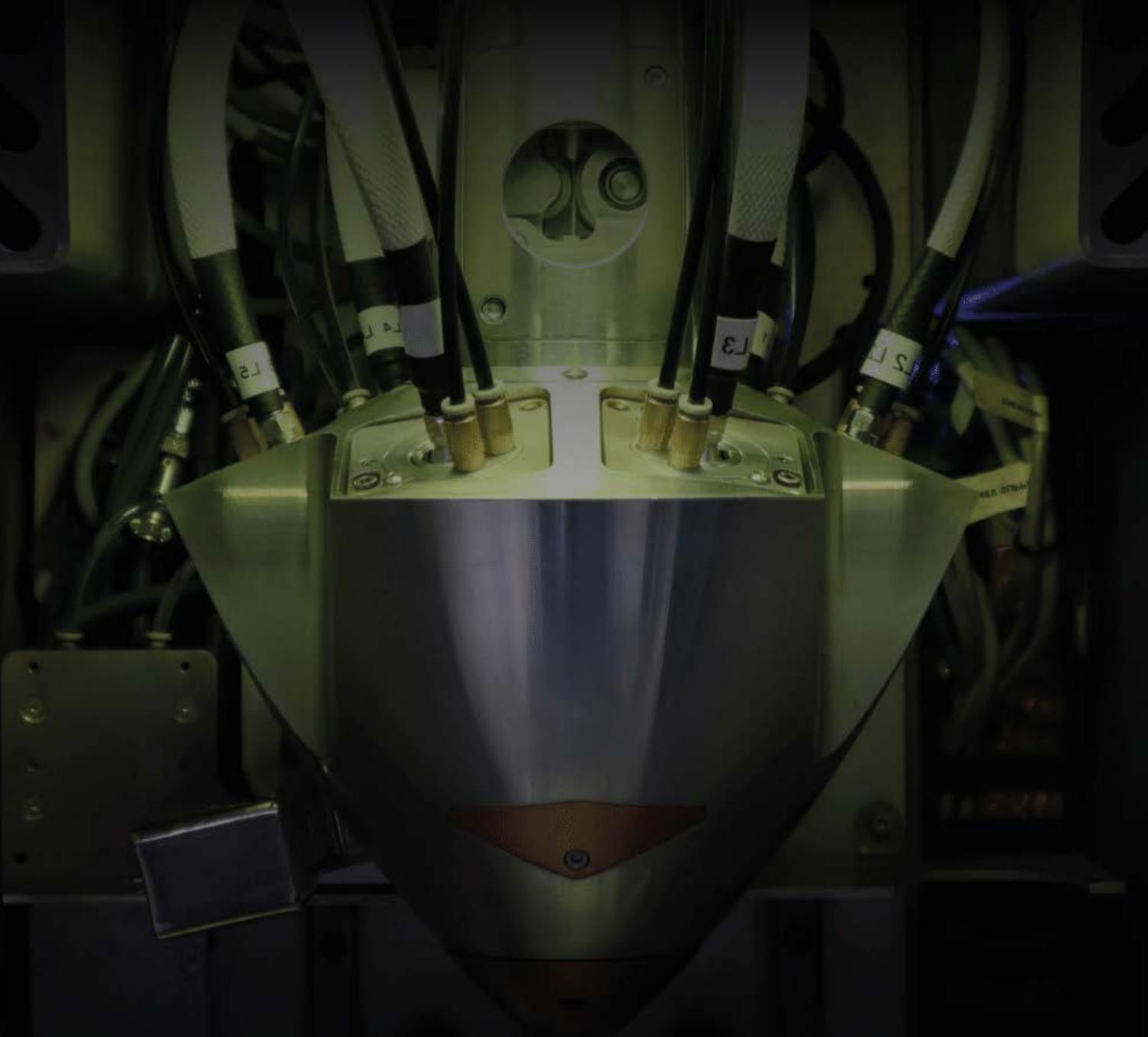
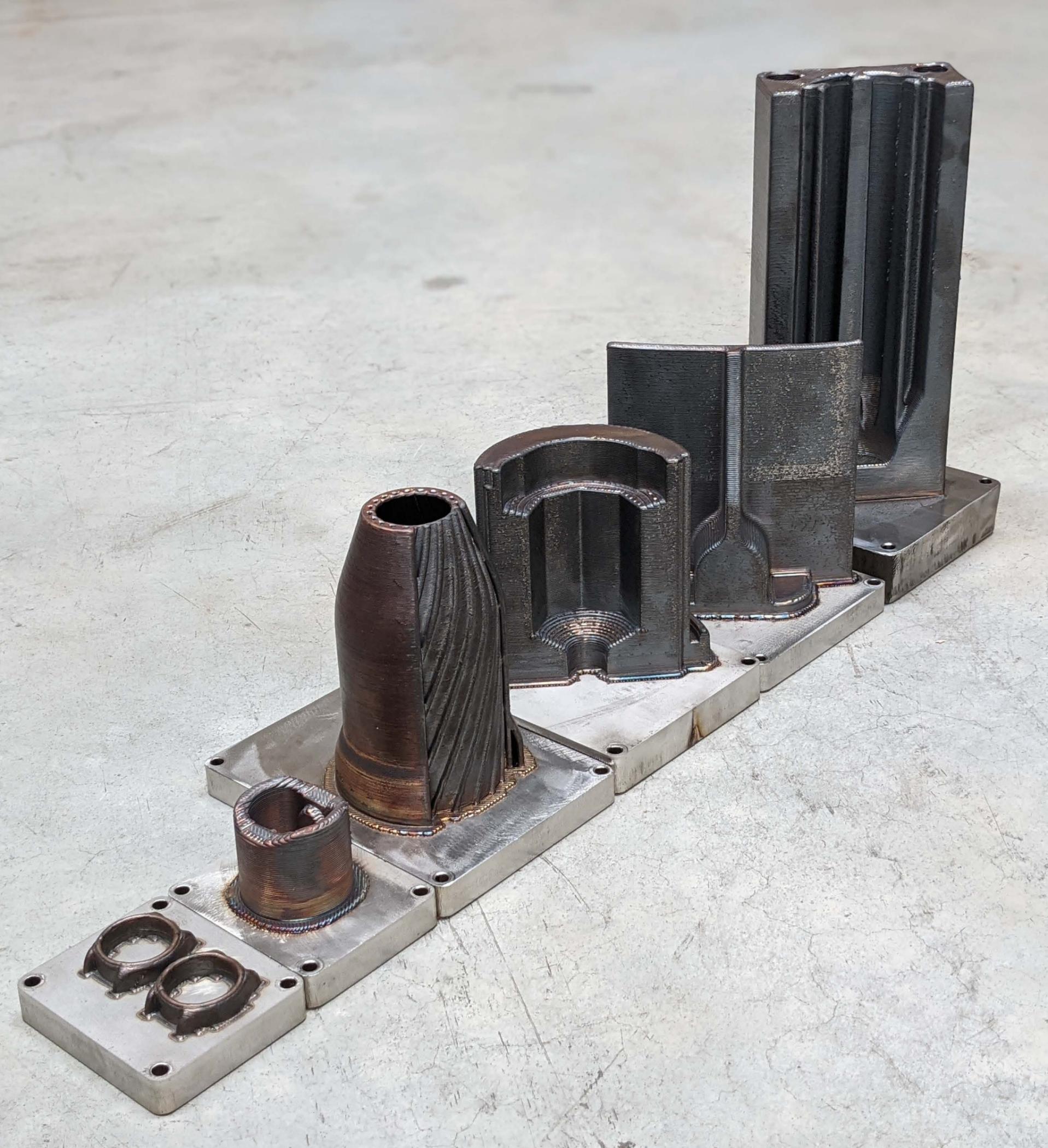


MELTIO

Multi-Metal 3D Printing

A disruptive laser metal deposition technology





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Combustion Chamber

Aerospace
Stainless Steel 316L

Size: 110,5 x 110,5 x 170 mm

Weight: 4,88 kg

Print Time: 27 h 30'

Print Cost: € 97,09



About

Our mission is to delight customers, partners, and employees by pioneering the development of affordable metal 3D printing solutions that are reliable, safe, and easy to use, continually reinforcing our status as a disruptor.

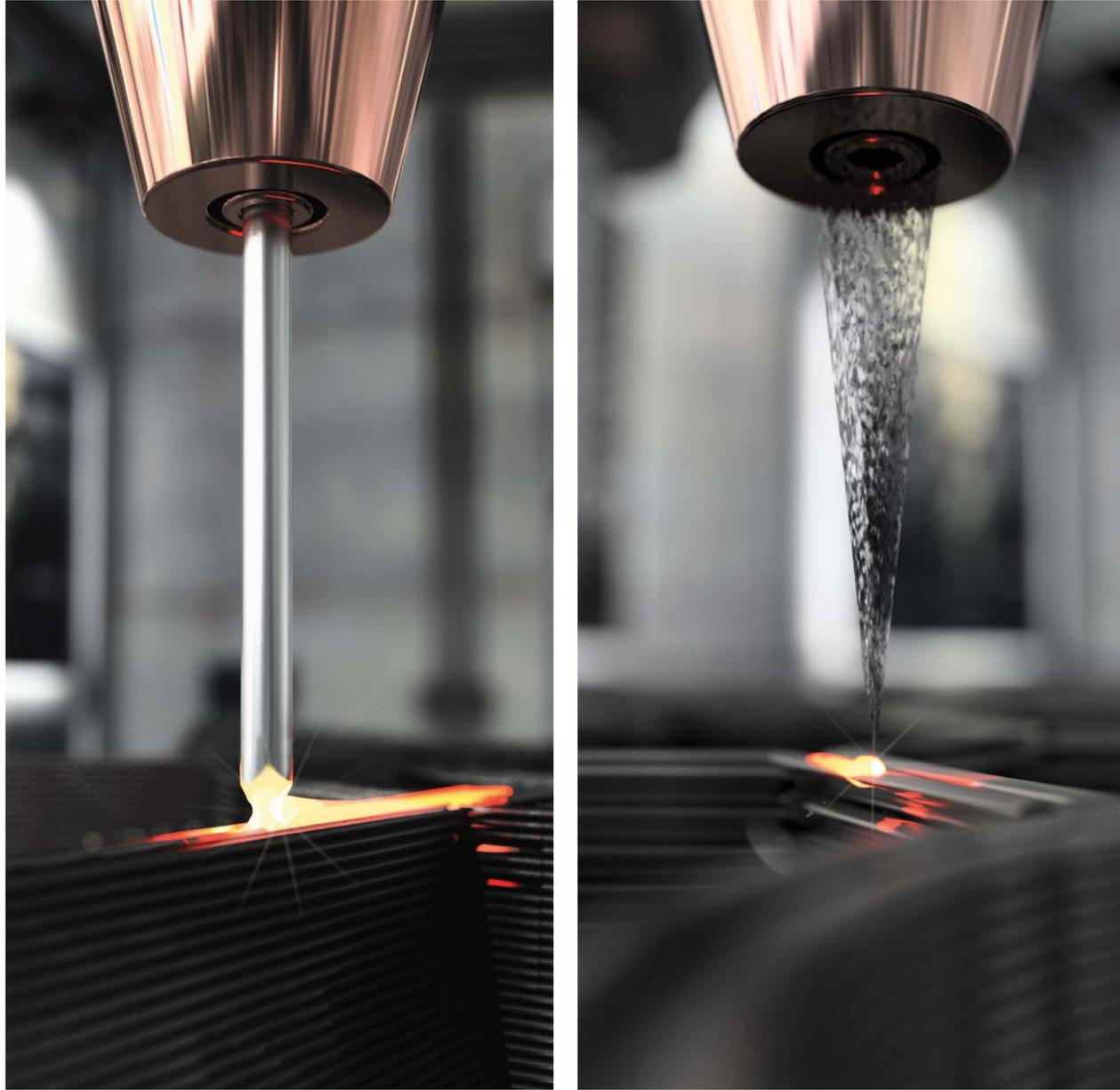
Excellence in technology and commercial development.

Incorporated in June 2019 through a joint venture of AddiTec, a Las Vegas-based technology company, and Sicnova, a leading 3D printing commercial distributor, Meltio proudly counts with the strategic support of ArcelorMittal, the largest steel producer in the world.

Multi-laser Metal Deposition

Laser Metal Deposition is a Directed Energy Deposition (DED) process that functions by precisely stacking weld beads on top of one another when introduced into the laser-generated melt pool.

Meltio's multi-metal 3D printing technology comes packaged in a compact deposition head, host of multiple lasers, and capable of processing wire and powder simultaneously.

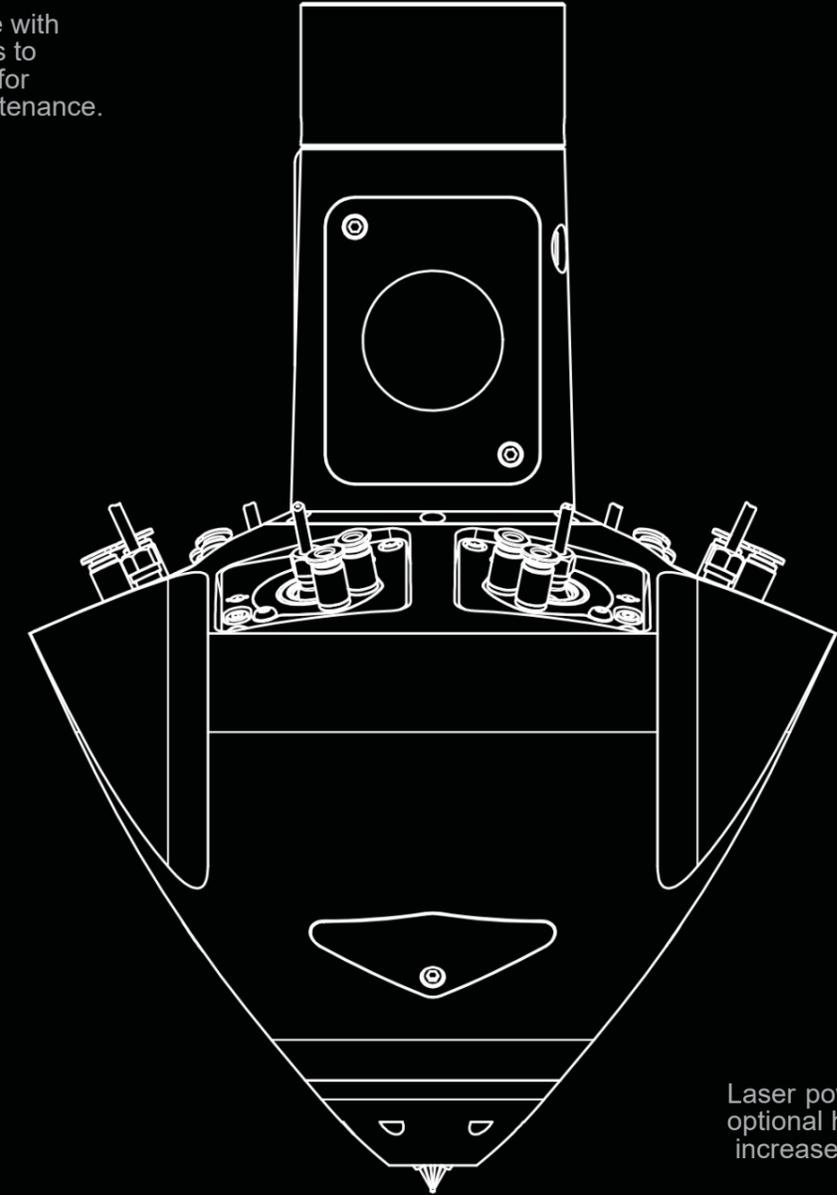


Process Stability

The metal 3D printing process is monitored in real-time and compensated by process control.

Maintenance Ready

Long service life with excellent access to all components for preventive maintenance.



High Power

Laser power of 1.2k,W and optional hot wire system for increased deposition rates.

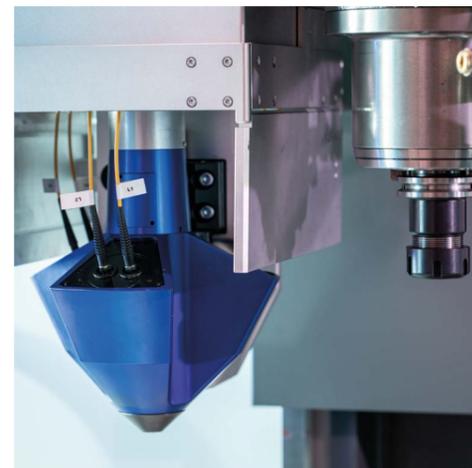
Extremely Efficient

The wire deposition utilizes 100% of the material and the heat input is kept extremely low.



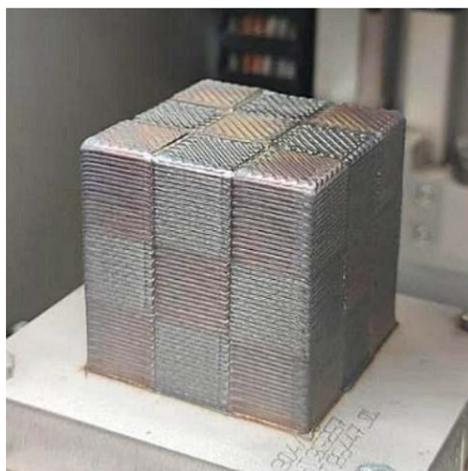
Safe and Reliable

The bulk of the 3D printing process is built around wire, the safest, cleanest, and easiest to work with metal feedstock.



Integration Ready

Turn an existing CNC or robotic platform into a hybrid manufacturing system with no inherent size constraints.



Multi-Metal 3D Printing

Print dual wire for hard-facing or anti-corrosion applications, or wire and powder to create new alloys on the fly.

Knee Implant

Medical
Titanium 64

Size: 99 x 77 x 51 mm

Weight: 410 g

Print Time: 2 h

Print Cost: € 38,32

Post-Processing: CNC Machining

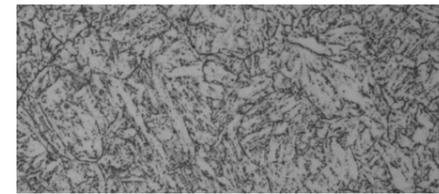


Open Materials Platform



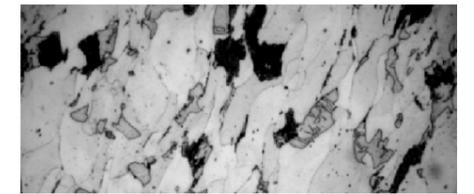
Single Wire

The bulk of the 3D printing process is built around wire, the safest, cleanest, and easiest to work with metal feedstock.



Stainless Steels

Excellent strength and corrosion resistance.

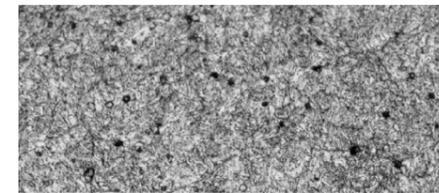


Mild Steel

Cheap and ductile, with unparalleled machinability and weldability.

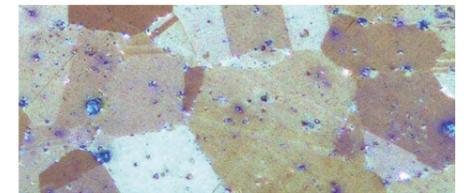
Dual Wire

Combine different metal materials in a single part. The wire switching process is quick, automatic, and clean.



Carbon Steels

High impact strength, retain hardness at high temperatures.



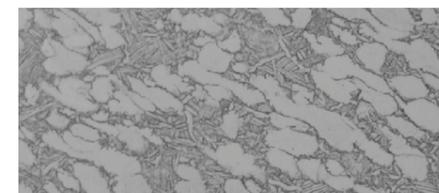
Inconel

High versatility, outstanding heat and corrosion resistance.



Wire and Powder

Create new alloys on the fly, test functional gradients and research metal matrix composites (MMC).



Titanium

Highest strength to weight ratio and corrosion resistance.



Copper

Under Development.

Excellent Mechanical Properties

Meltio's compact heat-affected zone process achieves exceptional mechanics, decreased thermal stress and near isotropic properties, exceeding casting, and forging material properties.

Stainless Steel 316	Wrought Properties	Cart Properties	Meltio XY Properties	Meltio XZ Properties
Tensile Strength (MPa)	515	550	635 ± 13	650 ± 7
Yield Strength (MPa)	208	260	390 ± 30	380 ± 17
Elongation (%)	40	35	52 ± 3	46

Titanium 64	Wrought Properties	Cart Properties	Meltio XY Properties	Meltio XZ Properties
Tensile Strength (MPa)	930	860	950 ± 5	-
Yield Strength (MPa)	860	758	882 ± 5	-
Elongation (%)	>10%	>8%	12 ± 0.5	-

Inconel 718	Wrought Properties	Cart Properties	Meltio XY Properties	Meltio XZ Properties
Tensile Strength (MPa)	1241	802	1308 ± 10	1235 ± 11
Yield Strength (MPa)	1034	758	1128 ± 20	1040 ± 12
Elongation (%)	10	5	6.6 ± 2.1	8.5 ± 0.7

Glass Mold Core

Manufacturing
Stainless Steel 316L

Size: 158,5 x 79,31 x 144,3 mm

Weight: 6 kg

Print Time: 30 h 12'

Print Cost: € 100,74

Post-Processing: CNC Machining

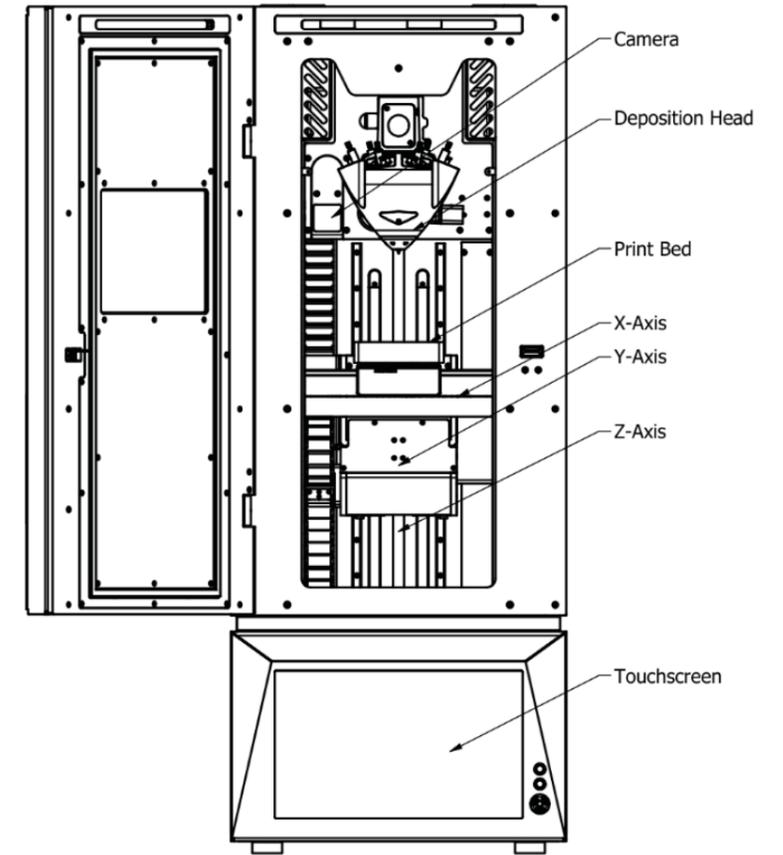
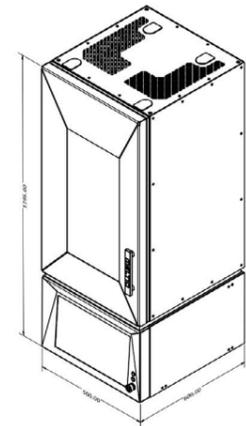
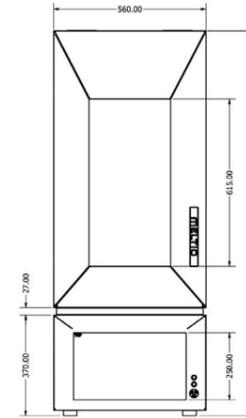


Meltio M450

Designed for industry without the need for industrial infrastructure; affordable, reliable, safe, and easy to use metal 3D printer. Ideal for small to medium size part fabrication, and multi-metal 3D printing research.



Specifications



Reliable

The metal 3D printing process is monitored in real-time and compensated if required by process control.

Easy to use

Automatic toolpath generation and material print profiles supplied by Meltio make for a plug-and-play experience.

Safe

Suitable for any environment thanks to a process built around wire, a sealed chamber and a built-in 3 stage filter.

Affordable

The low capital and running costs of the Meltio M450 make metal 3D printing of conventional parts possible.

Dimensions (W*D*H):
560*600*1400 mm

Print Envelope (X*Y*Z)
150*170* 425 mm

Weight:
250 kg

Laser Power:
1200 W

Laser Type:
Multiple 200 W direct diode lasers

Laser Wavelength:
976 nm

Enclosure:
Laser- safe, sealed, controlled atmosphere

Process Control:
Cosed-loop laser and wire modulation

Power Input:
208/230 V single phase or 400V three phase

Power Consumption:
2-5 kW peak depending on selected options

Interface:
USB, ethernet, wireless datalink

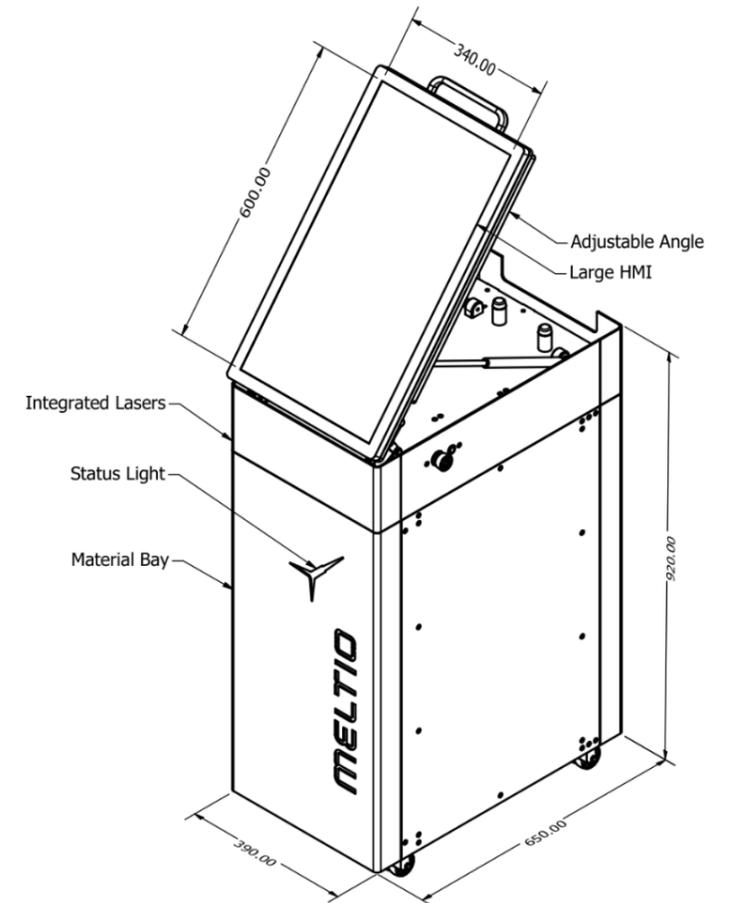
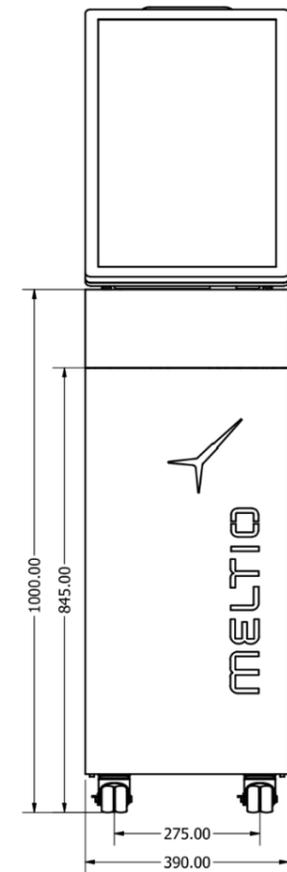
Cooling:
Active water-cooled chiller included

Meltio Engine

Advanced control module for fitting existing CNC and robotic equipment with Meltio technology. Turn any motion platform into a metal 3D printing system with no inherent size constraints.



Specifications



Hybrid Manufacturing

Create highly complex parts with machining tolerances in the same process.

Part Repair

Cost-effective component repair, part augmentation and feature addition.

Retrofitting

Provide new capability to any CNC machine by turning it into a hybrid metal manufacturing system.

Geometry Freedom

No inherent constraints when the working envelope is only limited by the size of the motion system.

Dimensions (W*D*H):

390*700*1025 mm

Print Envelope (X*Y*Z)

Inherent to motion system

Weight:

142 kg

Laser Power:

1200 W

Laser Type:

Multiple 200 W direct diode lasers

Laser Wavelength:

976 nm

Process Control

Closed-loop laser and wire modulation

Power Input:

208/230 V single phase or 400V three phase

Power Consumption:

2-5 kW peak depending on selected options

Interface:

USB, ethernet, wireless datalink

Cooling:

Active water-cooled chiller included

Meltio Engine CNC Integration

The most affordable hybrid manufacturing solution, fitting almost any CNC machine in the market. Enable 3D printing and machining of complex geometries in a single process step.



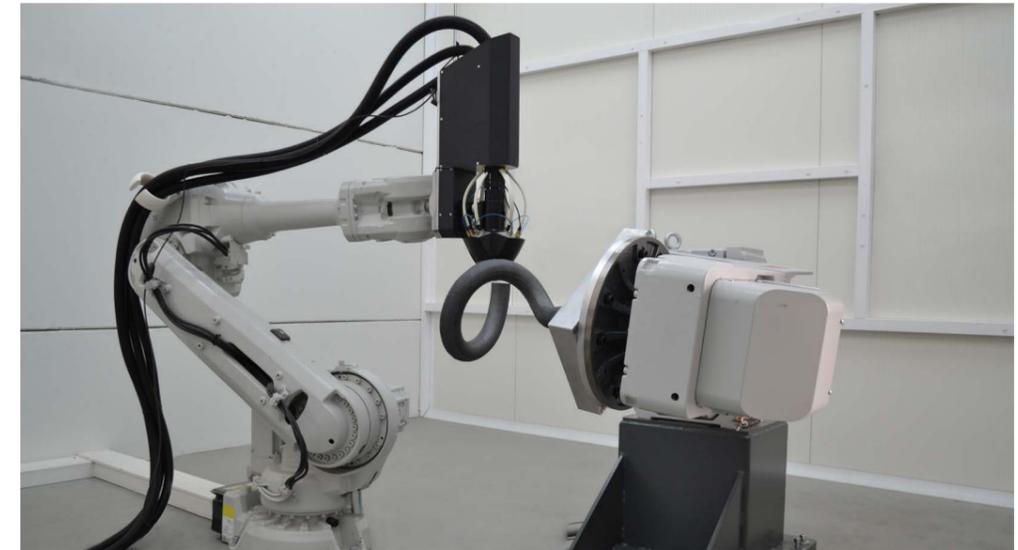
CNC Integration Hardware

Actuated hardware mechanism where the deposition head is stored in a sealed enclosure when it is not in use and automatically deployed when needed.



Meltio Engine Robot Integration

Unlock geometry freedom in part size and complexity by integrating Meltio with a Robotic Arm. The cost-effective solution for large metal part manufacturing.



Robot Integration Hardware

Unconstrained metal 3D printing. Mounting hardware for the deposition head, and related electronic sensors in robotic applications.



Watch Bezel

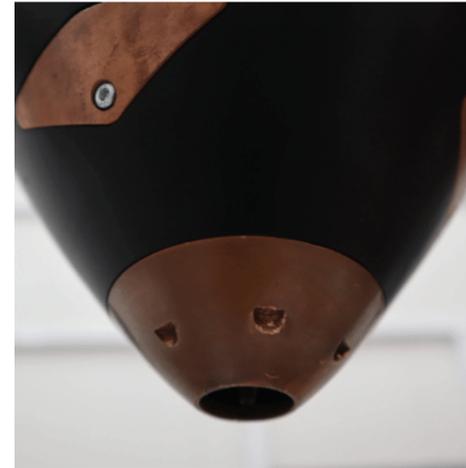
Jewelry
Titanium 64

Size: 53,37 x 44,59 x 10,85 mm
Weight: (x6) 155,93 g / (x1) 29,22 g

Print Time: (x6) 5 h 40' / (x1) 56'
Print Cost: (x6) € 31,09 / (x1) € 5,18
Post-Processing: CNC Machining



Upgrades and Accessories



Hot Wire

Programmable power supply that preheats the material to increase the deposition rate.

Dual Wire

This option allows to 3D print two wire materials sequentially with very quick wire switches.





Powder Feeder

Necessary to 3D print from powder feedstock, unlocks on the fly metal alloying.

Only available for Meltio Engine Robot Integration*

Gas Turbine Fan Blade

Oil & Gas
Inconel 718

Size: 35 x 75 x 135 mm

Weight: 1,11 kg

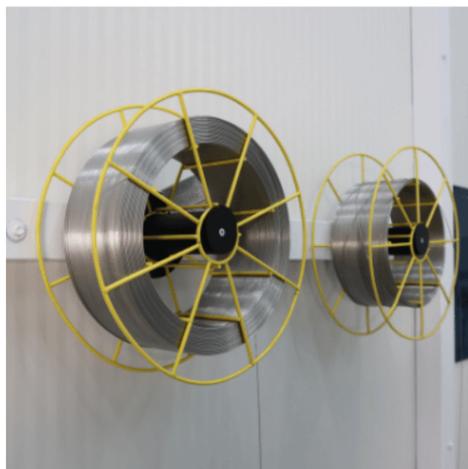
Print Time: 3 h 10'

Prin Cost: € 67,85

Post-Processing: CNC Machining

Station

Sturdy wheeled table made from stainless steel and aluminum. Contains tool and material drawers.



External Wire Drum

Draw from an external wire source. Drums from 100kg may be used for convenience.



MELTIO

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