

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.

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.

Single and Dual Metal 3D Printing



Single Wire

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



Dual Wire

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



Wire and Powder

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

Open Materials Platform



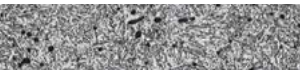
Stainless Steels

Excellent strength and corrosion resistance.



Mild Steel

Cheap and ductile, with good machinability and weldability.



Carbon Steels

High impact strength, retain hardness at high temperatures.



Titanium

Highest strength to weight ratio and corrosion resistance.



Inconel

High versatility, outstanding heat and corrosion resistance.



Copper

Under development.

Applications



Combustion Chamber SS316L – Aerospace

System: Meltio M450
Size: 110,5 x 110,5 x 170 mm
Weight: 4,88 kg
Print Time: 27 h 30'
Print Cost: € 97,09



Glas Mold Core SS316L – Manufacturing

System: Meltio M450
Size: 158,5 x 79,31 x 144,3 mm
Weight: 6 kg
Print Time: 24 h
Print Cost: € 103,44



Watch Bezels Titanium – Jewellery

System: Meltio M450
Size: 53,37 x 44,59 x 10,85 mm
Weight: (x6) 155,93 g
Print Time: (x6) 5 h 40'
Print Cost: (x6) € 31,09



Naval Propeller SS316L – Marine

System: Meltio Engine Robot
Size: 600mm Ø - 250mm
Weight: 12,1 kg
Print Time: 43 h 40'
Print Cost: € 189,71



Engine Manifold SS316L - Motorsport

System: Meltio Engine Robot
Size: 205 x 360 x 473 mm
Weight: 5,2 kg
Print Time: 19 h 23'
Print Cost: € 95,86



Spherical Tank SS316L – Oil & Gas

System: Meltio Engine Robot
Size: 500 Ø mm sphere
Weight: 29,6 kg
Print Time: 81 h 20'
Print Cost: € 433,07



MELTIO

Multi-Metal 3D Printing

A disruptive laser metal deposition technology

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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.



Reliable

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

Safe

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

Easy to Use

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

Affordable

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

Technical Specifications

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

Weight: 293 kg

Laser Type: Six 200 W direct diode lasers

Enclosure: Laser-safe, sealed, controlled atmosphere

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

Interface: USB, ethernet, wireless datalink

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

Laser Power: 1200 W

Laser Wavelength: 976 nm

Process Control: Closed-loop, laser and wire modulation

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

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.



Geometry Freedom

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

Retrofitting

Provide new capability to any CNC and robot arm by turning it into a metal 3D printing system.

Part Repair

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

Large Scale

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

Technical Specifications

Dimensions (W*D*H): 390*700*1025 mm

Weight: 146 kg

Laser Type: Six 200 W direct diode lasers

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

Interface: USB, ethernet, wireless datalink

Print Envelope (X*Y*Z): Inherent to motion system

Laser Power: 1200 W

Laser Wavelength: 976 nm

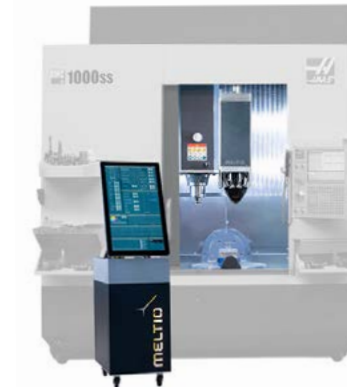
Process Control: Closed-loop, laser and wire modulation

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

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 metal 3D printing and machining of complex geometries in a single process step.



CNC Integration Hardware

Dimensions (W*D*H):

Retracted 255*320*872 mm

Unretracted 255*320*1045mm

Weight: 46,5 kg

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

Dimensions (W*D*H):

202*297*784 mm

Weight: 15,5 kg