



Meltio Engine CNC Integration

Laser Metal Deposition (LMD) Technology

Turn any machine tool into an hybrid manufacturing system with no inherent size constraints. The Meltio Engine is the ideal CNC complement for near net shape manufacturing, repair and feature addition.



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 and robot arm by turning it into a metal 3D printing system.



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

System Weight: 142 kg

Laser Type: 6 x 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): Depending on the integration

Total Laser Power: 1200 W

Laser Wavelength: 976 nm

Cooling: Active water-cooled chiller included

Process Control: Closed-loop, laser and wire modulation

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

Printhead Retracted Size (WxDxH): 255x320x872 mm

Printhead Unretracted Size (WxDH): 255x320x1045 mm

Printhead Weight: 46.5 kg

Wire Feedstock: Diamenter: 0.8-1.2 mm
Spool Type: BS300 or wire drums

Accessories: Laser Alignment System, and Dual Wire

Open Materials Platform

Stainless Steels

Excellent strength and corrosion resistance.

Mild Steels

Cheap and ductile, with unparalleled machinability and weldability.

Carbon Steels

High impact strength, retain hardness at high temperatures.

Titanium

High strength to weight ratio and corrosion resistance.

Nickel

High versatility, outstanding heat and corrosion resistance.

Copper

Under Development.

Meltio Engine CNC Integration



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.

CNC Integration Hardware

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



CNC Requirements

Minimum requirements for a successful integration of the Meltio Engine with a CNC machine are:

1. Spindle motors can handle the additional weight
2. Deployment mechanism can be mounted without collisions
3. Eight unused M-code controlled relays
4. Ability to add a NO relays to the feed hold
5. Ability to add feed resume/start buttons
6. Laser safety windows can be mounted
7. System can lock all doors and windows