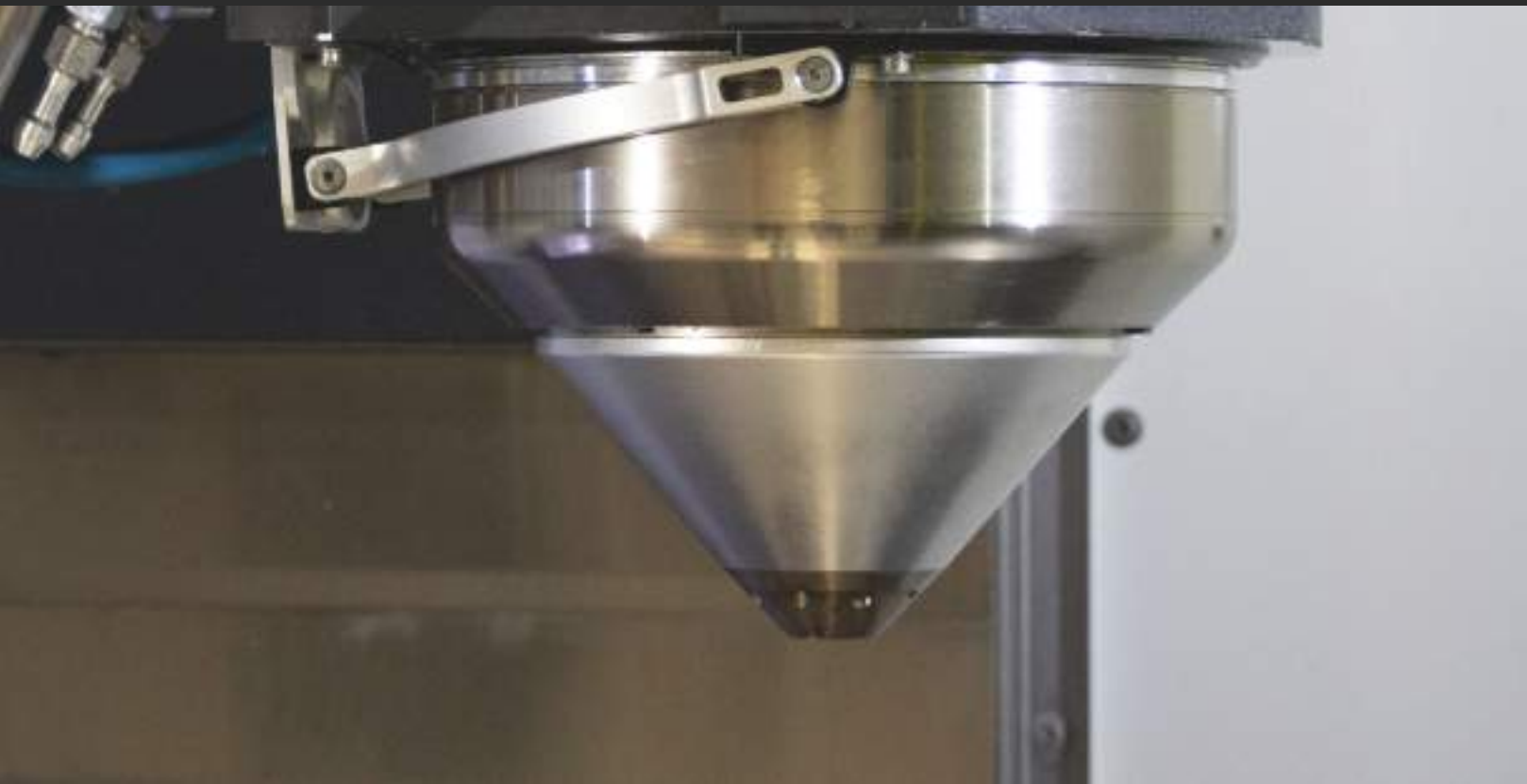


MELTIO

**Advanced Metal
Additive Manufacturing**



Meltio delivers a new standard in metal manufacturing with its patented wire-laser technology available as a compact standalone system or easily integrated into CNC machines and robotic arms. Our plug-and-play integration kits make **advanced additive manufacturing** more accessible than ever, with fast setup and minimal hardware requirements.

By using standard welding wire as feedstock, Meltio systems produce **dense, high-quality metal parts** with consistent mechanical performance without complexity and risks. Whether you're enhancing existing machinery or adopting additive from scratch, Meltio offers a flexible, cost-efficient, and reliable path to modern metal production.



Laser Metal Deposition

Multi-Laser Deposition Head

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

Our compact deposition head integrates multiple lasers and a coaxial wire feed, enabling efficient processing of standard welding wires, independently or in sequence.



What makes our systems unique?

Safer operations

Fully enclosed systems, Class 1 laser safety, and wire feedstock eliminate airborne risks.

Precision and control

Patented Coaxial Wire Feed and multi-laser heads for consistent, precise deposition.

Single, Dual and Quadruple wire

Options for printing with up to four different materials in the same print sequentially with the reliability of a single wire process.

Great mechanical properties

Achieve near net-shape parts with superior properties.



Enhanced performance and reliability with Meltio Blue Lasers

High absorption and efficiency

450 nm blue light improves energy absorption and printing efficiency, enhancing deposition rates and reducing energy consumption.

Factory laser alignment

Ensures maximum printing repeatability and minimal maintenance, enhancing long-term reliability and reducing downtime.

Wide range of compatible materials

The multi-laser blue system is compatible with a broad range of metal materials, providing flexibility and versatility in production.

Integrated sensors and vision system

Real-time monitoring and feedback from integrated sensors and a vision system ensure precise control and continuous optimization during the printing process, enhancing quality and consistency.



Industries already working with Meltio

Energy, Oil & Gas

Corrosion-resistant parts and pipeline repairs, showcasing hybrid manufacturing that integrates additive and subtractive processes on a single platform.

Aerospace, Defense and Naval

Part repair and on-demand manufacturing capabilities in remote or operational areas. Wide range of common military-grade metals. Legacy components no longer manufactured by the OEM. Rapid prototyping on designs for new components or specialized tools.

Automotive and Motorsport

Production of high-performance components with successful implementations of multi-material printing to boost part efficiency.

Tooling and Molds

Custom tooling with conformal cooling channels, where multi-material printing and repair extend tool life and performance.



Mining

Create and repair parts directly at the point-of-need, even in remote locations. Greatly reduce the high costs for custom or complex parts. Improve the production process by cutting the equipment downtime impacting productivity.

Heavy Industry and Construction

Large-scale manufacturing and reinforcement structures, supported by large-scale printing case studies that significantly reduce production costs.



Meltio M600

Industrial Metal 3D Printer

Expand your manufacturing capabilities with Blue Lasers, a large build volume and a fully inert chamber for the best material properties. Printing is easier than ever thanks to the improved process control, advanced sensors and live monitoring allowing you to produce parts consistently 24/7.

The Meltio M600, with its built-in 3-axis probing system and work-holding solutions, is the ideal companion for your manufacturing operations.



Production ready

Reliable

Easy-to-use

Repeatability

Dimensions (WxDxH):	1050 x 1150 x 1950 mm
Build envelope (WxDxH):	300 x 400 x 600 mm
System weight:	800-1000 kg (depending on options)
Movement system:	Servo Motor Linear axis with absolute encoder on all axis
Filtration system:	3 Stage Particulate and Chemical Filtration included
Environment control:	Control O2 and Humidity levels
Laser type:	9x Direct Diode Lasers
Laser wavelength:	450 nm (Blue)
Total laser power:	1000 W

Power input:	380-415 V Three-phase + N + PE 200-240 V Three-phase +PE
Power consumption:	4-6 kW avg. consumption, 12 kW peak
Process control:	Closed Loop, Laser and Wire Modulation
Touch probe:	Automated XYZ Touch Probe integrated
Enclosure:	Laser safe, Controlled inert atmosphere
Interface:	USB, Ethernet
Cooling:	Active water-cooled chiller included
Wire feedstock:	Diameter: 0.8-1.2 mm / Spool Type: BS300 External wire drum ready



Exhaust manifold - Automotive

Size:	126 x 111 x 110 mm
Weight:	4.6 kg
Material:	Stainless Steel 316L // Nickel 718



Heat exchanger core - Oil & Gas

Size:	120 x 120 x 395 mm
Weight:	8.7 kg
Material:	CuCrZr

Meltio Engine Integration kits for Industrial Robots and CNCs

Enhance your existing equipment

The integration-agnostic Meltio Engine Laser Integration Kits enhance Industrial Robots and CNC mills by incorporating our high-precision laser head technology, allowing companies to leverage metal 3D printing using their existing equipment.

By adding advanced additive metal manufacturing, Meltio **empowers businesses to innovate and elevate their production** capabilities efficiently. Our flexible integration solutions maximize return on investment, enabling more companies to compete effectively in the evolving manufacturing landscape.

Hybrid

Retrofitting

Geometry freedom

Part repair

Large-Scale

Cladding



1. **1.0/1.4kW Blue Laser** factory calibrated

2. **Stronger & reliable** dual wire feeders

3. **Compact** & simple system

4. All Quick-Connect **easier integration**

5. **Process control** more stable & compatible

6. 27" & 17" **screen options**

7. **Melt pool camera** on head

8. **Max safety** level PL4e

9. **Predefined print profiles** for meltio materials

10. **Frictionless wire liners**
(no external motor or reservoir)

Easier than ever

Integration steps

Select Your Movement System: Choose between Robot or CNC Mill

2. Mount the Meltio Engine: Includes Laser Deposition Head, Engine Control Unit, Touch Screen (HMI), Spool Holder and Chiller

3. Protect your team: Laser-safe windows, panels, and door interlocks

4. Two-way communication: 8 digital I/O & respective M-codes. Dual channel safety lines between controllers

5. Let's slice: Enjoy a 1-year free Meltio Space subscription for Robots, or select Hybrid CAM software with adaptable post-processors for CNC mills and M-codes

6. Start printing: Enhance your productivity with predefined print profiles for Meltio Materials for solid and hollow geometries



Rely on your regional integrator partner

Local expertise: Integrators understand regional markets and specific robot/CNC brands, tailoring solutions effectively

Enhanced support: Local partners offer timely, expert support, boosting customer satisfaction across platforms

Market penetration: Our partner network enables fast market entry, adapting to different brands and technologies

Adaptation and innovation: Collaborations drive innovation, aligning Meltio's technology with diverse sector needs and CNC architectures

Accessibility: This approach ensures Meltio's solutions remain globally accessible and compatible with various machinery



Explore the opportunity to become one of our partners

Include your own integrations within the "Powered by Meltio" portfolio, allowing your integration to be sold within your region by our reseller network.

Meltio Engine Integration kit for CNCs

Hybrid Manufacturing

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

The Meltio Engine is the ideal complement for near-net shape manufacturing, repair and feature addition.



Hybrid

Retrofitting

Geometry freedom

Part repair

Laser system: 1.0/1.4 kW 9 x 450 nm direct diode lasers

Printhead: Mounted on the right side of the spindle 32.5 to 35 kg

Printhead retracted size (WxDxH): 280 x 332 x 684 mm

Printhead unretracted size (WxDxH): 280 x 332 x 943 mm

Control unit: Wall mounted, air-cooled 80.5 kg
600 x 300 x 800 mm

Human machine interface: Wall mounted 17" tactile screen

Cooling: Water-cooled deposition head. Chiller Included

Print envelope (WxDxH): Depending on the Machining Center

Feeder system: Quad-point traction servo feeders,
frictionless liners

Process control: Melt Pool Camera & Closed-loop
wire modulation

Power input: 200/240 V 3W+PE
380/415 V 3W+N+PE

Power consumption: 9.2 kW peak 2-5 kw avg.

Wire feedstock: Diameter: 0.8-1.2 mm / Spool Type: BS300
External wire drum ready

Product configurations: Single or Dual Wire



Injection knife - Agriculture

Printing time: 15h Printing Time

Material: Stainless Steel 316L



Aircraft bracket - Aerospace

Size: 110 x 161 x 35 mm

Weight: 1.5 kg

Material: Titanium 64

Meltio Engine Integration kit for Industrial Robots

Large and complex manufacturing

Turn a robot arm into a metal 3D printing system with no inherent size constraints. It is the perfect platform for large and complex 3D printing, repair, cladding and feature addition.

The Meltio Engine integrates with any robot arm manufacturer and interface on the market. Meltio Space slicer software for robots is compatible with ABB, Kuka, Fanuc, Yaskawa and Siemens.



Large-Scale

Geometry freedom

Part repair

Cladding

Laser system:	1.0/1.4 kW 9 x 450 nm direct diode lasers
Printhead:	Robot Mounted 20.5 to 23 kg
Printhead size (WxDxH):	262 x 272 x 572 mm
Control unit:	Wall mounted, air-cooled 80.5 kg 600 x 300 x 800 mm
Human machine interface:	Wall mounted 27" tactile screen
Cooling:	Water-cooled deposition head. Chiller Included
Slicer software:	Meltio Space 1-year subscription Included
Print envelope (WxDxH):	Depending on robot's reach

Feeder system:	Quad-point traction servo feeders, frictionless liners
Process control:	Melt Pool Camera & Closed-loop wire modulation
Power input:	200/240 V 3W+PE 380/415 V 3W+N+PE
Power consumption:	9.2 kW peak 2-5 kw avg.
Wire feedstock:	Diameter: 0.8-1.2 mm / Spool Type: BS300 External wire drum ready
Product configurations:	Single or Dual Wire



Ball Valve - Oil & Gas

Size:	360 x 405 x 301 mm
Weight:	4.3 kg
Material:	Stelloy 21



Eductor - Naval

Printing time:	58 h Printing Time
Material:	Stainless Steel 316L

Meltio Engine Robot Cell

Plug-and-Play Solution for Robot Integration

An affordable turn-key solution for the Meltio Engine Robot Integration. It is designed to provide industries with a secure and efficient solution for manufacturing metal 3D printed parts.

The Meltio Engine Robot Cell is the most versatile and capable solution for 3D printing, repair, cladding and feature addition.



Plug-and-Play installation

Best components

Safe

Tested and certified

Dimensions (WxDxH): 4.050 x 2.350 x 3.000 mm
Indoor use only

Print envelope: 1 meter diameter printing volume with continuous positioner axes interpolation. Actively Cooled 300 x 400 mm build platform

System weight: 4.000 kg

Laser type: Meltio Engine Robot Integrated and Tested

Movement system: 6- Axis Robot Arm & 2-Axis Workpiece Positioner

Platform: Structural Steel with Laser-safe Class 1 enclosure with CE certification. All equipment anchored to the platform

Integration: Unified Control Panel, 4k WebCam monitoring & Live Timeline of sensors and 3D model based on reading TCP positions from robot

Slicing software: Meltio Space one year subscription included. Pre-defined Print profiles and slicing strategies. Focused on ease of use

Power input: 385-415V 50/60Hz (3W+N+PE) 20 kW peak 7 kW avg. upon request: 230V 50/60Hz (3W)

Required inputs: Inert Argon Gas supply between 2 to 5 bar. (Meltio offers an optional Gas Regulator) & Internet Lan cable connection

Accessories: Inert Bubble for full Print envelope with Independent Atmospheric Control O2 and Humidity and Temperature Monitoring



Jet engine exhaust - Aerospace

Size: R167 x 355 mm

Weight: 12 kg

Material: Stainless Steel 316L



Vertical manifold - Automotive

Size: 255 x 255 x 450 mm

Weight: 5.7 kg

Material: Stainless Steel 316L

Powered by Meltio

Turn-key Meltio Engine solutions by our partners

Harness the power of our advanced metal additive manufacturing technology with confidence, backed by expert support of our integration and reseller partners. Available regionally, these solutions cater to a wide range of industrial applications, making it easier than ever for businesses to elevate their production capabilities.

Our vision is to integrate with every robot, CNC mill, and CNC controller, including various CNC architectures like lathes. **“Powered by Meltio”** is a game-changing market segment, **adapting to diverse industries** while upholding the quality and reliability of the Meltio brand. We invite new integrators and resellers to join us in this exciting journey, empowering you to offer innovative solutions that meet the evolving needs of the market. **Together, we can transform the future of manufacturing!**

Turn-key

Pre-configured

Expert support

Confidence

Regional availability*

Hybrid CNC Machines



Phillips Additive Hybrid

3-axis & 5-axis
Hybrid CNCs
Haas controller



Jupiter & Union

3-axis & 5-axis
Hybrid CNCs
Fanuc controller



Lagun L1600 Hybrid

3-axis Hybrid CNC
Fanuc controller

*Consult Meltio for their availability in your region

Multi-axis Robot Cells



Wire Trading

6+2 axis Robot Cell
Kuka robot



3D Solution

6+2 axis Robot Cell
Kuka controller



Force Automation

6+2 axis Robot Cell
ABB robot



Accufacture - Alchemist I

6+2 axis Robot Cell
Fanuc robot



AM Solutions - with:Plus

6+2 axis Robot Cell
ABB robot

Containerized solutions



Snowbird - SAMM Tech

3-axis
Hybrid containerized solution
Fanuc controller



AM Solutions

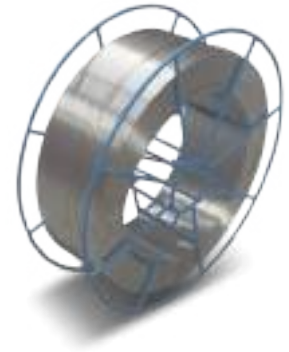
6+2 axis
Containerized solution
Kuka robot

Meltio Materials

Multi-Wire Advanced Manufacturing

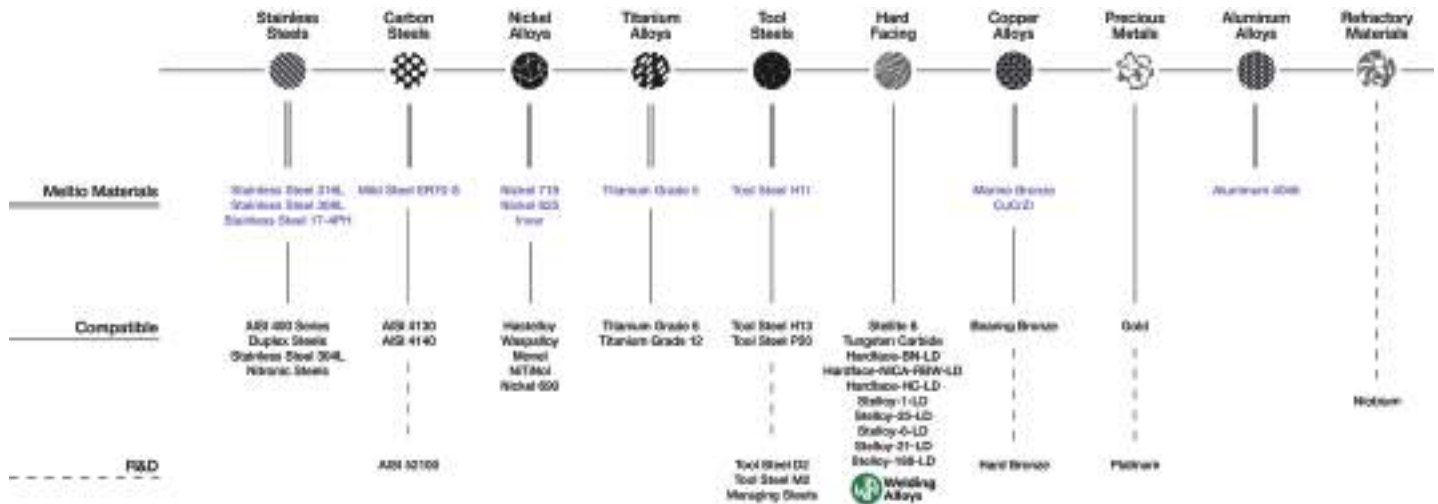
Meltio's Laser Metal Deposition process achieves exceptional material mechanical properties using multiple wires.

Choose the ideal welding wire for your application: unlimited third-party commodity material or qualified Meltio Materials that secure the user experience.



Single wire Dual wire Quad wire 99.98 % Densification

Unlimited third-party material choice



Meltio Materials

Meltio Stainless Steel 316L

Meltio Stainless Steel 308L

Meltio Stainless Steel 17-4PH

Meltio Mild Steel ER70-S

Meltio Tool Steel H11

Meltio Marine Bronze

Meltio CuCrZr

Meltio Nickel 718

Meltio Nickel 625

Meltio Titanium 64

Meltio Invar

Meltio Aluminum 4046

Materials Properties

Superior mechanical properties:

Meltio delivers significantly higher Ultimate Tensile Strength (UTS) and Yield Strength compared to traditional casting and wrought methods, ensuring robust performance in demanding applications.

Competitive hardness:

Materials like Tool Steel H11 (49 HRC) and Nickel 718 (245 HV-30) offer excellent wear resistance, making them ideal for high-performance components.

Material and time efficiency:

Additive manufacturing minimizes material waste and energy consumption contributes to more sustainable production practices, particularly for hollow or thin parts, leading to lower production costs and shorter lead times.

Lower heat input:

The laser energy source used in Meltio reduces the heat-affected zone (HAZ), resulting in stronger, more durable parts by minimizing material recrystallization.

High density and compliance with standards:

With over **99.5%** density achievable in various metal alloys, Meltio meets or exceeds ISO and ASTM standards, providing confidence in material performance.

Summary of structural properties as printed:

Material	Ultimate Tensile Strength (MPa)	% of Casting	% of Wrought	Yield Strength (MPa)	% of Casting	% of Wrought	Hardness (HV-30)	% of Casting	% of Wrought
Stainless Steel 316L	643	126%	118%	429	206%	165%	173 HV-30	80%	77%
Stainless Steel 17-4PH	1017	130%	78%	815	106%	70%	258 HV-30	66%	66%
Mild Steel ER70-S	598	144%	136%	484	236%	194%	175 HV-30	109%	138%
Tool Steel H11	1830	92%	88%	1170	71%	70%	49 HRC	92%	100%
Nickel 718	833	104%	67%	537	71%	52%	245 HV-30	72%	70%
Nickel 625	739	89%	90%	323	78%	66%	160 HV-10	73%	73%
Titanium 64	802	93%	86%	727	96%	85%	303 HV-30	89%	87%
Meltio Materials Average	802	111%	95%	609	123%	100%	186.57 HV	83%	87%

*Printed parts can be heat treated in order to enhance its structural behavior

Meltio Horizon

Metal 3D Printer Slicer

Meltio Horizon is a proprietary toolpath generator software for 3-axis metal 3D printing, tailored specifically to our laser-wire deposition process with the Meltio M600 industrial metal 3D printer.

Simpler profile selection and premade profiles that cover a large range of geometries and qualities.



Custom buildplates

Improve layer flatness

Cool new possibilities

Crisp overhangs

Tailor-made for wire-laser process:

Designed for Meltio's W-LMD process and materials.
Complete solution with defined material parameters

User-friendly:

Access just the essential settings, with clear guidance to get you started

All-in-one integration:

Going beyond simple toolpath generation, this system merges print and material profiles into one single job file. This integration provides greater control over the entire printing process

Future ready:

By developing a dedicated platform for toolpath generation tailored specifically to Meltio, we are positioning ourselves to broaden our range of services in the future

Optimized gas profiles:

Easily configure your gas source and costs directly in Meltio Horizon.
Flow rates can be customized for each material to optimize performance and efficiency

Hotwire compatibility:

Leverage Meltio Hotwire features directly within the slicer to optimize various sections of your build for enhanced quality and speed

Meltio Horizon additional features

Unlinked infill for flatter layers

Hotwire printing parametrization freedom

Improved overhang quality through material control

Advanced infill strategies and objects modifiers

Full control: Parametrize Infill, Inner and outer perimeters, support and rafts.

Predefined print profiles for Meltio materials

Meltio Space

Tailor-made 3D printing software

Meltio Space is a state-of-the-art toolpath generator software for the Meltio Engine Robot Integration with an easy-to-use interface for planar, non-planar, and Meltio's tech adapted variable extrusion calculation for the ABB, Kuka, Fanuc, Yaskawa and Siemens robots.



A new perspective on 3D printing, specifically for robot systems, by breaking free from the limitations of 3-axis systems.

Unlock complex geometry

Reduce programming time

Unparalleled easy-of-use

Intuitive:	No previous expertise in robotics or programming is required thanks to a modern interface built specifically for wire-DED and robots
Powerful:	Multiple slicing options including variable deposition to address a wide variety of geometries with very fast calculation of complex toolpaths
Post-processor:	Meltio Space offers its users a diverse range of post-processors for the most popular robot brands, including predefined options such as ABB (IO), ABB (OPC), ABB (Socket), KUKA (IO), FANUC (IO), YASKAWA
Investment protection:	Low capital and running costs. Includes continuous updates and predefined robot kinematic libraries
Dependable:	High success rate thanks to its kinematic model able to detect collisions along part creation even with part itself
Tuned to Meltio LMD:	Automated process parametrization when defining only the Geometry (Solid or Hollow), the desired Quality (Utility or Fully Dense), and the Material

Meltio Space Slicing Strategies

☰ Planar horizontal

↷ Planar along curve

⊗ Planar angled

⊙ Radial

⊙ Radial 360°

↓ Cladding

⊕ Conical fields

⊖ Non-planar surface

↻ Revolved surface

☞ Sweep



Get to know us!

MELTIO

