



HYBRID²™

Print Different

Liquid Metal Jetting (LMJ) is an innovative additive process offering key advantages within a hybrid manufacturing system. By utilizing low-cost welding wire, LMJ enables the production of near-net shape parts. This process is notable for its ability to achieve high-resolution metal printing, allowing for the creation of fine, detailed geometries that are often challenging for other

metal additive processes. The hybrid system further enhances LMJ by incorporating subtractive machining capabilities. These enable post-printing operations to refine surface finishes and achieve tight tolerances. The combination of flexibility and precision makes LMJ particularly suitable for industries requiring high-performance, intricately designed components.



Multi-Tech Platform

Manufacturing System with Liquid Metal Jetting, and CNC Machining.



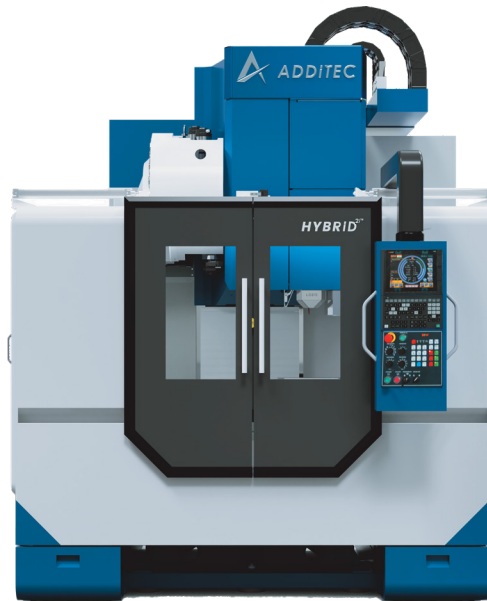
Cost Savings

Low wire feedstock and equipment costs lower the overall COGS for produced parts.



Material Utilization

100% raw material is used by melting wire and ejecting droplets to form parts.



Complexity

90° overhangs and complex gyroid designs have been successfully fabricated.



Class Leading Processing Heads

Advanced processing heads for LDED and LMJ, backed by over a decade of development expertise.



Post-Machining

Subtractive process provides post-machining capabilities to achieve desired surface finish and tolerances for parts printed

Technical Data

	Liquid Metal Jetting	CNC Machining
Layer Thickness	0.24 mm (min.)	Build volume (mm)
Maximum Deposition Rate	0.11 kg/hr	Motion axes
Wire Feed Stock	1.6 mm Ø	Max. Spindle Speed
Dimensional Accuracy		Max. Cutting Speed
XY	+/- 0.6 mm	Power Requirements
Z	+/- 0.5 mm	Machine Footprint (m)
Closed Loop Process Control	Yes	
Density	99.5 %	
Build Volume (mm)	300 x 300 x 120	
Materials	Aluminum Alloys	
Shielding	Localized (Argon)	
Cooling	Active water cooling	
Slicing software	ADDITEC Builder for Hybrid	

Accuracy as per ISO-230-2

Positioning Accuracy	0.01 mm
Repeatability Accuracy	0.008 mm

*These specifications are subject to change without notice.



ADDITEC™

Print Different



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Manufacturing System with Liquid Metal Jetting (LMJ), Laser Directed Energy Deposition (LDED) and CNC Machining. LMJ and LDED are two additive processes desired within a hybrid manufacturing system as both processes use low-cost welding wire to print near-net shape parts. With LMJ we unlock high resolution capability while with LDED we unlock high deposition rate

capability. In addition, multi-material capability is enabled by having two additive processing heads within a single system. The subtractive process within a hybrid manufacturing system provides post-machining capabilities to achieve desired surface finish and tolerances for parts printed using the two additive processes.



Multi-Tech Platform

Manufacturing System with Liquid Metal Jetting, Laser Directed Energy Deposition and CNC Machining.



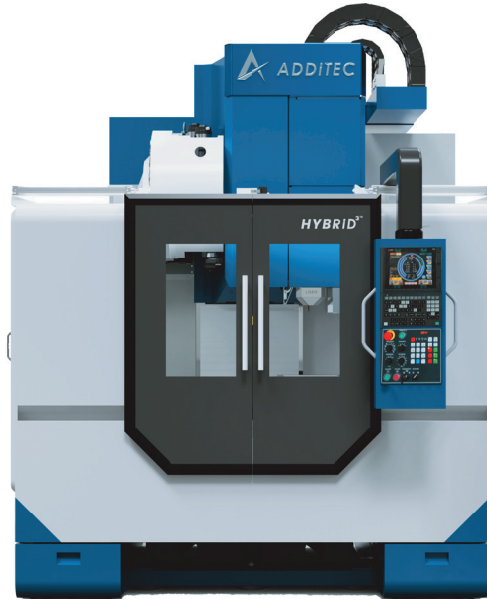
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Post-Machining

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Technical Data

	Liquid Metal Jetting	Laser DED	CNC Machining	
Layer Thickness	0.24 mm (min.)	0.8 - 1.2 mm	Build volume (mm)	300 x 300 x 300
Maximum Deposition Rate	0.11 kg/hr	4 kg/hr	Motion axes	Up to 5
Wire Feed Stock	1.6 mm Φ	0.8 - 1.2 mm Φ	Max. Spindle Speed	12000 rpm
Maximum Laser Power	-	6kW	Max. Cutting Speed	1 - 20000 mm/min
Laser Type	-	Fiber laser	Power Requirements	415 V 67 AMP
Laser Wavelength	-	1080 nm		50 / 60 Hz
Dimensional Accuracy				3pH +N +G
XY	+/- 0.6 mm	+/- 0.25 mm	Machine Footprint (m)	2.4 x 2.2 x 2.6 (WxDxH)
Z	+/- 0.5 mm	+/- 0.25 mm		
Closed Loop Process Control	Yes	Yes		
Density	99.5 %	99.7 %	Accuracy as per ISO-230-2	
Build Volume (mm)	300 x 300 x 120	300 x 300 x 300	Positioning Accuracy	0.01 mm
Materials	Aluminum Alloys	Fe, Ni, Al, Cu	Repeatability Accuracy	0.008 mm
Shielding	Localized (Argon)	Localized (Ar or N)		
Cooling	Active water cooling	Active water cooling		
Slicing software	ADDiTEC Builder for Hybrid	ADDiTEC Builder for Hybrid		

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ADDiTEC™

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