

MK1



Liquid Metal 3D Printer



Patented MagnetoJet Technology

Wire-fed drop-on-demand molten metal printing



Material Capability

Aluminum and its alloys (4043, 6061, 7075)



Elimination of Hazardous Powders

Safer operation and simple sourcing



Faster Build Rate

Up to 1 lb. (.45 kg) per hour



Total Printed Part Cost

90% part cost reduction vs. Powder Bed Fusion

VADER

Introducing the Mk1 by Vader Systems



THE MK1 BY VADER SYSTEMS represents a revolutionary advancement in metal additive manufacturing, offering an attractive combination of incredibly fast print times, lower operating costs and safer operation. Centered on the VADER patented MagnetoJet technology, the Mk1 can create fully-dense (99.5+%) parts—without typical residual stresses—in record time.

MagnetoJet Technology



VADER'S PATENTED PROCESS is based on the field of Magnetohydrodynamics (MHD), which is the manipulation of liquid metal through magnetism. The physics of MagnetoJet are accomplished by feeding aluminum wire through a heated chamber where it becomes molten. This molten media is then electromagnetically propelled in drop-on-demand fashion from a ceramic nozzle. Aluminum was an intentional first step; VADER MagnetoJet technology will evolve to offer printing with higher temperature metals, multiple heads and even multi-materials, all within one machine.

Experience. Revolution. Now.



Early adopters of the Mk1 will receive one year of regular upgrades and normal wear items on first unit at no extra charge, priority scheduling on future orders, direct connection to our product development team for feature upgrades and input into next generation product specification—not to mention immediate access to ground-breaking MagnetoJet technology. Inquire about our leasing programs.



Mk1 Specifications

Material	Aluminum 4043 6061, 7075, Copper & Bronze in development
Material Format	0.035 in. (0.9 mm) wire, 0.0625 in. (1.6 mm)
Material Packaging	16 lb. (7.3 kg) spools
Droplet Range	0.012 in. (300 µm) to 0.020 in. (500 µm)
Droplet Rate	1000 Hz
Accuracy	+/-0.015 in. (0.38 mm) FS.
Max. Build Envelope (x,y,z)	12 in. x 12 in. x 12 in. (300 mm x 300 mm x 300 mm)
Deposition Rate	1 lb. (.45 kg) per hour based on 500 µm droplet size
Shield Gas	Argon
Motion Controller	Siemens Flagship 840D-SL with 19 in. touchscreen
Machine Weight	2500 lbs.
Machine Dimensions	94" x 79" x 42" (2.4 m x 2 m x 1 m)
Floor Space	41.57 in. x 113.52 in. (includes 12 in. additional for Argon tank)
Part Slicer	Open Source
Part File Type	G-Code
Part File Post Processor	Custom Vader Systems
Electrical Requirements	480 VAC, 3 ph. 4 wire, 50 Amp
Printhead Max. Operating Temp	900° C

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