

MELD Technology

Solid-State Additive Manufacturing

www.meldmanufacturing.com

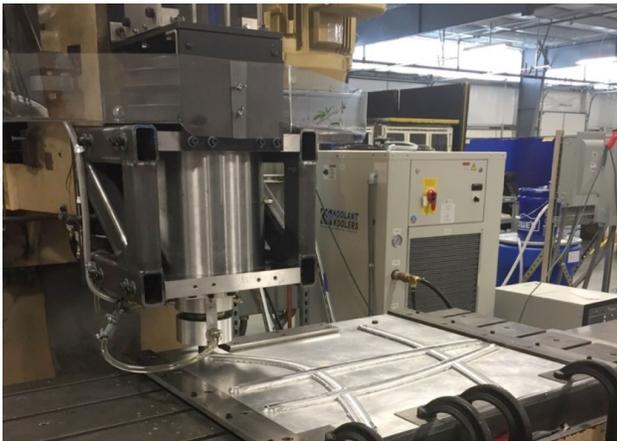


What is MELD?

MELD is a revolutionary, patented* solid-state manufacturing process for metals. While other processes melt metal, introducing weakness and other issues, MELD puts the material in a unique, malleable state without melting. Since MELD is also an open-atmosphere process, no special vacuums or chambers are needed for operation, making it a safer, more efficient, and fully-scalable technology.

Bigger

MELD's open-atmosphere operation and scalable equipment allow it to make much larger parts than similar technologies. Without the constraints of powder beds or chambers, MELD machines can grow as needed to produce large-scale components.



Materials of Your Choice

Unlike many other processes, MELD offers freedom of choice for materials. The MELD technology allows the use of everything from sub-micron powders to solid bars of metal in a wide range of metals and metal matrix composites.

Better

Since MELD is a no-melt technology, the many issues introduced by melt-based processes are avoided. Furthermore, MELDed parts are already fully-dense, require no secondary processing, and exhibit superior mechanical and performance properties.

Faster

The size of MELD machines means they're able to deposit a range of metals at a rate unmatched by other metal additive processes.

Material Family	Alloys/Examples
Aluminum	1XXX, 2XXX, 5XXX, 6XXX, 7XXX
Magnesium	AZ31, AZ91, WE43, E675, AMX602, E21
Copper	Cu 110, NAB
Titanium	Ti64, Titanium Aluminide
Steel	ODS 14YWT-F82H, 300M-4140, Aermet 100-4140, A514
Nickel	Inconel 625, Inconel 718, Inconel 600, Cu-Ni200, Nimonic 80A
Metal Matrix Composites	Al-SiC, Al-Fe, Al-W, Al-Mo, Al-BNC, Al-CF, Al-CNT, Cu-W, Cu-Ta

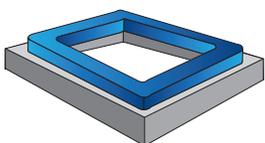
Al 20 lbs/hr

Steel 10.7 lbs/hr

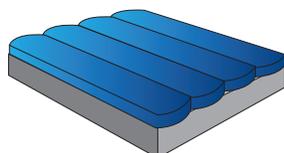
Ti 5.5 lbs/hr

Ni 1.5 lbs/hr

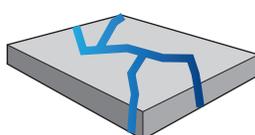
One Technology. One Machine. One Step.



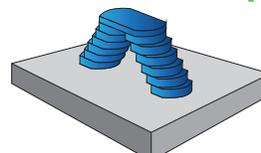
Add



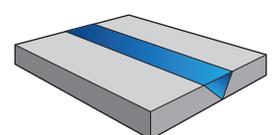
Coat



Repair



Alter



Join

*US Patents 8,397,974; 8,632,850; 8,636,194; 8,875,976; 8,893,954; 9,205,578; 9,266,191; 9,511,445; 9,511,446; 9,643,279; 9,862,054; 9,943,929

Don't melt. MELD.

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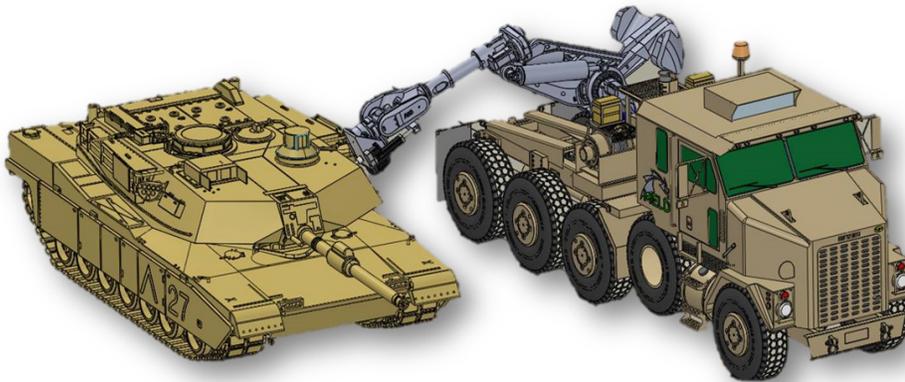
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MELD in Theater



12 Patents + Patents Pending

2018 RAPID + TCT Innovation Award Winner

Woman-Owned Small Business

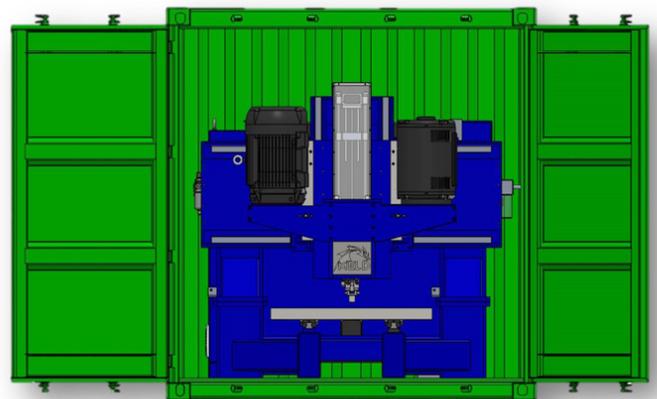
Concept for the implementation of the MELD process for mobile repair. The size of the system can be scaled up or down for the application, offering a custom solution for the needs of the military.

MELD is advanced technology for the full lifecycle: DESIGN to MANUFACTURE to REPAIR

The MELD process offers tremendous support throughout the lifecycle of military components and assets, including tanks, aircraft, ships, and other vessels. MELD technology can be used to create novel, function-specific materials for platform development during **design**. The same MELD process and machines can then be used to additively **manufacture** components on short-order, improving lead times, decreasing costs, and potentially eliminating extra parts, such as fasteners. Utilization of portable MELD systems can help extend the life of assets and components by supporting sustainment activities such as **repair** and improvement at a Depot location or even in theater at a forward operating base environment.

MELD is the safest, most portable additive manufacturing solution for remote use at the point of need.

Build or repair what you need, when you need it.



MELD machines can also fit within a standard conex box (8 ft x 8 ft x 10 ft).

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