



Ensuring Warfighter Readiness with Metal Additive Manufacturing

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Hypersonic Ramjet model featuring integrated complex internal flow channels, printed on a Velo3D Sapphire printer.

Your Battlefield Advantage

At Velo3D, we're well aware of the specific obstacles confronting US defense groups. Primarily, there's the need to stay technologically ahead of fast-evolving adversaries. Additionally, there's the challenge of keeping older equipment operational and navigating supply chain issues to ensure warfighter readiness.

Meeting these essential goals demands superior components and a flexible supply chain capable of adjusting from limited production batches to full-scale output. It also necessitates the ability to deploy near-field manufacturing solutions to support our forces efficiently.

The Velo3D Solution

Advanced manufacturing capabilities: We are metal additive manufacturing experts with established credentials as the leading manufacturing solution for propulsion, including hypersonics, launch vehicles and spacecraft.

A trusted partner: We're trusted by some of the biggest names in defense, including Honeywell, Hermeus and Lockheed Martin.

Battlefield innovation: In our era of geopolitical instability, fast innovation is essential. As key adversaries continue to gain ground – using highly advanced technical capabilities such as hypersonics – US defense organizations need to find ways to maintain technical superiority in the field. And, crucially, they need to secure this position before the next global crisis emerges.

Ensuring warfighter readiness with modern manufacturing: Working with legacy infrastructure and growing supply chain disruptions creates challenges for defense organizations. Modern manufacturing methods provide a powerful toolset to navigate these challenges, allowing you to extend the life of existing assets and infrastructure through more flexible production.

This gives you the ability to deploy at a moment's notice and in overwhelming volume. It also helps you make the most of aging assets through advanced maintenance and repair techniques.

Your battlefield advantage: Velo3D has expanded to become a leading supplier of metal AM for aerospace manufacturing, positioning itself as the world's fastest-growing 3D printing technology provider. Our comprehensive AM solution, encompassing print preparation software, laser powder bed fusion printers, integrated metrology, and quality control software, equips defense organizations with the resilience and production capacity essential for battlefield superiority.

Our technology helps low-rate initial production to be scaled out into full volume production for deployment in the field.

Extending lifecycles: Support for your maintenance, repair and operations supply chain with the ability to print replacement parts whether they were initially designed for additive manufacturing or traditional manufacturing technologies.

With the ability to scale and reproduce high-performance, mission-critical components, Velo3D is your committed partner in ensuring your technical leadership and battlefield readiness in any part of the world.



Mission-Critical Manufacturing for Superior Operational Agility

Our mission is to enable innovation in defense solutions through additive manufacturing capabilities. We do this by ensuring defense organizations have the technology they need to lead on the battlefield by providing a fully integrated metal 3D printing solution for performance-optimized parts.

Velo3D's advanced solution helps the defense industry leverage modern manufacturing methods for quicker production that allows military resources to deploy at a moment's notice.



No need to acquire specialized labor to operate the solution.



Gain higher-performance parts with improved fuel burn and cost-efficiency.



Automated calibrations to maintain consistent print execution.

Key benefits of Velo3D technology for defense organizations

Higher performance parts

Improve fuel burn, emissions, and parts lifecycles. Our 3D printing solution provides better material properties than casting and a wider design window that allows for technology innovation. It is capable of working with export-controlled data and operating in classified environments with data segregation routes to different servers based on need.

Improved scalability and deployment

Velo3D doesn't require specialist knowledge to operate. You can print parts on any Sapphire family printer, providing you with fast, on-demand, scalable manufacturing, and supply chain redundancy.

Assurance of a US-based solution

Founded, made, and designed in the US. Velo3D is a US-based manufacturing solution that is proudly developed and produced in California with an established contract manufacturing network and US-based support team.

Enhanced Security Against Cyberattacks

Velo3D printers are hardened against cyber-attacks to lower your risk of cyber threats. Velo3D Sapphire metal 3D printers have achieved Green Level STIG Compliance as required by the US Department of Defense (DoD) to connect to the Non-Secure Internet Protocol Router Network (NIPRNet) and are eligible to connect to the Secret Internet Protocol Router Network (SIPRNet).

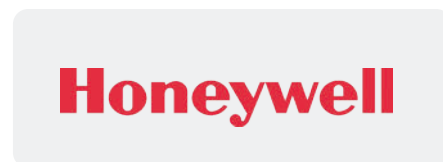
Helping You Command the Field

There's a reason why some of the most innovative organizations choose to work with Velo3D. We're committed to your success, and we go the extra mile to earn your confidence and trust.

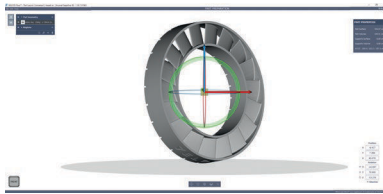
Our dedicated engineers are an extension of your team and are available to guide you through every step of the AM process, assisting with the design, development, and manufacturing phases to deliver the best project outcomes.

Used by leaders in aerospace and defense

Velo3D technology helps solve mission-critical part design and manufacturing challenges for dependable delivery and high performance at reduced cost.



The Velo3D Fully Integrated Metal AM Solution for Global Readiness



Flow

Print Preparation Software

Sapphire

Metal AM Family of Printers

Assure

Quality Validation

UNDERLYING INTELLIGENT FUSION MANUFACTURING PROCESS

Defense organizations need AM systems that support mission-critical operations without fail. At Velo3D, we've simplified complications that make conventional AM systems inefficient and non-repeatable, creating conditions for a more agile, robust, and cost-effective supply chain that improves maintenance and sustainment efforts.

Our solution unlocks the freedom of design for innovative parts without Design for Additive Manufacturing (DfAM). The Flow intelligent print preparation software, Sapphire family of metal 3D printers, and Assure real-time quality validation and control software are all driven by our Intelligent Fusion underlying manufacturing process. This means your engineers can focus on designing parts that are optimized for performance on the battlefield, not manufacturability.

Accelerate Part Deployment with Flow Print Preparation Software

Flow intelligent print preparation software enables defense engineers to significantly reduce the time from initial concept to one build file for use on any Velo3D printer anywhere. Flow intelligently identifies and automatically applies a library of standardized recipes ensuring the highest level of efficiency, quality, and repeatability. This significantly speeds the time to production for critical components and allows military resources to deploy faster, and in volume.

Steadfast Reliability on Sapphire Printers

The Velo3D Sapphire family of printers (Sapphire, Sapphire 1MZ, Sapphire XC, Sapphire XC 1MZ), all running the same process, deliver repeatable consistency that you can depend on. Designed for use with a broad range of alloys to meet defense design, performance, and quality requirements, our printers are continually measured, monitored, and controlled layer by layer for predictable and efficient production. A proprietary non-contact recoater reduces the risk of part collisions, enabling our Intelligent Fusion underlying manufacturing process to build parts without compromise.

Provide Reassurance in the Field working to the Highest Quality Standards with Assure

Assure software delivers reassurance that your parts are fit for the field. It provides instant visibility into every layer of the build through real-time sensors, physics-based excursion detection algorithms, and optical measurements. These in-situ monitoring systems and reports give defense engineers confidence that the printer is operating at optimal performance and that the part is built with no defects, layer by layer.

High-Performing Parts for Mission-Critical Requirements

Here are a few innovations our technology has enabled across a wide variety of metal alloys including:

- Inconel® 718 / Inconel® 625
- Copper: GRCo-42 / C18150
- Hastelloy® X / Hastelloy® C-22®
- Aluminum: Aheadd® CP1 / F357 / Scalmalloy®
- forAM® Haynes® 282® / Haynes® 214®
- Titanium: Ti-6Al-4V
- Stainless 415
- Steel M300

With many more being validated each year



Microturbines

- Improved performance
- Reduced weight
- Consolidated assembly



Turbopumps

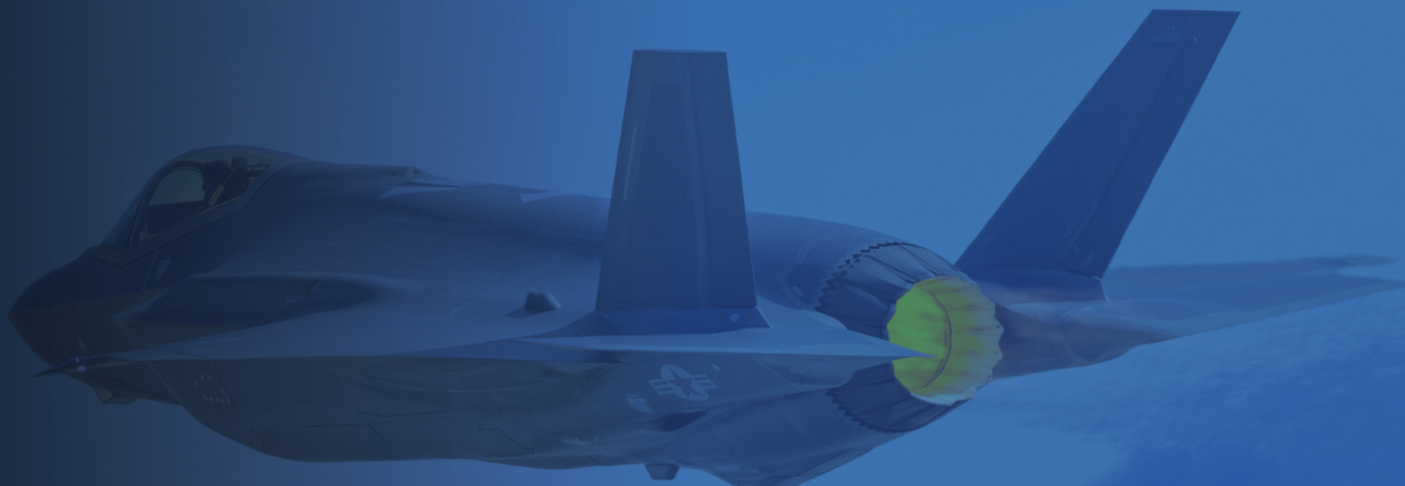
- Reduced pressure drop
- Lower print angles
- No redesign for replacement parts



Heat Exchangers

- Thinner walls for improved heat transfer
- Better surface finish for reduced pressure drop

¹ Powder is produced by Höganäs under license from Haynes International, Inc.



Security and Scalability with the Velo3D Trusted Global Partner Network

Velo3D gives you the reassurance that you can scale and deploy globally with precision.

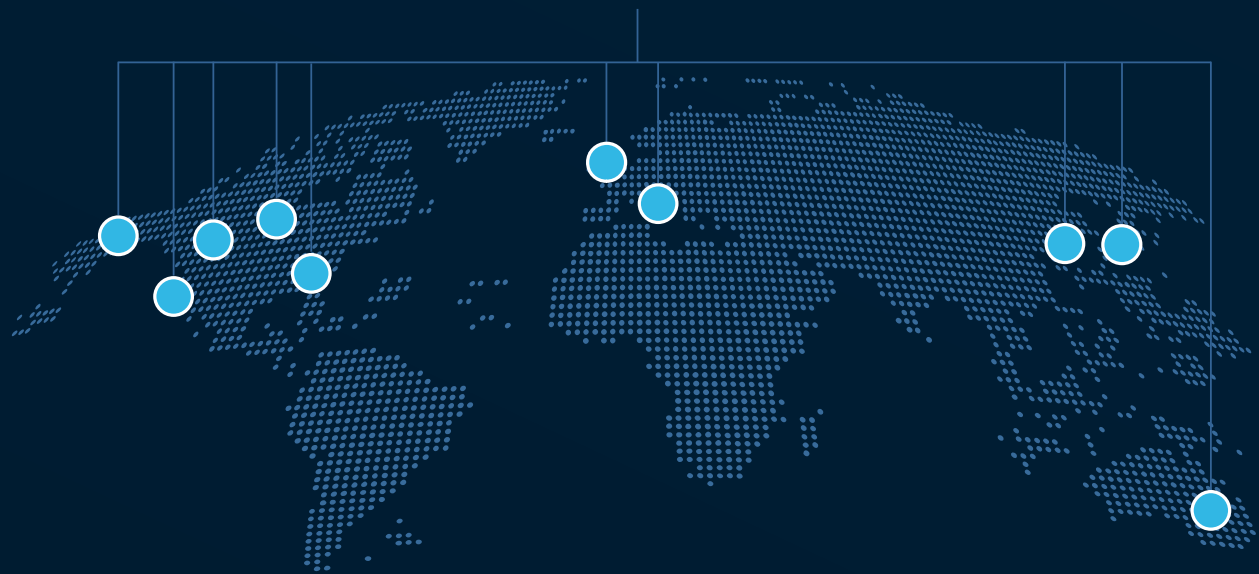
Our single print file enables a part to be printed on any Velo3D printer, anywhere in the world.

Velo3D Sapphire metal 3D printers are the first in the industry to achieve Green Level STIG Compliance, as required by the US Department of Defense (DoD) to connect to the Non-Secure Internet Protocol Router Network (NIPRNet) and are eligible to connect to the Secret Internet Protocol Router Network (SIPRNet). This milestone demonstrates our commitment to security, ensuring the confidentiality, integrity, and availability of customer data.

STIG compliance affirms that Velo3D printers are hardened against cyber-attacks to meet the DoD's stringent security standards, substantially lowering the risk of cyber threats. This compliance gives Velo3D customers, especially those who work with the DoD, the confidence that their Sapphire printers will not compromise their cybersecurity.

You own one print file for each project that can be printed on any Velo3D printer across the global contract manufacturing network or their own global facilities. As a result, your mission-critical components are manufactured securely, precisely and quickly – anytime, anywhere.

One Velo3D golden print file to any Velo3D printer produces the exact same part



Build Your Technical Advantage on the Battlefield

Our fully integrated metal AM solution for the defense industry is designed to support global readiness for mission-critical applications. If you're ready to learn more about driving technical leadership on the battlefield, our experts are here to help.

Visit: velo3d.com/industry/military-defense or contact us today to schedule a consultation.

Without Compromise

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