

OVERVIEW

Norsk Titanium AS is the world's pioneering supplier of aerospace-grade, additive manufactured, structural titanium components. The company is distinguished in the aviation industry by its patented **Rapid Plasma Deposition™** (RPD™) process that transforms titanium wire into complex components using dual plasma torches in a super-clean argon environment. Norsk Titanium is a tier 1 supplier to Boeing and Spirit AeroSystems; we are committed to producing cost-reducing aerostructures and jet engine components for the world's premier aerospace manufacturers. RPD™ is the world's first FAA-approved, 3D-printed structural titanium delivering substantially less material waste, shorter lead times, and significant cost savings to aerospace, defense, and commercial customers.



NORSK TITANIUM RAPID PLASMA DEPOSITION™ (RPD™)

Norsk Titanium RPD™ delivers high-quality aerospace-grade titanium parts at reduced cost, lead time, and environmental footprint. Norsk Titanium can serve as a raw materials provider or a full-service parts provider.



RAPID PLASMA DEPOSITION™ BENEFITS

GREATER CAPACITY | FASTER RATES | LESS MATERIAL WASTE

- Current equipment has the ability to produce large structural parts weighing in excess of 100 lbs; even larger parts will be eligible with new generation machines
- Production speeds 100x faster than powder-based additive manufacturing systems and 50x faster than forging at approximately 1/3 of the cost*
- Less material waste since 40%–75% less titanium is needed, compared to incumbent forging and subtractive metal processes
- Technology applicable across industries, including aviation, space, transportation, oil and gas, and maritime
- MERKE IV™ RPD™ machine production of up to 20 metric tons of aerospace-grade titanium parts per year, per machine*

*Depending on part size and geometry

Advantages Setting Us Apart

Commitment to Quality Assurance

- **Design of experiments** to validate key process parameters (KPP)
- **Probability of detection** to verify inspection methods
- **Machine-to-machine compatibility** for global consistency—the same part can be made on any machine in the world
- **Machine configuration management and machine specification**

Qualifications and Certifications

- FAA Certified
- ISO 9001:2008 and AS9100D
- NORSOK M-650 Certified
- Boeing Qualified Producer List (QPL)
- Spirit AeroSystems Approved Supplier List (ASL)



ACHIEVEMENTS

- Aviation Week's Annual Laureate Awards selected Norsk Titanium and Boeing as a 2018 Laureates Award winner for supplier innovation in commercial aircraft.
- Norsk Titanium's New York facility is the world's first industrial-scale additive manufacturing plant for aerospace parts.
- RPD™ technology enabled the world's first FAA-approved structural additive manufacturing of titanium components.
- Norsk Titanium is the first qualified supplier for Boeing's high deposition rate material specification.
- The Boeing 787 Dreamliner is the first commercial airplane to fly with certified additive-manufactured titanium parts in structural applications.
- MERKE IV™ machine's RPD™ process manufactures 3D-printed parts that achieve the same structural properties as parts produced through forging.
- RPD™ technology also has the capability of print-then-forge and forge-then-print manufacturing methods.
- Norsk Titanium has been granted 30 patents and patents pending for its Rapid Plasma Deposition™ technology and MERKE IV™ machines.

LOCATIONS



Worldwide HQ

Egemoen Aviation & Technology Park

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Industrial Scale Production

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Technology Partners



Commercial Partners



Investors

- Scatec
- Aljomiah Group
- New York Empire State Development
- Arconic
- Insight Equity
- Applied Materials Ventures
- Fortress Investment Group
- Rose Park Advisors

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