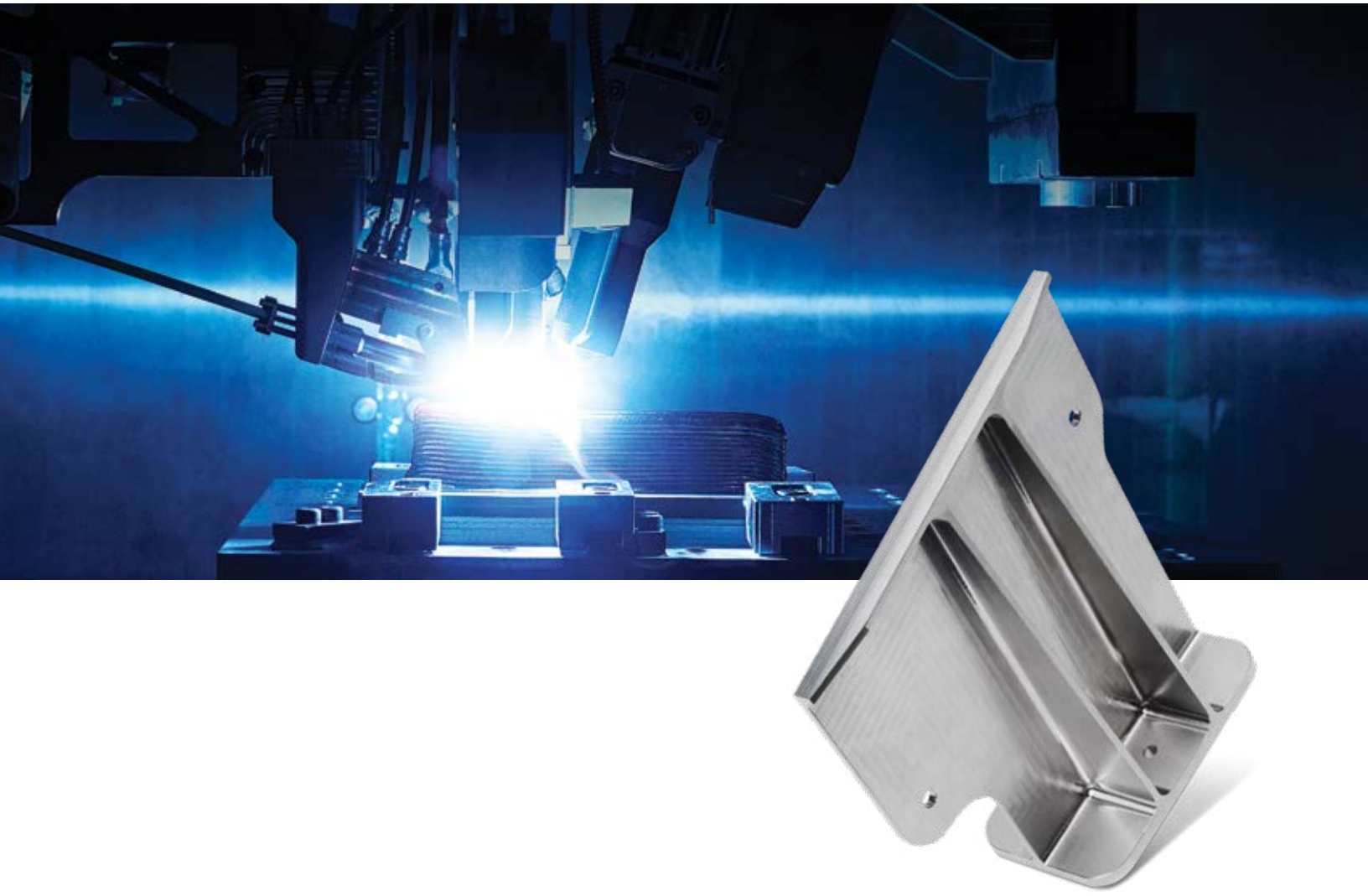
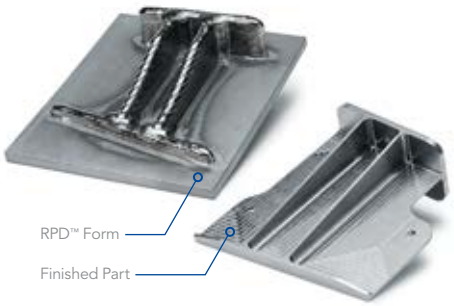
THE WORLD'S FIRST FAA-APPROVED
3D-PRINTED STRUCTURAL TITANIUM



NORSK TITANIUM | RAPID PLASMA DEPOSITION™


## Norsk Titanium MERKE IV™

| | |
|---|---|
| Technology | **Rapid Plasma Deposition™** |
| Part size | **900 mm × 600 mm × 300 mm** |
| Layer size | **H = 3–4 mm; W = 8–12 mm** |
| Material | **Ti-6Al-4V** |
| Deposition rate | **5–10 kg/hour** |




## RAPID PLASMA DEPOSITION™ TECHNOLOGY

### GREATER CAPACITY | FASTER RATES | LESS MATERIAL WASTE

The result of 10 years of process control and materials science research, our MERKE IV™ **Rapid Plasma Deposition**™ (RPD™) machines use dual plasma torches in a super-clean argon environment to take customer CAD files and titanium wire as the inputs to produce aerospace-grade, structural components. Norsk Titanium is producing and delivering the world's first FAA-approved, 3D-printed structural titanium components. We are proud to be on the approved supplier lists of the world's largest aircraft manufacturers.

At our headquarters in Norway, our technology center features capacity of up to 60 metric tons of annual production and is certified to ISO 9001:2008 and AS9100D standards. We have expanded production operations in the United States, with production capacity of up to 180 metric tons per year at the world's first industrial-scale additive manufacturing facility for aerospace production.

NORSK TITANIUM

# RAPID PLASMA DEPOSITION™ (RPD™)

## Norsk Titanium's proprietary RPD™ technology is ushering in an efficient new era of on-demand metal additive manufacturing.

Thousands of forged and machined parts can now be made by RPD™— preserving the strength and weight benefits of titanium, while reducing cost, material, machining, and lead time.

## MARKET APPLICATIONS

Titanium has traditionally been regarded as expensive and inefficient to process. However, Norsk Titanium's RPD™ technology strikes the perfect balance between high performance and efficiency, opening new markets and applications to titanium performance.

**Defense & Space:** Titanium's compatible properties apply in all modern military airframes and offer opportunities to employ RPD™ technology.

**Engines:** Resistance to corrosion and extreme heat make titanium ideal for modern engines. RPD™ can meet the demand for higher build rates, larger engines, and larger global fleets.

**Maintenance Repair & Overhaul:** OEMs commonly use additive manufacturing methods, such as RPD,™ to produce and repair components on demand.

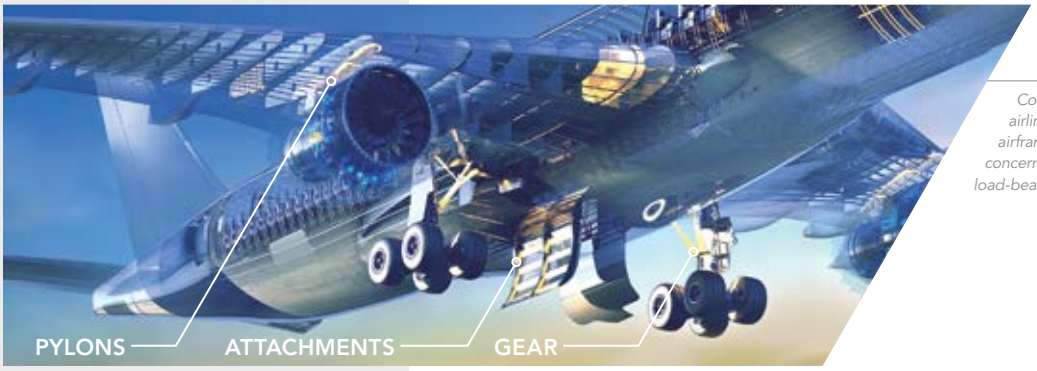
**Oil & Gas:** Achieving NORSOK M-650 certification, we have shipped finished parts to the offshore oil and gas industry, as well as the seismic industry.

**Transportation:** Lightweight titanium parts made with RPD™ technology can help the transportation industry adapt to meet evolving environmental requirements in new designs.

**Future Opportunities:** Market analysis shows growth opportunities for RPD™ wherever fast, cost-effective titanium production is applicable.

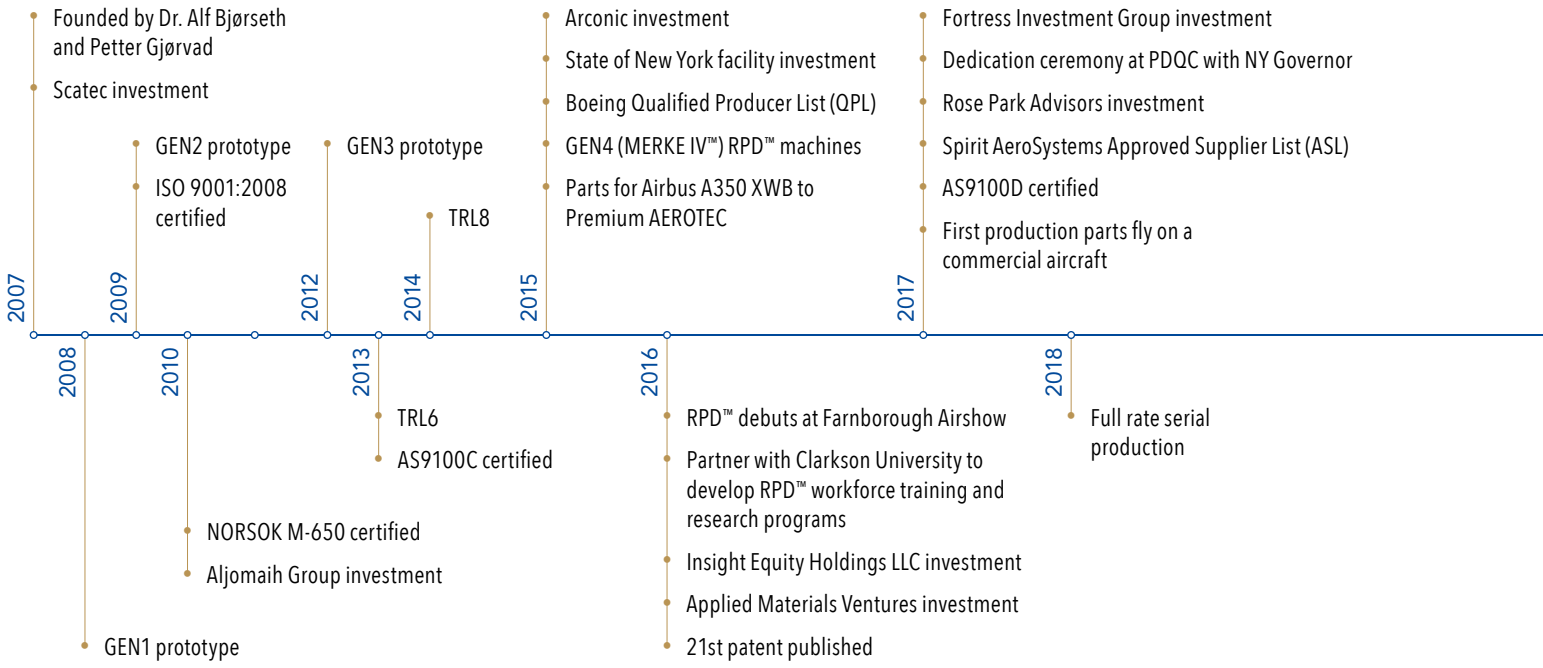
### Commercial Aircraft

Norsk Titanium's RPD™ technology is manufacturing the world's first FAA-approved, OEM-qualified, 3D-printed structural titanium. With RPD™ parts aboard, the Boeing 787 Dreamliner is the first commercial airplane to fly with certified additive-manufactured titanium parts in structural applications. We are committed to producing cost-reducing aerostructures and jet engine components for the world's premier aerospace manufacturers.




### AEROSPACE APPLICATIONS

*Compared to previous designs, modern commercial airliners make greater use of composite materials in their airframe and primary structure. Titanium has minimal fatigue concerns, is highly resistant to corrosion, and helps create the load-bearing frame structure of the aircraft.*




## Worldwide HQ

**Eggemoen Aviation & Technology Park**

Norsk Titanium AS
Flyplassveien 20
3514 Hønefoss, Norway

## Industrial Scale Production

**Plattsburgh Development & Qualification Center**

Norsk Titanium US Inc.
44 Martina Circle
Plattsburgh, NY 12901 USA