



## Oerlikon AM

www.oerlikon.com

Oerlikon AM supplies additive manufacturing solutions to the aerospace, energy and automotive sectors, the semiconductor industry and various other high-tech industries. Together with Oerlikon Balzers and Oerlikon Metco, Oerlikon AM forms the Surface Solutions Segment of the Swiss-based Oerlikon Group (SIX: OERL). The segment offers unique and integrated solutions from material selection and production through to the post-treatment of components with functional coatings.

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INDUSTRY	NUMBER OF EMPLOYEES	LOCATION
Manufacturing solutions for sectors including the aerospace, automotive, energy and tool industries	120	Barleben (Germany)

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### TRUMPF PRODUCTS

- TruPrint 3000
- TruPrint 5000

### APPLICATIONS

- Additive manufacturing

## Challenges

Oerlikon AM is one of the pioneers of additive manufacturing using metals and polymers. Operating at four sites across Europe, the United States and China, the company provides co-development and contract manufacturing services for high-quality and performance-optimized components. This includes activities ranging from research and development to the production of proprietary metal powders for 3D printing. The company entered the additive manufacturing market in 2004 with rapid prototyping, investing heavily in collaboration with various equipment manufacturers and evaluating exactly which concepts would work best for Oerlikon AM customers in the aerospace, energy, automotive and toolmaking sectors.

## On the verge of a breakthrough

Hendrik Alfter, General Manager at Oerlikon AM Europe, is now confident that the technology is approaching the next significant milestone: "The production of complex series components using additive manufacturing is on the verge of a breakthrough in industrial sectors such as aerospace and energy." The technology, materials, processes and costs per component – the overall package is cohesive and has reached economically attractive regions." However, it's not time to crack open the Champagne just yet", explains Hendrik Alfter: "The possibilities are there – but development and qualification take time, leading to delays in project launches and requiring perseverance. The industry must remain proactive in consistently enhancing performance so that series production can kick off in earnest."

### **Predominantly statements of intent**

The reason? The project pipeline is well and truly filled in many places, including at Oerlikon AM. Several development projects with promising potential for becoming series projects are already underway in-house. Even small-scale series, which involve significant preparation and follow-up time, have already been implemented successfully. But quantities in excess of 2000 parts rarely make it beyond mere statements of intent.

### **Critical phase**

The reason for this is that, while suppliers like Oerlikon have been developing the technology and accumulating knowledge over many years, transferring it to the industrialization of additive manufacturing, the in-depth exploration of the technology in numerous customer industries is only now entering a critical phase. The training of the next generation of design engineers, who adopt an "AM-first" mentality, is currently in full swing at universities and among customers. The same applies to the qualification of technology, for example in the aerospace industry.

### **Challenging times**

As a result, major projects are in development, with their realization expected in the medium term. In the meantime, however, the amortization payments for the assets continue. This means that the current situation is a stress test for many companies.



"The essential factors for an effective machine suitable for mass production include reliability, high-quality components and excellent service. TRUMPF delivers all of these."

**HENDRIK ALFTER**  
GENERAL MANAGER OF OERLIKON AM



### **Solution found in shared risk**

The planning uncertainty induced by the current market situation cannot be minimized. The market cannot be made to move any quicker. The same applies to the qualification phases. Companies like Oerlikon AM must continually advance their technology and expertise, producing parts to ensure that their investments yield returns. So what happens now? Hendrik Alfter believes that the pathway to success until the breakthrough of series production is manifestly clear: "By fostering close collaboration between system manufacturers and their customers during development, the technical and commercial risks can be shared. This approach accelerates the breakthrough of series production. Both sides learn something new. For me, success in additive series production is achieved through development partnerships."

### **Implementation**

Oerlikon AM first embarked on this collaboration with TRUMPF back in 2010. Amongst other benefits,

Oerlikon AM receives early access to beta versions of new TRUMPF systems as a test customer. The two companies also work closely together on parameter development. The TRUMPF TruPrint 3000 and 5000 have already been qualified as series production machines at Oerlikon, providing the best price/performance ratio for numerous applications. The inert, closed powder circuit enables simple and safe parts and powder handling under inert gas, along with consistent powder and part quality. Both machines have a quick-change build cylinder and powder supply cylinder. Cylinder setup and powder removal for build jobs can therefore be performed parallel to the LMF process. This significantly reduces the downtimes and non-productive times of the systems at Oerlikon, and enables the company to respond quickly and flexibly to customer requirements. "The essential factors for an effective machine suitable for mass production include reliability, high-quality components and excellent service", explains Alfter. "TRUMPF delivers all of these".



## Forecast

Partnerships such as the link with TRUMPF are a key factor for Oerlikon AM in influencing the development and qualification of technologies at an early stage. "We receive the machines for testing early on. This enables TRUMPF to optimize the machines quickly based on our feedback. In return, we can use and qualify the systems quickly, acquaint ourselves with the technology and parameters, and simultaneously expedite future business for our company," Alfter adds. "For the machine manufacturer, this ideally translates to a market launch in emerging areas, such as the aerospace sector. This enables them to establish a presence in new areas at an early stage." Manufacturers who refrain from entering such partnerships risk missing out on opportunities to capture market share in emerging markets.

## Find out more about our products



### TruPrint 3000

The TruPrint 3000 is a universal medium-format machine (LMF / PBF / LPBF) with Industrial Part and Powder Management. This means you benefit from even more flexibility, quality and productivity for your additive batch production – now also with the full-field multilaser option.



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### **TruPrint 5000**

TruPrint 5000 gets you ready for industrial series production. Thanks to highly productive, partially automated LMF processes, you can produce your 3D component more quickly.



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