

Oerlikon Balzers introduces new INVENTA PVD coating system featuring Advanced Arc Technology (AAT)

Balzers, Liechtenstein, September 9, 2024 – **Oerlikon Balzers, an Oerlikon brand and leading provider of surface technologies, is pleased to announce the launch of INVENTA, its latest Physical Vapor Deposition (PVD) system. This new coating equipment features Advanced Arc Technology (AAT), representing a significant development in PVD Arc Technology. Reflecting Oerlikon’s technological leadership and commitment to efficiency and sustainability, the INVENTA allows customers to use this new technology to achieve greater productivity while saving resources and materials.**

The new INVENTA system enhances PVD Arc Technology by providing higher coating efficiency, reducing the costs per piece, and enabling existing BALINIT® coatings for customers to be transferred. This gives customers lower ownership costs, plus the ability to benefit from future coating innovations based on new Advanced Arc Technology.

AAT – Advanced Arc Technology

At the core of the INVENTA is the Advanced Arc Technology (AAT), which incorporates several key features. The technology enables a wider variety of target materials, better deposition efficiency, and improved coating uniformity.

The newly developed arc source allows for fast adjustment of its magnetic field, facilitating quick and easy changes to different coating structures. The flexibility of the magnetic field significantly optimizes material utilization. Multiple materials can be used on a single target (bi-material), enabling sophisticated coating microstructures, such as nanolayers. The discharge voltage control feature of the AAT arc source also enhances the reproducibility of different coating structures and evaporation rates, ensuring exact coating thicknesses on high-tech products.

Another innovation is INVENTA's newly designed, maintenance-free and low-wear trigger system, which supports multi- and nano-layer coating structures through its high-frequency operation. The optimized and fixed trigger position prevents droplets from reaching the substrate, resulting in smoother coatings.

Enhanced chamber design for high process efficiency and improved coating quality

The INVENTA also features a new chamber design with a variable flange concept and optimized geometry for high process efficiency. It enables direct temperature control of the substrate with three independent thermocouples, contributing to even higher-quality coatings.

Improved coating volume, resource efficiency and sustainability features

The INVENTA kila has a 25% higher loading capacity than its equivalent predecessor, with a coating height of 500 mm (19.7 in). The new cooling system reduces cooling time by 20-30%, enhancing productivity and reducing batch times.

The system also offers up to 50% higher deposition rates and up to 60% better target utilization than its predecessor, making it a resource-efficient solution. These improvements help reduce the total cost of ownership by about 10-20%, depending on the coating type.

The INVENTA reduces energy consumption by about 20% and minimizes target material waste. Its water-cooled system utilizes residual heat for recuperation. For enhanced operator safety, users can utilize a mobile monitor and have fully remote access via a desktop connection.

Global connectivity and control

The INVENTA is easy to use with an intuitive HMI (Human Machine Interface), including a wizard for standard coating recipes. It enables digital global connectivity, allowing customers to export standardized data (OPC UA) – equipment utilization, resource and energy consumption, coating quality and more – to their own ERP/MIS system.

Ready for new developments and future coatings

“With the INVENTA, customers can access the latest developments in PVD Arc Technology and future AAT technology as it improves, giving them greater productivity for existing coatings and lower ownership costs. They also benefit from our application expertise and global After Sales & Service network. The INVENTA is an immediate step forward in efficiency and sustainability”, says Alexander Mohnfeld, Global Head of Product Management OSS Equipment.

To learn more about the new INVENTA PVD coating system, visit:

www.oerlikon.com/balzers/inventa



Oerlikon Balzers has launched INVENTA, its latest PVD system featuring Advanced Arc Technology (AAT). Significant developments in PVD Arc technology will increase productivity and save resources and materials, reflecting Oerlikon's technological leadership and commitment to efficiency and sustainability.

For further information, please contact:

Petra Ammann
Head of Marketing Communications
Oerlikon Surface Solutions
T +423 388 7500
petra.ammann@oerlikon.com
<http://www.oerlikon.com/>

About the Oerlikon Surface Solutions Division

Oerlikon is a leading global provider of surface and additive manufacturing solutions and services. The division offers an extensive portfolio of market-leading thin-film, thermal spray and additive manufacturing technologies, equipment, components and materials. Emission reduction in transportation, maximized longevity and performance of tools and components, increased efficiency and intelligent materials are hallmarks of its leadership. Pioneering technology for decades, the division serves customers with standardized and customized solutions across a worldwide network of more than 170 sites in 37 countries.

With its technology brands – Oerlikon Balzers, Oerlikon Metco, Oerlikon AM, Oerlikon Riri and Oerlikon Fineparts – the Oerlikon Surface Solutions division focuses on technologies and services that improve and maximize performance, function, design, reliability and sustainability, which are innovative, game-changing advantages for customers in the automotive, aviation, tooling and general industries and in the luxury, medical, semiconductors, power generation and oil & gas markets.

The division is part of the publicly listed Oerlikon Group (SIX: OERL), headquartered in Switzerland, which has more than 12 600 employees and generated CHF 2.7 billion in revenue in 2023.

For more information see: www.oerlikon.com/surface-solutions