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News Release

Oerlikon Balzers Launches BALDIA VARIA, an Advanced Diamond Coating for Efficient Machining of Special Materials

Balzers, Liechtenstein, June 16, 2025 — **Oerlikon Balzers, a technology brand from Oerlikon specializing in thin-film coatings for precision components and tools, is introducing BALDIA VARIA, a new advanced chemical vapor deposition (CVD) diamond coating engineered for cutting tools used to machine lightweight and ceramic materials. Supporting progressive wear behavior on a wide range of tool sizes and geometries, this coating responds to the growing demand for a more efficient machining of these special materials. By launching BALDIA VARIA, Oerlikon continues to expand its portfolio of high-performance diamond coatings while focusing on more sustainable and productive machining.**

As the use of special materials such as fiber-reinforced plastics (CFRPs), composite stack materials, graphite, and advanced ceramics continues to grow – particularly in the aerospace, medical, and molding sectors – BALDIA VARIA helps improve part quality, increase tool utilization, and reduce manufacturing costs. The diamond coating is based on Oerlikon's CVD plasma technology, resulting in a dense, nanocrystalline coating structure. This structural composition supports progressive wear behavior that enables early wear detection and optimized tool utilization – with the added advantage of an optimum cost-benefit ratio for tool management and production planning.

"With its extreme hardness and progressive wear behavior, BALDIA VARIA was developed with a clear goal: to help manufacturers machine special materials with greater reliability and cost-effectiveness," says Matthieu Guillon, Product Manager for BALDIA Diamond Coatings at Oerlikon. "In addition, its adaptability across micro and large-scale tools, combined with our plasma-driven CVD technology, gives customers a diamond coating that extends tool service life, resulting in a lower total cost of ownership."

A key advantage of BALDIA VARIA is its ability to deliver consistent coating quality across a wide range of tool geometries, from micro drills and inserts to large-diameter milling tools and saw blades. Particularly effective in roughing and finishing operations for CFRPs and ceramics, BALDIA VARIA's progressive wear mechanism enables easier wear monitoring – helping prevent sudden tool failure and reduce unplanned downtime.

For more information about the BALDIA VARIA visit: https://www.oerlikon.com/balzers/baldia-varia


Image: Oerlikon

BALDIA VARIA is an advanced, versatile CVD diamond coating designed for cost-effective machining of challenging materials. It ensures consistent coating quality across a wide range of tool geometries – from micro drills and inserts to large-diameter milling tools and saw blades.

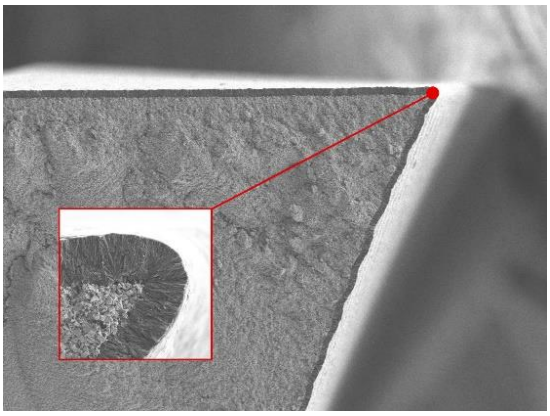
Image: Oerlikon

Developed with Oerlikon's CVD plasma technology, BALDIA VARIA features a dense, nanocrystalline coating structure that promotes progressive wear behavior – enabling early wear detection for optimized tool performance.


Image: Oerlikon

The exceptional hardness of diamond means BALDIA VARIA is ideally suited for machining highly abrasive materials such as composites.

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About Oerlikon

Oerlikon (SIX: OERL) is a global leader in surface technologies and advanced materials. With a unique portfolio spanning surface engineering, high-performance materials, coating equipment and components, we make products better by enhancing performance, efficiency and sustainability. Oerlikon serves a wide range of industries, including aerospace, automotive, defense, energy, medical, luxury and semiconductors.

Headquartered in Pfaeffikon, Switzerland, Oerlikon together with its subsidiary Barmag operates in 38 countries with more than 12,000 employees across 199 locations, achieving sales of CHF 2.4 billion in 2024.