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## Latest Startups and Technology Features for Stainless Steel Production via AOD in Europe

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Cost competitiveness, high productivity and safety are crucial for the survival of the stainless steel industry in Europe. The AOD converter, as an efficient refining aggregate, is a fixed process step in every high-performance stainless steel production. Primetals Technologies is continuously optimizing and improving the AOD process, the AOD equipment and its automation.

One key innovation is the Vaicon Autofix, a fully automatic vessel suspension that eliminates manual interaction during vessel exchange. The Vaicon Autofix is combined with an air-cooled trunnion ring and increases operational safety and reduces vessel exchange time, thus enhancing plant productivity. Additionally, modern AOD converters are equipped with the Vaicon Drive Damper, which reduces vibration-induced wear, lowers maintenance costs, and prolongs equipment lifespan. An advanced dedusting system, featuring a heat exchanger, enhances energy efficiency and meets strict emission standards, improving workplace conditions. Another recent innovation that allows to reduce operating costs is a compressed air station installed at the AOD to supply high-pressure air as a substitute for oxygen and nitrogen, reducing OPEX through decreased oxygen and nitrogen consumption.

For improved process control the AOD Optimizer, a Level 2 system that optimizes stainless steelmaking through dynamic control, process visualization, and comprehensive heat tracking was enhanced. The optimizer now features new functions for the highest process accuracy and serves as a valuable tool for process optimization during daily production. Additionally, new evaluation packages for the AOD converter in the Asset Life Expert (ALEX) condition monitoring system were developed.

Primetals Technologies has recently revamped and upgraded three AOD converters in Europe: one at ASO next and two at Aperam. In addition, a complete new line at Aperam in Genk where these features are implemented, was recently started up. This paper will present the technical highlights and operational improvements achieved with the new features developed in the latest installations.

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