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Grinder-polisher saves time and consumables

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The Planar Met 300 incorporates a fixed grinding stone for time-saving grinding of up to 10 samples in a central force sample holder. (Source: Buehler)

Metallographers of Robert Röntgen use planar grinders for short preparation cycles for the day-to-day operations. Additionally, the systems also helps in saving more than just time.

[Robert Röntgen GmbH & Co. KG](#), a manufacturers of saw bands and saw blades for metal cutting, based in Remscheid, Germany, are using a Planar Met 300 planar grinder in combination with an Eco Met Auto Met 300 grinder-polisher from [Buehler](#) for time and cost efficient preparation of metallographic samples analysis in their laboratory.

The samples being prepared are segments of highly wear-resistant, carbide-tipped high-performance saw bands, used worldwide in applications such as high-speed sectioning of high strength steels. After preparation steps are carried out, the

metallographic cross sections are checked for hardness, grain structure, and the quality of welded joints between the carbide tip and the steel substrate, followed by documentation of the results with a view to ensure strictest manufacturing tolerances and process reliability in accordance with ISO 9001:2015 are achieved.

The Planar Met 300 table-top planar grinder was designed by Buehler specifically for fast, accurate and convenient sample preparation in metallography, the company explains. Its 305 mm grinding stone and a powerful motor provide ability for high material removal rates of up to 0.6 mm per minute — allowing grinding processes to be completed up to ten times faster than with traditional SiC paper, the company states. For higher sample throughput, sample holders that can hold up to ten samples are used, and when used with dedicated work stations allow shorter preparation time. Material removal can be programmed with an accuracy of up to 0.1 mm. All in all, Planar Met 300 offers the same high performance as larger floor-standing models, whilst saving time, space and cost.

Alicja Kaplan, Laboratory Manager at Robert Röntgen reports: “Since purchasing the Planar Met 300 planar grinder, the machine's high removal rate and superior accuracy have enabled us to achieve perfect sample surfaces within extremely short grinding

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cycles of only 8 to 10 min for six samples. In comparison, the grinding process took approximately five times longer with our previous system, despite the fact that we were using diamond grinding discs. Another significant benefit of the Planar Met 300 grinder lies in that the drive adapter used in the machine's multi-sample holder is compatible with our Eco Met Auto Met 300 polishing system, thus eliminating additional setup times. The transition from grinding to polishing can

be achieved within a minimum of time.”

Alicja Kaplan goes on to explain that the laboratory was also able to reduce its consumable spend. “Whereas in the previous set up, we needed up to three different diamond grinding discs to reach the target plane on the sample, we only need one SiC or Al2O3 stone when using the Planar Met 300. Although the system is in operation for several hours every day in our lab, we need only two stones per year, resulting in considerable cost savings.”

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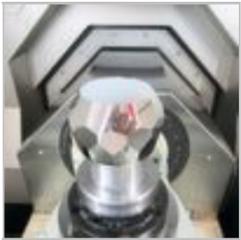


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