

Advancing Precision and Efficiency: Umlauf Bridles as Strip Tensioning Units in Metal Manufacturing

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Abstract

Umlauf Bridles are an innovative technology approach for strip tensioning in metal manufacturing. This presentation delves into the role of Umlauf Bridles as strip tensioning units in metal manufacturing and highlights their significant impact on various processes in the production chain.

These systems are capable of handling remarkable tension forces, ranging from over 100 tons for heavy-duty tasks such as strip levelling, to delicate forces of just a few hundred grams for intricate procedures. At the same time, these systems are guiding strips with millimetre accuracy.

The incorporation of Umlauf Bridles represents a transformative advancement, converting strip tension into a tool for optimizing procedures in the strip production process. Through precise force adjustment, these systems enhance processes and contribute to greater efficiency and higher quality in metal manufacturing. Umlauf Bridles, e.g., produce an extremely homogeneous strain distribution across the entire strip width and an improved strip flatness, and achieve this at a significant lower engineering effort compared to conventional bridle rolls which entail the deflection of the strip.

In summary, Umlauf Bridles exemplify the ongoing innovation in the field. Their multi-functional contributions, ranging from accurate guidance to tension management, highlight their pivotal role in improving accuracy, efficiency, and overall performance in metal strip manufacturing processes.

Finally, the latest and most innovative development of the Umlauf Bridle will be presented: It uses non-contact strip guidance, which is of particular interest for aluminium applications.