

## Press Release

# Two-side pre-bending in a step-by-step process without plate waviness in the pre-bent edges – Graebener® innovation for the production of large pipes

04 February 2020

**Kreuztal/Netphen.** The company Eisenbau Krämer GmbH (EBK), an internationally renowned specialist for the production of large steel pipes once more banks on an innovation by the special machine builder Graebener®. At the end of 2019, Graebener® delivered a 2-Side Pre-Bending Press for the production of thick-walled pipes which raised the pre-bending technology to a new level.

Up until now, the company EBK, internationally renowned for high quality pipes, has been using conventional roller pre-bending machines for the pre-bending process. During the roller pre-bending process, top and bottom rollers move along the plate in parallel which creates the corresponding radius at the longitudinal plate edge. This standard procedure has proven and established itself over decades and is the most widespread pre-bending method worldwide. In the meantime, however, this process is being looked at more and more critically. The problem of the process is the creation of thinning in the material which in turn requires extensive reworking efforts to achieve a high pipe quality. Ever increasing requirements for pipe tolerances and weld seams are becoming more and more challenging for pipe manufacturers – especially when it comes to high quality special pipes for the gas and oil industry. For this reason, EBK was looking for a solution and turned to the German company Graebener®.

The Graebener® 2-Side Pre-Bending Press, in contrast to the roller pre-bending machine, is suitable for the simultaneous pre-bending of both longitudinal plate edges in a step-by-step process. While the plate is moved through the machine step-by-step, the longitudinal plate edges are pre-bent to the respective radius by means of the upper and lower pre-bending tools. This way, crushed edges and thinning out of the plate ends can be avoided.

This process is not an entirely new one on the market, but up until now has been causing a plate waviness throughout the entire length of the pre-bent edges. As the goal is to produce a perfect open seam pipe, a faultless weld seam and thus achieving a zero gap without edge offset are very important. Otherwise, excessive reworking efforts such as multiple calibration steps are necessary to compensate and remedy the waviness. Thus, avoiding a plate waviness during the economic production of open seam pipes with proper zero gap is indispensable.

Graebener® has taken up this issue and developed the machine in such a way that today various international customers rely on the Graebener® 2-Side Pre-Bending Presses. Together with EBK, the process has been further perfected during the last year. The key to success: perfectly designed tools.

The tool contour was optimized so that now plate waviness in the pre-bent edges is a thing of the past. Today, the Graebener® 2-Side Pre-Bending Press can achieve a result which is unrivaled worldwide: 100% forming of the pipe, i.e. an open seam pipe with zero gap, no edge offset and with a perfect weld seam preparation. "Our Graebener® pre-bending press is operating with such precision that we can significantly reduce additional process time on the Graebener® calibration press," says Dr. Scott McCann, Managing Director at EBK.

The Graebener® 2-Side Pre-Bending Press can be used independent of the material (suitable for all kinds of common steels in pipe production, especially Clad material) and can process plates with increased wall thickness and of high steel qualities and special grades.

The forming tools necessary for the pre-bending are designed for cost efficiency. To reduce the number of tools necessary, they are designed in a way that they can be used for wide diameter range with a variety of plate thicknesses.

Hubertus Valpertz, Authorized Officer and Technical Manager Sales at Graebener®, lists yet another cost advantage: "Our process creates a constant pre-bending over the entire plate length, i.e. even at the beginning and at the end of the pipe to be produced. Due to this constant form, in contrast to the conventional roller pre-bending method, the entire plate length can be processed further which eliminates the previously required cutting of the two pipe ends. This, in turn, leads to a significant cost reduction."

EBK has been trusting in Graebener® and the company's know-how in the sector of material forming for decades. Dieter Kapp, Managing Partner at Graebener®, has high hopes for the sophisticated technology: "The pre-bending results with our press for wall thicknesses larger than 50 mm are unparalleled. No matter how accurately the works were carried out in the past, with the technologies available to date it simply was not feasible physically to eliminate waviness over the entire pipe length for this wall thickness range. This chapter is closed now. I am absolutely sure that our solution will conquer the market very soon."

Number of characters (with spaces): 4.832

### **Pictures and caption**

„Bild1.jpg“ – Graebener® 2-Side Pre-Bending Press for the pre-bending on both sides in a step-by-step process

### **Boilerplate**

Graebener® is a medium-sized, family owned machine building company with locations in Netphen (Germany), Houston (USA) and Shanghai (China) as well as a variety of international representatives. Based on almost 100 years of experience in the metal processing business we develop and realize customized solutions for the core markets of automotive industries, hydroforming, manufacturing of large pipes, shipbuilding, wind tower production, vessel construction and renewable energies. Our product range includes hydraulic forming lines, milling and bending machines, calibration and straightening presses as well panel production lines. Graebener® stands for a holistic approach. As technology and system partner we accompany our customers along the entire process chain – from the initial idea, comprehensive engineering (including hydraulics, automation and control technology as well as intelligent Industry 4.0 applications) up to customized new machines or retrofitted existing lines.

[www.graebener.com](http://www.graebener.com)

### **Contact person for company communications**

Mrs. Sabrina Rohde	Gräbener Maschinentechnik GmbH & Co. KG
+49 2737 989-369	Am Heller 1   57250 Netphen-Werthenbach
<a href="mailto:s.rohde@graebener.com">s.rohde@graebener.com</a>	<a href="http://www.graebener.com">www.graebener.com</a>