Always one step ahead of the state of the art - WEIDMANN and BRÜCKNER set new standards in stenter technology

One hundred and seventeen years ago, the WEIDMANN weaving mill was founded in the tranquil Filstal valley in the district of Göppingen near Stuttgart. Today, WEIDMANN GmbH in Süßen is known worldwide as a specialist for the finishing of fiber and down-proof articles and woven industrial fabrics. WEIDMANN's customers particularly appreciate the company's reliability and flexibility with regard to their individual requirements, and consistently high quality of its products. The Swabian textile manufacturer finishes premium fabrics, mainly for the bedding industry, using the latest technology and in an environmentally conscious manner.



Mrs Henrike Weidmann



General view of the new line at WEIDMANN



Stenter entry



View of the stenter dryer

The complex production and finishing processes for high-quality fabrics require a reliable and efficient machine technology. With this in mind, WEIDMANN has always relied on the proven stenter technology from BRÜCKNER. For many decades, the German textile machinery manufacturer has been a world leader in the construction of production lines for the finishing of classical textiles, woven industrial fabrics, nonwovens, glass fabrics and floor coverings. In addition to stenters, the company's production program also includes coating lines, relaxation dryers, sanfor lines, continuous dyeing lines as well as ovens for the bonding of nonwovens and other special lines. All machines are produced 100% in-house in Germany.

Both companies continuously invest in new and innovative technology in order to be successful and competitive today and in the future. Only Recently, a completely newly developed BRÜCKNER stenter was installed in the ultra-modern plant at WEIDMANN. During the intensive project

engineering phase it soon became clear which features are of special importance for their daily production requirements:

- uniform moisture distribution in the machine entry and during pick-up of the specialized chemicals in the finishing padder before the thermoprocess
- weft-straight fabric flow with minimized residual distortion
- very good accessibility for maintenance and daily cleaning
- sensor technology and automation of setting parameters for energy optimization
- heat-recovery with hot water generation for the dye house
- the line must be fully Industry 4.0 capable

The new line is equipped with two padders, a weft straightener and 6 drying compartments. The two padders arranged one behind the other with automatic squeezing pressure adjustment and special roller covering allow an absolutely uniform liquor application and produce a pleasantly soft fabric handle. A differential moisture measurement by microwave sensors continuously checks the fabric moisture and thus the pick-up during running production, so that the squeezing pressure can be adjusted automatically if necessary. The straightening unit in special design in front of the stenter entry ensures the correct and straight fabric flow. Possible bow or skew distortions are reduced to a minimum by an intelligent drive system.

The newly developed stenter dryer is specially designed for textiles which produce a large amount of lint during the drying process. The lint is collected on horizontally arranged double lint screens, which can easily be cleaned during ongoing production. The interior of the dryer can also be cleaned very easily and quickly by means of a suction probe and it is easily accessible for cleaning and maintenance work on the nozzles, width adjustment and chain rails. Energy-saving motors of the highest efficiency have been used for the dryer. The air circulation fans and motors can be easily removed from the outside of the dryer as one unit for maintenance work. The newly developed horizontal fabric transport chain is characterized by its high robustness and easy maintenance or

lubrication with high temperature grease. Due to the large chain rolls, very long lubrication intervals are possible even at high production speeds.

Of course, the new BRÜCKNER line is also Industry 4.0 capable. Via OPC-UA the stenter is directly connected to WEIDMANN'S ERP system. All production and quality data are recorded per batch, hour, day, week and year. Electricity and gas consumption are accurately measured and logged. The current machine status can also be monitored from an external device, such as a smartphone or tablet. Maintenance and servicing is supported by digital and interactive maintenance programmes.
To enhance the servicing of the machine the customer can use the newly developed feature of a visual link between the machine and BRÜCKNER technicians, this can be used as an addition to the standard teleservice function. This enables BRÜCKNER to provide support and to eliminate malfunctions remotely much faster and more directly targeted.
Furthermore, the simulation software ExPertex, which is newly developed by BRÜCKNER, is installed on the new line at WEIDMANN. On the basis of fabric type and process parameters, this tool gives the line operator valuable hints as to which settings can make the current finishing process even more energy efficient and productive. The software maps the technical processes on the line and helps the line operator to determine the optimum machine recipe and settings for the respective process.

Mrs Henrike Weidmann, together with her husband Michael Rapp, are the third generation to run the family business. They are positive about the future.
Mrs Weidmann says "The Brückner company, like us, has very high quality standards. The direct communication with Sales, Service and Design made it easy for us to implement our many requests for optimization.
At Brückner, as always, we found reliability and the best support. Qualities that we, as a family run company have also anchored in our company philosophy. Another criteria in our purchase decision was that the company manufactures in Germany. This increases confidence in the quality and helps to maintain our textile know-how "Made in Germany"."