The strategy for innovation is the basis for DiloGroup's success

Mr. Johann Philipp Dilo, CEO of DiloGroup

1. **Present Status of DiloGroup**

The Dilo machine building was founded in 1902 in Eberbach, Germany. The group with DiloSpinnbau, a carding specialist, DiloTemafa, specialized in opening and blending equipment, and Dilo crosslappers and needlelooms successfully formed since 1996 and 2005, is a specialist for the production of complete needling lines. Needling is one of the most prominent and important consolidation technologies for nonwoven material in almost any sector of application. With that basis Dilo has been successful longterm and sees a bright future for its range of machinery which are included in a comprehensive and modern leading programme. In cooperation with partner companies also the sectors through-airbonding, thermobonding, chemical bonding and water entanglement can be offered in the complete line business.

2. **How is DiloGroup adding digitalization to its product portfolio?**

It is worthwhile noting that needling lines have since decades a very high degree of automation and extremely high productivity due to the speed needled products can be manufactured. The lines run with very little manpower and tie in all components through variable drives which are synchronized and controlled. PLCs control all functions in the programmed way and get from the operator's control station and the graphical screen monitors through the operators the set values individually adapted or from a recipe library. Digitalization today however means more than this basis of digital controls for drives and line integration which is sometimes described as smart industry or Industry 4.0. Software additions and sensors assist the operators in order to reduce the degree of complexity and provide means to run the lines in a higher degree of automation for example during a startup mode where assistance particularly is needed ("Dilo smart start"). Dilo operator's assistance modules, for example, offer insight, also remote, for all line parameters set and real. And also give insight to surveillance processes of individual machine components for preventive and

predictive maintenance actions by monitoring temperatures, vibration, pressure and parameters of that sort in order to prepare action and increase uptime.

Photograph shows container board, used in the new MicroPunch technology..

Photograph shows the container board in the MicroPunch needleloom

Other modules save energy by helping to adjust drives for pneumatically conveying fibre flocks in the network of ducts to various machine components as well as in the pneumatic dedusting and filtering systems from DiloTemafa's Airsystems engineering.

The status of machine components in the fibre preparation section is monitored by the "smart guide light" system to assist the operator in his surveillance job about the status of individual components.

This process of developing operator's assistance system is evolutionary and not revolutionary. All attempts so far to provide complete digital solutions, for example in the auto industry, have not been successful or could not be realized yet. On the level of car driver assistance systems more and more modules are made available as in the case with our lines.

3. **DiloGroup strategy in case of sustainability and innovation?**

   Our strategy for innovation is the basis for our group's business. Since we are provider of machines which have in our long history in many ways contributed to improve performance of nonwoven lines through innovations, inventions including revolutionary changes and modifications in the complete range of our machinery. Always with the aim of increasing productivity by speed and efficiency as well as improving quality of the textile product and reliability of line performance in the long term.

   Sustainability is a very important move in our societies and in the industry in many ways. The protection of the environment and the avoiding of waste of natural resources is a must.

   Dilo with its new **MicroPunch** line offers a way as of ITMA 2023 to produce lightweight fine fibre nonwovens for the hygiene, medical and technical sector by needling instead of water entangling. Even in the range of 40 to 100 g/m² needling through MicroPunch reduces the amount of energy needed by approximately 75 %; no water is consumed, no gas needed to dry the water out of the fleece. At the same time, less fibre is consumed. MicroPunch is considered a breakthrough for the needling technology to provide a green alternative for the production of lightweight nonwovens.

Energy and water savings should not be the sole focus for sustainability. Fibre material savings are at least equally important. For this purpose, Dilo has started a cooperation with our Italian partners Dell'Orco& Villani and Technoplants who are specialists in the provision of tearing equipment for hard and soft textile waste and for garment clippings respectively working at high throughputs and alternatively for controlled tearing in order to keep the staple length as long as possible. For the shorter range of fibre and high mass per unit area, for the manufacturing of the more voluminous and thick materials applied in acoustic and thermal insulation as well as in cushioning pads the aerodynamic webforming process is offered by Technoplants, an expert in this field, which DiloSystems integrates together in their range of complete lines for nonwoven production including needling, through-airbonding, end-of-line components which include packaging. With this technology, several cycles of reusing end-of-life textiles, a large contribution to better sustainability is provided through DiloGroup.

4. **How do you see future trends in case of technology?**

   In my previous answer about **MicroPunch** we can prescribe a way for continued success of DiloGroup at least for the next five years. Our main business, needling lines for a large array of applications like floor coverings, automotive, filtration, geotextiles, synthetic leather, industrial and household wipes, mattress and upholstery is now completed with a specialty technology also for the lightweight range using very fine fibre and through our **Recyclo-Line** to process waste textile for its reuse..

5. **How do you see DiloGroup in the next 5 years?**
   see above

6. **DiloGroup message to customers?**

   In the light of sustainability and environmental protection, Dilo has completed its machine programme offering a huge amount of savings for electric energy, gas, water

and fibre. Our **Recyclo-Lines** engineered together with our partners Dell'Orco & Villani and Technoplants can help to transform textile waste into meaningful nonwoven quality products. These technologies are available for the use in many areas of application in the nonwovens sector. Dilo looks forward to engineering closely with our customers such lines in order to be energy and material efficient for a better future.

7. **Your expectations from ITMA 2023?**

No one really is capable to look into the future. Many political influences in our global economy play a large role also for our industry. Yet, DiloGroup is getting prepared for this show by all means. Dilo will present a complete line for intensive needling in the MicroPunch mode. On a stand of 750 m² approximately 25 people of our sales and service team are ready to receive you at our booth, hall 10, booth No. A201, where we are confident to lay the basis for future success not only at Dilo but even more so for our customers.