



Picture1: Main entrance at TROPIC KNITS

# When a vision becomes reality

**CDL KNITS / TROPIC KNITS in Mauritius strike a new path in textile finishing.**

The TROPIC KNITS Group located in Mauritius, with 3000 employees is one of the biggest producers of high-quality fine knit garments in the Indian Ocean. Well-known international brands from Europe, U.S. and South Africa are among the company's most important customers since many years.

The textile industry has undergone drastic changes, particularly in the past years, not least caused by a change in consumer behaviour: Increased online shopping, shorter production lead-times, fast fashion cycles and quick turnaround for new collections coupled with high-quality customer demands at the right price. And, in addition to that, the focus has been on sustainable production meaning compliance to environmental standards and social compliance. These are the great challenges for TROPIC KNITS, the garment division of the Group. The company achieves this thanks to its excellent target-oriented, customer focused and flexible team. CDL KNITS, a fully integrated knitting, dyeing and finishing plant is the Fabric Mill division of the TROPIC KNITS Group. There, they have the ability to control the complete production chain which allows rapid optimization of processes to improve fabric quality as per customer demand.

At Forest Side in Mauritius, CDL KNITS is producing approximately 17 tons of knitted fabric daily, out of which 80% is assigned to TROPIC KNITS which converts them into garments. The rest is exported to South Africa in open-width fabric form.

The operations and finishing team of CDL KNITS has been looking for leaner production processes that would lead to further savings in terms of resources and energy for the company. During ITMA 2015 in Milan, the first ideas were dis-

cussed with different textile machine manufacturers. CDL KNITS manufactures a variety of cotton fabric, cotton blends and viscose. The finishing line they operated at that time comprised of a relaxation dryer, a stenter and a compactor. The intention was to replace these three finishing machines by only one line without compromising quality. In the beginning, this seemed to be rather unrealistic from a technical point of view.

The German textile machinery producer BRÜCKNER TEXTILE TECHNOLO-



Picture 2: New BRÜCKNER line for knitted fabric at CDL KNITS, Mauritius.

GIES after several fabric trials at the BRÜCKNER Technology Centre in Leonberg/Germany designed new machine concept for CDL production site in Mauritius. The most important was the mutual trust, which has developed during the phase of conceptual design between BRÜCKNER and CDL KNITS. The excellent assistance by the complete BRÜCKNER team, the technological advice and the positive results of the trials in Leonberg were convincing and crucial for the purchase decision in the end.

The new BRÜCKNER line for knitted fabric which will in future replace CDL's three finishing machines is a special design: A relaxation dryer with pre-arranged stentering zone. Scroll rollers in the entry of the line provide for the spreading of the fabric and skew straightening rollers for the reduction of spirality. After that, the fabric is pinned on precisely directly behind a special selvage spreading unit so that the selvage waste is later reduced to a minimum. A non-lub vertical transport chain, developed particularly for knitted fabric, transports the fabric through a ten-meter-long stentering zone. It is provided with a selvage gumming unit, comprising several IR dryers and further hot air dryers for a complete drying of the gummed

selvedges. Depending on the process and the fabric quality it is possible to operate with up to 60% overfeed and a wet overstretching of 40% and more.

At the end of the stentering zone a selvage cutting device is installed. With minimum tension the fabric is then fed on to a specially coated transport belt leading into the 4-zone relaxation dryer. The fabric is dried with an optimized air control concept and it is relaxed due to the tumble-like movement so that the residual shrinkage is reduced to a minimum. The individually adjustable air flow in the dryer and the wet spreading and shrinkage in the stentering zone allows to influence the quality features such as shrinkage, fabric width and fabric surface to the optimum. The curling of edges in the dryer is prevented by a systematic and selective arrangement of the circulating air. This new technology allows savings compared to previously required expensive process steps.

BRÜCKNER's Technical Director for Mechanical Design visited CDL KNITS in Mauritius after commissioning of the new line. Together with the customer he made tests with different fabrics and determined the optimum process parameters for each fabric quality.

After a short time, CDL could start the production and the results speak for themselves. The fabric quality is better than expected and the residual shrinkage, as well as, the spirality are for all fabric types less than 5%. CDL is already now saving about 40% of electrical and thermal energy compared to their previous process. The biggest saving is definitely the significantly reduced process time. Where previously 90 hours were required, it takes only 20 hours to achieve the same productivity, resulting in great benefits regarding the delivery time.

There are some more aspects which made CDL KNITS invest in a BRÜCKNER line. For example, the state-of-the-art lines of the German machinery producer are very robust and durable. Spare parts and support are available for all machines, even if they are 20 or 30 years old. In addition, the machines are produced 100% in BRÜCKNER's own plant in Tittmoning / Bavaria, in Germany tailor-made to the customer's needs. Furthermore, BRÜCKNER attaches particular importance on an energy-efficient technology to save costs for their customers when operating the lines and to reduce simultaneously the consumption of resources.



*Pic 3: View of the stentering zone in front of the relaxation dryer.*

The TROPIC KNITS Group is part of the FINE KNITS cluster of CIEL TEXTILES which is also located in Mauritius. The complete Group has more than 20,000 employees with an annual turnover of about 300 million USD. Once a year CIEL TEXTILES hosts the CIEL Textile Chairman's Manufacturing Excellence Award for its capital intensive companies. This is a good occasion to bring together the employees of the individual business units and to emphasize the team spirit and the solidarity of the whole team. Because only together it is possible to master challenges. The Knitting Division of CDL KNITS won the award for Manufacturing Excellence twice in 2015 and 2016. This year, in September 2017, CDL won the World Class Innovation & Creativity Award. The installation of the new BRÜCKNER line at CDL KNITS and the corresponding benefits for the company played a small but nevertheless important role in winning the award.

The group and each individual business unit attach great importance on sustainability. This includes the saving of

resources (water, oil, electricity, etc.), but also social responsibility with a vision for the future. CDL KNITS came up with the initiative "Stairway to Hope". The objective is to help underprivileged people in the community. Selvedge waste from production is provided to socially disadvantaged persons who knit these into rug mats which they sell and earn a living. The required equipment (for example wooden frames or needles) is made available by CDL KNITS who also supports the people in the sales of their products. The project is also known as "WASTE to GOLD". Since last year, CDL KNITS is engaged on a yearly basis on a D-Day, also known as Love Day, with a community close to its production facility. This is an opportunity where all the employees of the company would gel with the people living in the community and organise different activities such as free medical check-ups, planting of trees, cleaning of the environment, awareness on drugs and diseases and also distribute food and school materials to the needy. In September 2017, CDL KNITS was also

awarded the CSR (Corporate Social Responsibility) Award among the capital intensive units of CIEL TEXTILES.

Verena Ruckh, Head of Marketing at BRÜCKNER, is really inspired. "A great commitment with many exciting social projects. During my stay at CDL and TROPIC KNITS in Mauritius I met so many highly motivated people from various cultures who always welcomed me with a smile. When I walked through the company I could feel the spirit of willing to move something forward together as a team. This is something very special and it impressed me deeply. Keep it up!"

The Group now benefits from a state-of-the-art and durable BRÜCKNER line for knitted fabric which clearly saves thermal and electrical energy and streamlines their internal processes. Improved fabric quality and shorter lead-times are other benefits derived from the new finishing line. This allows TROPIC KNITS to offer in future the highest possible quality and to position itself as a very good alternative to suppliers from China and the Far East. ♦



Pic 4: 4-zone relaxation dryer in the new line for knitted fabric of CDL KNITS.