

# SPINNOVATION

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**Bräcker**

**Novibra**

**Suessen**

*Graf*



# IMPRESSUM

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Werner Strasser, Head Business Group RCO  
Editor in Chief SPINNOVATION

## Dear Reader,

In a few weeks' time ITMA 2015 will open its doors in Milan, the capital of fashion. Renowned fashion brands such as Armani, Prada, Ermenegildo Zegna, Valentino, Marzotto etc. are based in and around Milan. They are worldwide trendsetters. These trends are possible thanks in no small measure to our components.

Milan is also a city of engineers and the sciences. Leonardo da Vinci spent the years 1482-1499 living in and around Milan. In addition to painting, e.g. the world-famous artworks "Mona Lisa" and "The Last Supper", he devoted himself to scientific study. Over decades he sketched flying machines, for example, which resemble the helicopters of today, built boats and submarines, hydraulic systems for irrigation and canalization, and – let's not forget – spinning machines.

Why am I telling you this? Because I am convinced that technical innovation and design are things we cannot do without if we want to be successful on the market in this day and age. Successful companies inspire their customers. Bräcker, Graf, Novibra and Suessen are successful companies.

Bräcker rings and travellers are leading the way in terms of productivity and service life. The BERKOL® grinding machine is the fastest top roller grinder on the market.

Graf products represent superior performance in carding, combing and nonwoven applications.

Novibra spindles are indispensable at maximum speeds. CROCOdoff, the spindle cutting crown without underwinding, reduces fly accumulation in the spinning mill to a minimum. The LENA spindle helps you to make big energy savings at maximum speeds.

The Suessen EliTe® Compact Ring Spinning System is a world market leader.

Premium Parts spinning components for open-end spinning have a maximum service life with minimal energy consumption. They also make it possible to be highly flexible with regard to yarn characteristics.

Our products' unrivalled success is due to the interaction of good ideas and customer requirements. Our customers are won over by a dedicated development team and a highly-motivated marketing and sales team. For us, every day is a trade fair day.

The following pages will show you that what our team has achieved under the "Experience the Difference" slogan is much more than a hollow marketing promise. Product benefits such as yarn parameters, energy consumption and the utilization of fibre raw materials are a focal point. Notable customers all over the world are happy to back our products with their company name. The world-famous Italian fashion label Marzotto provides a testimonial for our products. To me this is proof of our prime position in the market.

I am delighted to invite you to visit us in Milan and experience our innovations.

Arrivederci







## EliTe® CompactSet *Advanced* – Flip-Over Technology



Fig. 1: EliTe® CompactSet *Advanced*

During ITMA Asia 2014 in Shanghai, SUESSEN presented as a world first our EliTe® *Advanced* Compact Spinning System. In the last SPINNOVATION No. 29 we briefly outlined the main distinguishing and exceptional features of its concept and components. Specifically the following criteria are the driving forces and objective targets in all of our development work for superior solutions and new product levels:

- best yarn quality achievable
- sustainable consistency in yarn quality
- increased production stability
- reduced costs for consumables
- reduced maintenance costs
- increased production
- reduced energy consumption

Within this issue of SPINNOVATION No. 30 we will give you a detailed insight to the specific features of the EliTop *Advanced* with the Flip-Over Concept and technology.

### The new EliTop Advanced

In the new EliTop *Advanced* the technique to apply the pressure to the delivery roller and the EliTe®Roller is completely different: until now the pressure has been applied by the leaf spring (Fig.3) of the top roller retainer of the top weighting arm alone, divided by the structure of the EliTop body to the two top roller pairs delivery roller and EliTe®Roller in a given relation.

This has resulted in serious shortcomings of our EliTe®Compact Spinning System when customers have intended to reuse their old top arms in modernization projects. The pressure exerted on the EliTop has not been sufficient to retrieve the whole potential and benefit from our compacting system.

In the new EliTop *Advanced* housing the pressure of the leaf spring serves to a 100 % the delivery rollers only. The EliTe®Roller receives its pressure from the new EliSpring® (Fig. 4) applying the pressure directly on top of the EliTop *Advanced* housing in the position of the EliTe®Roller.

This new system, the EliTop *Advanced* is especially productive when inferior top arms are used in the compacting process. Our customers benefit from an almost 25 % reduction in end-breaks (depending on the basic top arm), a perfect traction in driving the lattice apron on the EliTube and excellent yarn parameters with a further minimized deviation between individual spinning positions.

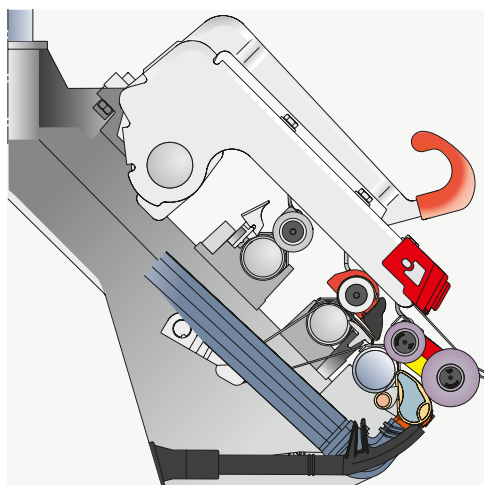


Fig. 2: cross-section drafting system with EliTe®*Advanced*



Fig. 3: top roller weighting unit with leaf spring



Fig. 4: EliSpring® with EliTop *Advanced*

In future, EliTop *Advanced* with EliSpring® will be used for all possible top weighting arm applications (P3-1, PK, HP-GX, HP-A, etc.).

Another new feature of the EliTop *Advanced* housing is in the symmetry of its body. With the new flip-over technology the EliTop housing can be used “upside-down”. Top and bottom parts of the housing are technologically identical and only differ by their red and yellow colours (Fig. 5).

This comes into effect when using the EliTube *Advanced* and the EliTube Concept we are going to describe in the following.

A last new feature of the EliTop *Advanced* are the increased top roller cot diameters, i.e. Ø 41.35 mm for the EliTe® Roller cot and Ø 30 mm for the delivery roller cot. The customer benefits from the increased lifetime of top roller cots with an increase in utility of 165 %.



Fig. 5

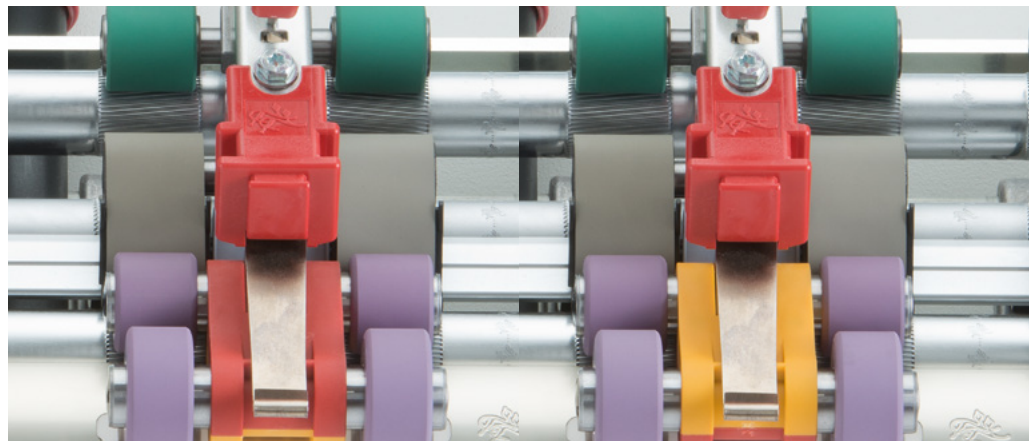


Fig. 6: “flip over” the EliTop *Advanced* within the top arm position from the “red side up” to “yellow side up”

### The benefits in using EliTop *Advanced* with the EliTube Concept:

As the EliTop *Advanced* can be turned over (flipped over) in the top weighting arm (Fig. 6) and remains in the same spinning position

- the logistical effort is minimized to the maximum,
- the basic setting of the components of a spinning position such as alignment of top arm, roving guide etc. is much less critical,
- in EliTube Concept on most machines only one type of EliTube *Advanced* is necessary.

This all sums up in less handling and maintenance costs as well as less expenses for the consumables.



### EliTube Concept

The EliTube Concept is the natural step ahead in the development for all new EliTe®*Advanced* projects.

All EliTubes *Advanced* show as the basic technological feature the off-centre suction slot in regard of the conventional spinning path (Fig. 7); the complete fibre path in the 3-roller-drafting system is not anymore in the middle of the spinning position (Fig. 8).

It is therefore possible to use all spinning components twice. As only an “off-centre” part of the component was “used” (worn-out) in the spinning process, it can be turned over and used a second time before buffing or substitution are necessary (Fig. 9).

In EliTube Concept Standard the customer uses our EliTube *Advanced* with off-centre suction slots and all suction slots slanted to the right side (Fig 10).

In EliTube Concept flip the off-centre suction slots of the EliTube *Advanced* are slanted to the right and to the left as shown in Fig. 11.

- 4 suction slots are slanted to the left and off-centre to the left of the insert
- 4 suction slots are slanted to the right and off-centre to the right of the insert.

This EliTube is named “EliTube *Advanced* flip”.

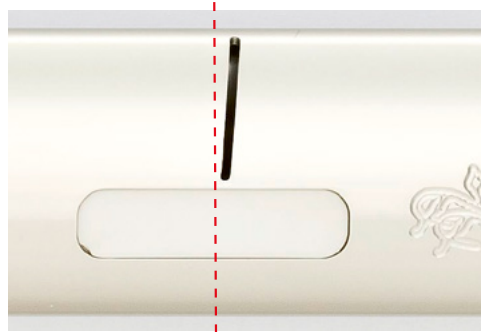


Fig. 7: off-centre suction slot on the EliTube *Advanced*

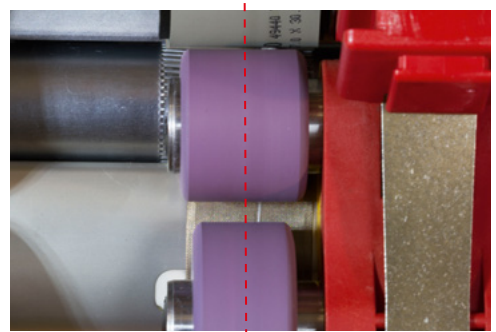


Fig. 8: off-centre suction slot visible between the cots of the EliTop *Advanced*

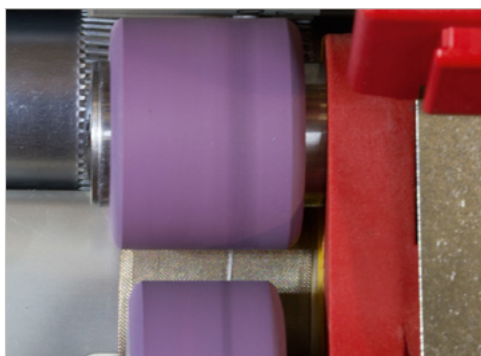
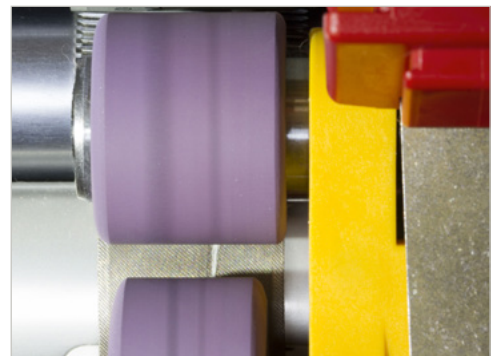


Fig. 9: double use of top roller cots in EliTop *Advanced*





**Using EliTube Advanced plus EliTop Advanced the customer will enjoy the following advantages and benefits:**

- **Double use of EliTop cots**

When the first path on the cots is used and the worn surface should be buffed, just flip over the EliTop *Advanced* within its top weighting arm position and continue with the unused second path (Fig. 8). This doubles lifetime of cots.

- **Double use of top aprons**

When the first path on the top aprons is used and they should be replaced under standard spinning conditions, just turn the aprons in their position of the cradle, or exchange the left with the right apron on the cradle or vice versa. This doubles lifetime of top aprons.

- **Double use of back top roller cots**

When the first path on the cots is used and they should be buffed, just flip over the back top roller in its top weighting arm position and continue with the unused second path. This doubles lifetime of cots.

- **Extended use of lattice aprons**

Lattice aprons are prone to cleaning at regular intervals, every 3 weeks on the average. Their lifetime is up to one year depending on the fibre material

spun and the yarn count. So for maintenance purposes, customers remove lattice aprons from and refit them on the EliTubes about 17 times within their lifetime period.

Statistical equations show that within these 17 cycles over 85 % of the lattice aprons will have changed their working direction, thus using the two different fibre paths on their surface due to the off-centre suction slots, by the ratio of at least 10 : 7 one side over the other. An overall extension of the lattice apron service life of 60 % is more than certain to be expected.

- **Double use of bottom aprons**

When using EliTube *Advanced* flip it is also possible to exchange the bottom aprons within one roller stand system (when using an 8-spindle box system). As there are different slot inclinations on one EliTube *Advanced* flip, you may exchange the bottom aprons from spinning positions with left-slanted slots with those of positions with right-slanted slot and vice versa. This doubles lifetime of the bottom aprons.



Fig. 10: EliTube *Advanced*



Fig. 11: EliTube *Advanced* flip

**Micramics – the new insert for EliTube Advanced** (Fig. 12)

The new Micramics insert is made of highly resistant ceramic material. The specially designed microstructure of the surface supports the general spinning stability and reduces the wear of the inside surface of lattice aprons by up to 15 %. This decrease in friction reduces the torque on the complete compact spinning drafting system. Expected lifetime of Micramics inserts is over 10 years.

**New 5star<sup>®</sup>S+ lattice apron** (Fig.13)

The new surface structure of the 5star<sup>®</sup>S+ lattice apron offers an improved wear resistance up to 20 % at the outside. The better mechanical resistance makes it even fitter for everyday life in rough spinning mill conditions.

**SUMMARY**

- EliSpring<sup>®</sup> provides better spinning stability, improved yarn parameters and minimized deviation between individual spinning positions, particularly with inferior top arms
- EliTop *Advanced* together with EliTube *Advanced* or EliTube *Advanced* flip provide numerous benefits with double use of EliTop roller cots, double use of bottom roller aprons, double use of top roller aprons, double use of back top roller cots and extended use of lattice aprons
- Micramics insert together with 5star<sup>®</sup>S+ lattice apron reduce torque on the complete drafting system and provide extended lifetime of the components

**The increased customer benefits are undoubted and can be verified in terms of money.**



Fig. 12: Micramics insert

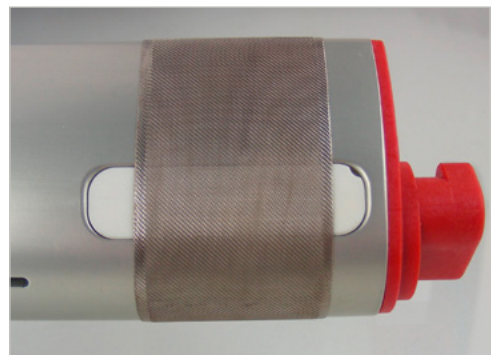


Fig. 13: 5starRS+ lattice apron and Micramics insert



## ORBIT Ring/Traveller System

New range of application



**The ORBIT ring/traveller system has been successfully in use for the last 20 years in markets all over the world. Thanks to successful long-term trials in new areas we have been able to expand into new market segments and to again document the exceptional quality of this system.**

The positive characteristics of this ORBIT ring / traveller system are well documented in these, by Bräcker recommended, application areas. The “critical” surface pressure of the traveller on the ring surface is only achieved at considerably higher traveller speeds. Thanks to that, 10 to 20 % higher traveller speeds can be achieved, compared to the flange ring/C-shaped traveller system. This at the same or longer traveller service life and without sacrificing neither yarn quality nor spinning stability.

The large contact surface between traveller and ring with the ORBIT system allows for higher spindle speeds even with fibres like Viscose where the build-up of a lubrication film is very difficult or with fibres, tending to thermal damage during the spinning process (e.g. Polyester).

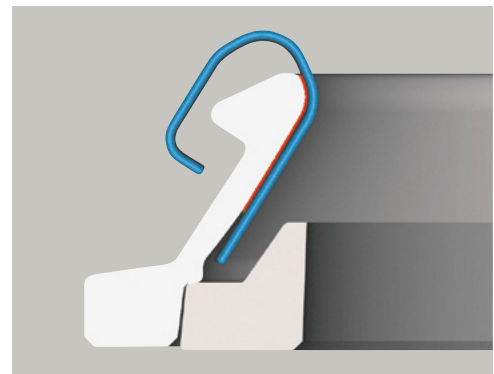
So far the ORBIT ring/traveller system has been mainly used for spinning at highest speeds for highest productivity. With fibres within the recommended application area, with attractive yarn values and very good machine performance, speeds of up to 23'000 rpm were possible.

### Tests with “new fibres”

Presently there are tests running worldwide, to improve yarn quality with new fibres by improving and optimising running conditions. Of course the spinning mills happily accept increases in productivity, this however, does not have first priority in these mentioned tests.

Thanks to the large contact area between ring and traveller in the ORBIT ring/traveller system, the fibres which are spun, are treated very gently. Due to the stable running condition, the reduced specific surface pressure and the optimal heat diffusion allow most attractive yarn values in all spinning positions and this with very low yarn breakage figures.

A new ring holder system (redORBIT), which is only available for Chinese ring spinning frames, allowed for wide spread and long term trials in this very attractive market segment with the ORBIT ring/traveller system.



ORBIT System: large contact area between traveller and ring —





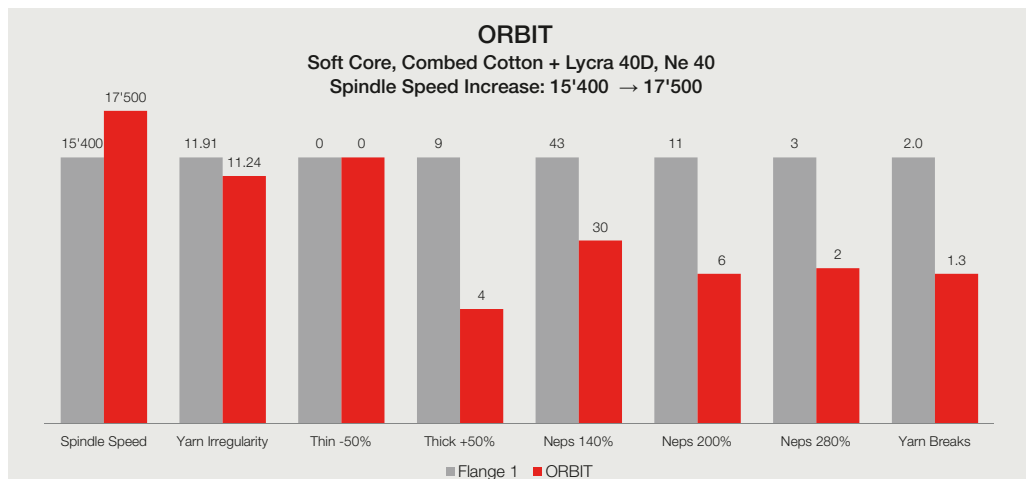
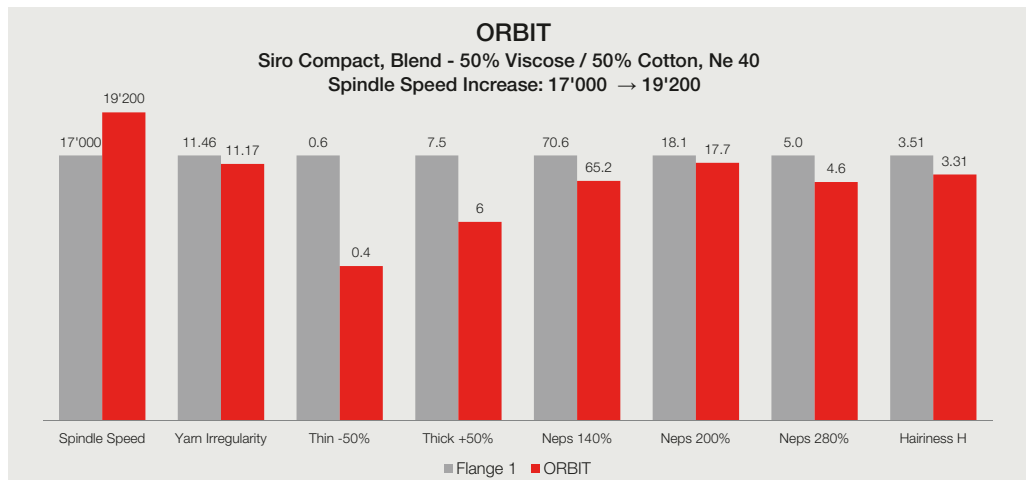
The geometry and the finish of these ORBIT rings with the Chinese ring holder design, are identical with the standard Bräcker ORBIT rings.

**With the new range of application, the portfolio of available travellers has grown**

To fulfill the requirements of our customers in these new areas of application, we had to add various new SFB-travellers to our “ORBIT traveller portfolio”. Spinning finer yarns requires lighter weight travellers. Due to the design of the SFB travellers, the material length of a comparable SFB traveller corresponds approx. to double the length of a standard C-shaped traveller. This of course presents certain problems, especially when very light weight travellers are required.

State of the art production processes and consequent quality control in each and every production step have allowed Bräcker to find appropriate solutions to these production-technological challenges and to extend our SFB traveller portfolio as per the market requirements.

Entering the field of Compact, Siro and Compact/Siro spinning with the “new” fibres, has required additional adjustments to the choice of traveller profiles and weights and within a very short period of time, our traveller portfolio for ORBIT rings has been doubled in size. Upon request, these travellers are available, see QR Code (new types are not yet available ex stock).



Practical examples from various spinning mills

The ORBIT ring/traveller system (patented worldwide) is designed for spinning at top speeds whilst producing best yarn quality.

**The special features of the ORBIT system are:**

- Large contact area between traveller and ring reduces the specific pressure of the traveller against the ring surface
- Optimum heat dissipation traveller to ring

**The ORBIT system offers the following advantages:**

- Increase in speed and production
- High dynamic stability in traveller running
- Reduction of yarn breakages
- Improved and more consistent yarn quality
- No thermal damage when processing synthetics

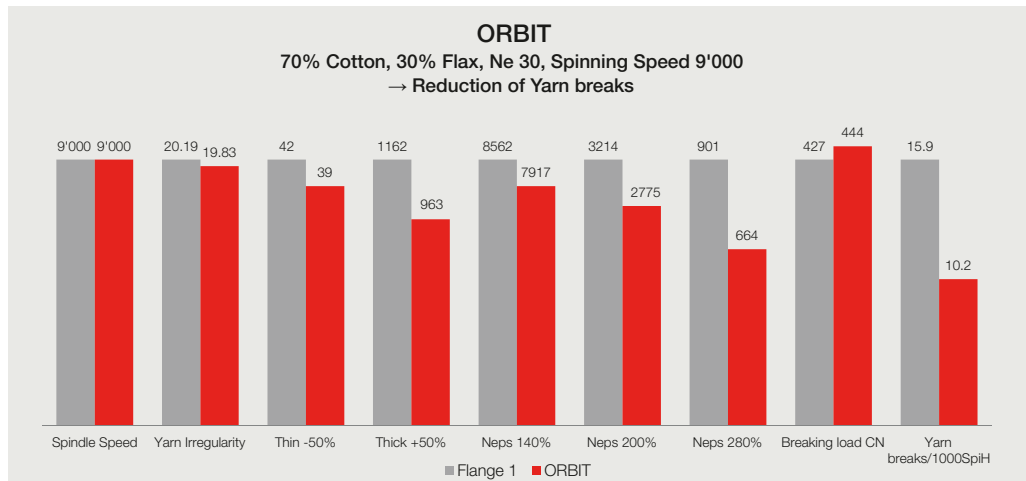
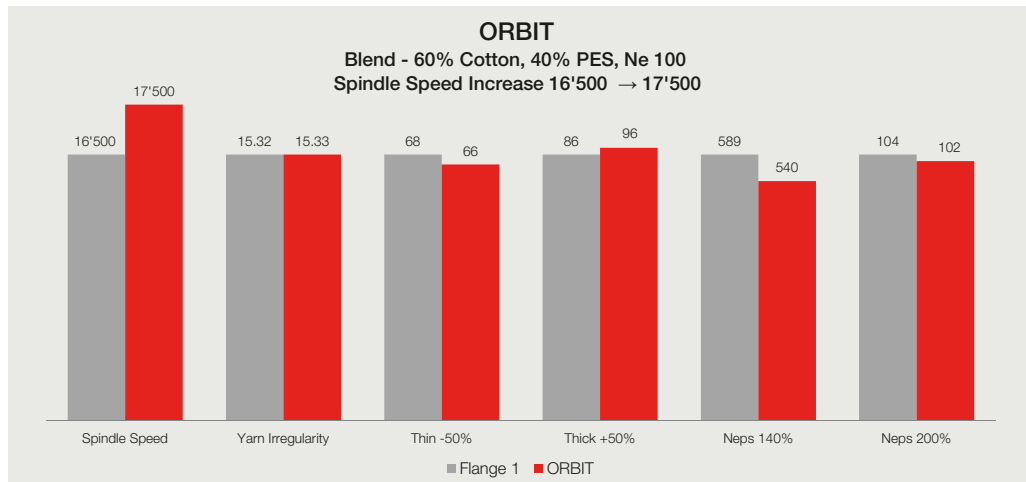
**Application**

- Fibres: Cotton combed, Polyester/cotton blends, Polyester 100 %
- Yarn count range: Ne 30 to Ne 60 is the most recommended yarn count range.

Customers are also successfully producing yarn from Ne 14 up to Ne 140 with very good yarn quality and machine performance

**Preconditions for best results:**

- High performance spinning frames
- Roving yarns in high and even quality
- Well performing air-conditioning
- Generally clean environment in spinning mill



Practical examples from various spinning mills



## Leading Technological Edge

by permanent transfer of technology from research into product development

### SUMMARY

The rapid development of textile machines in the area of cards and combers in recent years has considerably raised the requirements for their technological components. The partial shift from 100 % cotton yarns to technical and functional blended yarns brings about additional, very high and – to some extent – novel demands on the raw material, the production and manufacturing processes, shapes and surface properties. Graf is working continuously on the further development and optimization of the technological parts with the aim to gently and productively process the fibre, while at the same time reaching unrivalled lifetimes. Latest findings from research and development in the area of manufacturing, processing and refining of steel are consistently incorporated into the development of new and existing Graf products. This unfailing commitment of R+D, combined with advisory competence of our technical sales specialists, allows us to provide the customer with the best possible solution of technological components available in the market.

### Rapid development and changing requirements

The latest generations of textile machines with their enormous increase in productivity place high and sometimes novel demands on the manufacturers of such technological components. The increase in production – in case of cards to as much as 250 kg/h – as well as the demand for perfect performance from the moment of starting up and requirement for reduced maintenance have considerably augmented the standards for the technological components with regard to manufacturing and processing technologies. Additives mixed in for processing with the fibres, such as titanium oxide (TiO<sub>2</sub>, see red marking in Fig. 1) used as delustering agent, pose a further challenge. The hardness of TiO<sub>2</sub> is comparable to that of a diamond. Even small quantities have a detrimental effect on the lifetime of technological components. In order to meet such requirements at all times, Graf relies on a permanent transfer of knowledge from research to the development of products and processes.

### Development of material

Graf, for decades, has relentlessly conducted research in order to increase the resistance to wear of components for carding machines. The main challenge in the development are the conflicting objectives between maximum hardness and resistance to wear on the one hand and the processability and costs on the other hand. Unlike the competitors that rely on widespread standard steels, e.g. 100Cr6 ball bearing steel, Graf develops steel grades with properties that are in precise accordance with the demands in application. This ensures that our products always satisfy prevailing market needs.

Progress in the simulation of materials and processes extend the possibilities in the development of new products. It is established today to calculate phase balances and time-temperature transformation diagrams (TTT) already prior to melting experiments. This allows the time for development to be speeded up substantially. Figure 2 illustrates an example of the TTT behaviour of a matrix of a high-carbide model-alloy. These essential findings are applied to optimize the cooling process during production.

### Production of steel

Graf always considers the latest technologies in the manufacturing of steel. Quality and homogeneity of the material, for example, could be improved and the unwanted, process-related contaminants were reduced by applying final stirrers and soft-reduction. Precisely controlled heat treatment sections as well as a variety of other optimizations that cannot be named for reasons of secrecy, have resulted in an increase in the special carbide content which in turn is primarily responsible for the improved resistance to wear of our material.

In addition this allowed us to achieve most homogenous materials with a minimum in batch fluctuations which is imperative for the subsequent processes and application.



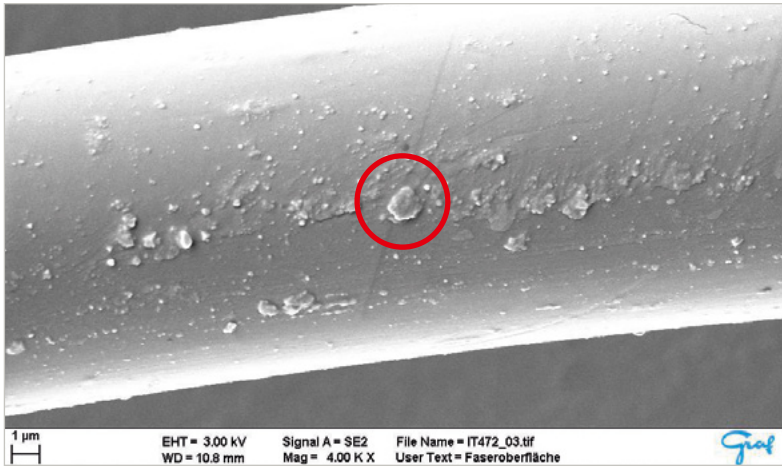


Fig. 1: Electron microscopic image; fibre with traces of titanium oxide (red marking)

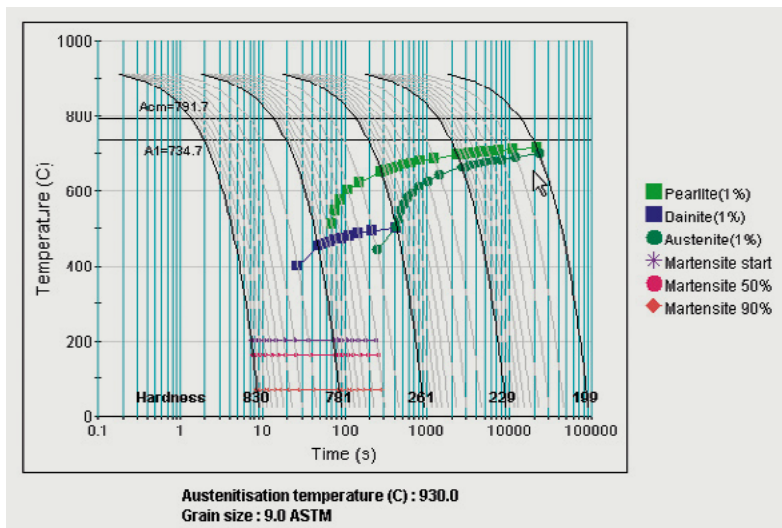


Fig. 2: TTT-diagram of simulation

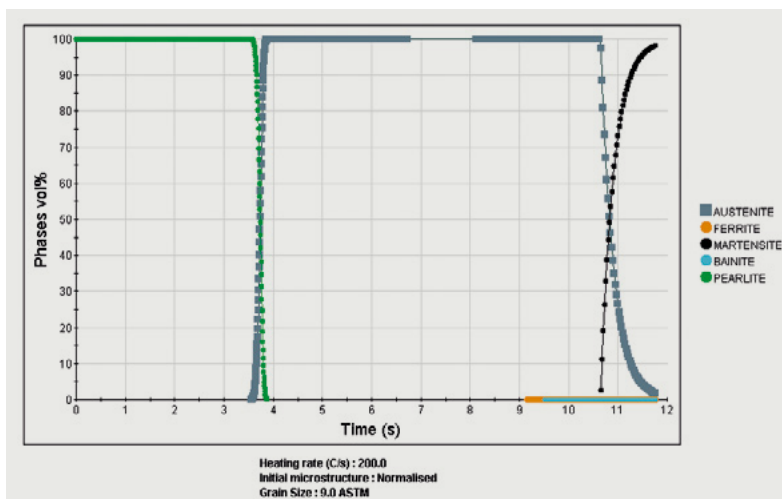


Fig. 3: Structural composition in time T

Batch variations that create considerable difficulties for many steel producers and cause many a challenge in subsequent processes could thus be eliminated.

### Processing

In the areas of profile rolling, punching and hardening Graf also relies on most modern simulation technology. In the punching technology for example extensive punching simulations are carried out at an early development stage in order to achieve the best possible tooth quality.

For the hardening of the clothings it is essential to control the process of a quick thermal treatment of the tips of the teeth. Figure 3 shows an example of the structural evolution of the matrix together with the corresponding development of the specific heat which is required for the optimization of the heat conduction. Optimum parameters for each material are defined by simulations to improve the know-how of the process and thus to allow the development of materials with maximum resistance to wear. The know-how of Graf lies in the mastering of the processes which leads to the high quality, second to none in the market.

For products with higher demands on the finish of the surface Graf has developed processes protected by patents such as scale-free hardening, Poldur and Needle Finish as illustrated in figure 4. These methods assure the removal of residues caused by preceding processing steps e.g. oxide residues (scales) that occur as a result of the thermal treatment, punching burrs or other residues. Such contamination can lead to extended running-in periods in application since individual fibres may stick to the clothing teeth which in turn results in a higher tendency for loading with fibres and trash particles, e.g. seed coat fragments or the like. Since these are highly complex and cost intensive processes it is a matter of weighing costs and benefits prior to application.

For certain products such as articles for combing, these treatments are standard application and lead to a drastic reduction in the running-in period.

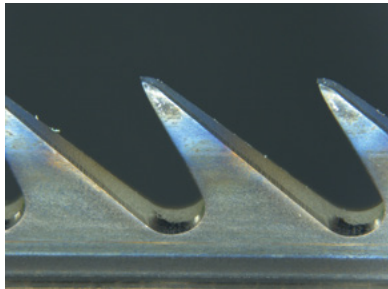
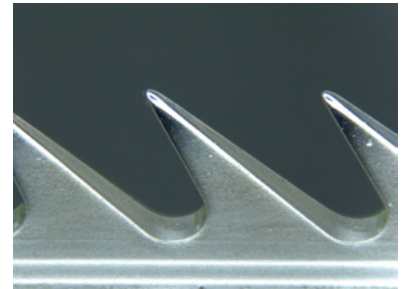


Fig. 4

Blank



Polidur



Needle Finish

### Use and application

In the end the performance in application is the only deciding factor; in this respect Graf is a step ahead of the competition. New products undergo intensive tests before they are formally launched. Besides comprehensive field tests Graf also applies specially developed and standardized testing procedures.

Figure 5 illustrates the evaluation of the resistance to wear of different materials. In the comparison between ball bearing steel 100Cr6 and Graf's CUTTYSHARP® the high value of the normal distribution, indication for the homogeneity of a material, and on the other hand the smaller loss in weight are evident. Graf uses this procedure to test new developments and to regularly assess the positioning of products.

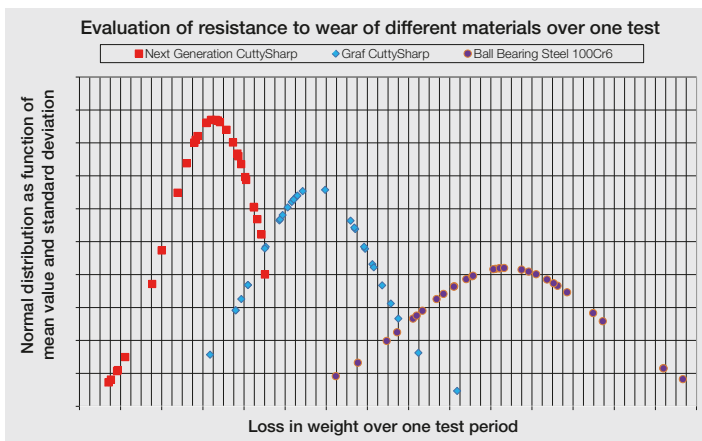


Fig. 5: Evaluation of resistance to wear of different materials

### Advisory competence

In order to achieve a good performance in application, excellent card clothings are one factor, but just as important is the sound knowledge and competence required for the application-oriented selection of the clothings. This is where our technical customer advisors (TKB) enter the picture.

Taking into consideration the raw material processed, the type of machinery in operation as well as the quality of the intended end product they will provide the customer with a clothing recommendation which assures a maximum productivity at optimal operating performance.

To achieve an even quality throughout the life cycle of the card clothings, regular maintenance is essential. Graf offers a wide range of high quality machines and equipment for the various service requirements on cards. Our technical customer advisors provide support in the selection as well as in the instruction of users with respect to application, maintenance and service of the equipment.



## Why to choose CROCOdoff

CROCOdoff was presented to the public for the first time during ITMA Asia 2012. Since then CROCOdoff has been running in 8 different countries on various applications.

There are many reasons for customers to choose CROCOdoff. Firstly it is not just an under-winding system. CROCOdoff can help to reduce energy consumption, maintenance costs and generally to run the ring frames in a more efficient and economic way.

### Energy consumption

Spindle energy consumption is caused mainly by air friction, particularly by open hairiness (Fig. 1). At the traditional 3 under-winding systems additional air friction occurs due to flying open yarn ends.



Fig. 1

Thanks to CROCOdoff, with less than one turn of under-winding, we do not have to face the energy consumption issue. After opening of CROCOdoff the yarn end flies out of the system and no open yarn tails consume expensive energy (Fig. 2).

### After doff end-down rate

No people means no time for end-down handling. Rising wages and non-availability of workers forced Chinese spinning mills to focus on autodoffer machines. In the past the cost and availability of people was no problem at all.

Time has changed, the cost of workers has increased dramatically and the availability of workers has become a big problem in China. In the past it took just a few minutes to fix the end-down. Due to decreasing number of workers in the mill, the time needed to fix the end-down is becoming longer and longer (Fig. 3). Nowadays it is very common that end-downs are not being fixed for hours. That means production loss. Instead of producing yarn for sale, the spinning mill is producing waste.

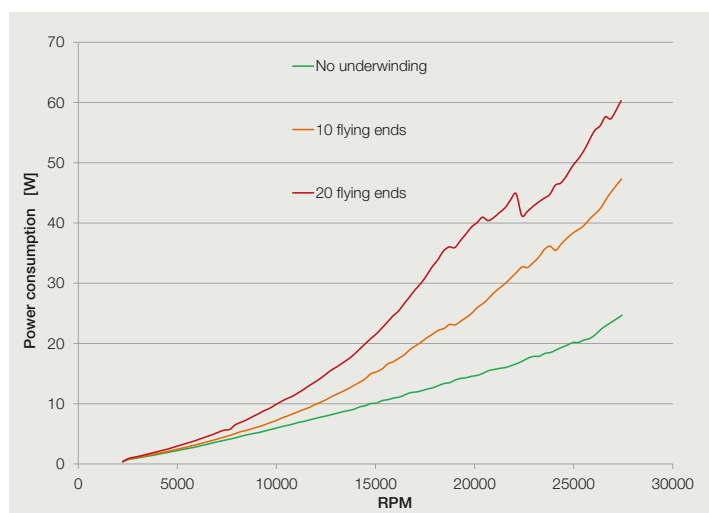


Fig. 2



Fig. 3





Fig. 4

Most of the end-downs happen during the doffing. We had a chance to measure the end-down rate on 4 different machine types, in the same spinning mill building, running under exactly the same conditions. Out of the 4 machines, 1 machine was running with CROCOdoff spindles, the others with the traditional 3 under-winding system spindles. Measurements were taken within several months. With the 3 under-winding system the average end-down rate was 45 to 70 depending on the respective machine brand. The average end-down rate on the machine running with CROCOdoff was only 11 end-downs per doff.

#### **Maintenance and Cleaning**

No people also means no time for cleaning. Besides higher energy consumption of the traditional 3 under-winding system, we also have to consider the maintenance, respectively the cleaning of spindles.

The more yarn is on the under-winding section, the higher energy will be consumed.

The more yarn is on the system, the more after doff end downs occur. The wound yarn will affect the new under-winding process and may end up in an additional end-down (Fig. 4).

One spinning mill in Shandong modified their existing machines with 528 spindles each with autodoffer. They produce Ne 16 cotton yarn. Due to the modification with autodoffer the spinning mill could reduce

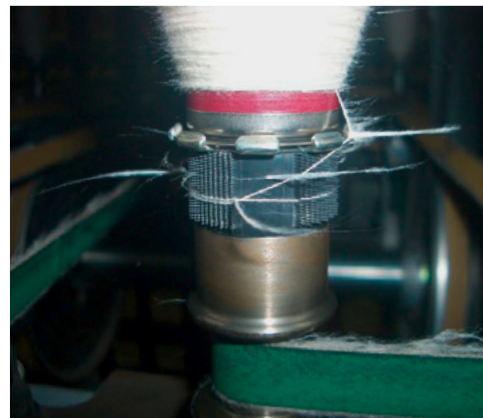


Fig. 5

the number of workers. However, to run the machines smoothly, they had to stop each and every machine once a day for 20 minutes to clean the under-winding section. The statement of the mill manager was clear: He does not have enough people for fixing the high after-doff end-downs or for cleaning the under-winding section.

Thanks to CROCOdoff he was able to reduce the end-down rate after doffing and there is no need to stop and to clean daily every machine anymore.

#### **Modal Viscose fibres**

The end-down rate after doffing also depends on the material produced on the machine. Special material as Modal Viscose tends to have huge end-down rates after doffing. The yarn wound on the under-winding system affects the new doff. As a result the end-down rate is often higher than 100 end-downs for a machine with 1200 spindles. We were able to reduce the end-down rate to the average of 22 per doff only because of CROCOdoff.

#### **Less than 360° of under-winding is of the highest importance**

Only if the under-winding is less than 360 degree, the system becomes self-cleaning (Fig. 5). When the under-winding is more than one round, knots can occur easily; the yarn end cannot fly off. As soon as there is still some yarn in the clamping system, the danger that the new yarn from the following doffs also remains in the system is very

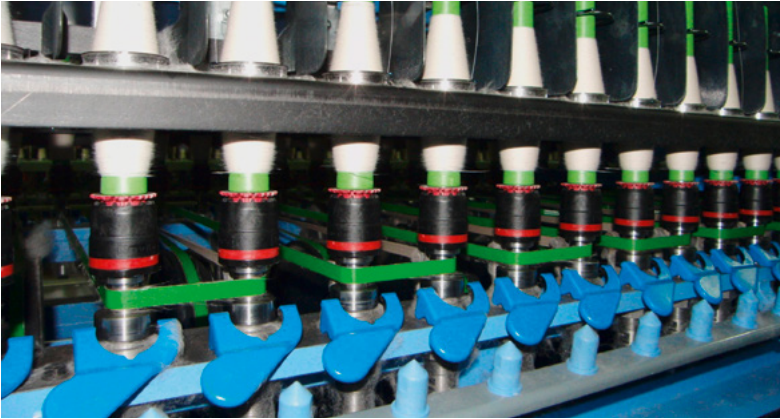


Fig. 6

high. When there is more than 1 round put during the under-winding, the system has to be cleaned frequently, after-doff end-down rate rises. The more yarn remains in the system, the higher the after-doff end-down rate will be.

After inserting the yarn into CROCOdoff, the machine has to be stopped quite fast. That means the machine must be able to stop immediately the clamping crown is closed. Thanks to the closing speed of only 2500 rpm, most of the machines are able to work with CROCOdoff. Beside a good brake to stop the machine, some software changes may also be needed. In that case, the respective machine manufacturer is to assist with such software changes.

Less than 360 degree of under-winding is a must for a self-cleaning and trouble free running of such under-winding systems. However, it is clear, that the less under-winding, the more important is a good clamping of the yarn. If the yarn slips out of the system, the system will fail due to huge end-down rate. Thanks to CROCOdoff clamping teeth, the yarn cannot just slip out.

For very coarse count yarn and especially for synthetic coarse counts, the yarn cannot be cut by the cutter of the clamping device. What happens is that the yarn gets stretched and is being broken, which means that the yarn tail is a little longer compared to the finer yarn counts. However, we have not found a yarn yet that

would slip out of CROCOdoff. Of course under-winding was always less than 360 degree.

One customer in Shanghai is working with the 3 under-winding systems and at the moment also testing some new machines with so called under-winding-free system. He was not happy at all with the performance of the clamping device delivered with the machine. After changing the spindles to CROCOdoff, the statement of the spinning manager who is responsible for the ring spinning machines was clear: From technical point of view CROCOdoff is the only system he knows that gives him what he needs. No cleaning, low end-down rate after doffing. Just trouble free working as it should be.

Since ITMA Asia 2012 CROCOdoff has been running in many different mills, different yarn parameters, from coarse to fine counts, different raw materials and different machine brands. To set the machines to perform perfectly is no issue to us. As long as the workers are available for low cost, there is no need for autodoffer or CROCOdoff. But when the availability of workers is low, spinning mills have to go for autodoffer. Spinning mills do not have the manpower for cleaning and fixing huge after doff end-downs any longer if they run autodoffer machines. A highly reliable system that is self-cleaning and has low end-down rate is a must for trouble free and smooth running of the spinning mill.



# Bräcker Traveller for 100 % Compact Yarns

A step ahead of the competition

**In the context of an analysis for a customer in Turkey, the traveller C1 EL udr ISO 25, SAPHIR, spinning 100% cotton compact yarn Ne 40, was compared with a major competitor's product and clearly outperformed its product regarding traveller lifetime and machine performance.**

### Introduction

By the technology components rings and travellers, not only the yarn quality but also the running characteristics and thus the productivity of the ring spinning machine is influenced. Depending on the application area and the production parameters, it is necessary to consider several aspects when selecting the traveller to guarantee smooth spinning process. Only with the choice of an optimal traveller, compact yarn can be spun with maximum spindle speed and traveller lifetime.

The spinning of compact yarns is constantly gaining in importance. The main compact yarn characteristics are low hairiness and high tensile strength.

The low hairiness demands a traveller shape which supports the build-up of the necessary lubrication film between ring and traveller. The low-bowed Bräcker traveller C1 EL udr was especially designed to spin compact yarns. Due to the small yarn clearance, the optimal build-up of the required lubrication film is facilitated, which influences at the same time the traveller lifetime positively.

An additional aspect in the choice of a suitable traveller, is the traveller surface treatment. The choice of the appropriate surface treatment enhances the wear resistance which contributes to an extension of the traveller service life as well as to a reduction in machine down-times.

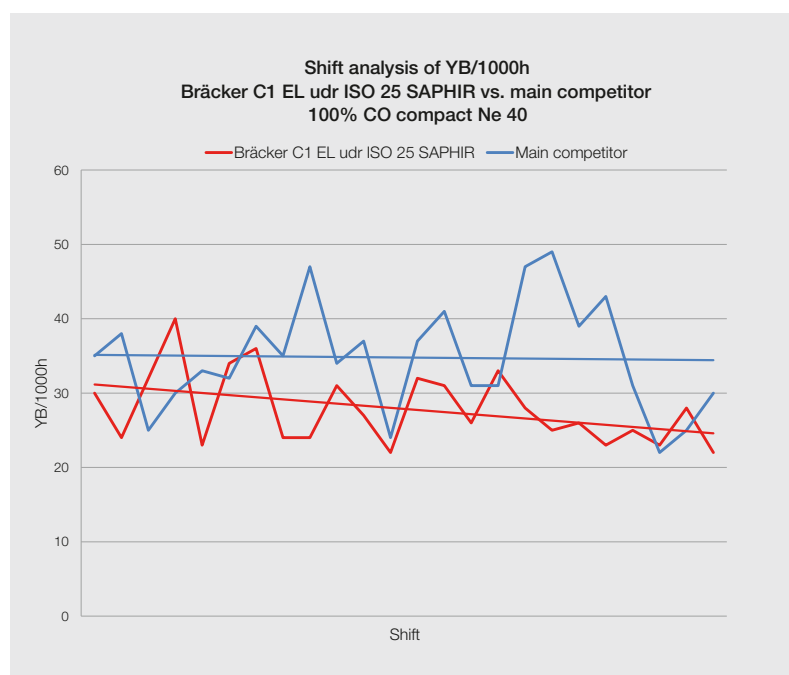


Fig. 1

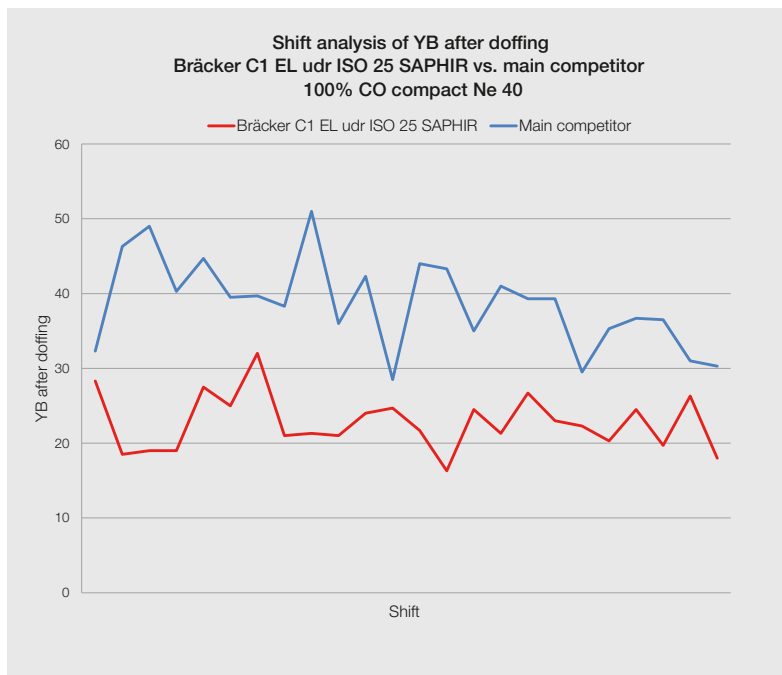
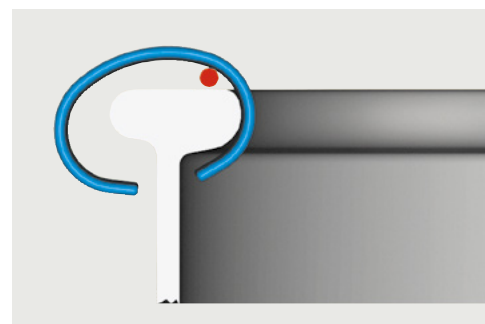


Fig. 2



Bräcker SAPHIR traveller



Schematic drawing: Bräcker traveller C1 EL udr with small yarn clearance

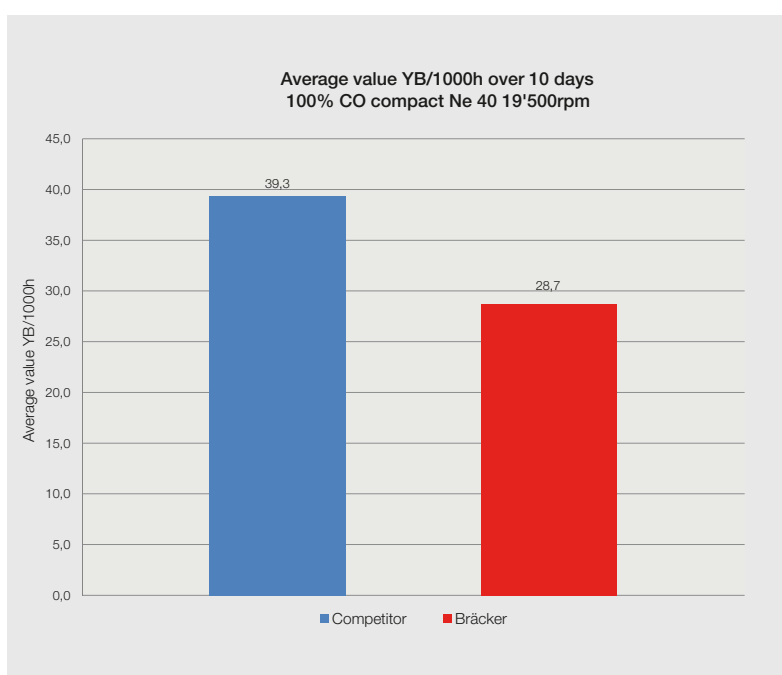


Fig. 3

The SAPHIR treatment characteristically stands for an universal application, for spinning any kind of fibres and yarn counts. This specific diffusion treatment penetrates the entire traveller cross section, so that the advantages of this treatment persist even when the surface is worn due to abrasion. This allows higher operating speeds and a constantly high performance of the SAPHIR travellers over their entire service life.

**Test procedure and analysis**

The comparative test was run in cooperation with a customer in Turkey, spinning 100% cotton compact yarn, Ne 40, at 19'500 rpm with 1040 T/m. Tested was the traveller type C1 EL udr ISO 25, SAPHIR. The yarn breaks (YB/1000h) were monitored online with the spindle monitoring system, then they were summarised for each shift.



Yarn count [Ne]		8	10	12	14	16	20	24	30	36	40	50	60	70	80	100	120	140			
Carded and combed cotton	Flange 2	C2 MM dr / M2 udr																			
	Flange 1					C1 UL udr															
						C1 SL udr															
								C1 EL udr													
													C1 SEL udr								
												C1 SKL udr									

Table 1

The shift analysis (Fig. 1) clearly shows the reduction in yarn breaks achieved with the Bräcker traveller C1 EL udr ISO 25 SAPHIR. After the building up of the lubrication film, the traveller achieves considerably lower yarn breakage values compared to the competitor product and convinces by its stable running behaviour.

The analysis of the start-up breaks after doffing (Fig. 2) also shows significantly lower end

breaks with the use of Bräcker C1 EL udr ISO 25 SAPHIR compared to the traveller of the main competitor.

In direct comparison of the average yarn breakage values per machine (Fig. 3), the advantage of the C1 EL udr ISO 25 SAPHIR becomes obvious. The Bräcker travellers, at the same speed level of 19'500 rpm, show clearly lower yarn breakage rates and therefore, set themselves apart from the competition.

### SUMMARY

The spinning range of compact yarns embraces a large range of yarn counts. Besides 100 % cotton, also blends with PE and Viscose are processed. Especially for these yarn categories, Bräcker has developed optimal travellers which are adapted to the various yarn counts and therefore allow for highest spindle speeds at constant and attractive yarn qualities.

Based on years of experience and the feedback of many satisfied customers, we have established a list of recommendations for the optimal traveller choice, shown in Table 1:

To achieve an optimal traveller service life, a "traveller running-in program" should be followed after each and every traveller change. A reduction of the rpm's by 10 to 15 % over a period of 4-6 hours considerably enhances the service life of the travellers. In the area of compact spin-

ning, traveller service life of 200 to 400 hours can nowadays be reached. When using Bräcker travellers with ZIRKON coating, traveller service lifetimes of up to 800 hours are possible.

During a benchmarking contest, the results with the Bräcker traveller C1 EL udr ISO 25 SAPHIR, spinning 100 % cotton compact yarn, Ne 40 clearly outperformed with regard to service life and productivity. Only by using best matching Bräcker rings and travellers, conventional and compact yarns can be processed with highest spindle speeds and maximum traveller service life.

# Durelastic Foundation

Graf reinvents the foundation of flexible flats

**Graf has developed a new durelastic foundation which allows our customers to run higher production rates and achieve higher lifetimes combined with even better quality. The very stable quality throughout the lifetime and short delivery times are further benefits of this breakthrough innovation.**

The latest generations of cards such as the high-production Rieter C 70 or Truetzschler TC11 cards put extremely high and partially new demands on their technological com-

ponents. These cards require a maximum of running performance, precision, stability, continuity and lifetime. Particularly the flat tops, which for decades have been manufactured on the basis of a multilayered cotton foundation with layers of natural rubber reach their limitations and increasingly become the limiting factor as far as further improvements in performance and quality of the cards are concerned.

Graf has addressed this issue and commenced the development of a novel foundation, designed to meet these new market requirements. With the finalization of the development, Graf is in a position to present a high-tech product that provides the customer with a variety of advantages.

### Vision of development

Previous developments in the field of flat tops dealt with changes in the setting pattern, working angles and dimensions of the carding wire. The vision to improve the dynamic features of the foundation added an entirely new dimension to the development of flat tops. Figure 2 indicates which varying strains act on the foundation of a flat within the carding zone. The new foundation should meet the demands of the increasing production rates and the resulting rising carding forces:

- Rigid however elastic; a precise and constant carding gap at varying carding strain
- highest capacity and production output at
- unrivalled lifetime as well
- elimination of the aging process

In brief, the visions at the outset of this innovation were:

*A foundation that allows peak performance of the card at a quality in line with market demands.*

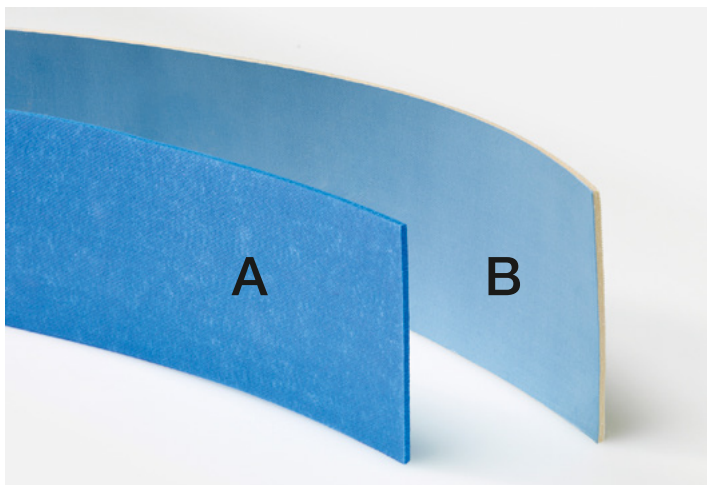


Fig. 1: durelastic foundation A and standard foundation B

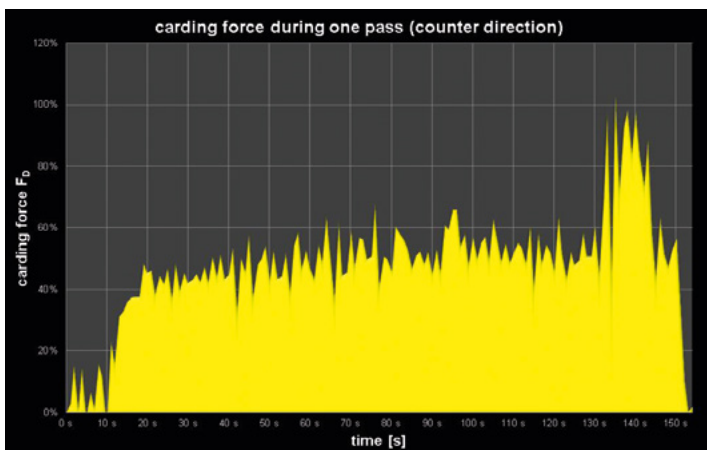


Fig. 2: Typical progression of force on flat within carding zone; during one pass

### Analysis of current foundation

Initially the focus of the assignment was put on analysing the existing foundation and on determining the factors and parameters that are relevant to quality and lifetime. For this purpose the engineers of ITV in Denkendorf developed new, high-tech measuring techniques and methods which allow the measuring and understanding of the dynamic behavior of the needle tips in synergy with the foundation.

What happens with the needle tips during the carding process? Which influencing factors determine the carding result and the lifetime?

Figure 3 shows the dynamic behavior of a standard foundation throughout a production output of 600 tons on a 60" card. In this simulation the pairs of needle tips are dynamically deflected in both a practical number of cycles as well as in the deflection path; this in order to examine, for example, the reduction in resetting force throughout the lifetime. Which parameters, such as the inserting of the needle tips into the foundation, are important in the production process?

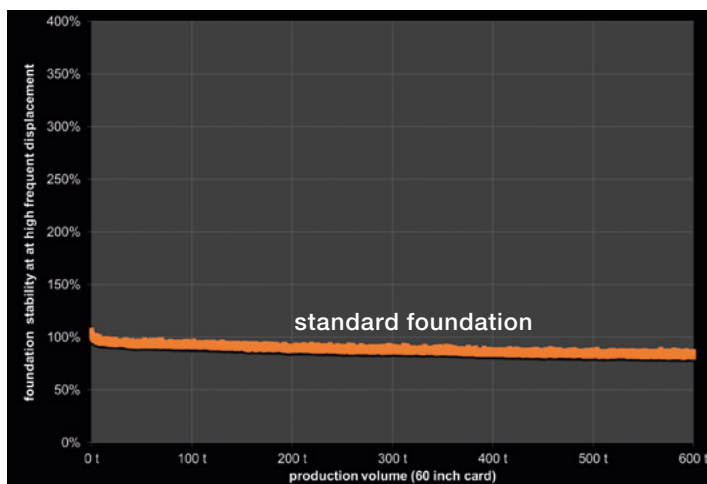


Fig. 3: Dynamic behavior of standard foundation throughout the lifetime of the flat clothing

Figure 4 illustrates the progression of force of a norm test-needle at the time of penetration and retraction at a defined travel path. On one hand this information contributes to the optimization of the wrapping and supporting force of the foundation. On the other hand this information serves for the improvement in the insertion of the needle tips during the production process. Where is the optimal balance between rigidity and elasticity of the foundation? How high do the retention and resetting forces need to be and within which time does it need to be effected? Which influence do the ageing of the existing foundation and the respective embrittlement have?

Figure 5 illustrates the graphics of a further test method. Here a pair of needle tips are deflected for a number of cycles by a defined travel path. The information thus gained allows conclusions on the dynamic behavior and the resetting force of the foundation which in turn ensures the foundation to be ideally set to meet the requirements in the carding process.

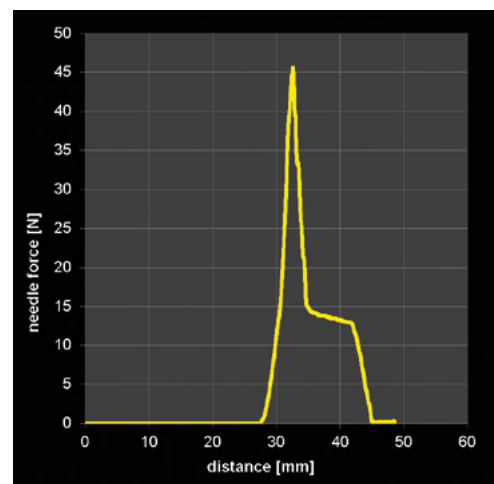


Fig. 4: Penetration test: Graphic illustration of the forces of penetration, pervasion and wrapping of a standard foundation

All the above issues were addressed by the engineers with great dedication and perseverance. Once all queries were completely resolved and a number of testing methods worthy of patents were put on the table, we could start defining the flat tops of the future.

### Technological

As mentioned earlier on, it is an increasing market demand to better control the carding gap. This requirement has become even more important with the introduction of the wider cards. And this not only for just one passage of the flats but throughout the entire lifetime of the flat tops. As far as high production performance is concerned, today's flat tops are the limiting, or at least the quality-limiting factor. In the development this barrier needed to be broken through. Since Graf has got the entire manufacturing process of flat tops in-house, a subtask of this project was the optimizing of quality and processes.

### Economical

An ideal carding result can be achieved throughout a longer period. This requires the application of process-reliable technology components. The service demand can be reduced with longer intervals and a higher throughput of fibres can be achieved, maintaining the quality. This with a process-related shorter and thus improved delivery capacity.

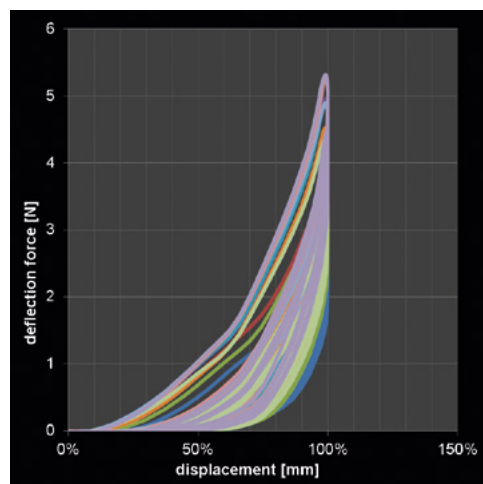


Fig. 5: Hysteresis test: Graphic illustration of force and displacement of a needle pair for a number of cycles by a defined travel path

### The solution: durelastic foundation

The nature and the structure of the existing foundation permits only very limited adjustments in the dynamic behavior. Furthermore the application of natural raw materials such as natural rubber and cotton results in noticeable tendencies of embrittlement as well as variations in the raw material that are detrimental to the quality of the card sliver. It became the challenge to develop a new generation which distinguishes itself primarily by continuity on a very high level throughout the entire life cycle.

### Precise and constant carding gap

Figure 6 schematically illustrates the deflection of the needle tips in the carding process. Flat rod B shows today's foundation, flat rod A the durelastic foundation. As a result of the higher deflection resistance of the new foundation compared to the existing one, the deflection of the needle tip is smaller in the load condition. Therefore the deviation of angle  $\Delta\alpha_2$  is considerably less than that of angle  $\Delta\alpha_1$ . This leads to a substantially more precise and constant carding gap ( $K$  in Figure 6) which also allows for closer settings. Furthermore the needle tip in the durelastic foundation works markedly more precisely since it stays closely to the working angle ideal for the carding process (see Figure 6):

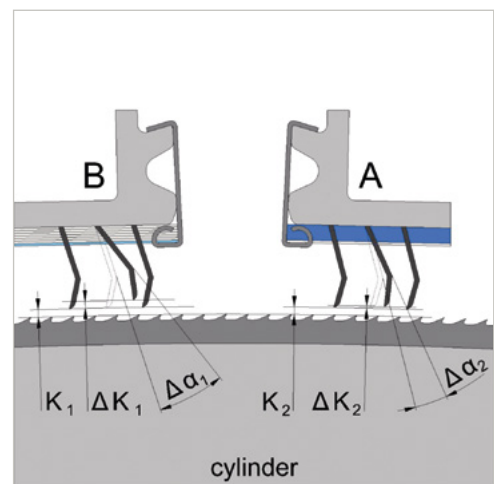


Fig. 6: Deflection of needle tips under same load in direct comparison, B standard foundation, A durelastic foundation



The needle tip in foundation B cannot retain the strips at high loads, resulting in a poorer carding result.

The prevailing carding forces throughout one cycle of the flats vary greatly (see Figure 2). Subsequently an increased deflection results in a lower carding quality.

Since specific materials are used which are not subject to any ageing process and thus any embrittlement, both the rigid but yet elastic features remain constant throughout the lifetime. Figure 7 shows a direct comparison between the old and new foundation.

Based on the novel structure of the durelastic foundation higher densities as well as substantially improved setting patterns can be realized. The considerably greater stability with constant deflection is another characteristic of the new foundation.

### Outlook

The process of development of the durelastic foundation has resulted in comprehensive understanding and know-how on the demands and the strain in operation. All parameters and influencing factors of flexible foundations are now known to us and the measuring methods and testing systems developed allow us to pass qualified statements on the running properties at short notice. This know-how and the experience gained are of great benefit for the continuous development of the durelastic foundation.

The new foundation opens entirely new opportunities for technologists to influence and alter the dynamic behavior and thus to eventually optimize the carding process as well as the lifetime. The compiled possibilities and the knowledge will be strictly applied to continuously provide our customers with the best products on the market. Changing market requirements will not cause us to shy away from taking novel ways in order to stay ahead of our competition by the few extra steps with our technology components.

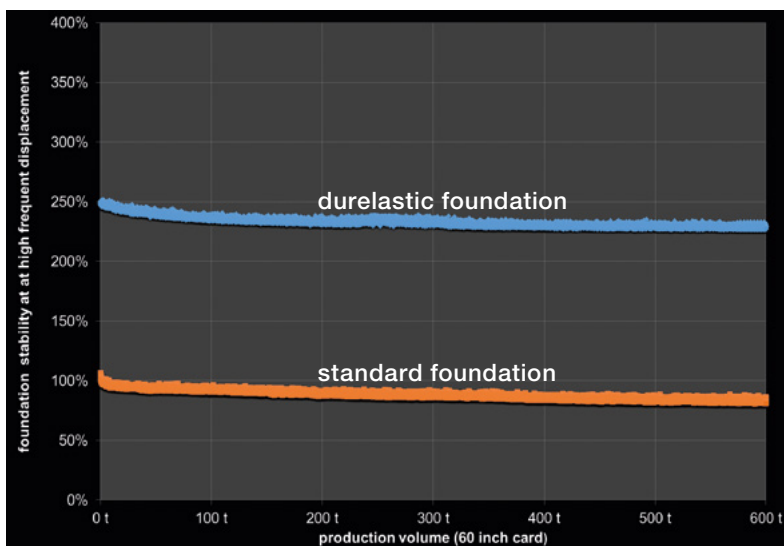


Fig. 7: Dynamic deflection test throughout lifetime of a clothing



Fig. 8: Flat top with durelastic foundation

## PS7 TwinDisc: Energy Saving on Open-End Machines



PS7 – energy-saving TwinDisc

**The most energy consuming device in an Open-End machine would be the rotor drive, especially the TwinDisc bearing unit. Depending on the machine length and rotor speed the share of the rotor drive is 50 to 70 % of the total power consumption of the rotor spinning machine.**

### Development history

Technically the TwinDisc bearing unit is a support disc bearing, meaning the rotor shaft has no direct bearing but the support discs are pivoted. This past development by Suessen solved the problem of the technical maximum bearing rpm.

Due to the diameter ratio between rotor shaft and support disc this principle reduced the bearing speeds by almost 90 % and enabled the current practical rotor speeds up to 160,000 rpm.

### Energy footprint

Generally the piecing-up of a yarn requires a consistent acceleration of the stopped rotor up to the needed piecing-up speed. Accordingly a certain pressure of the tangential belt to the rotor shaft is needed to meet this requirement. This pressure reduces the slippage between rotor shaft and tangential belt during the acceleration.

On the other hand this pressure causes additional flexing work between the rotor shaft and its supporting points on the TwinDiscs.

This flexing work is the main reason of the high ratio of total power consumption of a rotor spinning machine.

So it is quite understandable that any improvement to the rotor bearing units will have the biggest impact to the total power consumption of rotor spinning machine.

### Tackle the cause

In this case flexing work is nothing less than the rotor shaft constantly pushing a rubber bulge ahead – just imagine pushing a car with flat tires – exhausting ... energy consuming. To definitely reduce the energy consumption, this bulge has to be reduced.

### Options

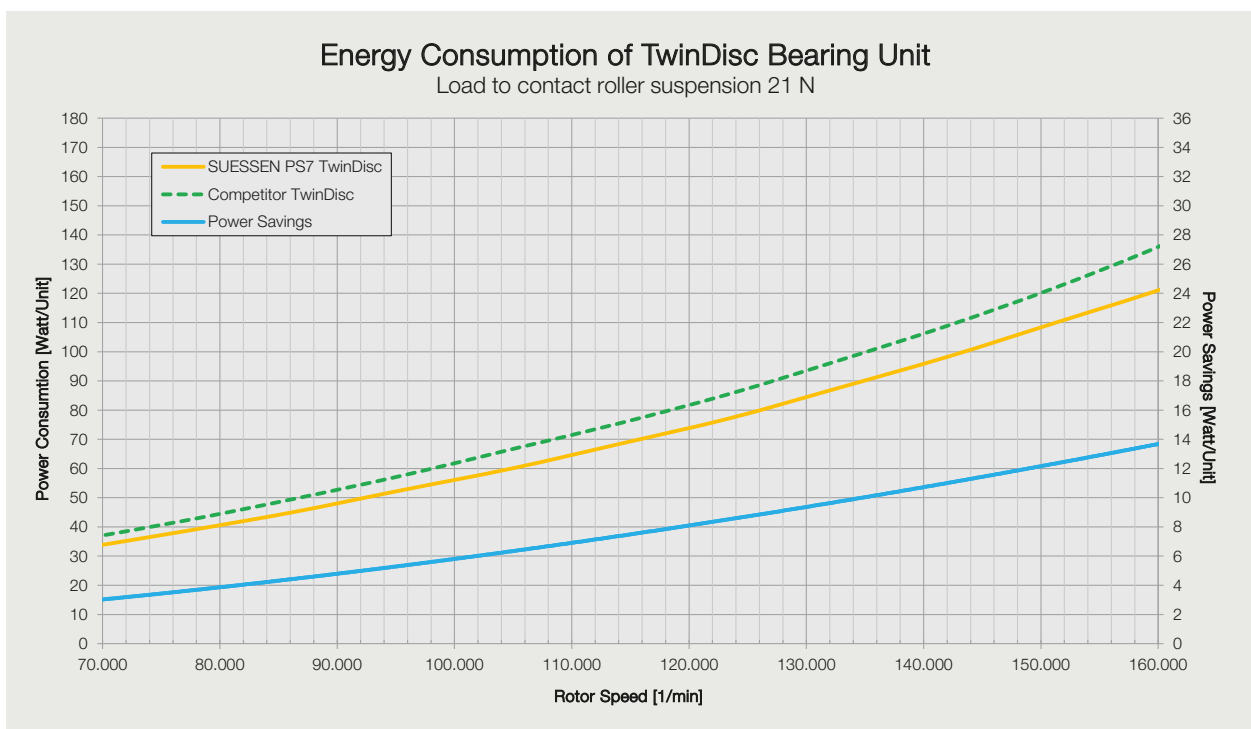
Less pressure to the rotor shaft will reduce the bulge and thereby the flexing work between rotor shaft and TwinDiscs. This product, the “energy saving leave spring” for the contact roller to the rotor shaft, was already introduced at ITMA Barcelona in 2011.

This option is only available for older SE 9 and SE 10 rotor spinning machines and requires a pressure increasing lever to the piecer carriage when using bigger rotor diameters. More modern machines are already operated at the lowest possible pressure level.

Another option is using a harder rubber. Harder rubber will have higher resistance to the pressure, thus the bulge would be smaller and thereby reducing the flexing work between rotor shaft and TwinDiscs. This option would mean a long term development with wide-ranging field tests, since the long-run effects, like wear, rubber aging, shaft contamination, etc. are not predictable.

The most reasonable option is the narrowing of the support points between TwinDisc and rotor shaft. This will result in bulges with the same shape of height but narrow in width – easier to be pushed ahead by the rotor shaft, thus less energy consuming.

This option combines reliable and known rubber properties with the existing manufacturing know-how to ensure a beneficial and safe product.



### PS7 TwinDisc

The new TwinDisc development from SUESSEN has 7 mm width – the “PowerSaving” 7 mm TwinDisc. The power savings, depending on the rotor speed, are up to 14 Watt compared to the competitors’ support discs.

For example an ACO 288 at 130,000 rotor rpm could save 9 Watt per unit and hour, adding up to almost 90,000 kWh per machine in a 4 year life span of the PS7 TwinDisc.

The savings are even bigger with a high speed application on e.g. an ACO 480 at 140,000 rpm. In this case the savings of 10.2 Watt per unit add up to 168,000 kWh per machine in the 4 year life span of the PS7 TwinDisc.

### Measuring energy consumption

All measurements were executed on a special spinning rack at our R&D department. All different support discs were brand new and tested under the exact same conditions like exact same TwinDisc bearings, exact same speeds, exact same contact roller pressure and exact same room temperature, etc.



Comparing measurements in the spinning mill deliver quite inaccurate and often misleading results, because of the high amount of variables.

While overhauling the bearing units of a rotor spinning machine the TwinDisc bearings have to be freshly lubricated, often a new tangential belt will be equipped. The fresh grease in the TwinDisc bearings leads to higher energy consumption due to the resulting resistance of the steel balls running in grease. A new tangential belt is stiffer compared to a used one and causes additional flexing work.

Furthermore the older TwinDisc rubber is harder due to aging (dissipating softeners) thus the flexing work is less with older TwinDisc. In most cases after the overhaul and replacement of TwinDisc of any brand the readings will show higher energy consumption.

The run-in time of the fresh grease will take about 2 weeks before losing the negative impact to the power measurement; the tangential belt probably needs about 1 to 2 month.

The natural aging characteristics of rubber remains as biggest hurdle for the measurement – accordingly only TwinDisc of the same age and running time could be compared – a almost impossible task in a spinning mill.

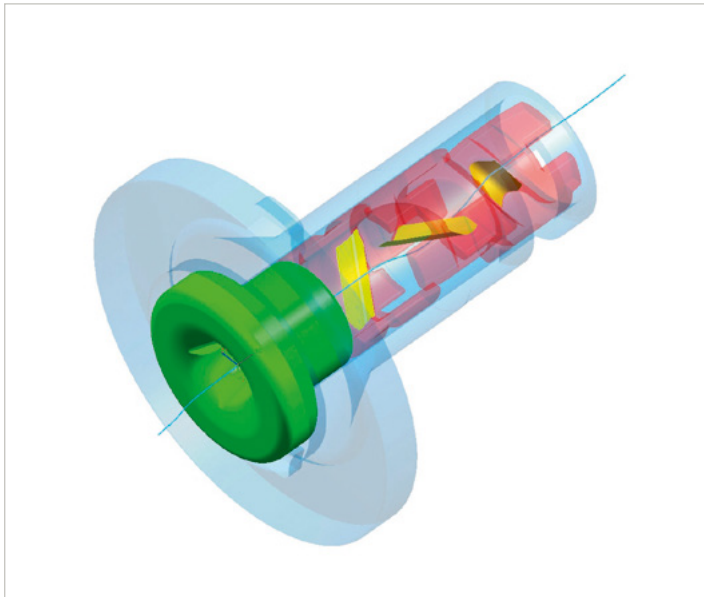
### CONCLUSION

The average annual power bill, especially the stated kilowatt hours, will show the estimated power savings with the PS7 TwinDisc. With the PS7 TwinDisc the spinning mills utilize a safe and reliable support disc and gain a remarkable advantage – in particular power cost savings.





## Production Increase on Open-End Machines? 10 % or more with TwistTrap Navel!



TwistTrap-Navel with yarn path

Production increase sounds promising, but how is this done without a loss in yarn quality? One possibility would be to raise the rotor speed by using smaller rotors – technologically possible, but usually this results in different yarn characteristics. On the other hand most of the older machine models are already operated at their technical rotor speed limit.

Furthermore speeding up the rotors consumes undeniably more energy, so speed is not a preferable and in some cases not a possible option.

A second possibility would be a modernization of the spinning units or even a new machine, enabling better performance. But this would mean a huge investment with long payback period.

### Introduction of a technological knack

A reasonable option is the application of a high performance spinning component. The costs are manageable and the use is easy.

With this article we like to introduce a technological knack, the reinforcement of the yarn at the most heavily strained zone.

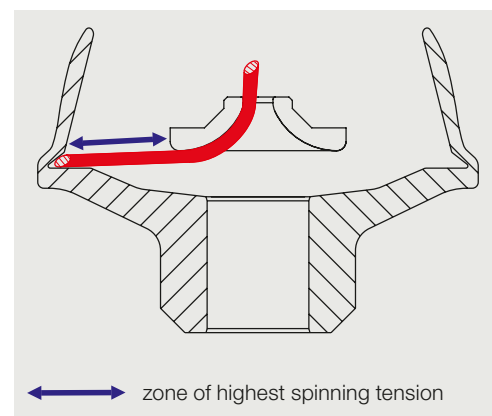


Fig. 1

This zone is between rotor groove and navel, where the spinning tension reaches the highest level due to centrifugal force (see Fig.1).

Consequently the yarn needs more twist in this zone. Simply to increase the twist multiplier would actually drop the delivery speed, accordingly this would cause a loss in production. Additional twist, just in this specific zone is needed without increasing the twist multiplier.

#### **Retained twist**

The whole system of navel and TorqueStop works as a twist retainer and supports the yarn strength in the discussed zone. Any sharp TorqueStop clip or more aggressive navel shape increases undesired long hairiness.

The solution is the integration of an additional twist retaining element. This element should be soft, thus the long hairiness will not be increased.

#### **TwistTrap-Navel**

Due to the limited space we added such a twist retaining element into the navel throat – between the nozzle and the TorqueStop – and called it “TwistTrap”.

The effect of the TwistTrap-Navel is to detain more twist towards the rotor groove. The advantage of this additional twist detainment is the desired reinforcement of the yarn strength in that zone of highest spinning tension. This additional twist is a so called “false twist” and will dissipate after passing all twist retaining elements towards the winding.

#### **Customers' benefit:**

The real advantage now is that the normally required twist multiplier for a specific yarn can be reduced without the risk of increasing the yarn-break level.

Accordingly the take-up speed can be increased (without increasing the rotor speed) by 10 % or more. Especially for knitting yarn applications a further benefit is a softer hand of the fabric due to the reduced twist multiplier.

Another not less important option is the possibility to add lower grade or shorter fibre material to the bale layout. Truly, in this case without lowering the normal twist multiplier, but with the benefit of raw material cost savings.

#### **Application**

Weaving yarn requires a minimum yarn strength to overcome the downstream processes of warping and weaving, therefore a reduction of the twist multiplier or increased blending quota of low grade fibre material might weaken the yarn.

In general this TwistTrap-Navel is designed for knitting yarn applications, since the yarn strength is not such a big issue for the downstream processes.

Wide range field tests with knitting yarn applications from Ne 18 to Ne 28 and different cotton blends proved the possible production increase of minimum 10 % due to twist reduction.

The following knitting process was unproblematic and a slightly softer hand of the knitting fabrics was acknowledged by the knitting mill specialists.

We are nevertheless convinced that the spinning mill specialists will find further applications for a beneficial use of the TwistTrap-Navel.



## Bannari Amman Group

Success with a human face



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The Bannari Amman Group, headquartered in Coimbatore, TN, is one of the largest industrial conglomerates in South India with a wide spectrum of manufacturing, trading, distribution and financial activities. Manufacturing and trading activities include cotton yarn, fabrics and garments. Other divisions include distribution of automobiles and related accessories of renowned brands with financing activities. The service sector has wind power energy, education, health care, real estate etc. The Group's net-worth exceeds INR 450 crores (approx. USD 75,000,000.-), with sales turnover in textile operations crossing around 200 Million US Dollars.

Obviously, I am biased towards spinning – and limited in my knowledge of their other activities, so I will report about the “spinning angle” only.

Their spinning division consists of:

- Shiva Tex yarn unit 1
- Shiva Tex yarn unit 2
- Bannari Amman spinning mills unit 1
- Bannari Amman spinning mills unit 2

Their total spindelage and the portion of Suessen EliTe® may be seen in the table below.

Mill Name	Suessen Compact Spindles (nos)	Total Spindelage (nos)
Shiva Tex Yarn unit 1	31,344	39,072
Bannari Amman Spinning Mills unit 1	23,184	30,240
Bannari Amman Spinning Mills unit 2	74,400	114,000
Shiva Tex Yarn unit 2	28,800	50,400
<b>Total</b>	<b>157,728</b>	<b>233,712</b>



Mr. S.V. Alagappan, Chairman and MD of Shiva Tex Yarns Ltd.



Mr. S.V. Arumugam, Chairman and MD of Bannari Amman Spinning Mills

This capacity allows them to produce about 120 tons per day of combed yarns, compact yarns, for knitting and for weaving, in the range of 16's to 100's. Among the cotton varieties used are Supima, BCI, Giza, organic cotton and West African.

Mr. S.V. Alagappan, whom I regrettably know less well personally, is Chairman and MD of Shiva Tex Yarns Ltd. He takes care of policy matters, projects and implementation of projects. His degree in law is an asset to the group.

If my recollection is correct, I met Mr. S.V. Arumugam, Chairman and MD of Bannari Amman Spinning Mills in June of 2006.

Naturally, our agent Mr. Mathew (VTS Venus Textile Systems, Coimbatore) had told me, but still it was an experience one does not forget:

He greeted us very friendly. Then the "needling" started. I do not recall anymore, what it was about – but I must have given a satisfactory answer because he smiled – and the next needle prick came. It was almost like fencing, but not with heavy sword, but with light rapier.

I have met him many times thereafter, and every time I have enjoyed the meeting.

Mr. Arumugam holds a Bachelor of Science (B.Sc.) degree and he is a Chartered Accountant, but in my view, his greatest asset are not his degrees, but his capacity to quickly and correctly judge a situation, and draw the right conclusions – and his sense of humor!

Success obviously does not just happen! Mr. Arumugam has a very deep knowledge of techno commercial – and he surely expects his supplier to technically know his product.

With success comes social responsibility, and Mr. Arumugam does not shy away:

- He has been the Chairman of CITI, the Confederation of Indian Textile Industry, the apex body of all textile activities in India.
- He served as Vice Chairman of the Indian Wind Power Association (IWPA)
- He was the Chairman of SIMA
- He was the Chairman of CII, the Confederation of Indian Industries, Coimbatore zone

I recall that we requested his help as Chairman of CITI in some EPCG issue. He listened intensely, asked his usual precise questions – and helped to solve the matter on hand.



No Field Marshall can win a battle without able generals, highly motivated officers and well trained, loyal troops.

Mr. Arumugan and Mr. Alagappan at the helm are assisted by Executive Directors Dr. Sundaraman and Mr. Senthil. The execution and implementations of the directions given is the responsibility of a competent team of GMs who in turn rely on Technical Executives to manage the day-to-day operations.

Obviously, this group is a large customer of Suessen's EliTe®Compact System; I have had discussions on all management levels. The basic philosophy was always similar, only the subject matters were different.

Straight questions demanding straight answers. Their criticism on our products was fair, goal-oriented and helpful. A good sense of humor prevailed – but would not cover up any issues!

**Suessen EliTe® was consistently favored mainly due to the following advantages:**

- Up to 30% reduction in end breaks
- Up to 50% reduction in pneumafil waste
- Productivity improvement between 10% and 15%
- Better yarn realization
- Spinning potential of cotton is improved
- Less fly liberation helps better working environment and lower classimat faults
- Challenging quality required by customers is easily possible
- Possibility of new product developments

The last point above is the challenge they pose for Suessen: "Stillstand ist Rueckschritt" as the German saying goes: If you do not move ahead, you fall behind! They expect – and have the right to expect – that Suessen EliTe®Compact Spinning System will be further developed.

I sometimes like to say: Suessen builds the piano – but the customers only know how to play the symphony!

Table 2 shows the improvements the mills have been able to achieve, using Suessen's piano (EliTe®Compact Spinning System).

Table 2

Count	30s		40s		60s		80s	
Quality	Combed		Combed		Combed		Combed	
End Use	Knitting		Knitting		Weaving		Weaving	
Spinning System	Normal	Compact	Normal	Compact	Normal	Compact	Normal	Compact
Yarn U%	8.5	7.8	10.0	9.2	11.5	10.8	12.1	11.7
Total IPI	51	40	80	65	180	120	400	200
RKM (Tensojet)	18.5	19.6	18.5	20.8	22.0	24.0	21.5	24.5
Hairiness	6.4	5.2	5.8	4.4	3.8	3.0	3.4	2.6



The groups have their own knitting and weaving divisions, also their own garmenting and processing facilities, so they can judge the merits and demerits of Suessen EliTe®Compact yarn.

I feel privileged to know this group, its inspiring leaders, and able executives on all levels! Success does not mean, we may rest on our laurels, but it is a challenge to try even harder!

#### Advantages of Suessen EliTe®Compact System in knitting

- Less pilling tendency
- Less spirality complaints
- Less fly and dust liberation during knitting
- Less knitting breaks and defect free fabric
- Fabric withstands more number of washes than the fabric made out of conventional yarn.
- Dimensional stability of the fabric is much improved.
- Less shrinkage of the fabric during processing
- Better fabric appearance due to improved evenness and low yarn hairiness
- Unwaxed compact yarn can be used directly in knitting.
- The fabric made out of Compact yarn has less chances of dye vessel blockage.
- Better realization of raw material upto 2 % due to reduction in waste during washing and processing.
- More production in knitting
- Needle damages is avoided.



#### Advantages of Suessen EliTe®Compact System in weaving

- Compact yarn is a must for Auto looms.
- Higher yarn strength, better elongation and less hairiness help to operate the looms at high speeds. Loom efficiency improves upto 10 %.
- The bursting and tearing strength of the fabric is higher and these fabrics can be subjected to much harsher treatment in further processing depending on the application
- The fabric appearance has improved, better luster and very good sheen of the fabric is obtained.
- Less pilling tendency and better luster of the fabric
- The dye pick-up and printing clarity will be good.
- Improved yarn properties alongwith a clean surface of the yarn give less loom stoppages and the fabric defects come down by 30 to 40 % in yarn-dyed applications with good improvement in loom efficiency.
- Lower twist levels possible to spin which will give better feeling of the fabric.
- Fabric singeing can be eliminated.





M.K. Patodia, CMD GTN Industries Limited

## GTN Industries Ltd., Hyderabad

An epitome of reliable excellence



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**GTN Industries Limited, an organization with over six decades of ceaseless efforts to select the best natural cotton fibre from the world markets and convert into value added products such as fine count grey yarns, compact yarns, gassed yarns, organic yarns, mercerized and dyed yarns, knitted fabrics and lifestyle garments at the consumer end of the markets.**

Vertically integrated manufacturing set up to produce fine and super fine cotton yarns, grey knitted fabrics, gassed fabrics, organic fabrics, mercerized fabrics and lifestyle garments offers a unique one stop shop to those looking for an operationally strong and reliable source.

World Class Competence – Be it fibres to fashion, the range of competencies in GTN Industries group is simply long, linear and vast. Portfolio migration determined by core competence and dedication makes us an extra ordinary focused company and a reliable business partner to those, 'When Time is of Essence and Quality is a Passion'.

### Spinning

From multi location facilities in India, with an aggregate of about 1.2 lakh spindles, GTN Industries Limited group has achieved

performance which is considered as benchmarks in the market place.

State of the art infrastructure – With a constant endeavour to maintain its prime position, GTN Industries limited has invested in latest technology for modernization and up gradation. GTN Industries limited has impressive spinning capacity across all its manufacturing facilities incorporating latest process knowhow from leading manufacturers including Suessen, Murata, Schlafhorst, Rieter, Truetzschler, LMW, Volkmann and SSM.

With over 1 lakh spindles running with EliTe® compact and EliTwist® compact, GTN industries Limited produces and delivers cotton yarns ranging Ne 13 to Ne 120. All these yarns are made like five star kitchen from Indian, Egyptian, Supima, US and Australian cotton.

GTN Industries limited accepts challenges in making yarns for their customers' competence which include jointless two ply yarns, single compact yarn with very low imperfections, curved shaped dye packages and tailor made yarns as per demands from its customers. Some of its future targets include yarn with zero imperfections and zero Classimat faults and value for money yarns.

### Knitting

The yarn quality achieved over years of consistent and market oriented business policies have prompted to invest in high end fabric manufacture in knitting. The company has 24, 26 and 28 gauge Terrot knitting machines capable of knitting Jersey Pique, Interlock, Rib, Mini Jacquards and Auto stripe patterns. The fabric knitting systems are supported adequately by collar knitting machines from Shima Seiki. GTN Industries also knits high quality lycra fabrics providing knitting division versatility, success and wider customer base.

GTN Industries Limited always uses its knitting and processing divisions to evaluate performance of its yarn being produced in spinning. Its day to day quality checks for the yarns include knitting performance study, observing quality of bleached and dyed fabrics, reducing standard of allowable defects.

### Processing

Yarn Processing – With an installed capacity of 6 tons per day, the company produces International Quality – gassed, mercerized, bleached and dyed yarns. GTN 's state of the art yarn processing is ably backed by in house grey yarn providing end to end quality yarn solutions to discerning clients world

wide for high end users like outer wear polo shirts, socks, home furnishings, embroideries etc.,

Fabric processing – The facilities include fabric mercerization, soft flow dyeing, open and tubular width compaction, stenter and garment dyeing and washing with a capacity of 10 tons / day. It has complete expertise to impart various finishes to fabrics like moisture wicking, anti microbial, UV and Teflon. With stringent quality assurance at various stages, the company produces defect free fabrics meeting international standards.

### Garments

A state of the art Juki assembly line garment confection arrangement backed by contemporary facilities in cutting, placket welting, CAD systems and embroidery machines provide facility which is capable of producing over 3 million garments every year in the highest end of life style garments.

Working with world leaders in fashion along with vertically integrated value addition chain in house, GTN Industries group has launched its own brand of lifestyle knitted garments: "Cotstyle". The brand also offers customized garments for the corporate houses in India.

	Ne 40/1 CW	Ne 50/1 CW	Ne 100/2 CW	Ne 30/2 CW
	EliTe®Single Yarn	EliTe®Single Yarn	EliTwist®	EliTwist®
Ave Count	40.5	49.9	50.0	15.3
CV% for count	1.2	1.3	1.3	0.9
TPI	26.3	28.3	27.6	21.5/16.6
UT5 – U%	8.7	9.0	9.0	6.5
Thin/km	0	0	0	0
Thick/km	9	6	11	0
Neps/km	20	14	47	0
Total/km	29	20	58	0
Hairiness index	3.7	2.9	2.5	4.7
Sh	1.0	0.8	0.7	1.4
UTR3 RKM	20.5	22.4	23.5	22.9
RKM CV%	8.5	8.8	7.7	4.8
Elongation %	4.8	5.0	5.1	6.2
Elongation CV%	8.5	8.7	7.9	4.9
CMT3, Total	47.3	20.1	77.0	0
Obj. faults	0	0	0.5	0





Martin Kägi,  
CEO Bühler Spinning Group

## Hermann Bühler AG

Spinning better brands –  
The experts in spinning quality and innovation



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**Hermann Bühler AG was founded in Switzerland by J. J. Bühler in 1812. An important step towards globalization of the company was made in 1996 with the launch of Bühler Quality Yarns Corp. in the USA. Today, 80,000 spindles produce more than 7,000 tons of yarn each year for customers in 43 countries.**

“A traditional and yet vital, innovative company should possess a specific attribute – it must offer solid products and continually adapt these to market requirements.

A company must also be able to count on a skilled workforce – it is the 300 employees on both sides of the Atlantic who have made us what we are today.”

### Hermann Bühler AG

Bühler is the specialist for fine yarns manufactured from exclusive Supima® extra-long staple cotton, high-quality organic cotton, MicroModal® Edelweiss, Micro TENCEL® and their blends.

“The pursuit of a strategy based on innovation is decisive for our company. For further technological development the cooperation with Spindelfabrik Suessen GmbH is of crucial importance.

Through the implementation of latest spinning technologies at an early stage, we gain a lead in production techniques and valuable experience which ensures our position as industry and market leader“, says Mr. Oswald Baldischwieler.





Oswald Baldischwieler,  
COO Hermann Bühler AG,  
Switzerland



## INNOVATIVE INSIGHTS

Get more than just yarn.

### **Quality – Around the Globe, Around the Clock**

Numerous satisfied, long-standing customers worldwide are the best evidence that the proverbial Bühler quality stands for the foundation for sustainable success in the textile supply chain. Quality has been spun for more than 200 years, 7 days a week, 24 hours per day.

Monitoring in the technical laboratory is carried out with the most modern testing devices by competent personnel. In liaison with the customers, the laboratory data also helps to determine the optimal yarn for the required application.

Only in this way can the best properties in the end product and high productivity and economy in yarn processing be achieved.

### **200 Years Spinning with Passion**

The pillars supporting the company philosophy at Hermann Bühler AG are excellent service, short delivery times, optimal supplier relationships, ongoing innovation, consideration for the environment and – of course – dependable Swiss quality.

### **Speed to Market**

The central location in Europe and the commitment to short response times mean the most rapid deliveries – the products reach the market as long as the latest trends are still in fashion.

### **Counselling and Technical Support**

From the selection of the most suitable yarns to the solving of product-specific problems, the team of experienced sales specialists and technicians do all they can to ensure that yarns exactly correspond to customer requirements.

A profound understanding of industrial downstream processes and of the markets is guaranteed.

### **Partner in the Supply Chain**

The close relationships to raw material and technology suppliers and industry networks help to find the right partners in the textile chain and to more efficiently organize procedures.

### Sustainability

The certification STeP by OEKO-TEX® confirms that not only consumer safety but also environmental protection is paid due respect. The fibre suppliers rely on methods which save resources and efficiently use the limited agricultural areas. The company's own hydroelectric stations produce green power.

### Introducing the EliTe®Compact Spinning System at Hermann Bühler AG:

Spindelfabrik Suessen GmbH has considerable experience, a good knowledge of the market and a convincing technological competence – these were the arguments influencing the decision to implement EliTe®Spinning in our company.

The fact that the range of yarn counts that can be spun is practically unlimited is crucial for Hermann Bühler AG, a spinning mill renowned for its extremely fine high-end yarns.

Thanks to the improved embedding of the fibres in the fibre strand (utilization of fibre substance) the number of fibres in the yarn cross-section can be reduced when reaching the limit of spinning stability. This means that a finer yarn count can be spun with the same fibre quality.

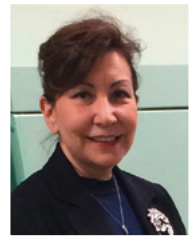
The EliTe®Compact Spinning System can be retrofitted to our existing ring spinning machines thus increasing the utilization of the machinery available.

Compared to the cost of acquisition of a new machine, upgrading with EliTe® requires much less investment. Furthermore, we are very flexible in using the upgraded spinning machines.

The EliTwist®Spinning Method is a most cost-effective method to produce two-ply compact yarns. Their technological yarn parameters are unequalled.



EliTe®Compact Spinning System on Hermann Bühler ring spinning machine



Marina P. Kakouras, Marketing Director

## GILDAN

An innovative company provides new life for the U.S. textile industry as well as a new opportunity for Graf



# GILDAN®

Website: [www.gildan.com](http://www.gildan.com)

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Decades after many people thought the U.S. textile industry was dead, the industry rose like a phoenix from the ashes in 2012. This upswing in the U.S. textile industry continued, particularly in the U.S. southern states. In 2013, various textile-related companies headquartered in other countries around the world announced plans to open or expand textile plants in Georgia, North Carolina, South Carolina, Tennessee, Virginia and Louisiana.

Gildan, a leading manufacturer and marketer of quality branded basic family apparel, including T-shirts, fleece, sport shirts, underwear, socks, hosiery, and shapewear, was one of the major players in the rejuvenation of the U.S. textile industry. Gildan's desire to produce superior ring and open-end yarn using the most modern technology led to their decision to purchase Rieter's complete line of equipment. Graf quickly became a part of this partnership with Gildan with the purchase of Rieter's high performance C 70 cards. Graf's technical expertise in carding wires and services, particularly for the Rieter C 70 cards, will ensure these facilities deliver the high efficiencies and quality Gildan expects.

Graf is very pleased to have been selected by Gildan, an innovative and successful company, to collaborate on this substantial U.S.-based venture.

### Company overview:

Gildan's history began within a small apparel company, named Harley Inc., established in 1946 in Montreal, Quebec (Canada) and owned by the grandfather of Glenn Chaman, Gildan's current President and CEO. In 1984, with the acquisition of a knitting mill, the family began the vertical integration – now a foundation of Gildan's success. During the early 1990s, Gildan® branded apparel was introduced to the North American screenprint marketplace. The first Gildan T-shirt was sold into this channel in 1992 and the company's name was soon changed to Gildan Activewear Inc. (in 1995).

Gildan's vertically integrated business model is based upon growth, leveraging capital investments, and continuous expansion of their manufacturing operations and delivering superior value products to their consumers. This growth model has allowed the company to become one of the world's largest manufacturers of basic apparel.

Some milestones in Gildan's growth history:

- Starting in 2002, Gildan furthered its vertically-integrated business model, through the gradual establishment of state-of-the-art large-scale manufacturing facilities in Central America and the Caribbean

Basin. These investments allowed the company to offer superior quality, better value products.

- By 2008, having the leading position in the North American screenprint markets, Gildan further pursued a growth strategy into the retail markets.
- Since 2006, Gildan has made several strategic acquisitions, targeted to either reinforce its leading position in the screenprint markets or further penetrate the retail markets.

#### **What influenced Gildan to expand its manufacturing presence in the U.S. market?**

Some factors that influenced the decision to pursue the integration of yarn-spinning operations and expand these operations in the U.S. are:

- Gildan's primary cotton source is U.S. cotton. As one of the largest domestic consumers of U.S. cotton, and a proud licensee of Cotton USA®, Gildan has engaged firsthand with many U.S. farmers. Gildan has chosen U.S. cotton as one of the most sustainably grown and ethically harvested cotton crops globally, in alignment with the company's leading corporate social responsibility practices.

- Gildan chose the state of North Carolina because it provides a qualified textile workforce, competitive energy rates and a good transportation network, which are all keys to their expansion projects.
- Gildan's overall presence in the United States includes its Branded Apparel sales and marketing headquarters based in Charleston, South Carolina, its state-of-the-art distribution center in Eden, North Carolina, its garment dyeing operations in Massachusetts, as well as yarn-spinning operations in North Carolina and Georgia. Gildan currently employs approximately 2,200 people in the U.S.

#### **Gildan's product offering:**

Unlike many of today's well-known brands, Gildan owns and operates vertically-integrated manufacturing operations in the United States, Central America and the Caribbean basin, running the full gamut from selecting raw fibre to assembling and distributing the finished products.

The majority of yarns consumed in Gildan facilities globally are produced within the company's new state-of-the-art yarn spinning facilities in the United States.

#### **Gildan plants in the U.S. with Rieter equipment:**

Gildan's most recent yarn-spinning facilities in the U.S. with Rieter equipment are:

- Cedartown, Georgia  
Production of open-end yarn  
In October 2012, Gildan acquired the remaining shares of a joint-venture, initiating capital investments and installation of carding equipment and spinning frames with newer Rieter technology.
- Salisbury, North Carolina  
Production of ring-spun yarn  
Began production in February of 2014
- Salisbury, North Carolina  
Production of open-end yarn  
Began production in December of 2014

Gildan's product offering







Gildan Salisbury's line up of Rieter C 70 cards and R60 spinning frames



Graf technician servicing a Gildan C 70 card

- Mocksville, North Carolina  
Production of ring-spun yarn  
Began production in June of 2015 and is expected to be fully ramped-up during 2016

Once fully ramped up, the four facilities will employ over 800 people.

**What were the key selling points that drove Gildan's decision to buy Rieter equipment, particularly the Rieter C 70 cards?**

Chuck Ward, Senior Vice President of Yarn Spinning, provided some of the key selling points that drove Gildan's decision to buy Rieter equipment, particularly the Rieter C 70 cards:

- "When planning three new yarn-spinning facilities in North Carolina, Gildan decided to invest in the most modern yarn-spinning technology to produce consistent superior ring-spun and open-end yarn."
- "For any major projects, we assess our options by using an internal evaluation matrix that considers technology, operating costs, logistics and ease of integration of the equipment in the total scope of project."
- "Based on these criteria, we selected Rieter, and more particularly the Rieter

C 70 cards. Also, the fact that Rieter was offering a complete line of equipment was an advantage for our Greenfield facilities."

**Graf's solution to the maintenance and service needs for the C 70 cards at Gildan:**

Gildan's decision to purchase the C 70 cards has provided a wonderful opportunity for Graf U.S. to showcase the superior products, technical knowledge and services in Gildan's state-of-the-art facilities. Given the investments Gildan has made in high performance C 70 card equipment in North Carolina, the decision was made to position a Graf workshop in one of the Salisbury plants.

After much discussion and planning, Graf implemented the following actions:

- Graf provides the infrastructure to assure that all service work for the C 70 cards can be accomplished efficiently and without any delay. To provide all of Gildan's card service requirements, the workshop in Salisbury is equipped with a DABM flat stripping machine, a DAM 100/1 flat clipping machine, ESM 150 flat end milling machine, a DSM 20/1 flat grinding machine, and a ROD 35/1 roller reclothing and grinding machine as well as Graf winding equipment, carding tools and general tools.





Graf workshop located in Gildan's Salisbury plant

- The size of the Gildan operations requires the permanent presence of a team of Graf service technicians to take care of all regular scheduled and ad hoc service. These technicians have been trained exclusively to service the C 70 cards. All the card service work for Gildan's C 70 cards located in Salisbury and Mocksville can now be provided by these local technicians.
- A further important contributor to the Graf service package is the availability of spare flats as well as entire lickerin and doffer modules. These can be prepared in the workshop in advance and are available to the service technicians for immediate use. To round off the entire service arrangement, stock of spare card clothings of all types required is kept in stock at the Graf workshop.

With all components and skills on site, Graf is able to provide optimum service for Gildan's cards in the Salisbury and Mocksville plants. Graf, with its most updated flat equipment, can assure Gildan that their C 70 flats are reclothed with the precision performed in the Graf workshops world-

wide. In order to assure a comprehensive high quality and documented flat service, Graf measures the flats several times during the flat service process. Each set of flats has a computer-generated graph showing the calibration measurements. Lean manufacturing, specialized tools and knowledge ensure that a C 70 card can be serviced in one day, improving uptime for Gildan's production.

The convenience of having a Graf workshop on site in one of the Salisbury plants also provides a good opportunity to promote Graf's Card Clothing Management Program. This allows Graf service technicians to carry out maintenance work on the C 70 cards based on comprehensive knowledge, but also taking into account the customer's own experience and requirements.

The aim of following these service recommendations is for our customer to reach the maximum lifetime of the card clothings and at the same time, maintaining an optimal quality level in the card sliver. It is reassuring for Gildan to have the technical support they need in their own facility to service all of their C 70 cards in North Carolina.

This is a win-win partnership for Gildan and Graf.

**Gildan also believes that this partnership is beneficial based on the following comment from them:**

"So far, our partnership with Graf for on-site services at our Salisbury and Mocksville facilities has provided us with many benefits including quick response times from their technicians," said Chuck Ward.

Graf appreciates the confidence Gildan has expressed in our products, services and technical support for their high performing C 70 cards. Graf is pleased to be an important supplier to this fast-growing company, who has invested substantial dollars in the U.S. yarn spinning operations. Given the benefits of these investments to the U.S. economy, Gildan, we salute you and we thank you!



Felipe Acevedo Vélez, Senior Sales Manager

## Creditex S.A.A., Lima, Peru

Successful experience cooperating with Bräcker, processing fine PIMA cotton, using special Bräcker travellers



Jose Ignacio Llosa,  
Managing Director  
of Creditex SAA



Miguel Ortiz de Zevallos,  
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The following are statements of Mr. Paulino Escobar (Superintendent Yarn Production)

**The numerous developments executed within CREDITEX SAA, from the production of the yarn to the tailoring of the clothing, are the outcome of a strategic alliance with the best suppliers of superior technological textile components. In yarn production, in particular, Bräcker has been our most reliable partner for rings and travellers for many years.**

### History of Creditex

CREDITEX is owned by the Cervetur Corporation, after its purchase of Credisa, the original company in the 90's. Since then it has become the best vertically integrated textile company in Peru with six main units, ginning, yarn production, warp preparation, weaving, bleaching, dyeing, printing and finishing, garment manufacture and retail.

There are over 1600 well trained employees in specific activities which are involved within the following plants: Two gins located in Piura and Lambayeque, two spinning mills located in Trujillo and Pisco, a vertically

integrated plant with spinning, weaving, bleaching, dyeing, printing and finishing and a subsidiary Company TEXGROUP, a garment manufacturing plant.

Additionally, CREDITEX has a retail unit with 12 stores in Peru creating, positioning and promoting their own brands: MbÖ, Marc Böhler and Norman & Taylor (tailor made shirting).

### Ginning Plants

The ginning plants, set up for extra long staple cotton are strategically set-up along the north coast of Peru, where Peruvian Pima cotton and other extra long staple varieties are cultivated. The hand harvested cotton which ensures a clean fibre is processed in two plants which are equipped with roller ginning machinery which ensure high quality fibre with a minimum amount of neps.

### Spinning mills

CREDITEX has a large-scale spinning production base comprising about one

hundred thousand state of the art spindles supplied by leading European manufacturers. These produce the following yarns:

Carded, Combed, Compact, Open-end and Twisted and Gassed yarns, in counts ranging from Ne 6/1 to 160/2.

The spinning mill located in Trujillo with 49,152 spindles, is the most modern unit capable of producing extra-long Pima cotton yarn in fine counts from Ne 50/1 to Ne 150/1. It also produces twisted yarn up to Ne 160/2.

The other unit located in Pisco has 32,496 spindles and processes medium to coarse yarn with American Upland cotton

and a Peruvian variety of long fibre Tanguis cotton. Yarns processed range from Ne 8/1 to Ne 44/1. Fancy slub yarns are also produced.

The third spinning mill located in the city of Lima is vertically integrated with weaving, bleaching, dyeing, printing and finishing processes. The plant has 16,440 spindles processing 100% Pima cotton as well as blends with Polyester, Modal and micro Modal in various compositions including core spun Lycra /Cotton. The range of varieties from Ne10/1 to Ne 60/1.

The integrated textile plants supply well-known worldwide brands as well as CREDITEX's own brands and stores.

#### **Fine, extra-fine and fantasy yarns spun with Bräcker travellers and rings**

From the beginning, CREDITEX has equipped all their ring spinning machines with Bräcker travellers and Bräcker rings.

Initially the mills used Bräcker THERMO 800 rings, but then the three plants upgraded and changed to Bräcker TITAN rings.

In the spinning process CREDITEX also relies on several types of Bräcker travellers, all with SAPHIR finish, ideally designed to run on Bräcker TITAN rings, spinning fine yarns.

The goal of CREDITEX to improve the efficiency and performance of our spinning machines was obtained thanks to the Bräcker products and our close cooperation with them.

In 1998 CREDITEX began to produce fine yarns of up to Ne 140/2 and after another modernization-step in 2009, up to Ne 160/2 for the production of shirts.

To spin such fine yarn counts was a big challenge. The continuous support of our suppliers like Bräcker, helped CREDITEX to overcome the initial difficulties, to achieve higher production, produce excellent product quality, guarantee reliability of end



Paulino Escobar (left), Superintendent Yarn Production and Ricardo Tejada, Plant Manager Hilandería Plant 2, Trujillo



Norman & Taylor clothes shop

products and to assure consistent performance results throughout the entire value added chain.

CREDITEX is very much satisfied with the after sales service provided by Bräcker and by their agent PERUTECNICA SAC. The fast answering of any questions, the shipments of trial travellers as well as the continuous analysis of the wear and tear of rings and travellers, has helped CREDITEX to always find optimal solutions to any problems within a short period of time.

Especially the professional wear and tear analysis of travellers and rings provided by Bräcker helped CREDITEX to take the necessary actions on time.

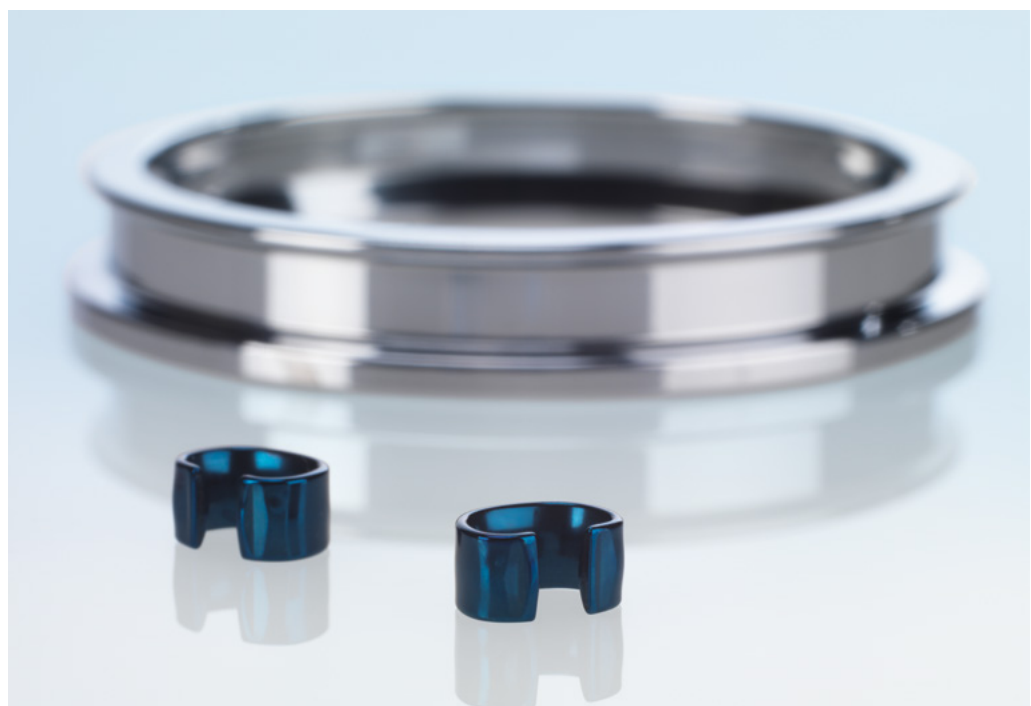
CREDITEX would also like to highlight the value of the visits of the Bräcker spinning technologist and the technical meetings he organized at the mills, aimed to train the operators in the care, maintenance and proper use of travellers and rings.

It is a pleasure for CREDITEX to be associated with Bräcker.

#### **Expression of thanks**

It is a great honor for Bräcker to closely cooperate with CREDITEX, it makes us work harder to meet and even try to exceed their demands and expectations.

We wish the CREDITEX Corporation and its leaders the very best of success!



The famous Bräcker TITAN spinning ring with SAPHIR travellers





Sergio Tamborini, A.D.  
Marzotto Group

## Marzotto, Italy

"I usually wear Marzotto"



Marzotto S.p.A., Valdagno, Italy



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**A historic group that has been constantly evolving for more than 175 years, combining long-standing tradition and continuous innovation. Marzotto Group is a key international player in the textile industry and is structured as a "company network" that encompasses prestigious brands.**

Marzotto functions as a hub in the textile supply chain through its national and global acquisitions and agreements. Marzotto is active in the clothing wool and cotton sectors, in the velvet sector, in the knitwear wool yarns sector and in the linen yarns and silk sectors.

### Global Expertise

Marzotto's value lies in its history and group-wide know-how, in the conceptual and creative ability of its human resources, in its international structure, in its capacity to manage processes from raw materials to logistics, in the wealth of material contained in its historical archives.

The mission of Marzotto Group is to be a full-service textile company that is able

to coordinate a wide range of skills and processes and to optimize its know-how along the entire textile supply chain

It's 1836 and the Italian unification has yet to come, when Luigi Marzotto decided to invest in a small wool weaving plant in Valdagno, a village at the bottom of a valley not far from the main town of Vicenza.

In 1840 his son Gaetano took over the management of the business which already employed two hundred workers.

In 1880 the construction of a spinning factory began. It manufactured combed yarns, while the Italian industry is hard set on carded yarns.

In 1929 when the Wall Street crash hit the world's economy, the Italian textile industry was affected by the crisis while Marzotto continued to achieve great results, investing and expanding its technology.

At the beginning of the Fifties Marzotto began manufacturing clothing, not only yarns and fabrics, but also suits.



"I usually wear Marzotto": became a pretty famous ad a few years later. Marzotto Group strives to be a hub of the Italian textile enterprise system in the world.

### **Nová Mosilana**

Nowadays the MOSILANA trademark with the white lamb situated above the silhouette of Brno symbolizes the company Nová Mosilana, a.s. – one of the prominent producers of fabric for men's and women's clothing made of combed woolen yarn, whose owner is the Italian international concern the Marzotto Group

The company has picked up the threads of Brno textile producers' work and their hundreds of years of traditions. The first textile manufactories started in the 18<sup>th</sup> century and Brno became one of the major centres of woolen fabric production in Austria-Hungary.

In accordance with the regulation of Ministry of Industry were these private firms integrated into the national company of Moravian-Silesian wool works after the WW II. The national company was registered in the trading register on 18 October 1946.

The MARZOTTO GROUP has been the owner of Nová Mosilana, as of 4 November 1994. Since Nová Mosilana, a.s. became a part of the MARZOTTO GROUP its production basis has been changed considerably, which is characterized by a self-contained production cycle beginning with the entry of rye tops and ending with completed cloth.



Nová Mosilana, Brno, Czech Republic

All production has been concentrated in one place in the processing area in Brno Černovice and the premise has expanded with new production and storage buildings. Machine holding and related technological junctions have been modernized successively.

As a result of this activity the production has increased more than four times compared with the previous production.

In its last stage of development the company put its main product – fabrics for men's and women's clothes made of top quality Australian wool – into the highest stages of wool industry.

The last success has connection with ability this firm to adapt product for required changes to still more exacting customer.

The quality of production as well as the quality of final products is guaranteed not only by professionalism and qualified experts, but also by the CQS ISO 9001:2001 certificate, certificate Ecolabel, certificate Oeko-Tex Standard 100.

### **EliTe®Compact Spinning Technology meets Marzotto**

In 2008, Nová Mosilana received the first EliTe®CompactSet-L for the modernization of Cognetex FTC-L machines. After a short testing period, from 2010 to 2013, all Cognetex FTC-L machines were modernized with the EliTe®CompactSet-L.

Today, 16,000 spindles produce approximately two thousand tons per year of EliTe®Worsted Yarns in yarn counts between Nm 46 to Nm 64.

Investment in the EliTe®Compact Spinning Technology underlines Marzotto's leading role in the field of high-class wool worsted fabrics.

Suessen is proud to contribute with the EliTe®Compact Spinning System to the future of the Marzotto Group.



Kaan Atsu, Sales Engineer

## MATESA A.Ş.

Interview with Mrs. Buket Celebi, Spinning Mill Manager

**MATESA A.Ş.**, founded in the year 1989 by Mr. Ali Galip Çalık, is an integrated factory complex covering an area of 400,000 m<sup>2</sup> open and 300,000 m<sup>2</sup> closed space in Kahramanmaraş, East-Turkey. **MATESA A.Ş.** is among the biggest textile companies in Turkey with seven yarn factories of approx. 80,000 ring spindles and approx. 10,000 rotor spinning positions, one yarn winder and doubling factory, denim factory, woven and woven dyeing factories as well as knitted fabric and knitted fabric dyeing factories.

Tube printing, rotation printing and yarn/fibre dyeing sections are also located in the facility.

Since the year 2000 MATESA have speeded up their investments with "State-of-the-Art" - machineries in denim as well as compact field, 50 % of which are for their exports and the other 50 % to be used in their in-house facilities.

Daily production is more than 100 tons of yarn, 45 tons of which are for knitting and 45 tons for dyed knitting. Compact yarns for the knitting production are given preference and this resulted in their first investment in compact spinning, more precisely the Suessen EliTe®CompactSet. In the year 2007, MATESA was the customer to receive the 2 millionth EliTe® spindle (see Spinnovation No. 23).

Afterwards additional compact spindles were installed and till today Suessen has a fruitful cooperation with MATESA A.S. and their continued EliTe®CompactSet orders.

Latest modernization orders were placed for their existing Zinser 351 machines at full success, and this gives us reason to conduct an interview with Mrs. Buket Celebi who is Manager of all Spinning Factories at MATESA A.S. regarding her experience.

Mrs. Buket Celebi started her carrier in the year 2000 within MATESA after her distin-

## MATESA

SINCE 1989

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guished graduation as Textile-Engineer at KSÜ (Kahramanmaraş University). Today she is responsible for the complete yarn production with all yarn quality parameters at MATESA A.S.

*Question:* Mrs. Celebi, your first experience with our EliTe®CompactSet started in the year 2007 when MATESA placed their first order with Suessen for 2 x Zinser 350 with 1200 spindles each.

This was the 2 millionth spindle of Suessen while today more than 8 million spindles world wide are operated with EliTe®CompactSet.

*Mrs. Celebi:* Yes, this was our first investment in compact spinning which was a major and clever decision of our management.

Today we can look back and say this was an important step of MATESA A.S. Of course – as we always like to work with the best providers in their field – we confidentially choose SUESSEN for this investment and your experience in compact systems.

*Question:* How many compact spindles do MATESA A.S. have today?

*Mrs. Celebi:* currently we have approx. 20,000 compact spindles as EliTe®Compact modernisations as well as new machineries, and our investment in compact spinning will definitely be expanded.

*Question:* What is the reason for using our compact spinning system?

*Mrs. Celebi:* We could see very fast the benefits of compact spinning in the yarn production process and yarn parameters, as well as the running behaviour of our ring spinning machines. Of course the downstream processes like dyeing and knitting are also significant, and therefore MATESA decided to go for more compact spindles.

*Question:* With EliTe®Compact you are using our compact system, please tell us your experience.



Mr. Ali Galip Çalik, Owner



Mrs. Buket Celebi

*Mrs. Celebi:* The Suessen EliTe®CompactSet gives us the most flexibility on our existing ring spinning frames, and we just have to upgrade them, which is very easy to handle and very fast to be installed at our facilities.

The machines are not losing their originality and Suessen only add on their flexible compact system to our machines. Even in raw materials as well as yarn counts we have never faced any limitation with the EliTe®CompactSet, and this is why today we can happily say it was a clever decision to work with the Suessen EliTe®Compact-Set.

*Question:* How do you see the future for compact spinning at MATESA?

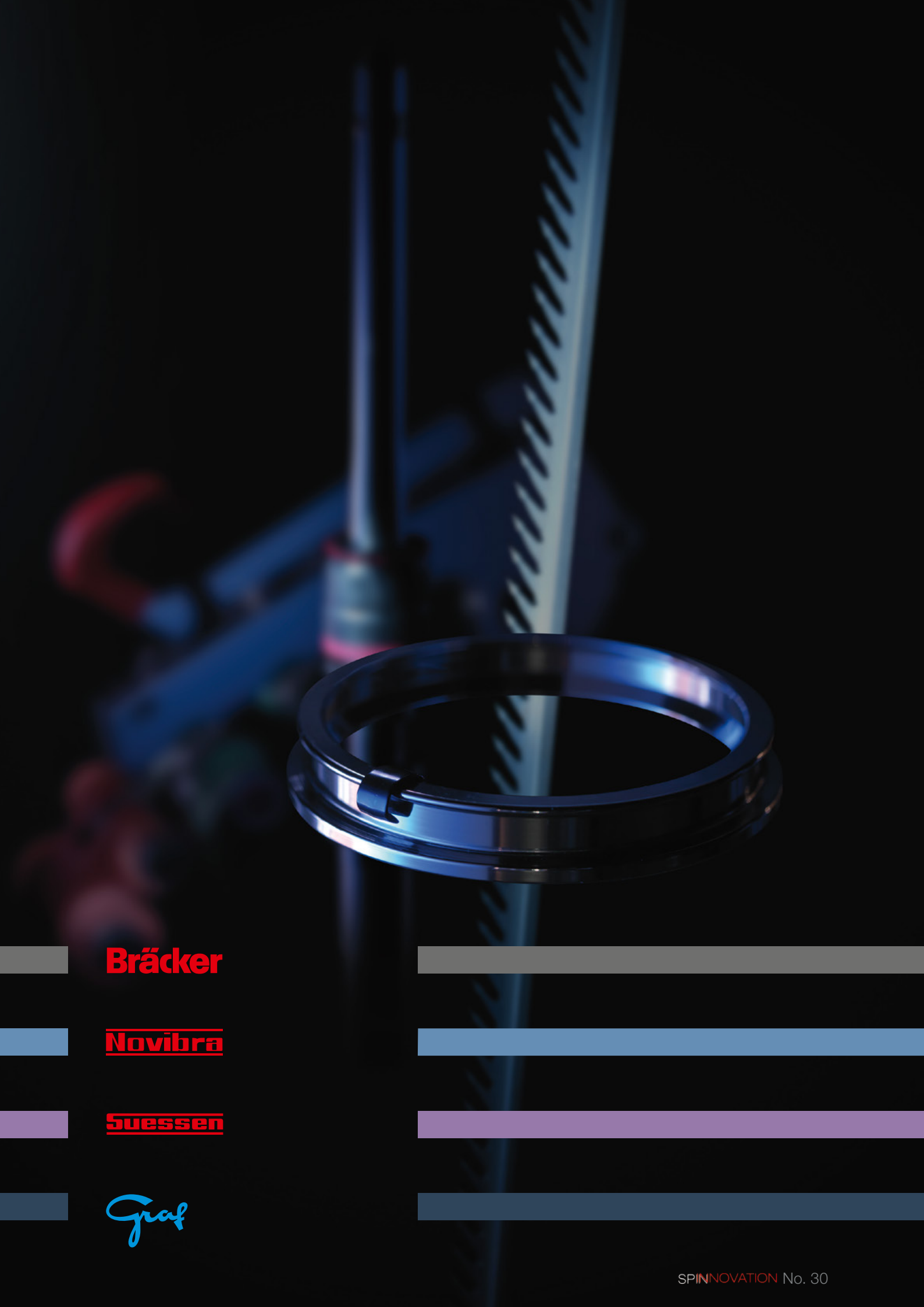
*Mrs. Celebi:* We are considering to finish the remaining Zinser 351 ring spinning plant with additional machines and would highly consider also other conventional ring spinning plants within MATESA A.S. to be modernized with EliTe®CompactSet.

This will be decided at the stage of investment by Mr. Ali Galip Çalik, but we can clearly state that Suessen is a very good partner for the compact conversion and we have no doubt in the EliTe®Compact System and such investment.

*Question:* Would you like to add some comments from your side ?

*Mrs. Celebi:* Let me add shortly that we are very happy with the performance of the EliTe®CompactSet and continuously receive latest Suessen technology for their system, which gives us the opportunity to work with the best components available in the market. This gives us a very high confidence and hope that this hand-in-hand cooperation will continue. – Thank you very much

*We thank you, Mrs. Celebi, for your impressions and for this interview.*



**Bräcker**

**Novibra**

**Suessen**

*Graf*