

NEWS

SPINNING

World

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Textile news and trends by **Prosino Borgosesia Rings**

Dear Readers,

The third issue of *Spinning World* comes at the end of an especially intense 2013, which confirmed us as leaders at the top of world markets in the spinning ring sector.

Our magazine has become a highly anticipated event among our customers and agents. It allows us to share useful information and success cases from one continent to another; it also brings us closer to our customers and can help them debate issues of common interest.

In addition, *Spinning World* offers a tool for better understanding our company and for sharing our background. PROSINO S.r.l. does not aim to be solely a vendor of textile components, but a true partner for its clients.

In this issue of the magazine, Carlo Alberto PROSINO reminds us of an anniversary that is incredibly important for us: 30 years of partnership with the *Rieter Group*, which for many years now has used Borgosesia rings through its affiliates, and which has made significant contributions to distributing our product around the world. In honour of the occasion, we are happy to offer an interview with *Mr Werner Strasser*, a member of the Board of Directors and a top manager in the *Premium Textile Components* division (Bräcker, Novibra, Süssen and Graf). This account is particularly interesting to us, since thanks to his in-depth knowledge of the sector, Mr Strasser is able to describe and outline scenarios and trends in the technological and manufacturing development of spinning.

For the feature dedicated to Italian excellence, we present to you one of the world's leaders in quality yarn: *Zegna Baruffa Lane Borgosesia*, an Italian company boasting 165 years of history and the ability to innovate the sector with products like Cashwool®, an extra fine merino wool yarn introduced in the late Seventies that revolutionized the world of yarns for knitwear.

Our guest country is Indonesia, with an interview with *Mr Jemmy K. Sastraatmadja*, owner of *PT DMC* (Dhanar Mas Concern, a successful and dynamic group), who describes for us the unique aspects of the Indonesian market. A market in which the Borgosesia rings have been welcomed with special favour, thanks to their ability to sustain a very intense pace of production for years – in 12 years on the Indonesian market we have sold 1,400,000 rings.

We close with two pages of additional technical information: h 9.1 conical rings for worsted, for spinning fine counts and on the technological advantages of the STEELHAWK ring. We would like this section to be a place that encourages ideas and thinking about the practical issues that all spinning mills must face on a daily basis. So please send us your comments and suggestions to info@prosino.com. We will keep them in mind for future issues of *Spinning World*!

Enjoy the read,

Pietro Prosino

CEO Prosino s.r.l. / Borgosesia Rings



**we KEEP
the WORLD
SPINNING**

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1984/2014 THIRTY YEARS OF PARTNERSHIP

On the occasion of the celebrations of the 30-year collaboration between PROSINO S.r.l. and RIETER, we asked Managing Director Dr. Carlo Alberto PROSINO to recall how the agreement came to be and what the atmosphere was like at that time in the industry.

I remember that time very well. We had been in contact with RIETER since the mid-70s, since at that time the Winterthur company still manufactured spinning machines for long fibres (wool, acrylic). We were looking for a ring supplier that could help us improve spinning machine performance. We agreed on our initial supplies, which went very well, but unfortunately the spinning machine project for wool was halted because the company no longer considered it to be strategic.

However, that relationship allowed us to expand our connection and also to agree to the initial sales of rings for cotton applications. At that time, RIETER made rings and spindles internally at its MEFAG plant in Effretikon, and had recently moved all production to Winterthur to rationalize production flow.

The atmosphere at the time was strongly influenced by the huge enthusiasm for open hand rotor technologies that promised great production advantages while delivering the same yarn quality. Expectations were so high that RIETER became convinced that ring spinning technology would not last much longer (in the meantime it had also acquired the INGOLSTADT company so that it would have its own line of open hand rotor spinning machines).

For this reason, and in order to be able to focus its strengths more on developing spinning machines rather than individual components, it reached the agreement in 1984 which also included selling all of its production machines, designs, measuring equipment, and all RIETER expertise in the field of rings to PROSINO.

I was of a different opinion. In fact, talking with customers who had tried the rotor open hand machines, I had sensed their limitations and had come to the conclusion that the ring spinning machine would instead remain a part of the market, because of the excellent quality of yarn it produces.

My intuition proved to be correct, and in fact a few years later, the director of RIETER, Mr Angelo Lucca (who was later a member of the Prosino board for many, many years), wrote the famous article "*The Renaissance of Ring Spinning*", which publicly decreed the return of global interest in ring spinning and laid the foundations for what would become the first compact spinning machine in history, made by RIETER itself.



Werner Kurt Strasser, Thomas Anwander, Carlo Alberto, and Pietro Prosino meeting in the Prosino s.r.l. Board of Directors.

ZEGNA BARUFFA LANE BORGOSIESIA

THE THREAD OF ITALIAN CREATIVITY BETWEEN HISTORY AND INNOVATION

Zegna Baruffa Lane Borgosesia, the thread of Italian creativity between history and innovation. To interview Paolo Busato, the Manufacturing Director for Zegna Baruffa Lane Borgosesia SpA, we visited the historic Borgosesia company plant in Piedmont. As soon as we stepped into the factory, a building of great architectural value that has preserved its nature over the years throughout all the technological modernization, and were welcomed into the President's office of the factory, in operation since 1850, we instantly recognized the presence of a strong historic memory.

The place represents the history of Italian manufacturing excellence, which has successfully won over the entire world with the quality of its products and its ability to innovate. Still today the company maintains its firm leadership, after more than 160 years of uninterrupted operation. The factory stands on the banks of the Sesia river, and uses its water. It was the focus around which the village of Borgosesia developed, as thousands of people were drawn there by the chance for employment in the worsted factory. The history of Italy has visited this place as well, in a crucial moment that led to national unity: it was in fact the Antongini family, owners of the factory, who in 1860 financed Garibaldi's Expedition of the Thousand that led to the unification of Italy. The bill that Alessandro Antongini signed served to guarantee the charter of ships from a shipping company in Genoa to carry Garibaldi's army to Sicily and march back up the peninsula, united for the first time under a single flag.

Today Zegna Baruffa Lane Borgosesia is one of the world's leading companies in the manufacture of high quality natural yarns for external knitwear, and is used in collections from the top names in fashion. All production is done in Italy, while a series of offices around the world – Paris, New York, Shanghai, Hong Kong, Tokyo – guarantees closer relationships with the clientele. The company typifies a vertically integrated company model, with a significant production capacity in high-quality yarn, including the highly-valued carded, combed and patterned yarns, made only in natural and noble mixed fibres like extra-fine wools, silk, and cashmere, used for external knitwear, weaving, and sewing.

On-going research has made it possible to bring to market innovative and quality yarns like Cashwool® (extra fine merino wool yarn), which since its introduction in 1970 has been the company's top product, and which today is offered in a range of approximately 300 colours in stock service, with a choice of melange, supermelange, solid, and mouliné effects.

The group uses the most modern technology, constantly updated in every stage of the process of transforming raw material into yarn. All aspects of production are focused on the principle of "quality".

All these factors support the success of the three historic collections – Baruffa, Chiavazza, and Botto Poala – and are responsible for their significant market presence.

Mr Busato, what is your range of counts and what are your woven fibres?

In the Borgosesia factory we produce Cashwool®, our most representative product, a registered name that leads production in external knitwear, in counts of Nm 48,000 and 30,000. In the Lessona factory we produce the fines and superfines in noble fibres, cashmere, silk, and carded items with fine counts ranging from Nm 60,000 through to Nm 120,000, while in our Chiavazza factory we produce carded yarns in also valuable blended articles.

Our group has over 1,000 employees in 3 factories, of which 580 are in Borgosesia. Our production is heavily seasonally influenced: most orders are concentrated between February and May, months in which the yarns for the following autumn/winter season are created; afterward we work on reorders for restocking, sampling, and new collections.

All the yarn created in our factories is sold exclusively under our three brands: Zegna Baruffa, Botto Poala and Chiavazza. We think that our yarn is unique, and in order to maintain its distinctive characteristics we have introduced the use of customized machines that do not exist on the market, that meet our specific needs.

You also use Prosino Borgosesia "4+4" Conical Rings on your spinning machines. What are the advantages of this product that make you choose Prosino?

We are constantly checking all our production terminals, waste, and breaks on the spinning machines, and we can say that Pros-

ino rings guarantee a series of advantages both for quality and for process. Approximately ten years ago we focused on Prosino rings because they minimize production waste; we are satisfied, the product is adequate, the quality is excellent, and breakage is kept to a minimum. Thread breakage directly influences production costs, because the assignment of staff is linked to it: for every thread break, a person must intervene, production stops, and product waste is created.

For you, what value lies in the post-sales service (ring maintenance and replacements) that the local Prosino organization guarantees?

To tell the truth, we do not have frequent contact with Prosino, even though we are just a few kilometres away... but that is really just the best demonstration of their quality, because it means that the rings work and that they do not require maintenance! In fact, we replaced all our rings in 2007 and no maintenance has been needed since. With the medium-fine counts, if the spinning machine is run well, little stress is created on the rings and they last even longer.

Are you assessing the compacting devices on your spinning machines?

At Botto Poala we already have compacting devices.

5) We know that your company has taken on a long-term commitment to promote environmental sustainability in its production. What does this factor entail for how the spinning is organized? Are you happy with the results?

We are still evolving, although we have been working for some time to become 100% sustainable. The Borgosesia plant is subject to the constraints of the Integrated Environmental Authorization, so we can collect rain water when it starts raining and put that in the purifiers rather than surface water. We have removed asbestos from the plant, and in our condensation boilers, we have cut back the fumes they give off from 150° to 50°, while also recovering clean hot water to be used in the dyeworks for dyeing. This project will help us lower our gas usage by 550,000 m3 each year. With the recovery of dyeworks water, by using heat pumps we can reduce our gas consumption by an additional 660,000 m3 each year. Overall the goal is to reduce our gas needs over three years by 1,500,000 m3: this is a significant result both in terms of fighting

pollution and for containing production costs, with a company that is more independent from the energy factor. We use surface waters from the Sesia river, filtering them and sending them directly to the dyeworks. Our purifier returns clear surface waters. Every day we analyse the water exiting our purifier, which has redundancies for all of its functions to ensure greater safety. In terms of our dyeing substances, we stopped using chrome dyes 10 years ago, before legal requirements came into force.

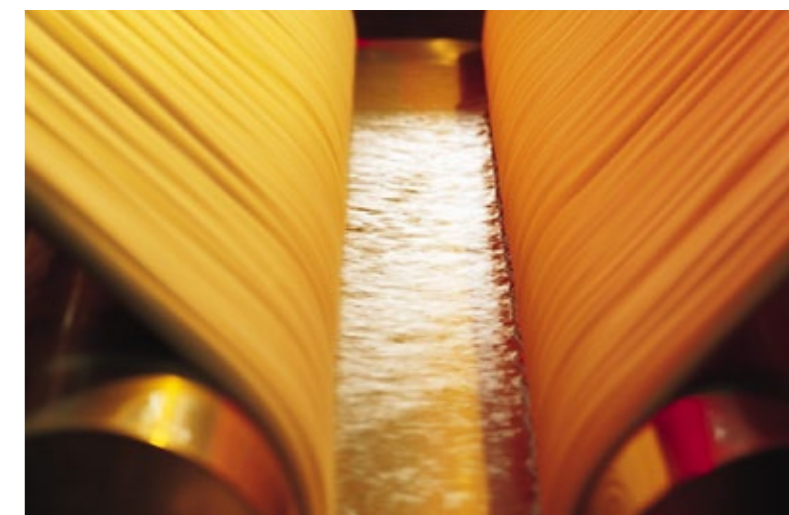
What trends are emerging in yarns?

Although traditionally yarn has been a semi finished product, it is increasingly subject to development and innovation, something we try to promote, with the new products we bring to Pitti Filati in Florence twice a year.

In terms of trends, a special focus on colour is building; in the next autumn/winter collection we have introduced paint yarn, characterized by a relatively vibrant colour with 3-4 colour effects on the thread. Six years ago we introduced the supermelange, which gives the combed yarn a colour effect similar to carded yarn, thereby overcoming the lined effect we were used to seeing in yarns for knitwear. We are moving forward on a track of continuous innovation, which as our history shows, is the principle from which we have always drawn inspiration in developing our company.

ZEGNA BARUFFA uses BORGOSIESIA "4+4" conical rings in 51 x 11.1 dimensions on its Gaudino and Cognetex spinning machines to make the CASHWOOL® line

Made in ITALY



THE RIETER GROUP, GLOBAL SUPPLIER OF MACHINERY AND COMPONENTS FOR THE TEXTILE INDUSTRY



We interviewed Mr Werner K. STRASSER, Head of the Premium Textile Components Business Group, the world leader in spinning process technologies. He provided us with an interesting and authoritative overview of the spinning world today.

We met with Mr Strasser during celebrations for the 30-year relationship between PROSINO and the RIETER group. Indeed, PROSINO has been the RIETER group's supplier of rings since 1984. Subsequently, in 1989 RIETER also became a legal part of PROSINO, having acquired 49% of its capital, with the other 51% owned by the PROSINO family.

Mr Strasser, what is your role within the Rieter Group?

I have worked at Rieter since October 1, 1994, and I have developed a fairly broad understanding of the complex world of technology applied to spinning machines, having held various positions over the last 19 years.

Rieter is one of the world leaders in the supply of machinery and components for the spinning industry. The company consists of two main business groups: Spun Yarn Systems, which offers complete spinning systems, and Premium Textile Components, the area I am in charge of. It includes four companies in the group: Bräcker, (which most benefits from the 30-year relationship with PROSINO), Süssen, Graf and Novibra. The Premium Textile Components Business Group is capable of supplying top quality components for all spinning technologies, also suitable for non-Rieter machinery.

The new CEO of Rieter Group, Dr. Norbert Klapper, took up office in April 2013. What is your impression of Dr. Klapper, and how do you think that his management might influence the company's strategy over the coming years?

Mr Erwin Stoller (who knows the Prosino family well), for strategic reasons shared with the Board of Directors, has held the roles of both Chairman and CEO for the last four years; he then felt the time had come to separate these offices again. I had the opportunity of meeting Mr Klapper shortly after he took office. The impression I

got was excellent. He is a manager with experience, in Asia, in different types of companies. He brings about a generational change in Rieter's management and this is a positive value.

It is well known how the Rieter Group is currently the only company that, in global markets, is capable of offering four different spinning technologies (ring, compact, rotor, air-jet). Can we claim that these technologies are complementary to each other and not in competition?

I would like to make a preliminary remark: Rieter is the only company that can make spinning machinery for the entire process, from preparation lines right through to yarn production. Furthermore, the preparation lines will have different features depending on the type of technology that is chosen for the yarn production (ring, compact, rotor, air-jet). The four technologies each respond to a different market need: traditional ring spinning is the oldest, but still today produces a quality of yarn that is without equal for certain applications. Compact spinning, introduced to the market by Rieter, provides the advantage of reduced hairiness, in addition to benefits for the subsequent spinning phases, such as weaving. Rotor spinning is still a viable option thanks to its guaranteed high productivity and its ability to suit certain specific applications. The air-jet spinning system, which until a few years ago had been exclusively used by Murata, is now being successfully applied by Rieter. This technology has proved to be excellent with certain kinds of fibres, such as viscose and synthetic mixtures. Now the real challenge is applying this to cotton, which we know does not provide the evenness guaranteed by synthetic fibres. The real question at this point is: from which production sector will air-jet capture market share? Some say it will be the rotor system, but my own opinion is that it will probably be the traditional ring systems. The field of application for air-jet spinning is mainly yarns for bed linen. In time we will see whether we can move towards finer yarn counts. Our team is working very hard on this objective.



You are the Head of the PTC (PREMIUM TEXTILE COMPONENTS) Business Group, which includes companies such as BRAECKER, GRAF, NOVIBRA, and SÜSSEN. What are the objectives for this business group within the Rieter Group? What opportunities do the various markets offer?

The PTC Business Group traditionally has two reference markets: internal and external. Our main effort is ensuring that we have an all-round competitive edge; we will be Rieter's first choice for its component requirements provided that we are more competitive than our rivals and not simply because we belong to the same group. That sort of conduct would not be sustainable in the long term.

The performance of the PTC Business Group, which is constantly improving, may be useful from a strategic point of view to offset the fluctuations in the textile machinery market, which is periodically subject to falls in sales due to cyclical crises within the sector. Our objective is to make PTC achieve a third of the overall sales within the entire Rieter Group.

Our key components, therefore, are intended for our internal customers as well as the outside market. These are wear components which can be fitted to all makes of machines, and often our products are chosen because they ensure top-quality, longer-lasting spare parts, providing the maintenance process with added value. One very important point that I would like to emphasize is that confidentiality is a critical value for PTC. If we develop a particular solution for a manufacturer, that solution will not be offered to others. This style of working has allowed us to gain the confidence of the majority of textile machine producers all over the world.

This also allows us to talk with our customers to find out what they need, with a constant flow of information, obtaining a great deal of data on the machines in use in various countries: their needs, strengths, and weakness. It is a unique and strategic overview on the condition of the market for spinning machines. The relationship with the client is a vital aspect for our company



Inspection of Ring Concentricity by PROSINO S.r.l.

today; the only way to guarantee it, to protect it, is to be able to rely on motivated, loyal staff, which we have at Rieter. In fact our management turnover is very low compared to other large industrial groups.

This year PROSINO S.r.l. is celebrating its 30 years of uninterrupted cooperation with the Rieter Group as a supplier of rings for spinning machines. Nowadays, such long-lasting business relationships are almost considered to be exceptional. What value do you attribute to this partnership and what advantages do you think it has brought to both companies?

I believe that the decision made by Rieter senior management in 1984 to cease the internal production of rings was a wise, far-sighted one. The relationship between Rieter and Prosino continues to be one based on trust, which brings mutual benefit to both companies, as well as creating interesting economies of scale. A Rieter representative sits on the Board of Directors of Prosino and of Bräcker and we need to take care of the well-being of both companies.

Just as in a happy and long-lasting marriage, over the years you get to know each other better and the synergies increase, and so we are certain that our collaboration will continue long into the future. We have witnessed a generational change: Pietro Prosino and Daniel Link of Bräcker have taken the place of their predecessors who signed the agreement and this is a further guarantee of continuity.

What is your personal vision of the European textile-manufacturing industry in a world that is changing at an incredible pace and where it apparently looks like Asia is taking up a leading position for the future?

Yes, from a general perspective Asia is definitely a big player. Rieter has solid roots in all areas where the textile industry is flourishing and we can define ourselves as local players, having built production facilities in India, in China and in Uzbekistan. We are no longer foreigners; we are now seen as part of the community. We have great opportunities in different types of markets due to our high technology, and our capacity to introduce higher levels of quality than local producers is well acknowledged.

Returning to your question, the textile scene is changing at great speed and certain phenomena are emerging that seemed unimaginable a short while ago: for example in the USA, the Parkdale Group* is re-opening its facilities, which had previously been divested, because it has excellent quality cotton, a qualified workforce, and low-cost energy, factors that have made the group competitive again compared to Far East producers.

But Asia is not the only business area: Turkey, Tunisia and Egypt, which are logistically nearer to the European markets and well equipped to better match their tastes, are also enjoying excellent health.

We are also witnessing the phenomenon of certain companies that are delocalizing from China towards Vietnam, Indonesia, Burma and Bangladesh, a trend that started with tailoring and the producers of sports footwear and seems likely to continue

with spinning, weaving and knitwear. The textile industry is on the move, looking for increasingly competitive scenarios, and this means that we have to monitor the markets all the time to pick up on these changes.

*A customer traditionally served by PROSINO S.r.l., through its agent in the USA.

The Rieter Group is generally recognized as the leading player in the international textile sector. Could you let us have some advance information about the upcoming objectives of your R&D Dept.?

I do not think we will be investing in a fifth system, but instead we will be working towards perfecting the existing ones, such as the use of air-jet spinning with cotton. With rotor spinning there is still space for progress and improvements such as, for example, individual automation for each position rather than shared automation systems. We are not taking any breaks with ring spinning either and our objectives concern components (spindles and rings) that will provide us with increasingly higher speeds. There are fundamentally three objectives for our R&D department: the advantage that we can give to yarn in terms of quality and productivity; the ability of our machines to work at reduced energy consumption levels, given the generalized increase in energy costs and, lastly, fibre transformation costs that should be lower than in the past (obtained either by increasing the productivity of the processes, or through the production of good quality yarns, starting from low quality raw materials).



The team at TRIJAYA TRADING COMPANY (TTC)

Hello Mr Jemmy K. Sastraatmadja. First of all, would you care to introduce PT Dhanar Mas Concern to our readers? What type of fibres do you work in your facilities? How is the company structured?

PT Dhanar Mas Concern went into business in 1989, and today is organized into three departments. The facility in Bandung has 73,000 spindles and works polyester-viscose, 100% polyester, and other fibre blends. Our policy is "one production unit, one product" to avoid the risk of cross-contamination among different materials. The Banjaran plant has 65,000 spindles in two divisions: one for cotton-polyester, and one for 100% polyester. We also have a weaving unit with 150 looms that operates thanks to our internal 6.8 Megawatt coal plant. The production unit for Silver Kris, a connected company, houses 55,000 spindles in two divisions: one for 100% polyester and one for blends. The yarn it produces is intended almost entirely for Japan.

What are your leading destination markets?

Ten percent of the yarn is used by our weaving unit, 40% is intended for the national market, and 50% is for export. Our leading foreign markets are Japan, Korea, USA, Egypt, Brazil, and South America. The textiles produced by PT DMC are largely sold abroad.

Has your collaboration with TRIJAYA TRADING COMPANY (TTC), Prosino's agent in Indonesia, been satisfactory? How do they help you?

The products and brands that TTC furnishes are excellent. What we most appreciate is the variety of the range they offer and their pre- and post-sales services, in addition to their ability to maintain a competitive price-quality ratio.

How would you assess your experience with Steelhawk, the latest-generation Borgosesia ring, used with your Toyota and Howa spinning machines?

We are extremely satisfied with the performance of Steelhawk rings: the price-quality ratio is really excellent! What we ask our

suppliers is to build an on-going relationship, to support us over time by helping us meet the needs that will emerge, and to ensure consistent support service.

What is the position of the Indonesian textile sector with regard to international competition? What are the factors that make Indonesia competitive?

The key words that guide us on international markets and that we focus on consistently are "quality" and "reliability". The quality of Indonesian yarn is well known by international clients, and the service – especially in terms of punctual deliveries – is decidedly better than other producers in Asia, including China, which bases its competitiveness mostly on price.

How do you view the future? Can you describe for us your vision as an entrepreneur operating on the global market?

The most concerning factor in my opinion is the increase in costs that are outside our control, such as electricity and wages. The strategy at PT Dhanar Mas Concern for the future involves an increase in its spinning capacity: an Bandung we will install 12,500 new spindles to produce a 100% rayon yarn. In Silver Kris we will introduce another 18,000 spindles, while investments in Banjaran will focus on the air-jet systems.

PROSINO is represented on the Indonesian market by TRIJAYA TRADING CO. (TTC).

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PROSINO has equipped the TOYOTA and HOWA spinning machines at its client PT DMC with 42-mm flange 1 STEELHAWK rings mounted on aluminium holder.



**PT DHANAR MAS CONCERN,
A LEADER IN THE SPINNING OF SYNTHETIC FIBRES IN INDONESIA**



Indonesia is an important market for Prosino, and Borgosesia rings have earned the trust of Indonesian customers thanks to their ability to meet the needs of the local spinning mills.

This success is proven by the numbers, and crowned by an important achievement by Prosino in Indonesia: 1,400,000 rings sold over the last 12 years. "These results show that Indonesian

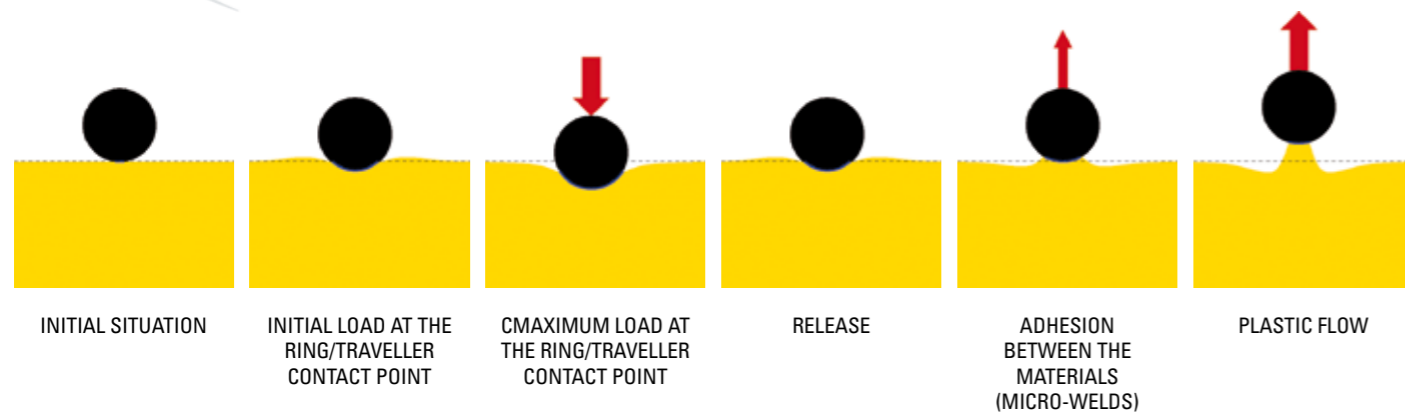
spinning mills prefer our products," comments Pietro Prosino, CEO of Prosino Borgosesia Rings. "I think that the crucial factors behind this success have been the reliability, high quality, excellent ROI, and long lifecycle of our rings. In spinning and twisting mills, saving time means saving money, and our rings have proven themselves to be reliable allies to manufacturing over the years."

In Bandung, one of the most important textile centres in the country, we interviewed Mr Jemmy K. Sastraatmadja, CEO di PT Dhanar Mas Concern, and President of the local Association of spinning mill owners. He described for us the special aspects of the Indonesian textile sector.

The technological advantages of STEELHAWK rings

Spinning rings are subject to a very particular sort of mechanical stress: an elevated load concentrated in a very small area. All in a significant absence of lubrication (especially with compact yarn and synthetic yarns).

The load applied to the surface of the ring causes a physical phenomenon known as Hertzian contact stress. This special type of sliding friction leads to adhesion between materials involving alteration of the sliding track layer, which we can illustrate schematically with this sequence:

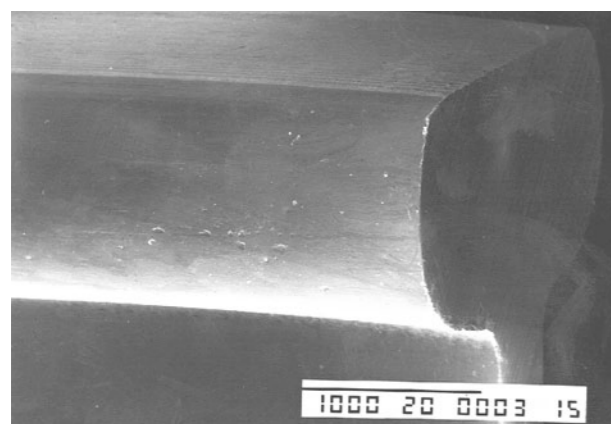


PROSINO S.r.l. developed the **STEELHAWK** ring by improving both the internal mechanical characteristics of the ring and its surface finish ("Best IN & OUT" philosophy).

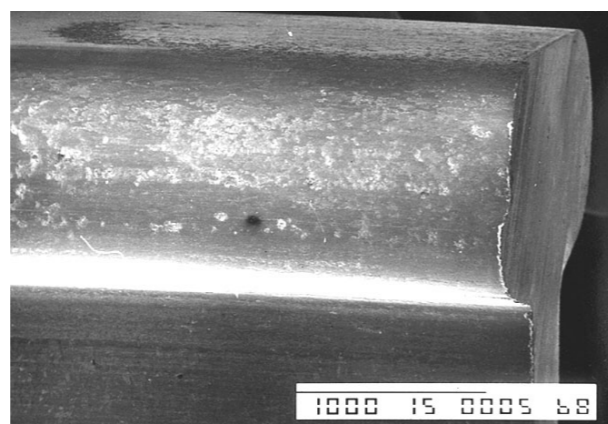
The most important innovations were:

- 1. Cryogenic treatment** on alloy steel with increased dimensional stability in the ring, and reduced plastic flow during Hertzian contact stress..
- 2. Non-metallic plasma coating**, eliminating weldability between the ring and traveller, preventing adhesion.
- 3. Vibratory finish for the ring**, which thanks to its minimal degree of roughness, better retains the natural lubrication of spun fibre and helps extend the lifecycle of the traveller.

The result is a ring that ensures very stable spinning machine production performance with very limited breakage.



STEELHAWK RING AFTER 36 MONTHS OF WORK (SEM PHOTO)



COMPETITOR'S RING AFTER 36 MONTHS OF WORK (SEM PHOTO)

STEEL CONICAL RINGS

The benefits of lubricated conical rings with h 9.1

Rings with a conical shape serve to distribute the load deriving from the centrifugal force of the travellers over the widest possible surface during spinning.

The load can be calculated by the known formula:

$$L = \frac{m \times v^2}{r}$$

Where

- L = Load in mN
- m = Traveller weight in mg
- v = Traveller speed in m/s
- r = Radius of the ring in mm (internal diameter / 2)

The weight of the ring in mg (m) varies as a function of the count being spun, the diameter of the ring, and the speed of the spindles.

For example: N°32 traveller (ISO 22,4), spindle speed 11,000 rpm, and ring diameter of 48 mm generates the following results:

$$V = 27,65 \text{ m/s}$$

$$L = 713,35$$

The load is distributed over a well-defined and understood area (contact area between the ring and the traveller).

If we reduce the height of the ring from 11.1 mm to 9.1 mm, we can distribute the same load over an area that is approximately 20% larger.

The term "specific pressure" defines the load/resting surface ratio.

This greater area of contact (at the same rpm), decreases the specific pressure, thereby allowing the spinning machine to increase the spindle rpm.

Practical tests have shown that speeds can be increased up to 8%.

Conclusion: *the adoption of conical rings with h 9.1 rather than h 11.1 can lead to an increase in speeds of up to 8%, with an immediate benefits for spinning machine productivity.*

PROSINO S.r.l. Manufacturers h 9.1 conical rings in its plant in Italy, for the following diameters, for any type of spinning machine on the market:

42 X 9,1 || 45 X 9,1 || 48 X 9,1 || 51 X 9,1 || 52 X 9,1



WE KEEP THE WORLD SPINNING



the **BEST** in&out

The latest development of the **PRO** line • 100Cr6 steel core hardened & plasma like coating

Customer driven spinning ring

Outstanding yarn quality • No running in • Superior speed
High wear resistance • Excellent payback • First class consistency

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