link

Customer Magazine No. 74/2018

Everything from One Source

Focus on Rieter systems at ITMA Asia

At a Glance: The Digital Rieter World

Rieter digital spinning as the key to success

CONTENTS

Cover:
A Rieter system is more than the combination of great Rieter machines. More information regarding this topic in this magazine.

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Dear Customer,

On numerous occasions I have had and will have the pleasure and the honor to meet many of you; at meetings which have taken place in connection with a mill tour, at a trade show, at a conference, or in a Rieter location around the globe.

In all these meetings I have had fruitful discussions with open and honest feedback. You told me about the success you have with Rieter machines, about the great support you get from Rieter's After Sales team. But also about problems you have experienced with Rieter. Feedback is the breakfast of champions – it is the starting point for performance enhancement, stronger customer orientation and continuous improvement. I therefore want to ask you to continue this intensive dialogue with us.

On one of my recent trips to China a customer said, "You can't make money with a Rieter system". What a statement! This was a big surprise to me. Rieter has been in the spinning equipment business for more than 200 years. Generations of spinners have bought Rieter systems, and these have made them rich. We sell systems to spinners all over the world. And now this gentleman says, "You can't make money with Rieter systems". He's a spinning professional, he knows what he's talking about. So why does he say this?

Back home again, we sat down and discussed the statement our customer had made. And we came to the conclusion that we hadn't done a good job of telling you what a Rieter system can contribute to the success of your business. A Rieter system is more than the combination of great Rieter machines. Buying a Rieter system means: producing the right yarn in constant quality and at competitive cost – taking advantage of Rieter's technical support over the lifetime of the equipment – and leveraging system integration in terms of material flow and digitization.

At ITMA Asia 2018 in Shanghai we'll be demonstrating to the spinners of the world how much money they can make with Rieter systems – ring, compact, rotor and air-jet.

In the present edition of "link" you will find an outline of what we intend to show. If you can't make it to ITMA Asia or you can't find the system you are interested in in our documentation, don't worry – just let us know so that we can arrange for a meeting after the exhibition.

Truly yours,

Norbert Klapper
CEO

Everything from One Source

Focus on Rieter systems at ITMA Asia

A broad range of products and services as well as customized spinning systems for every customer requirement. Rieter thus offers spinners the chance of maximum profitability and competitiveness – throughout the entire service life of a mill. Come and see us live at this year's ITMA Asia from October 15 to 19, 2018 in Shanghai.

A spinning mill production that is profitable now, but also in the future. Yarns that meet market needs. Trained operators who achieve the best possible results with spinning machines. Just three of the benefits from which customers who opt for Rieter systems will benefit.

Advantages of a system solution

Rieter will clearly demonstrate the advantages of system solutions at ITMA Asia using practical examples for four different process lines. In the case of end-spinning machines, the focus is on the successful and profitable ring spinning machine G 32, the new, energy-efficient compact-spinning machine K 47, the semi-automated rotor spinning machine R 36, which is particularly ideal for recycled fibers, and the highly productive air-jet spinning machine J 26, the unique yarns from which are incorporated in the creation of new products.

Rieter also has interesting things to offer in spinning preparation. For example, the autoleveler draw frame RSB-D 26 will celebrate its premiere in Shanghai. This new Rieter double-head autoleveler draw frame impresses with its superior sliver quality, low production costs, and easy operation and maintenance.

The on-site, high-quality technology components from Graf, Bräcker, Novibra and Süssen enhance the quality of the yarn and the performance of the machines while at the same time cutting energy consumption. SSM is continuing its trendsetting tradition and demonstrating innovations from the fields of texturing and precision winding. DIGICONE 2 will be presented for the first time, and customers can benefit from a higher dyeable package density. SSM highlights will include two new machines for dyeing high elastic filaments and the sturdy and financially appealing drum-winding machine.

Much more than a mere combination of machines: Customers benefit from customized Rieter solutions

Rieter Digital Spinning growing in importance
Digital products facilitate fast decisions, which optimize the operation of the spinning mill. With UPtime Maintenance Solution Rieter brings intelligence to maintenance work in mills. UPtime combines big data and the algorithms of machine learning to predict malfunctions. Thanks to the Alert and Cockpit Module, an integral part of the SPIDERweb mill monitoring system, the customer can monitor the performance of its mill 24/7 from anywhere. This allows the customer to react quickly in critical scenarios.

The full package
The product portfolio of Rieter is unique. It includes all machines for fiber and spinning preparation and all four end-spinning technologies established on the market – the basis for extensive technological expertise from the fiber through to the yarn and beyond to the textile fabric. Neutral advice is one advantage, and another advantage is the fact that Rieter customers have just one contact person for their spinning mill project.

Quick assembly and a rapid start to production are guaranteed with Rieter. Training helps provide a full understanding of machines and processes. This ensures efficient and profitable production and correct maintenance. For existing machines, Rieter offers interesting upgrades that are often based on developments from the latest generation of machines. High-quality and durable genuine parts and service packages for increasing production mean that older-generation products are still an interesting commercial proposition.

Opting for a Rieter system means that the right yarn can be produced in consistent quality and at a competitive cost, and system integration can be leveraged in terms of material flow and digitization. In addition, a Rieter customer will benefit over the lifetime of the equipment from the technical support offered by Rieter, as a Rieter system is much more than the mere combination of great Rieter machines.

Why not discover the numerous benefits of Rieter systems for yourself? Visit us at ITMA Asia in Hall 1, Stand D01. We look forward to seeing you there.

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At a Glance: The Digital Rieter World

Rieter digital spinning as the key to success

Digital Rieter products have one thing in common: They are always focused on the customer. They not only help the decision-making process at management level, they also help employees take the numerous decisions that need to be taken every day in spinning mills, objectively and quickly.

Greater transparency and performance through digital products

Digitalization is making inroads into spinning mills with Rieter Digital Spinning Suite. With SPIDERweb, for example. This mill monitoring system records data on processes, quality and production efficiency, analyzes this data, and detects deviations promptly. This allows quick response times to introduce the right measures, increases the efficiency of machinery, and reduces the costs of spinning mills. SPIDERweb is successfully used on more than 13 000 machines on the premises of some 270 customers in 50 countries. The system is also available for retrofitting on existing machines and equipment.

To be able to monitor the performance of a spinning mill 24/7 from anywhere, Rieter offers for smartphones the Alert and Cockpit Module. This app provides the key figures for production, quality and energy in real time. Rieter customers can respond quickly in critical cases, thus avoiding expensive downtimes.

Do you want to quickly and visibly display relevant key data in the mill? This is now also possible thanks to DASHboard. The display unit for spinning mills shows information on a range of factors, such as efficiency, production, quality, or the output of operators. In addition, the correlation between the factors shown and predefined limit values can also be identified.

With the UPtime Maintenance Solution, Rieter has opened a new chapter for the maintenance management of a mill. The system, which brings intelligence to the maintenance work of spinning mills, analyzes performance-critical data, identifies deviations and their causes and indicates potential future faults or even failures. This self-learning system offers a clear view of all future, current, and past maintenance work. UPtime Maintenance Solution optimizes the maintenance and monitoring of mills with a view to preventive maintenance.

74-202●

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Predicting the Unpredictable

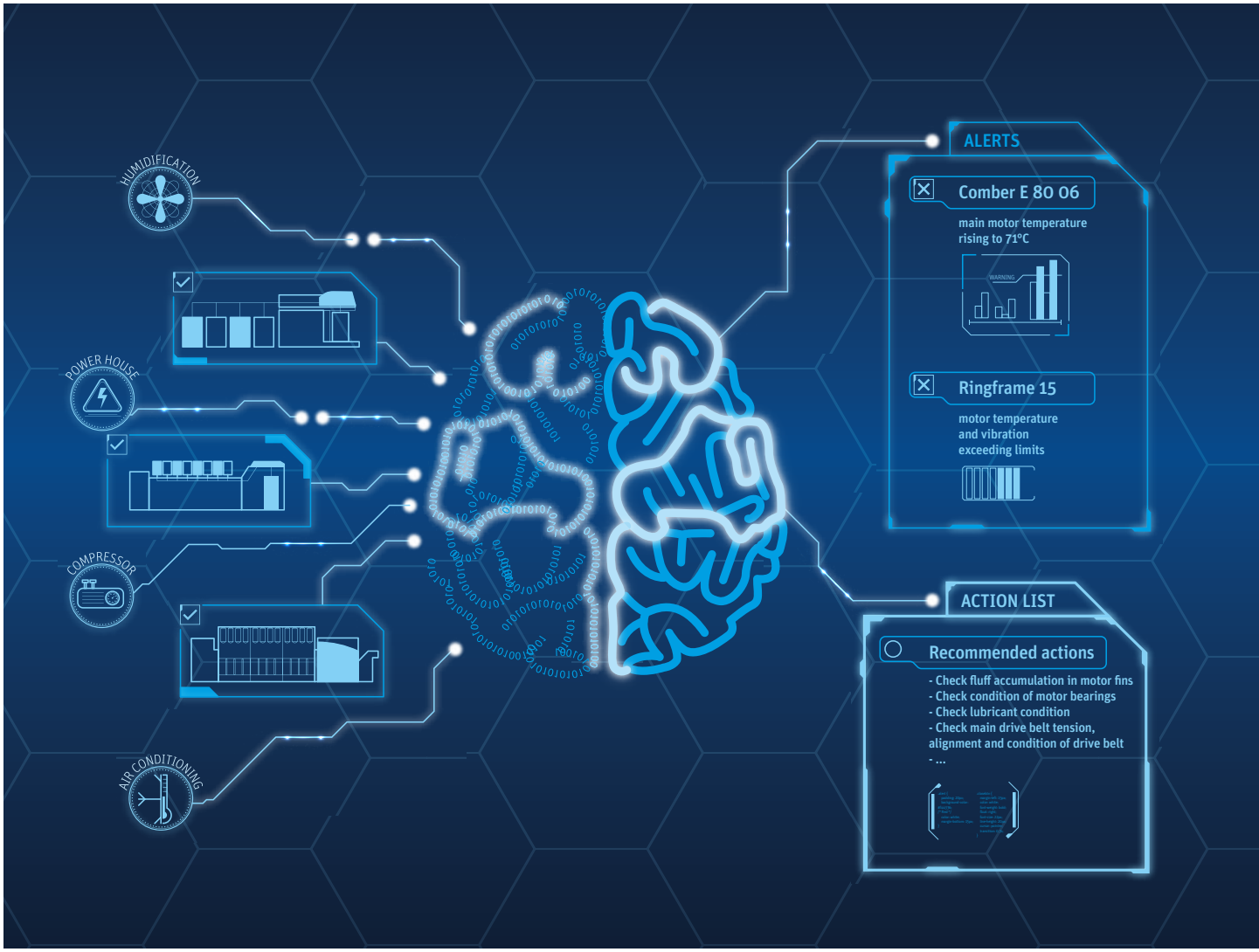
The future is here: Rieter brings Artificial Intelligence into spinning mills

What if you knew exactly what actions needed to be taken before a machine malfunctioned? With UPtime, the power of prediction is now available.

When it comes to machines and malfunctions, predicting the future could not only help a business avoid downtime, but could also save money, improve quality and increase productivity – a recipe for success. Rieter introduces a new approach to machine maintenance with UPtime, an innovation that achieves what was once unimaginable: predicting issues and malfunctions before they happen.

The power of prediction

The aim of any maintenance strategy is to minimize downtime and keep production on schedule. A preventive approach uses statistics to determine when maintenance should be executed, but this does not eliminate unexpected downtime and it can also lead to replacing parts before it is necessary to do so. Predictive maintenance is based on past and real-time data, which is analyzed to determine upcoming maintenance requirements.



With cutting-edge technology, Rieter brings machine maintenance to the forefront of digitalization.

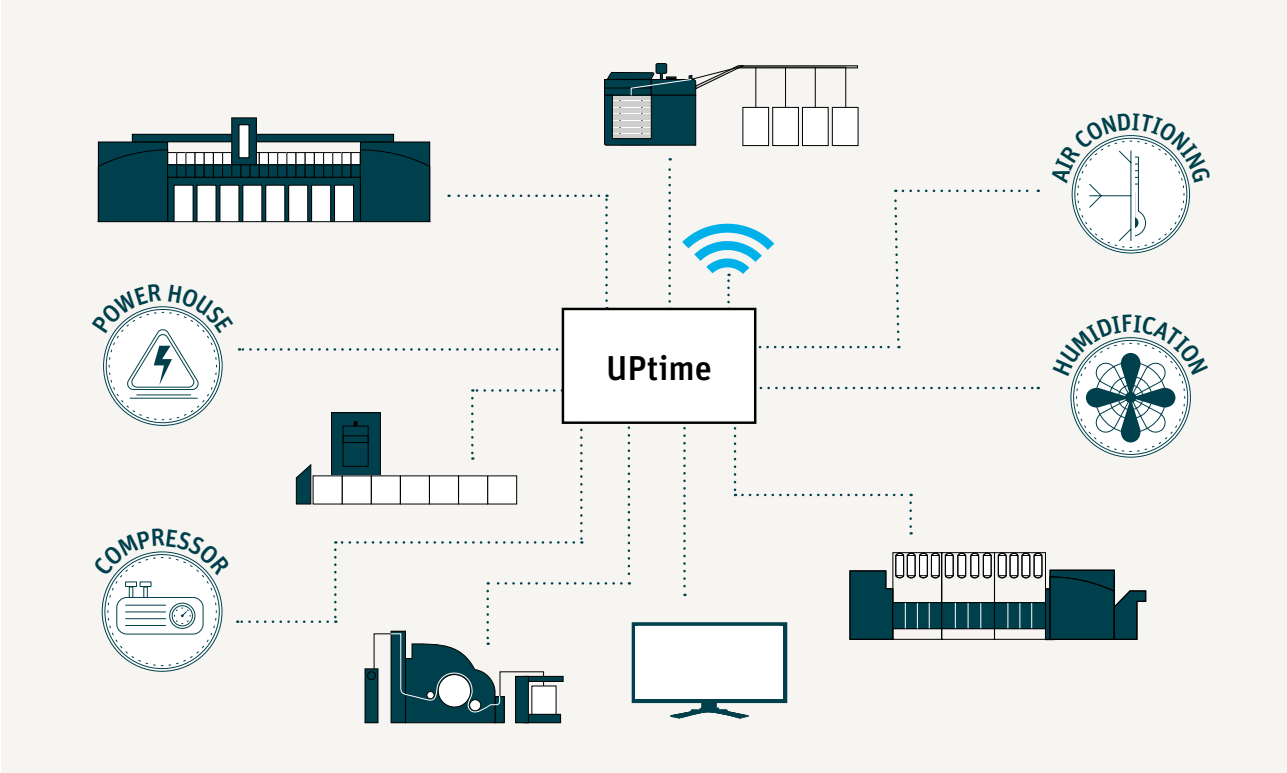


Fig. 1: UPtime analyzes performance-critical data of all machines in the process line.

UPtime collects data and uses artificial intelligence to identify the optimal time to perform maintenance based on a machine's unique settings and usage. This can lead to cost savings by helping a business evade production interruptions and reduce its stock of spare parts.

Entering the age of big data

Performance-critical information, such as air pressure, temperature and vibration, is transmitted to UPtime through sensors (Fig. 1). This data is then used to detect behavior patterns related to potential machine failure. When these patterns occur, UPtime's artificial intelligence recognizes the likelihood of failure and alerts technicians with early detection warnings and notifications about clear action steps. Furthermore, the system continuously learns from data and patterns, which means that UPtime's predictive power improves over time.

Imagine a future where it's possible to avoid unplanned downtime, emergency maintenance and stressful issues with no additional time investment. With UPtime, that future is already here.

74-203

How does UPtime work?
For more information, please download the leaflet using the QR code.

http://l.ead.me/bauojS

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The Perfect Couple

RSB-D 26 and SB-D 26 offer optimum quality and productivity on a small footprint

Autumn 2018. Rieter will present the new double-head autoleveler draw frame RSB-D 26 to a wide audience for the first time at ITMA Asia in Shanghai. The double-head draw frame SB-D 26 without autoleveling function is also new. Both draw frames offer a number of innovations resulting in lower production costs, better sliver quality and easier operation and maintenance.

They impress with even greater performance: the double-head autoleveler draw frame RSB-D 26 (Fig. 1) and the double-head draw frame SB-D 26 without autoleveling function complement each other perfectly. Compared to its predecessor models, the RSB-D 26 with patented ECOrized drive concept has lost a quarter of the belts, numerous drive elements and the differential gear. The frequency-controlled drive for the suction and the individual drive for the coilers are unique (Fig. 2). The straight belt tracking increases the lifetime of the belts considerably.

The new drive solution allows savings of up to EUR 1 500 per year and machine. Over the lifetime of the machines, this means an extremely attractive return on the investment. As a standard feature, the draw frames are now equipped with integrated energy monitoring. This supports preventive maintenance and can reduce the risk of machine failures.

Up to 33% more productivity without any loss of quality

The draw frame SB-D 26 without an autoleveling function and the autoleveler draw frame RSB-D 26 produce, in practice, at a delivery speed of up to 1 200 m/min. Depending on the fiber material, this means that up to 33% higher speeds compared to predecessor models are possible. The excellent scanning precision and high autoleveling dynamics of the RSB-D 26 ensure the high level of quality.

Further optimized drafting system

Conventional sliver guides in front of the drafting system

Fig. 1: The new RSB-D 26 double-head autoleveler draw frame – maximum productivity combined with precise autoleveling technology for high sliver quality.

Fig. 2: The servomotor for the coiler allows rapid optimization of the speed.

pose a risk of incorrect adjustments. The most common consequence of this is non-centric guidance of the slivers and the resulting disturbing faults in the yarn. The patented sliver guide of the new D 26 generation guarantees centric guidance of the slivers at all times (Fig. 3). The web width is set to a reproducible dimension by simple turning of the guide elements. Additional fiber guides in the main drafting field prevent lateral slipping of the edge fibers. As result, there are fewer disturbing faults in the yarn.

Due to the reduced heating of the lifetime lubricated top rollers, the lifetime is increased and maintenance is reduced. Active sliver separation by the RSB-D 26 ensures trouble-free

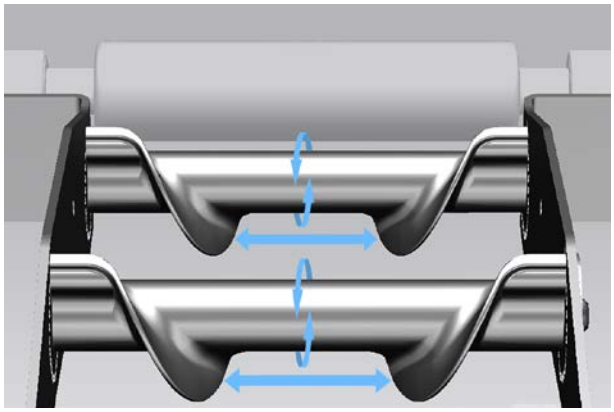

Fig. 3: Patented sliver guide for consistent and reproducible quality

can changes when processing chemical fibers. A thin place is deliberately created for this purpose in the autoleveler drafting system which breaks during the subsequent can change.

Clean sliver coiling

The CLEANcoil coiler is suitable as standard equipment for all fiber materials. The spiral coiling tube ensures coiling without drafting faults. Even at high delivery speeds. The honeycomb structure on the coiler underside reliably prevents deposits.

The CLEANcoil-PES coiler for processing 100% polyester (Fig. 4) is new. A special type of coating offers unique advantages in coiling. Even with critical polyester fibers, the production time until the next cleaning cycle can be doubled. This leads to more consistent sliver and yarn quality.

For cotton the CLEANtube equipment ensures sliver coiling without accumulations of trash. The intelligent control of the coiler drive ensures that no trash particles and short fibers accumulate in the sliver duct. The sliver coiler can be quickly optimized during operation if necessary. Individual drives for the can plates allow convenient adjustment of the speed and direction of rotation on the display.

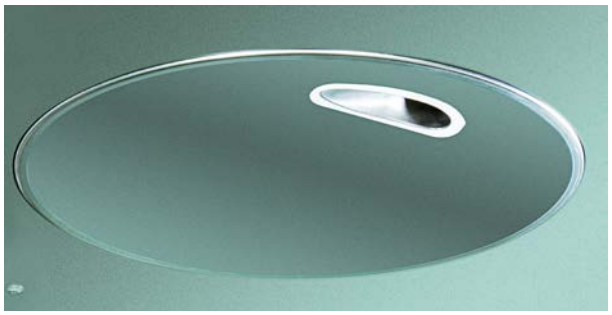

Fig. 4: CLEANcoil-PES: The coiler with a special surface for 100% polyester doubles the production time until the next cleaning.

Touch display and LED displays for efficient operation

The SB-D 26 and RSB-D 26 use the latest generation of controls with a colored touch display. This allows quick and easy operator guidance. LEDs visible from a distance provide information about the status of the draw frame, provide clear indications for the operator and also allow efficient work (Fig. 5).

Technological expertise in the machine display

Once the raw material data has been input, recommended settings for the whole machine appear on the display. A good standard quality can therefore be achieved even when specialists are not available or the staff are inexperienced. The basis is the well-known SLIVERprofessional expert system that is now incorporated into the machine control. Settings can quickly be correctly transferred to other machines via a USB interface. SLIVERprofessional also provides assistance with analyzing faults, for example by displaying periods and draft waves in the spectrogram. Operators can thus quickly rectify faults and increase the availability of the machine. Connection to the Rieter SPIDERweb mill monitoring system is possible and helps improve the efficiency of the system.

Minimal space requirements

The small footprint of the machines makes them ideal for applications where space is limited. With a machine width of less than three meters, the SB-D 26 is not only the most compact of its class but, together with the RSB-D 26, also forms the most compact draw frame line on the market. Both models allow mounting both on the floor of the hall and recessed into the floor. For maximum flexibility regarding sliver feed there is a selection of variants with cans arranged in two, three or four rows to ensure maximum flexibility for sliver guidance.

Established benefits preserved

The new generation of draw frames includes all the unique and in some cases patented features of the predecessor models SB-D 22 and RSB-D 24. The completely independent sides of the machine and the autoleveling of the RSB-D 26 guarantee high sliver quality on both heads. A sensor ensures exact first sliver coils, even with cans where the plates are too low. Constant suction in the drafting system and lifting cleaning lips on the top rollers guarantee the best Classimat values in the yarn.

Fig. 5: The clearly structured display with LEDs visible from a distance allows easy and efficient operation.

With the new RSB-D 26 and SB-D 26 draw frames, Rieter has set another milestone in draw frame engineering with the declared aim of offering the customer the best possible machine quality for their mill.

74-204●

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The Right Model for Everyone

Customized solutions for ring and compact-spinning

Rieter is further upgrading its end spinning product range with the new ring spinning machines G 37 and G 38 and the new compact-spinning machines K 47 and K 48.

Rieter is the leading supplier of ring and compact-spinning machines. Customers particularly appreciate the high productivity, low energy consumption and consistent excellent yarn quality. The two models established on the market, the ring spinning machine G 32 and the compact-spinning machine K 42, have been joined by four new models – the ring spinning machines G 37 and G 38 and the compact-spinning machines K 47 and K 48. But which machine is the best choice for which market? What advantages do the new models offer? And how will Rieter customers benefit?

Choosing the right spinning machine

The machines G 38 (Fig. 1) and K 48 are particularly suitable for markets which have limited personnel availability and which require particularly high levels of flexibility and yarn quality simultaneously. With these "all-inclusive models," customers benefit from the highest levels of automation, the best performance, complete flexibility for standard and special yarns, an electronic drafting system drive, integrated individual spindle monitoring (ISM premium) and the integrated slub yarn device.

The G 37 and K 47 were developed for markets where there is not a shortage of available personnel and the requirements for flexibility and yarn quality are high. They provide

Fig. 1: The new ring spinning machine G 38 is one of the four new ring and compact-spinning machines. It offers the highest level of automation, the best performance and complete flexibility.

customers with a high level of flexibility thanks to their unrestricted application range at full machine length and for all special yarns. The electronic drafting system drive reduces downtime for article change. The integrated individual spindle monitoring, ISM basic, increases operator efficiency – and therefore machine efficiency.

For customers who rarely change their assortment and who are active in markets where personnel are always available, the 2 series machines are the ideal solution. The proven ring spinning machine G 32 and compact-spinning machine K 42 with mechanical drafting system drive are ideal for standard applications with medium and fine yarn counts.

Outstanding performance

The machine concept for the G 38 and K 48, which features double-sided suction, allows unrestricted spinning for all applications at full machine length. Thanks to the integrated VARIOspin system for slub yarns, customers can change between standard and slub yarns simply at the touch of a button. The machines are equipped with the electronic drafting system drive FLEXIdraft as standard. FLEXIdraft makes it easier to set yarn parameters. The desired values can be entered directly on the operating unit. Unlike with the G 32 and the K 42, there is no need to make mechanical adjustments. This reduces downtime for article change from 75 minutes to 5 minutes and maximizes production time. The premium version of the individual spindle monitoring (ISM) is also integrated (Fig. 2), meaning customers can save personnel costs by five percent and more compared to the 2 series. The three-stage indicator concept, which features signal lamps on the ends of the machine and LEDs at every spinning position and section, controls the running behavior of each individual spinning position, optimizes operator guidance and increases machine efficiency. The customer can access important data directly on the operating unit of the machine. Detailed evaluations are possible on request with the spinning mill monitoring system SPIDERweb. All the applications given for both models can be produced at maximum machine length. Both models were designed in Switzerland.

The new machines G 37 and K 47 also offer the electronic drafting system drive FLEXIdraft. The extremely quick downtime for article change of under five minutes when changing to another yarn count increases the productivity of the machine. Both models are equipped with the integrated basic version of the individual spindle monitoring – ISM basic –

Fig. 2: The premium version of the individual spindle monitoring (ISM) is incorporated into the models G 38 and K 48. This reduces personnel requirements.

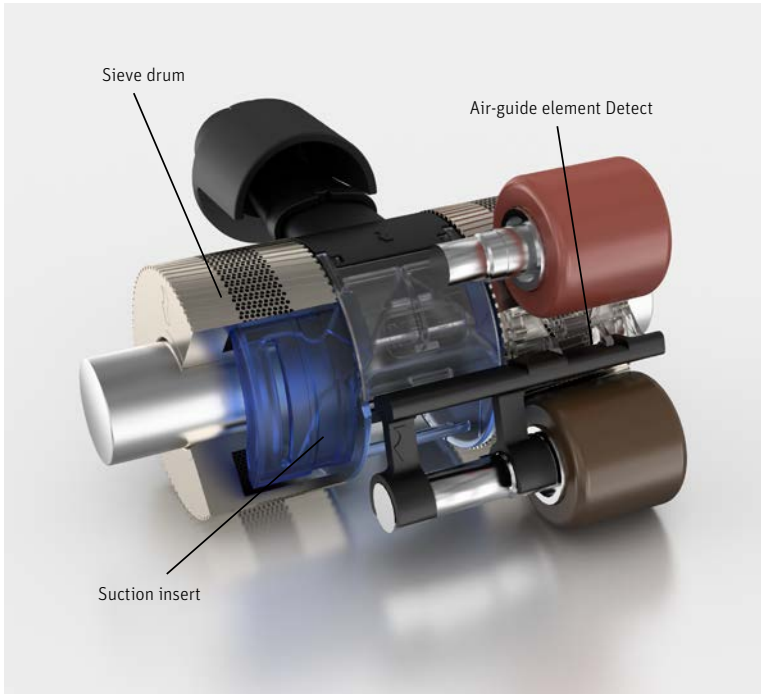

Fig. 3: The unique compacting elements of the K machines guarantee fully compacted yarns, facilitate the low energy requirements and keep maintenance costs low.

as standard. Thanks to LEDs at every spinning position and every section, customers can save around three percent on personnel costs. At the customer's request, the machines can also be supplied with ISM premium.

Compact spinning with unbeatably low energy requirements

For customers who want fully compacted yarns of the highest quality with maximum strength, the Rieter compact-spinning machines K 42, K 47 and K 48 are the best solution. Their unbeatably low energy requirements for compaction are outstanding: Less than one watt per spindle, just 20% of that of other solutions. In addition to the well-known sieve drum, the main reasons for this are the large cross-section of the central suction duct and the air guide element Detect, which guides the air flow in a specific manner (Fig. 3).

The air guide element Detect, the sieve drum and the suction insert are also at the heart of the Rieter compact-spinning machines. They form the basis for the unique air routing and the guarantee of fully compacted yarns. The air guide element also simultaneously monitors quality by creating deviations from the air flow and therefore from the vacuum. When a limit value is reached, a marking on the air guide element indicates that the compacting unit needs checking (Fig. 4). This monitoring allows a consistently high yarn quality.

With all compact-spinning machines, there is no need to replace compacting aprons: therefore machine downtime is avoided. Increased efficiency can be achieved as a result, making it simpler to plan production.

Fig. 4: The air guide element Detect for the compact-spinning machines ensures consistently high yarn quality.

One notable difference between the two new models and the existing K 42 is the expanded application range. The K 47 and the K 48 are equipped with a new sieve drum, which now allows customers to spin blends containing polyester and 100% viscose alongside cotton (Fig. 5).

Fig. 5: The sieve drum of the new compact-spinning machines is ideally suited to fiber blends.

Opportunities for even more flexibility

The flexibility of customers, i.e. quick adaptation to market requirements, is a key criterion for remaining competitive today. Systems for producing soft and dual-core yarns, as well as twin yarns, are available for all ring and compact-spinning machines on request. A quality package, also known as the Q-Package, offers cotton spinners the opportunity to improve their already-optimized quality yarns even further (Fig. 6). Rieter offers various solutions for ring and compact-spinning machines which allow the reliable and productive processing of man-made fibers.

The "EliTe®compact spinning system" is available as an option on the three conventional ring spinning machines G 32, G 37 and G 38. It can also be retrofitted at a later date. The system facilitates the production of high-quality compact yarns. It covers all yarn counts and can also be used for 100% polyester.

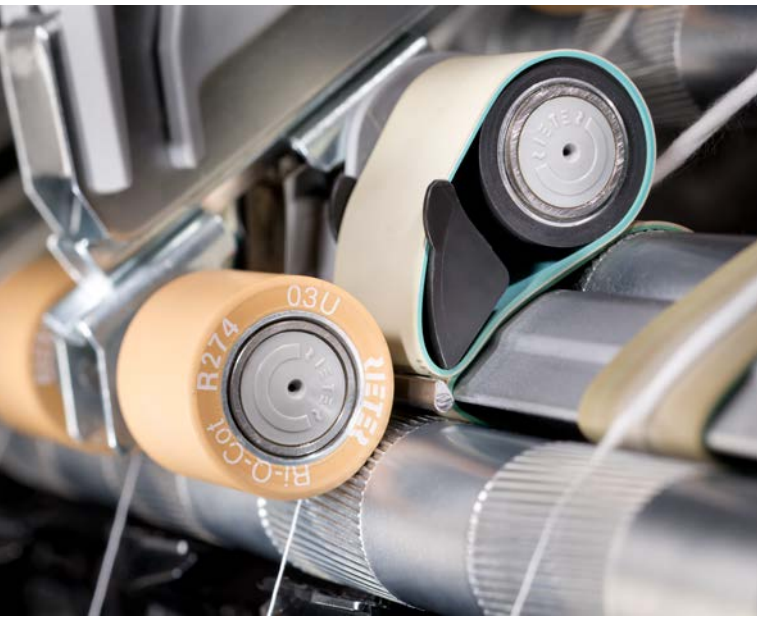

Fig. 6: The Q-Package: for specialists wanting to further improve already-optimized quality yarns made from cotton.

Fig. 7: The new tube loader ROBOload "wild loading" automatically sorts the empty tubes, reducing the amount of work required enormously.

The combination of the unique Rieter spinning geometry with high-quality technology components forms the basis for extremely high spindle speeds. This ensures consistently good yarn quality at maximum production.

The new LENA spindle and the highly efficient 110-kW motor that drives the spindles offer further significant energy savings on the four new models. Both are available as options.

Minimal workload

The new tube loader ROBOload "wild loading" is available as an option for the G 37, G 38, K 47 and K 48 (Fig. 7). It is now performing the task of sorting the tubes. There is no need for manual alignment. The tubes are placed in a trolley at the end of the machine. A tilting unit dumps the tubes into the ROBOload; another device automatically aligns the tubes and guides them correctly to the cop transport system SERVOdisc, significantly reducing manual effort. For existing models of the G 32 and K 42, Rieter offers suitable solutions with Rieter After Sales.

Keeping the well-proven

Well-known, successful solutions will remain an integral part of both the ring and compact-spinning machines. Such as the SERVOgrip system, for example. This prevents thread underwinding when doffing, and thus keeps the machine clean, thereby ensuring yarn quality. All models are still equipped with the reliable and low-maintenance cop transport system SERVOdisc. The customer saves energy here, as the conveyor belt is driven not pneumatically, but by two electric motors.

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J 26 Has a Significant Advantage

Air-jet quality yarns for high-quality terry towels

Thanks to the strong and stable production of combed cotton yarns, a new segment has opened up in China for the air-jet spinning machine J 26, as high-quality terry towels can be produced with this yarn, for example. That is not the only advantage, however.

For mills that want to produce air-jet cotton yarns, Rieter has the appropriate solution: the optimized spinning system and the technical and technological expertise. The mills benefit from low production costs and a quality of yarn significantly superior to that of competitors.

Cost and quality advantage in production

One of the largest Chinese mills carried out a comparison of the air-jet spinning machine J 26 with a competitor product over a period of six months. The J 26 convinced in a number of criteria.

The yarns spun on the J 26 at a higher production speed showed considerably better values for imperfections, evenness and strength (Fig. 1). The yarn hairiness was ideal for a soft touch with a low pilling tendency. The significantly lower fiber loss with the J 26 allows the mill an excellent raw material yield and this achieve annual cost savings of around 17 tons of cotton per air-jet spinning machine (basis of calculation: J 26 with 120 spinning units, yarn count Ne 32, delivery speed 420 m/min).

From the idea to the product

In China a middle class with high purchasing power emerged, that continues to grow. This lucrative consumer group is prepared to spend more money on high-quality products. Statistics confirm a strong growth in products in the higher price bracket.

Based on the properties of the Com4®jet yarn, the yarn of the J 26, an idea emerged of creating terry towels that meet the following criteria:

- No pilling, even after a number of washing cycles
- Brilliant colors throughout the entire lifetime
- Quick absorption of moisture from the body
- No fluffing, no loss of fibers during washing

The Rieter Com4®jet yarn was used in the pile to produce the terry towels and combined with carded ring yarns in the ground warp and weft, also produced by the customer (Fig. 2).

20 Rieter towels were given out to test persons to assess quality. Their feedback was univocal. Compared to the towels they currently used, they assessed the appearance and feel of the Com4®jet towels as Excellent. Water was absorbed quickly; the formation of lint and fluffing were minimal.

	Yarn count [Ne]	Speed [m/min]	USTER CVm%	Imperfections [-50%, +50%, +200%]	Hairiness H	Strength [cN/tex]	Fiber waste on the air-jet spinning machine [%]
Competitor	Ne 30	400	14.34	130	4.31	13.8	6.5
J 26	Ne 32	420	12.69	34.3	3.67	13.93	2.4
		360	13.76	101.1	3.34	15.87	2.45

Fig. 1 With slightly higher production, the Com4®jet yarn of the J 26 achieves better yarn values and lower fiber loss on the air-jet spinning machine.

Towel composition	Warp	Weft	Loop
Raw material	Medium-staple cotton from Xinjiang		
Spinning preparation	Carded	Carded	Combed
Yarn type	Ring yarn	Ring yarn	Air-jet soft yarn
Yarn count	Ne 32/2	Ne 21	Ne 32/2
Towel weight [g/m²]	650		

Fig. 2 The Rieter towel made from 100% cotton was based on a fabric made from carded ring yarn and a loop made from combed air-jet yarn.

Fig. 3 Compared to the high-quality towel, the Rieter towel (right) made from Com4®jet yarn already performs extremely well visually.

The independent Swiss test laboratory SGS was contacted for an neutral assessment. In addition to the Rieter towel, an extremely high-quality towel from the internationally renowned Christy brand was also provided to obtain reference data. From a purely visual perspective, both towels were comparable (Fig. 3).

The test results showed that the Rieter towel with air-jet cotton yarn in the pile performed very well (Fig. 4). No fibers were lost – in other words: there was no fluffing. The Rieter towel kept its volume for a long time, as the pile remained upright and also retained its softness. The tensile strength and therefore the wear resistance were also excellent. The absorbency was almost at the level of the reference product and therefore corresponded to a very high level within the standard. Particularly interesting were the raw material costs. The yarn of the Rieter towels was spun from medium-staple cotton. This saves around 40% on raw material costs compared to the long-staple cotton used in the Christy towel.

Towel		Christy (highest quality)	Rieter
Raw material/yarn type	Pile	100% combed US PIMA, long-staple, ring	Combed cotton, medium-staple, air-jet, Ne 32/2
	Warp/weft	100% combed US PIMA, ring	Carded cotton, warp: Ring, Ne 32/2 Weft: Ring, Ne 21
Weight [g/m²]		685	650
Fiber losses/migration of fibers away from the towel [%]		0	0
Absorbency of product [seconds]		3	4.1
Tensile strength of product [N]	Warp	410	290
	Weft	360	500
Tear strength [N]	Warp	61	61
	Weft	26	45
Retail price [CNY/unit]		100	---
Cotton reference price [CNY/kg]		25	15

Fig. 4 The data collected by the independent test laboratory SGS confirmed that Com4®jet yarns are perfect for high-quality towels.

This study has shown that the Rieter air-jet spinning technology produces cotton yarns of an very high quality. Used correctly, the air-jet yarns can play to their strengths. The results are very attractive end products. In addition, a mill saves considerable raw material costs.

The interest in air-jet cotton yarns is growing. An increasing number of spinning mills and downstream users are developing products and benefit from the modern J 26 air-jet spinning technology and its special yarn properties.

74-206

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C 70 Top in Global Comparison

Rieter card tested for production capacity, quality and energy consumption

The C 70 is the second card generation offered by Rieter in a width of 1.5 meters. Other suppliers offer cards with working widths between 1.2 and 1.5 meters. This allows direct global comparisons between these cards – with astounding results, as the following article reveals.

In all tests, considerable attention was paid to ensuring that the conditions for the C 70 and for the card of the respective other supplier were comparable. Production capacity, quality and energy consumption were tested.

All quality limits met

An American customer compared the yarn quality of a polyester cotton yarn with a count of Ne 20 at various production capacities. A C 70 and a 1.28-meter wide card of the latest design from another supplier were used. The C 70, which the customer had in operation already for a few years, was equipped with new components to ensure that both cards were state-of-the-art. A production of 170 kilograms of sliver per hour was used as a starting point. Up to a production of 181 kilograms per hour, both machines were on a par with each other in terms of quality. The quality indicator used was the number of neps per gram in card sliver, with a limit value as required by the customer of 200 neps. With a delivery of 204 kilograms of sliver per hour, this limit was exceeded several times over by the 1.28 meter card (Fig. 1). This was the point at which the team from the other supplier gave up and withdrew its machine from the race.

The C 70, on the other hand, reliably and continuously produced 227 kilograms of sliver per hour within the customer's quality limits. Even without supervision by the Rieter staff, the C 70 maintained an efficiency rate of 100% over several shifts. The sliver was spun on a rotor spinning machine. Despite the fact that the C 70 produced considerably more card sliver, no changes in the yarn quality, such as imperfections, were noted. The yarn quality remained stable throughout the entire test period. The running values of the rotor spinning machine were very pleasing: The new state-of-the-art card C 70 with high production rates came out with better results compared to the average for the rest of the card C 70 (Fig. 2). The 25% increase in production with the same yarn quality generated huge customer interest in the conversion kit.

Convincing results with positive implications

A Southeast Asian customer wanted to manufacture open-end yarn from 50% cotton and 50% cotton waste. He was looking for the best card for this project. As the company did not have any experience with Rieter cards at that point, a C 70 was added to the existing 1.28 meter card line for comparison purposes. The question of whether the C 70 produces more efficiently than the existing cards was soon answered: The test showed that the C 70 produced 160 kilograms of card sliver per hour, corresponding to a 20% increase in production compared to the installed cards. A comparison also showed that the sliver of the C 70 achieved 17% fewer imperfections in the yarn (Fig. 3).

It is particularly important in the weaving mill that the yarns are even and have the relevant yarn strength and elongation. In terms of evenness and strength, the yarns produced with the C 70 had a slight advantage. In terms of yarn elongation, the values for the samples from the C 70 and the 1.28 meter card were statistically identical.

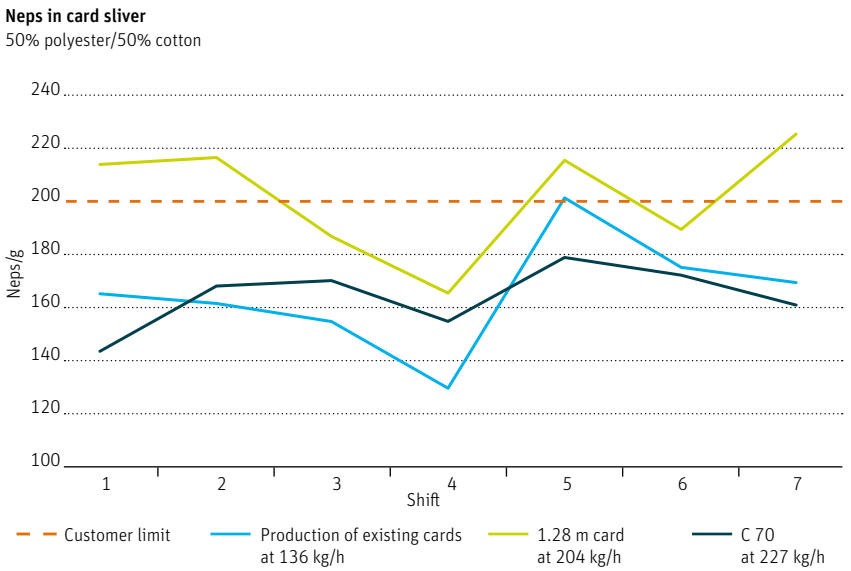

Fig. 1: With a production of 227 kilograms per hour, the card C 70 achieved considerably more stable nep values in the sliver.

The test results achieved persuaded the customer, and a complete rotor spinning mill with seven C 70 was ordered.

C 70 with high savings potential

A Turkish customer added a new 1.28-meter card to the existing C 70 card line producing open-end yarn with a count of Ne 30 from cotton. This offered the chance to conduct a comparison of the two cards at an hourly production rate of 95 kilograms of sliver. The energy consumption values recorded confirmed once again that the C 70 is extremely energy-efficient, as shown by the following consumption values, taken directly from the card: The C 70 required 10.2 kWh energy, the 1.28-meter card 12.4 kWh. The delta achieved of 2.2 kWh corresponds to a saving of USD 1 848 per card and year with the C 70 (assumption: 8 400 hours per year and 10 cents/kW).

Rieter card first choice for every spinning mill

The C 70 showed in a wide range of applications that it produces a high-quality sliver even at high delivery speeds. Moreover, in comparison with other suppliers it consumes less energy. Rieter permanently adapts it's machines to meet the challenges from the market, in order that customers benefit from state of the art products.

74-207 ●

Natural ends down during rotor spinning
50% polyester/50% cotton, Ne 20

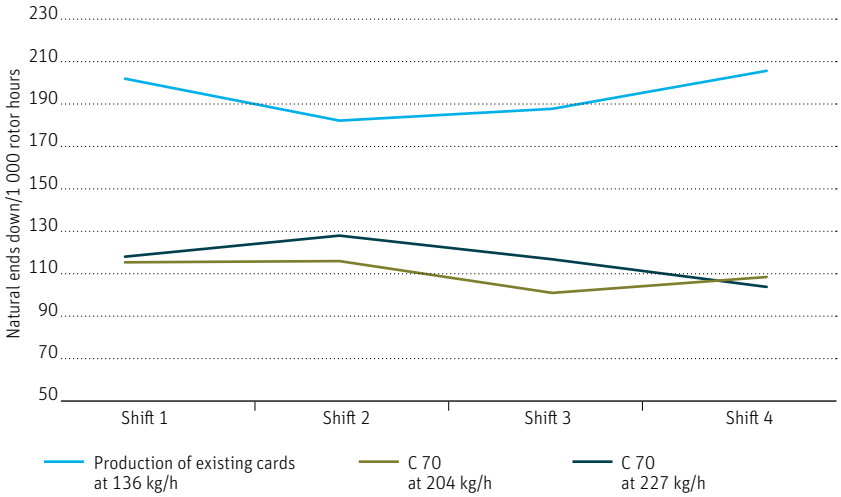

Fig. 2: The sliver of the optimized card C 70 shows excellent running properties on the rotor spinning machine even at high production rates.

Comparison of yarn quality
50% cotton/50% waste, sliver weight 8.9 ktex, rotor yarn Ne 16

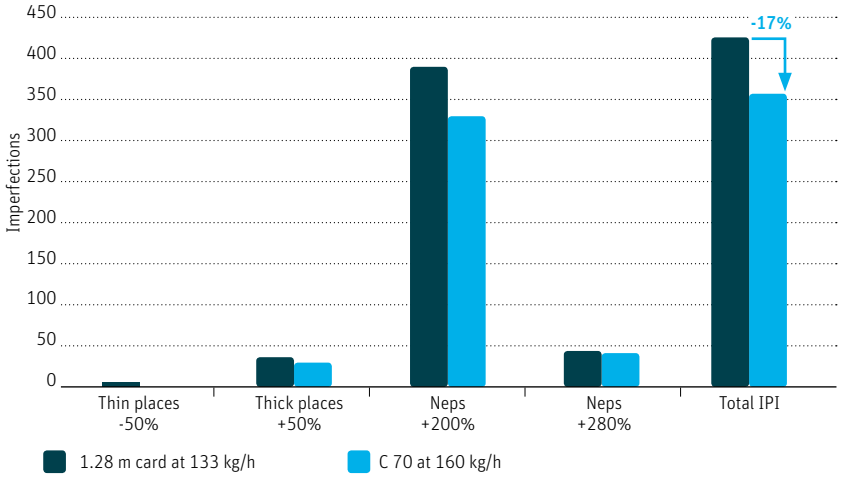

Fig. 3: With 20% higher production, the card C 70 achieves better yarn values than the customer's standard production.

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Investment Pays Off

More competitive thanks to high quality and low production costs

The experience of the Brazilian spinning mill Sergipe of using the new fully automated rotor spinning machine R 66 has been nothing but positive. No wonder, as the R 66 meets the highest quality standards at low production costs.

Sergipe Industrial Textile Ltda (SISA), founded 136 years ago, is now one of the largest textile companies in Brazil with its two production sites in the eponymous state of Sergipe. The spinning mill and the production for greige fabric are located at the parent company in Aracaju. SISA produces terry toweling goods at the second location in Riachuelo. This is also where all products are finished and tailored. Yarn production is 95% focused on cotton yarns with a count of Ne 12/1 to Ne 36/1. In the weaving mill up to 95% flat woven fabric for bed linen and table cloths and around 5% terry toweling fabric for towels are produced.

Investments in innovations

SISA is always on the search for innovations for developing new products that will protect the environment and ensure satisfaction, well-being and comfort.

"To remain competitive and be able to manufacture products of a high quality at low costs, the SISA management is investing year after year in machines of the latest generation for its production plants."

Augusto Oliveira, General Manager

SISA owner Oswaldo Franco (right) and General Manager Augusto Oliveira

In the spinning mill, SISA invested in the fully automated rotor spinning machine R 66 with 700 spinning positions. Its “state of the art” spin box technology ensures that the constantly high quality requirements are met. The high productivity, predictable and cost-saving maintenance and user-friendly design guarantee low production costs.

Good running properties, high efficiency

The special technical features of the R 66 facilitate high machine efficiency. These include firstly the short TWISTunit, which consists of the nozzle, the channel plate CHANNELinsert and the TWISTstop and stabilizes the yarn tension. This reduces the number of ends down and facilitates a high degree of machine efficiency. The technical solutions also include the absolutely precise centering of the rotor and delivery nozzle each time the spin box is closed, which is a requirement for a consistently high standard of yarn formation and a low level of yarn breaks. The consistent yarn quality – with very few weak points and exceptions – also has a positive impact on the running properties in downstream processes.

Efficient rotor cleaning prevents material loss

A pneumatic and/or mechanical rotor cleaning after every yarn break on the R 66 ensures that the rotor groove is free from dust or trash particles. The axial motion rotor cleaning head guarantees that the scrapers clean exactly in the rotor groove. This keeps the yarn quality at a high level at all times (Fig. 1).

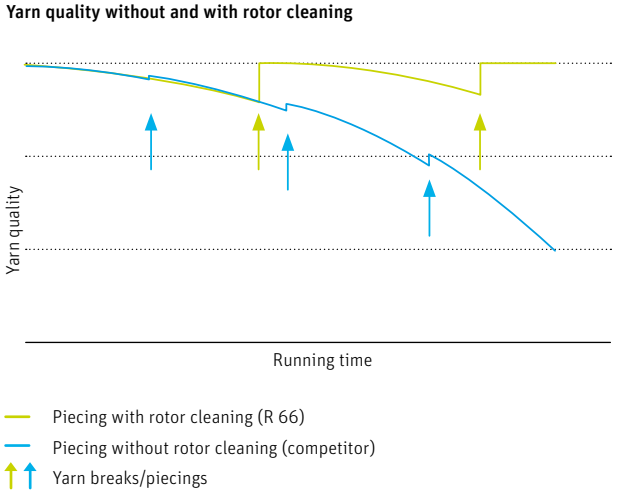

Fig. 1: Quality remains constant over the running time on the R 66 with rotor cleaning.

Maximum production time

The open design of the machine and spin box makes it easier for operators to gain access to key technology parts that can be replaced without tools. This also applies to the TWISTunit (Fig. 2).

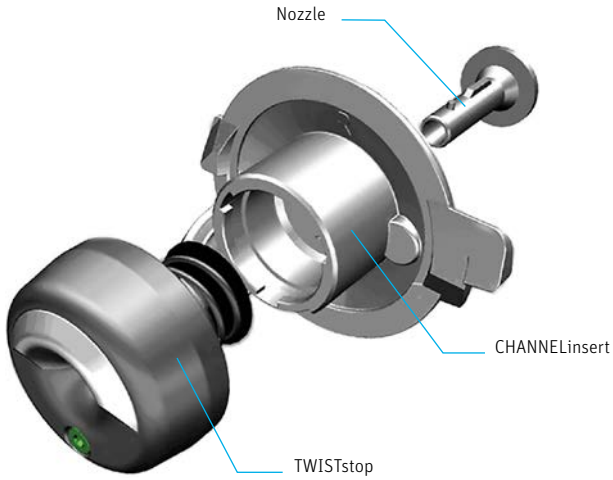

Fig. 2: Key components such as the TWISTunit can be replaced quickly and easily without tools. This maximizes production time.

The self-explanatory control unit with its clear and simple operator guidance makes it easier for employees to handle the machine. This reduces the time for lot changes considerably and maximizes production time.

Predictable maintenance is easier on the budget

The drive system of the rotor is exposed to extremely high loads. Regular maintenance is therefore essential, with preventive maintenance having proved successful time and time again. Wear parts should be replaced at fixed intervals, wherever possible in conjunction with other maintenance work. This will minimize unscheduled downtimes with high expenditure on troubleshooting and rectifying individual faults.

74-208

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Top Yarn Quality from a Range of Blends

Rotor spinning machine R 36 successful in practice

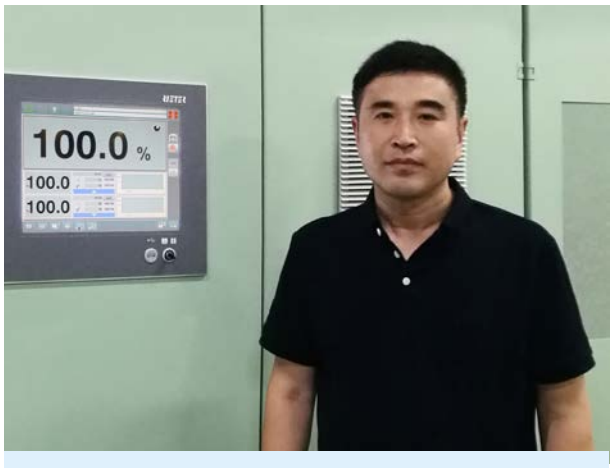
Rieter's customer Shangshui Xianghu Textile wants to find a way of efficiently using the cotton noils and cotton waste from the blowroom and the card and to thus profitably optimize their raw material blends. Using rotor spinning machine R 36 has provided the company with an incredibly positive experience.

Shangshui Xianghu Textile Co., Ltd. is located in Zhoukou City, Shangshui County, in the province of Henan (China). The company produces 12 million meters of greige fabric and 4 500 tons of cotton yarn per year; its most important products are Ne 16 and Ne 21 yarn.

The Challenge: To produce optimal yarn from cotton noils and cotton waste

The raw materials used are 70% comber noil and 30% cotton waste from blowroom and card. The management wanted to use these raw materials to produce high-quality yarn in an economically efficient manner. The aim was on the one hand to maximize profits and on the other hand to bring the yarn fully in line with the requirements of customers of Shangshui Xianghu.

Fig. 1: The right choice for Rieter customer Shangshui Xianghu: R 36 rotor spinning machines



"The R 36 has unparalleled effciency and stability. The yarn quality is consistently good. Choosing the R 36 was the right decision for us."

Jianguo Cui
Chairman, Shangshui Xianghu Textile Co., Ltd.

The Solution: Rotor Spinning Machine R 36

Shangshui Xianghu has therefore invested in four semi-automated rotor spinning machines R 36 with 460 rotors each. The machines are easy to operate and offer a direct way to achieve high yields of high-quality yarn. The R 36 fulfills every requirement specified by Shangshui Xianghu:

- The two sides of the machine operate fully independently and offer high flexibility.
- The excellent spinning technology, the yarn clearer Q 10 and the perfectly wound bobbins ensure a high quality product for the subsequent finishing process.
- The R 36 offers outstanding energy efficiency. Furthermore, the optional automatic piecing technology which Shangshui Xianghu has elected to use has significantly reduced the time taken to restart the machine after power failures.

The benefits for Shangshui Xianghu: outstanding efficiency and reduction of personnel costs

The diverse functions of the R 36 have far exceeded the customer's expectations:

- The efficiency of the machines is up to 99 to 100%, the potential productivity capacity is 2 to 3% higher than with comparable machines.
- The advantages in terms of labor costs are obvious: Fewer than 100 ends down per 1 000 operating hours results in a saving of up to 1 operator per machine compared to the former situation, thus sustainably reducing labor costs at Shangshui Xianghu.
- The company's customers are very satisfied with the yarn quality delivered.

Fig. 2: The good running properties of the rotor spinning machine R 36 allows savings in personnel.

The customer was able to increase its profits and Shangshui Xianghu was convinced by the excellent performance of the R 36 and has invested in two further machines.

74-209●

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Soft Knitting Yarn at Low Costs

Production increased thanks to rotor spinning machine R 66

Due to the increased demand for soft knitting yarn, Rieter customer Xinjiang Kangruixin Textile Co. Ltd. wants to increase production. At the same time, the Aksu-based company from the Xinjiang province, China, also faced pressures to save energy and personnel costs.

Xinjiang Kangruixin Textile Co., Ltd. (Kangruixin), a fully invested subsidiary of Henan Shenqiu Sanzha Textile Co. Ltd, operates 50 000 ring spindles, 640 semi-automated rotor units and 260 sets of high-speed rapier looms. The company employs more than 800 people. Kangruixin covers the complete home textile process with its production chain from design, R&D, through spinning and weaving, right through to dyeing and finishing.

The challenge: increased production with lower costs

Kangruixin has faced increasing pressure in recent years. There was a need to reduce energy consumption for ring spinning and save labor. To increase the production of high-quality, soft yarn, the management focused on 100% virgin cotton and aimed for a shorter spinning process. At the same time, however, Kangruixin also wanted to meet the demand for yarn with lower twist, stable yarn evenness and consistent yarn strength.

Fig. 1: R 66 Rieter rotor spinning machines at Xinjiang Kangruixin Textile Co. Ltd.: guarantees for soft knitting yarns and low production costs

The solution: R 66 rotor spinning machine

Kangruixin has invested in seven fully automated Rieter rotor spinning machines R 66, each with 600 rotors (Fig. 1). These machines are equipped with spin boxes S 66, which are at the cutting edge of rotor spinning technology (Fig. 2).

They feature unique functions including BYpass, SPEEDpass, CHANNELpass and TWISTunit. These allow stable running condition of the R 66 and a constant yarn quality. The robots with the VARIOclean units efficiently clean the rotor and the rotor groove before each single piecing operation. With the high degree of automation of the R 66 Kangruixin requires fewer operating personnel. With the R 66, the requirements of the customer were completely fulfilled.

More yarn with low energy consumption

The R 66 produces 25% more yarn compared to the semi-automated rotor spinning machine. The energy consumption per kilogram of yarn is 64% lower when compared with ring spinning production – also thanks to the energy-saving ECOrized drive technology.

The quality of the yarn produced is consistently high because of the new spin box S 66 technology. The machines run reliably and are easy to operate.

Fig. 2: State-of-the-art rotor spinning technology ensures quality and productivity

"With the R 66, all our expectations regarding productivity and yarn quality had been fulfilled fully. With the sturdy design, the easy handling and operating of the R 66 also our operators are happy. And as the lucky owner of the 288 888th spin box we always will have a positive feeling regarding our rotor yarn production."

Mingxin Li
General Manager
Xinjiang Kangruixin Textile Co. Ltd.

The number of operating personnel could be reduced by 75% compared to the ring production. The customers of Kangruixin are very pleased with the quality of the yarn. On a regular basis, they are able to sell the yarn above the current market price.

74-210●

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Unlocking Productivity Improvements

Five percent productivity increase through customer training

On-the-job training provides operators the skills they need to enhance their core competencies and achieve a machine's maximum performance. By elevating rotor spinning operating skills to the next level, the Pakistani customer AL-KARAM TEXTILE MILLS (PVT.) LIMITED increased its productivity by five percent.

The AL-KARAM Group in Karachi, Pakistan is a successful and future-oriented provider of innovative textile solutions with strong growth strategies. AL-KARAM TEXTILE MILLS (PVT.) LIMITED is a part of the AL-KARAM Group and vertically integrated composite textile mill, offers spinning, weaving, dyeing, cutting, stitching and finishing processes. Its portfolio comprises all types of yarn ranging from Ne 7 to Ne 120 with a total production of 63 tons per day. The company is selling its own private label and is also trusted by international clients such as Ikea and Walmart.

The Challenge

One unit of Alkaram Textile Mills Pvt. Ltd. is now exclusively equipped with pre-owned Rieter machines delivered from China. Rieter After Sales dismantled and packed the machines ranging from blowroom to end spinning, including six fully automated rotor spinning machines R 60 with integrated robots. In the new mill unit, the customer commissioned the machines with the help of an experienced Rieter technician and scheduled production with maximum machine efficiency in the shortest possible time. Although the customer is an experienced spinner, the company is new in operating rotor spinning machines and faced several challenges such as low production and machine efficiency. Therefore AL-KARAM turned to Rieter for further support.

The Solution

When producing with rotor spinning machines, the selection of the appropriate rotor is crucial for yarn quality, spinning stability and production rate (Fig. 1).

The important rotor parameters include the type of the rotor groove, the coating of the rotor, the rotor diameter and the rotor speed. Rieter recommended rotors as per the application and in this specific case, the rotor type 33 XT-BD-AE1 for weaving. In addition to updating the software of the rotor spinning machines R 60, Rieter specialists instructed the customer's maintenance personnel about the operating procedures impacting yarn production and yarn quality.

Fig. 1: Rieter has the competence to recommend the best suitable rotor for customers needs.

Fig. 2: Selecting the right TWISTstop is key to an optimum yarn quality and a good spinning stability.

The Customer Values

Rieter Customer Training educated the customer's maintenance staff on how to best use the updated software and how to significantly reduce the time needed to monitor the machine performance. Furthermore, Rieter specialists reviewed factors such as the raw material selection and the use of TWISTstops. The shape and surface of TWISTstops and take-off nozzles greatly affect the yarn characteristics and values as well as the spinning stability (Fig. 2).

The Customer Training helped the staff to optimize maintenance of rotor cleaning and setting of the appropriate opening roller speed. It also provided appropriate measures and adjustments to control yarn breakages. As a result, AL-KARAM TEXTILE MILLS (PVT.) LIMITED profits from an optimized piecing procedure for a better yarn quality by robots while being able to maintain the robot's standard efficiency. Thanks to the updated software linked with in-depth Customer Training provided by Rieter, the customer now gets the full potential of the installed rotor spinning machines R 60. The customer achieved an average machine efficiency increase of 10% and a productivity increase of 5%.

"Achieving the best yarn quality while maintaining efficient production is the need of time. Rieter addresses those needs and keeps us ahead of the competition with its unmatched training resources and consistently updated software"

Waseem Abbas,
Technical Director Spinning,
AL-KARAM TEXTILE MILLS (PVT.) LIMITED

Fig. 3: From left to right: Samy, Field Engineer from SIMAG, the Rieter agency in Pakistan; Waseem Abbas from AL-KARAM; Rieter Trainer Juerg Hug; Abid Imam, Sales Manager from SIMAG

Following this success, AL-KARAM decided to expand its mill with the purchase of two new rotor spinning machines R 66. The rotor expertise of Rieter combined with the outstanding after sales support convinced the customer to further invest with Rieter. From new machines to after sales, AL-KARAM found in Rieter the reliable partner to strengthen its position as an innovative supplier of yarns and textiles.

74-211●

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The new double-head autoleveler draw frame RSB-D 26 impresses with best sliver quality at highest productivity.

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