

Ring spinning
Ring spinning machine G 38

RIETER

G 38 Innovations

Redefining the boundaries in ring spinning



Highest productivity at
lowest energy consumption

New Features

Highest production time

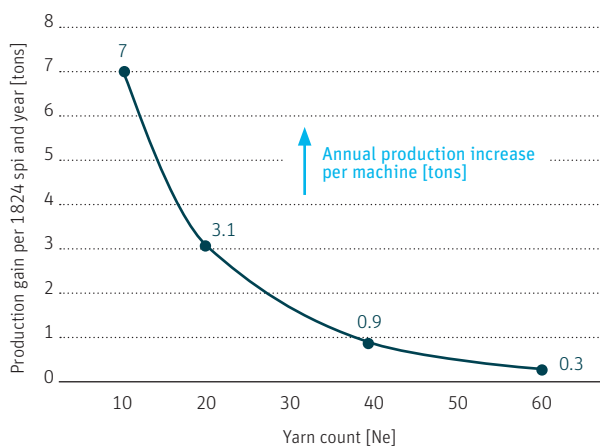
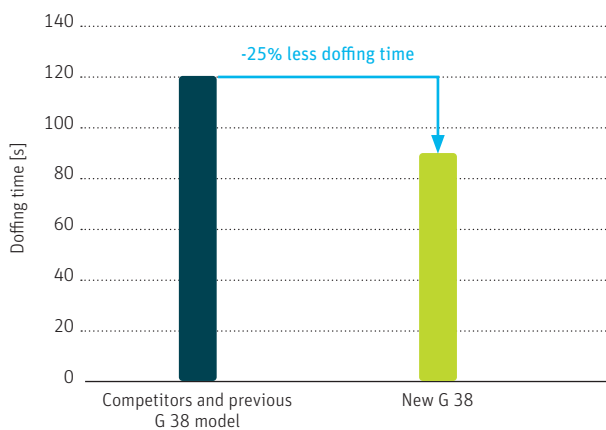
Doffing in only 90 seconds

The new generation of the ring spinning machine G 38 redefines the boundaries. The new and most reliable automatic doffing system with a perfect alignment of gripper, tube and cop tray enables a fast sequence of all doffing process steps. The redesigned doffing system completes its cycle in just 90 seconds, showcasing a remarkable 25% reduction compared to the prior version of the G 38 and all known competitors, whose cycles typically take 120 seconds. The reduced doffing time results in shortest machine downtime and therefore a significant production gain. The advantage is particularly evident with coarse yarn counts. With Ne 10 the annual production gain is 7 tons and for Ne 20 still 3.1 tons per machine with 1 824 spindles.

Thanks to the sophisticated monitoring system, doffing requires no human intervention. The system includes a special profile of the doffer beam and releasable grippers. In the event of faults, the doffing process is automatically stopped by a pressure monitor, ensuring highest process reliability. With the integrated SERVOfrip system, doffing can be performed without underwinding.



Doffing time and its influence on yarn production



25% faster doffing system leads to remarkable production gain

Clever and fast cop transport

The new cop transport system SERVODisc for link systems to the winding machine is 12% faster than the previous solution. It forwards up to 45 cops per minute directly to the winding machine and positions empty tubes. This open rail system is fast enough to remove all cops on time before the next doffing cycle is due. This is important for long machines with short spinning cycles and very coarse yarn counts. The new SERVODisc is even more reliable and needs less maintenance. The solid steel profile with less contact points reduces friction, and the positive driven pulley enhances the lifetime of machine components. Intelligent cop trays (Smarttray) with integrated RFID chip are available with the link system to the Rieter winding machine Autoconer X6 for information and material flow control.



New SERVODisc drive concept for less maintenance

Self-monitoring doffer grippers

The optionally available, redesigned gripper has a safety clip for a more precise and reliable tube positioning. The long lasting gripper membrane with improved grip is abrasion resistant and easy to replace. Changing of the membrane can be done directly on the machine within 15 seconds. This corresponds to a time saving of 80%.



Short-balloon setting for enhanced spinning performance

The limiting factors in ring yarn production are yarn tension peaks and the interaction with ring and traveler. One of the most important tasks therefore is to balance the various balloon forces during cop build-up. The short-balloon setting optimizes these ratios and brings clear advantages in terms of less ends down rates and longer traveler lifetime. Alternatively, the ends down rate can be kept constant, but production can be increased up to 2%. The traveler must continue to optimally compensate tension peaks and help that the yarn balloon is formed evenly during the entire ring frame movement.

Raising the Bar

With the new G 38

High-Speed Package for maximum productivity

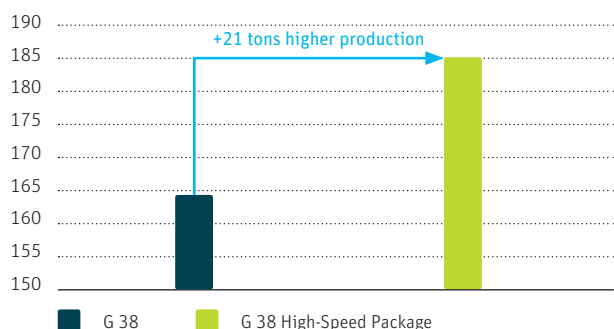
Maximizing the productivity in ring and compact spinning is an enormous challenge for spinning mills. The Rieter specialists have put together a High-Speed Package, in which the components are optimally matched to one another: LENA 28 spindle + smaller spinning ring with a 34 mm diameter + spinning tubes with smaller DUI of 16 mm.

The G 38 achieves up to 28 000 rpm spindle speed mechanically. This is an increase of 12% compared to 25 000 rpm achieved until now. The High-Speed Package includes a smaller spinning ring with a diameter of just 34 mm. The traveler needs less distance and less time for one revolution on the smaller ring. With a smaller spinning ring diameter, the traveler speed is reduced, opening up potential for an increase in spindle rotation. A plus of 3 000 rpm means a higher production of 21 tons/year, exemplary realized with cotton yarn, Ne 60.

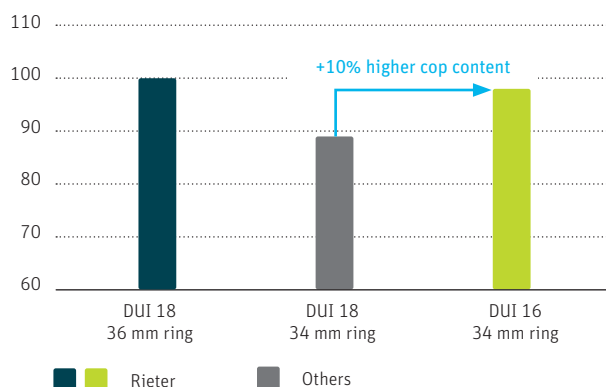


A smaller spinning ring diameter means less space for yarn on the tube. This would lead to more doffing processes and reduce profitability. To prevent this, a tube with a smaller bottom inner diameter (DUI) was designed, and the energy efficient LENA 28 spindle was adapted accordingly. The tube with the smaller DUI dimension can thereby take almost the same yarn weight as a conventional tube. So, the number of doffing processes on the spinning machine and number of cop changes on the winding machine remain the same.

12% higher production: CO, Ne 60 [tons/year/mc]



10% higher cop content: DUI 16, 34 mm ring [%]



Highest delivery speed

Depending on the yarn specification and spinning parameters, the ring spinning machine G 38 can produce ring and compact yarns with highest delivery speeds of up to 40 m/min. This increase is particularly important for the efficient production of coarse yarns and makes the ring spinning machine even more competitive compared to other spinning systems.

Lowest Energy Consumption

Energy efficient technology

The extremely efficient IE4 main motor drives were developed for high speeds to save energy. It can also be used profitably on machines with fewer spindles and low speeds due to its permanent magnetic functioning. Efficiency is not only related to motor technology but also to motor size. With one single spindle motor and the choice of IE4 motors, Rieter invests in sustainable yarn production.

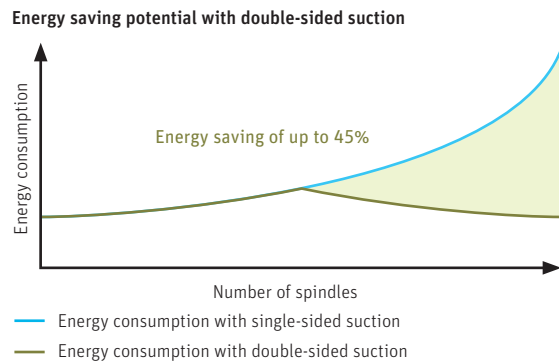
With the new HPS 28 and LENA 28 spindles, revolutions of up to 28 000 rpm can be run. Both spindles have a second damping system to remarkably reduce the bearing load and the noise level. Compared to conventional spindles with a whorl diameter of 18.5 mm or 25 mm, the LENA spindle with 17.5 mm saves up to 6% energy.

Energy savings with power monitoring function

The power monitoring function is a new standard configuration for the new ring spinning machine G 38. Power monitoring is used to compare the energy values between machines. The values provide the operator with information for early detection of energy losses. There are various reasons for higher energy consumption of a single machine in a spinning mill, for example high fiber contamination on different machine elements such as travelers, spindle tape or drafting rollers. The energy consumption can be an indication of the right time to replace wear parts. The power monitoring function effectively supports to find the most energy efficient machine settings and helps to save energy.

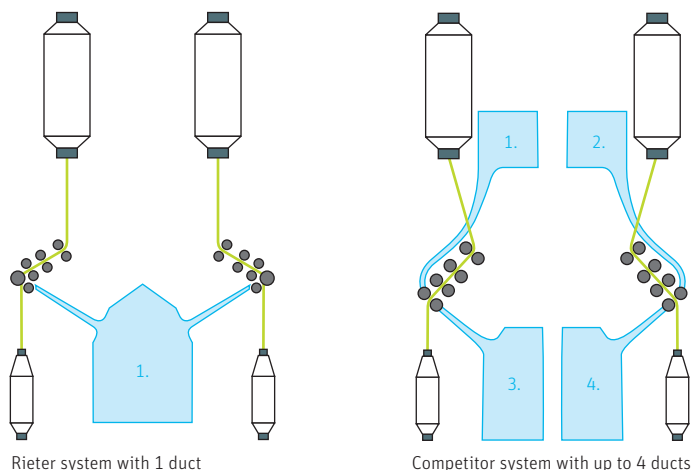
Efficient suction system

The double-sided suction for long machines optimizes the aerodynamics of the entire suction system. This reduces the energy that is required to generate the underpressure on machines with up to 1 824 spindles. Compared to single-sided suction system, the same air volume can be transported using less energy.



The G 38 with one-duct system requires significantly less energy for the production of high quality compact yarn in comparison to other solutions. No additional suction installation and motors are required as the underpressure for yarn compacting is supplied from the suction base unit. The large duct cross-section lowers air speed and reduces the air friction. This results in additional energy savings.

Rieter one-duct system for ring and compact spinning lowers air speed and energy consumption



Perfect Machine in Desired Configuration

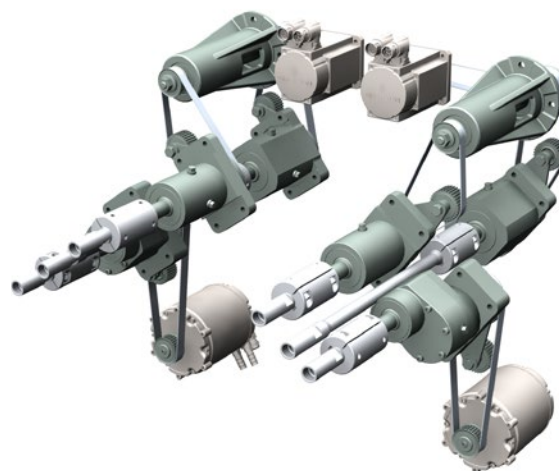
Easy machine handling

The new G 38 is available either as machine with electronic FLEXIdraft drafting system (G 38 FE) or with semi-electronic system (G 38 SE). Rieter previously offered two ring spinning machines, now the different types of drafting system can be configured modularly within the new G 38 machine generation. By offering two different drafting systems, based on the same model, the customer can select the option that best fits their budget and operational needs, potentially reducing investment costs.

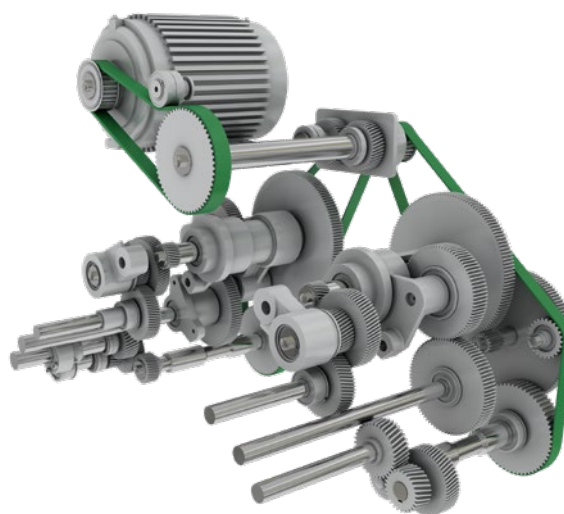
In both cases, the spindle speed, the yarn twist, and the yarn twisting direction, Z or S, can be changed easily on the panel and without additional mechanical adjustment. With the fully electronic machine also the yarn count can be changed electronically on the panel.

With the semi-electronic version, the drafting system for the yarn count change needs manual adjustment. This is an economical solution for spinning mills with lower variability and is often used when the same yarn count is produced over a longer period of time.

The optional VARIOspin drive system for slub yarn production is completely integrated into the fully electronic version, with a separate panel for easy operation and design.



G 38 FE with electronic drafting drive FLEXIdraft



G 38 SE with semi-electronic drafting drive



Economic startup

The optional FLEXIstart allows the drafting system to be switched on and off in stages. This allows a more efficient machine startup. Depending on the machine length, only a quarter or half of the machine is put into operation. This option for the electronic drive system FLEXIdraft avoids unnecessary material waste.

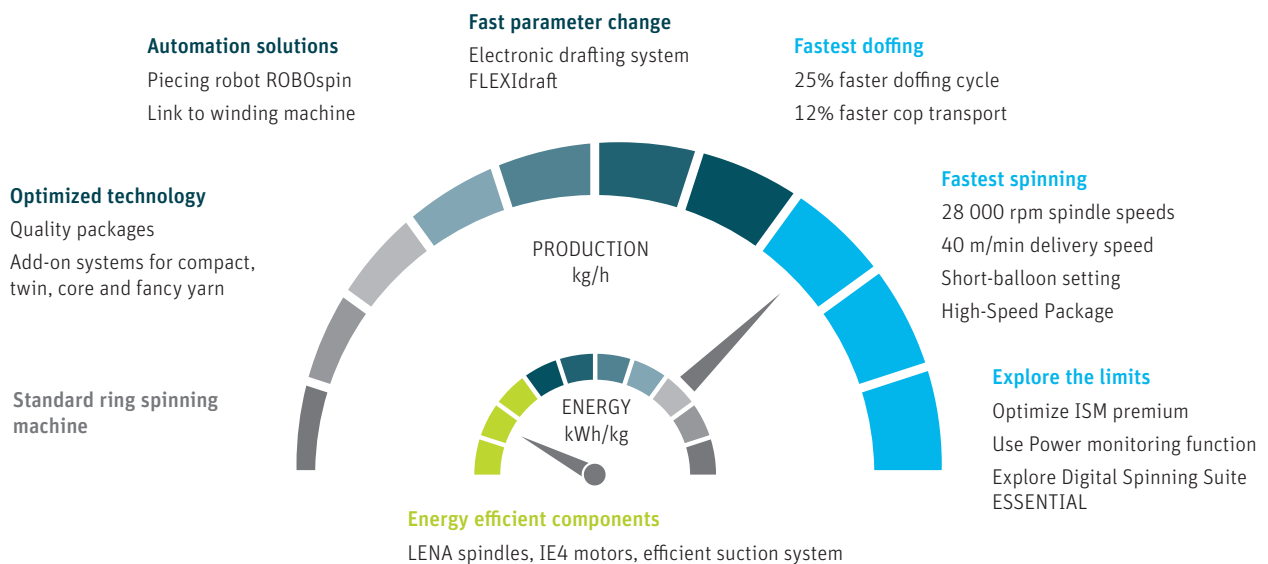
Highest Performance and Flexibility

The new generation of the G 38 redefines the boundaries

Maximum production in ring and compact spinning not only means offering the highest spindle speeds. Noticeable production benefits can be achieved by significantly reducing machine downtimes. And this is where the new version of the ring spinning machine G 38 leads the way.

The new doffing system with a doffing cycle time of less than 90 seconds, the optimized transport system

SERVOdisc with 12% faster cop transport and the effective balancing of the various balloon forces to reduce the ends down rate are just some of the new features of the new generation of the ring spinning machine G 38. Combined with the highest spindle speed of 28 000 rpm, the G 38 ensures maximum competitiveness in the production of ring and compact yarns in all yarn count ranges.



The flexible powerhouse

Flexible in yarn design: The modular G 38 allows easy change from ring to compact-yarn production with add-on compacting devices. Customers can diversify their product offerings by utilizing the machine for slub, twin and core yarn production.

Flexible in automation: The new G 38 offers varying levels of automation, from manual yarn piecing to fully automated piecing with ROBOspin for minimal personnel deployment. Intelligent linking with winding machines

and flexible automation solutions with Multilink/Multilot or ROBOload with WILDload can be used flexibly according to customer requirements.

Flexible in digitalization: The Individual Spindle Monitoring (ISM) system premium is now standard on every ring spinning machine and is the basis for the roving stop device. A much higher level of process optimization can be achieved by integrating the machines into the all-in-one mill management system ESSENTIAL.



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