Semi-Automated Rotor Spinning Machine R 36

The direct path for good yarn quality at high productivity with easy operation
The R 36 is able to run full speed on full machine length thanks to its sturdy design. The R 36 is able to run rotor speeds of 120,000 rpm and delivery speeds of 200 m/min. Rapid start-up after stop secures continuously high productivity.
600 Positions without Speed Limit
Improved Yarn Quality
The new spin box S 36 with effective fiber opening and fiber transport provides better yarn evenness with less imperfections. The complete fiber flow through the spin box is optimized by new technology components. It assures better raw material yield and better spinning stability.
Easy and Flexible Operation
Operators can perform easy work at perfect operating height including AMIspin or AMIspin-Pro piecing. The machine sides with two conveyer belts can be operated totally independent of each other – like two individual machines.
OUTSTANDING

FEATURES

Maximum Productivity
Up to 600 positions with up to 200 m/min for full machine length

Energy Saving Start-up
Quality Spinning-In for rapid machine start-up with controlled piecing quality

Better Yarn Quality
Spin box S 36 for better spinning stability results in fewer piecings and higher machine efficiency

* Option
9

Excellent Piecings, Easy to Operate
AMIspin piecing technology, AMIspin-Pro* piecing technology

100% Proven Yarn
Rieter yarn clearer Q 10* checks yarn and piecing quality

Independent Machine Sides
Two lots can be spun at the same time. Two independent belts prevent mix-up

Perfect Operating Height
Easy and ergonomic operations

Start-up after Power Failure
Automated Spinning-In* with a single press of a button

Precise Winding
And easy setting with electronic traverse drive
Designed for Higher Productivity

The smart solution of the R 36 combines superior economy and high productivity.

High productivity

The machine with 600 positions offers the benchmark of production capacity. There are 20% more positions than on the previous models R 923 and R 35. The excellent spinning stability of improved technology with the new spin box S 36 enables the high machine efficiency to be maintained.

Up to 200 m/min for full machine length

The electronic traverse drives on each machine side enable the machine to be operated at delivery speeds of up to 200 m/min even for the full machine length. Together with rotor speeds of up to 120,000 rpm this results in an outstanding productivity potential of the R 36.

More efficient drives save up to 10% energy

The new R 36 includes the latest developments in motors. Together with the specialized suppliers the big drives of the machine have been equipped with most modern motors in terms of minimized energy consumption. Measurements in the field approved a saving of up to 10% compared to the previous models R 35 and R 923.

Energy consumption R 36 versus R 923
Cotton waste mixing, Ne 25, rotor diameter 33 mm
Better Yarn Quality

Decisive advantages thanks to new spin box S 36 technology

Optimized quality and yarn strength

The spin box S 36 realizes an optimized fiber flow with resulting better yarn strength. Ideal handling of the fibers secure more consistent yarn quality. The advantage is visible compared to previous models R 923 and R 35.

Yarn quality in comparison

100% cotton waste, Ne 20, rotor diameter 33 mm, rotor speed 105 000 rpm, delivery speed 110 m/min

<table>
<thead>
<tr>
<th>Yarn Strength [cN/tex]</th>
<th>CV% of Yarn Strength</th>
<th>Elongation [%]</th>
</tr>
</thead>
<tbody>
<tr>
<td>R 923</td>
<td>11.5</td>
<td>5.3</td>
</tr>
<tr>
<td>R 36</td>
<td>12.1</td>
<td>5.8</td>
</tr>
</tbody>
</table>

Blend of recycled low-quality fibers and 5 – 10% man-made fibers, Ne 8, rotor diameter 41 mm, rotor speed 55 000 rpm, delivery speed 110 m/min

<table>
<thead>
<tr>
<th>Total IPI (-50%, +50%, +280%)/km</th>
<th>Total Sensitive IPI+100 (-30%, +35%, +200%)/km</th>
<th>Neps + 100 (+140%)/km</th>
</tr>
</thead>
<tbody>
<tr>
<td>R 923</td>
<td>64</td>
<td>14.6</td>
</tr>
<tr>
<td>R 36</td>
<td>29</td>
<td>8.3</td>
</tr>
</tbody>
</table>

Reduced imperfections

Redesign of elements in the spinning unit results in more consistent air flow and fiber opening. This guarantees better CV% and IPI values, even when processing low-cost material blends. Resulting lower ends down rates are in favour of a very economic production.
Best Use of Raw Material

Clear separation of trash with more consistent air flow and fiber opening

Successful running with high trash content

R 36 is designed for best use of raw material, which has positive influence on yarn costs. The optimized waste removal in the S 36 spin box for maximum use of good fibers is proven in mills. R 36 is running for example perfectly Ne 16 with a sliver containing more than 1% trash.
Optimised AMIspin Piecing
AMIspin-Pro* and AMIspin piecing technology – easy to operate and easy to learn

Better piecing quality with individual drive for sliver feeding

AMIspin piecing is a perfect combination of single feeding drive, the release magnet and a new arm-lifting mechanism. The whole process is exactly controlled by the spinning unit electronics. The control of the single feeding applies know-how from automated piecing to improve the piecing quality. This ensures fast, easy and exact AMIspin piecing.

AMIspin-Pro for excellent piecings with low variations

AMIspin-Pro uses a single drive motor for the delivery roller. This system is able to control the yarn end even more exactly than a release magnet. The operator just needs to put the yarn end behind the take-off roller and then into the exit tube. All further process steps of AMIspin-Pro follow without need of operator attendance. The resulting piecings are even more uniform than with AMIspin and of a high quality.

QR code scanning for more information
http://q-r.to/bamTYo
(Animation)
AMIspin and AMIspin-Pro – excellent piecing quality

The AMIspin piecing principle is based on fully electronic control of each step. After proper yarn end preparation by the operator and insertion of the yarn end into the exit tube, the process starts automatically immediately after closing the spin box. This repeatedly exact process is the basis for constant piecing quality, which leads to trouble-free downstream processing.

Quality of AMIspin and AMIspin-Pro piecings are very high, with AMIspin-Pro even higher and more uniform.

Ne 12, AMIspin

Ne 20, AMIspin

Ne 20, AMIspin-Pro

Ne 12, AMIspin

Ne 12, AMIspin-Pro
Fast and easy piecing operation with optimized yarn entry

AMIspin piecing has been optimized. Once the operator has prepared the yarn end, the design of the new spin box S 36 enables it to be easily inserted in the exit tube. Access from the front simplifies operation and reduces the risk of any faults. Compared to laborious processes on other machines, the operator can leave earlier for the next position.

Intuitive operation without pressing a button

All elements operators need to touch are easily reachable in a logic line from top to bottom. The AMIspin process starts automatically after box closing.
Maximum Flexibility
Designed for easy and effective operation

Flexibility with independent machine sides

The R 36 continues offering the known outstanding flexibility and easy operation. Two different lots can be produced simultaneously on one machine due to independent machine sides. Two independent package belts guarantee maximum protection against package mix-up. This allows a machine operation of both machine sides similar to two independent machines.

The flexibility of R 36 is unique in the semi-automatic segment.
Efficient lot change and maintenance

Lot changes or maintenance can be performed on one half of the machine whilst production continues on the other side. This standard feature of the R 36 increases overall efficiency with more lot changes and reduces production losses for maintenance.
Easy exchange of spinning components

Easy operation is the target. A wide range of yarn counts and raw materials can be covered with only a few technological components on the new spin box S 36. The simplified and optimized design allows direct access to the components. They can be exchanged quickly without using tools. Easy access saves operating time during lot change and maintenance and helps to ensure constantly precise working of operators.

Fashionable slub yarns with VARIOspin*

The individually-driven feed rollers can be utilized for the production of fashionable slub yarns.

The VARIOspin package has been jointly developed with fancy yarn specialist Amsler Tex. Their know-how enables the R 36 to produce slub yarns with especially distinctive and symmetrical effects. The system can produce up to 2.3 slubs per meter of yarn.

* Option
Assured Quality
Key devices control the quality

Digital yarn clearer Q 10*

The R 36 can optionally be equipped with the Q 10, the new generation of Rieter yarn clearers. The main advantages of the mill-proven digital yarn clearer system with optical measurement are:

- precise detection of all yarn defects (N-S-L-T)
- reliable measuring principle which is unaffected by climatic fluctuations
- rapid response to changes in sliver weight, especially important in the direct process
- fully integrated system, all settings are made at the main machine control panel
- 100% quality check of yarn and piecings

Simplified handling of quality cuts

Each quality fault detected by the yarn clearer is followed by the immediate reaction of the machine. To support the operator the new improved arm-lifting mechanism immediately stops the package. The yarn end remains visible to the operator and encourages the operator to remove the yarn fault. This Fast Spinning-In (FSI) thus saves working time and assures yarn quality.
Loop compensator for perfect yarn package

To guarantee perfect package quality during piecing even at maximum speeds the R 36 is equipped with a loop compensator.

The vacuum loop compensator immediately stores the delivery surplus of yarn at the moment of piecing. This results in high-quality packages and better unwinding in downstream processes.
Easy Operation

Continuously good operator performance

Perfect machine height for easy access

The R 36 is designed with very low height for access to the winding unit and yarn package. This is thanks to the optimized design of the spin box with a short exit tube. The low height has been a very welcome, unique benefit of Rieter rotor spinning machines for many years.

Easy operation on machine panel

The easily understandable graphic touch screen is clear and intuitive for use in machine operation. Graphics are easy to understand. For fast documentation the screen data can be saved on a USB stick.
Operation and Productivity
Increased machine efficiency

Back to operation in a few minutes with Automated Spinning-In* (ASI)

Keeping a high production is challenging especially with long machines, when frequent power interruptions occur. With the new Automated Spinning-In (ASI) the R 36 is able to start up the machine automatically within a few minutes without the need of additional staff for piecing-in. Based on the optional individual delivery drive of AMIspin-Pro this system is working excellently and with minimum maintenance up to the maximum machine length.

ASI allows to keep high machine performance despite frequent power interruptions.

* Option
Fast Spinning-In (FSI) drastically reduces piecing time

The new Fast Spinning-In (FSI) system on the R 36 assists the search for the yarn end. In the event of a power failure or quality cut the yarn end is kept in visible reach of the operator. This is possible due to the fast new arm-lift.

Quality Spinning-In (QSI): Power saving start-up with 100% AMIspin piecing quality

The unique Quality Spinning-In (QSI) process offered by R 36 with AMIspin optimizes the start-up of a complete machine with minimum operating time and minimized energy consumption. The process needs hardly more than 15 minutes taking 6 operators for a machine of 600 positions. The results are 100% checked piecings of renown AMIspin quality, whilst the machine consumes reduced power until the final start.

Energy saving with rapid Quality-Spinning-In
Start-up of R 36 with 600 positions and 6 operators

Quality Spinning-In
Power saving start-up with minimum operator time
QR code scanning for more information
http://q-r.to/bamTZH
(Animation)
Machine Data
Semi-automated rotor spinning machine R 36

Technological Data

<table>
<thead>
<tr>
<th>Material</th>
<th>Natural and man-made fibers up to 60 mm length</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sliver count</td>
<td>Nm 0.125 – 0.31; Ne 0.074 – 0.184; ktx 8 – 3.2</td>
</tr>
<tr>
<td>Range of yarn counts</td>
<td>Nm 3.34 – 69; Ne 2.0 – 40; tex 300 – 14.5</td>
</tr>
<tr>
<td>Draft</td>
<td>25 – 300 fold</td>
</tr>
<tr>
<td>Yarn twist</td>
<td>80 – 2 200 T/m</td>
</tr>
<tr>
<td>Delivery speed</td>
<td>Up to 200 m/min</td>
</tr>
<tr>
<td>Crossing angle</td>
<td>Adjustable from 30 ° to 40 ° in 1° steps</td>
</tr>
</tbody>
</table>

Length Dimension

L = Total length of machine [mm]
   n = Number of sections (minimum 2, maximum 30)
   L = 2 615 + (n × 2 350) + 2 750
### Machine Data

<table>
<thead>
<tr>
<th>Design</th>
<th>Double sided semi-automated rotor spinning machine with independent driven machine sides, with two separate package transport belts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gauge</td>
<td>230 mm</td>
</tr>
<tr>
<td>Number of spinning units</td>
<td>20 per section, maximum 30 sections or 600 spinning units</td>
</tr>
<tr>
<td>Can diameter</td>
<td>Up to 400 mm (16&quot;) / up to 450 mm (18&quot;) / up to 500 mm (20&quot;)</td>
</tr>
<tr>
<td>Can height</td>
<td>900 mm (36&quot;), 1 070 mm (42&quot;) and 1 200 mm (48&quot;)</td>
</tr>
<tr>
<td>Package size</td>
<td>Cylindrical package up to 320 mm or 4.5 kg Conical package 1°51 up to 320 mm or 4.2 kg Conical package 4°20 up to 285 mm or 3.5 kg</td>
</tr>
<tr>
<td>Waxing device*</td>
<td>Online application of wax to the produced yarn, with individual drive on each spinning position</td>
</tr>
<tr>
<td>Piecing</td>
<td>AMIspin or AMIspi-Pro* with front yarn entry and loop compensation</td>
</tr>
<tr>
<td>Yarn quality monitoring*</td>
<td>Rieter yarn clearer Q 10 for monitoring yarn as well as piecing quality</td>
</tr>
<tr>
<td>SPIDERweb*</td>
<td>Central spinning data collection from all machines</td>
</tr>
<tr>
<td>Rotor speed</td>
<td>With frequency converter 25 000 – 120 000 rpm</td>
</tr>
<tr>
<td>Opening roller speed</td>
<td>6 000 – 10 000 rpm</td>
</tr>
<tr>
<td>Delivery speed</td>
<td>Up to 200 m/min for full machine length (up to 34° crossing angle)</td>
</tr>
<tr>
<td>Frequency inverter</td>
<td>Infinitely variable adjustment of sliver feed, delivery speed, winding speed, central vacuum for technological air and trash, rotor and opening roller*</td>
</tr>
<tr>
<td>Arm-lifting</td>
<td>Automatic after yarn break</td>
</tr>
<tr>
<td>Yarn break sensor</td>
<td>For immediate interruption of feeding in the event of yarn break</td>
</tr>
<tr>
<td>AUTOvac</td>
<td>Automatic levelling of spinning vacuum</td>
</tr>
<tr>
<td>Blower*</td>
<td>For cleaning of the machine</td>
</tr>
<tr>
<td>VARIOspin fancy yarn application*</td>
<td>For production of fancy (slub) yarn powered by Amsler Tex</td>
</tr>
<tr>
<td>Rotor drive</td>
<td>Frequency inverter controlled with tangential belt, up to 120 000 rpm</td>
</tr>
<tr>
<td>Rotors</td>
<td>33, 36, 38, 41, 44, 50, 54, 60, 66, 68 mm with rotor grooves in various designs</td>
</tr>
<tr>
<td>Opening roller drive</td>
<td>Adjustable 7 000 – 10 000 rpm, with frequency converter* 6 000 – 10 000 rpm</td>
</tr>
<tr>
<td>Opening rollers</td>
<td>64 mm diameter</td>
</tr>
<tr>
<td>Nozzles</td>
<td>Ceramic and steel nozzles in various designs</td>
</tr>
<tr>
<td>Draw-off tube</td>
<td>Ceramic type in 3 designs U-Segment, V-Segment and TWIST FIX</td>
</tr>
<tr>
<td>Insert</td>
<td>1 insert type with 3 exchangeable adapters</td>
</tr>
</tbody>
</table>

* Optional
The Comfort of Competence

Put your confidence in Rieter's competence and enjoy the comfort of partnership!

Rieter is the leading supplier of installations for manufacturing yarns from short staple fibers. As a competent partner, Rieter makes customers' lives easier. It provides advice and support from the initial investment discussions to the successful operation of their spinning mills. Rieter's comprehensive know-how from fiber through yarn to the finished textile is the basis for innovative machines and consistent yarn quality.

Settle back and relax thanks to Rieter.
Valuable Systems
Rieter is the only textile machine manufacturer to offer four spinning technologies and to advise customers competently, independently and with tailor-made solutions. Investments in Rieter machines are exceptionally attractive due to the outstanding price/performance ratio, the low conversion costs of the yarn and the longevity of the products, which remain competitive by means of retrofits. Rieter has developed high quality standards since the company was established in Switzerland in 1795. All manufacturing facilities are ISO 9001 certified.

Convincing Technology
Rieter possesses comprehensive textile and technology expertise and covers the four spinning processes through to the textile end product. Alongside the most sophisticated machines and plants, Rieter offers extensive services in the field of textile technology. Customers profit from examinations and tests in Rieter’s spinning centers and laboratories and thus ensure the excellent quality of their yarns at high production capacity.

Supportive Partnership
Numerous sales and service centers support customers throughout the world. For decades, customers have enjoyed the advantages of one responsible contact partner for the entire spinning operation.

Rieter’s Services
• Investment planning
• Plant planning
• Project planning and realization
• Installation and maintenance
• Preventive inspection
• Wide range of wear-and-tear, technology and spare parts

Rieter’s Services
• Spinning trials based on the 4 spinning systems
• Spinning mill analysis to optimize quality and productivity
• Textile laboratory services
• Professional textile technological publications

Rieter’s Services
• Investment planning
• Plant planning
• Project planning and realization
• Installation and maintenance
• Preventive inspection
• Wide range of wear-and-tear, technology and spare parts

Rieter’s Services
• Training for management and operating personnel
• Com4® yarn marketing (yarn licenses)
• Marketing support of reference customers
• Rieter Award to confer a distinction on the best students in the textile industry
• Support for universities
• Symposia and roadshows in close proximity to customers
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