J 26
J 26 Automated Air-Jet Spinning Machine

Economical yarn production with a flexible machine
Up to 200 spinning units, up to 6 robots and spinning unit automation for piecing – features that substantially increase machine productivity and flexibility.

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Economical Yarn Production
Flexible in Application
J 26 with independent sides and extended product range offers the highest flexibility in application.
Customised and Innovative Solutions
The P 26 attachment for spinning 100 % polyester is supported by Rieter Q 10A clearer featuring unique clearing channels designed for air-jet.
OUTSTANDING FEATURES

Independent Machine Sides
Completely independent setting and package handling

Economical Machine Concept
High-speed production on minimum floor space

Energy-Saving Concepts
Individual drives for the spinning and winding units, traversing for prolonged life-time of components, solutions for air and energy savings

Advances in Productivity
Up to 200 units with 6 robots and delivery speed of 500 m/min
Rieter Yarn Clearer
Unique opto-digital clearing technology with special air-jet yarn channels for PES spinning

Optimised Winding Concept
Heavier weight and homogenous package density with soft edges

Yarn Quality
Added value with yarn and fabric softness and evenness

Piecing Technology
Yarn-like piecing with automatic piecing preparation, 100 % quality check

Higher Flexibility
100 % polyester spinning with P 26 system
Higher Flexibility

J 26 air-jet spinning machine – 100 % polyester spinning

Spinning 100 % polyester

With the new P 26 attachment 100 % polyester can be spun on J 26. The P 26 system applies liquid to the fibres in front of the twisting zone. This liquid creates benefit for:

- reducing polyester deposits on the technology components
- prolonging production times with stable yarn quality
- higher yarn strength
- lower yarn hairiness

The P 26 system is connected to tap water which is filtered so that no sediments can enter the system. The integrated Rieter clearer Q 10A checks the yarn quality. Special clearing channels monitor the P 26 system at each spin unit.

A male function of the P 26 system, e.g. insufficient liquid supply, causes fast changes in the yarn hairiness. This will be reliably detected by a special algorithm of the Q 10A customised channels.
Spinning Yarn with Quality and Quantity
Com4®jet yarn novel structure at high productivity

Increased productivity due to:
• machine length of up to 200 spinning units
• up to 6 robots
• production speed of up to 500 m/min
• automatic piecing preparation (APP)

The advances of the J 26 air-jet spinning machine concept aim to increase the productivity of the machine but at the same time reduce demands on the robots or operating personnel for operating the machine.

Automatic piecing preparation (APP)

The J 26 machine features the APP system, which automates piecing preparation on the unit in the event of a quality cut. The unit prepares itself for the piecing process before the robot arrives. For the majority of ends down due to quality stoppages, the piecing cycle is therefore reduced by half. The shorter piecing cycle thus makes piecing more efficient and enables the robots to serve more spinning units.

Com4®jet soft yarn

With the Soft Yarn setting the Com4®jet yarn and the fabric get a soft touch. Lower spinning air pressure, higher delivery speed and adapted technology components result in soft yarns as well as in 10 % lower conversion costs. The low hairiness and the good pilling resistance are maintained.

<table>
<thead>
<tr>
<th>Yarn conversion costs</th>
<th>100 % cotton combed, Ne 30, delivery speed 440 m/min</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conversion costs [USD/kg]</td>
<td>Standard setting</td>
</tr>
<tr>
<td>Waste</td>
<td>0.6</td>
</tr>
<tr>
<td>Labour</td>
<td>0.5</td>
</tr>
<tr>
<td>Energy</td>
<td>0.4</td>
</tr>
<tr>
<td>Auxiliary</td>
<td>0.3</td>
</tr>
<tr>
<td>Capital</td>
<td>0.2</td>
</tr>
</tbody>
</table>

Conversion costs [USD/kg] | 0.6 | 0.5 | 0.4 | 0.3 | 0.2 | 0.1 | 0 |

Graph: Comparison of conversion costs between Standard and Soft Yarn settings, showing a reduction of 11.3% in Soft Yarn setting.
Customised Solution for Air-Jet Yarn Clearing
Rieter Q 10A yarn clearer

With 15 years of experience and 1 million of sensors in operation Rieter is launching a yarn clearer specially designed for air-jet spinning. In addition to standard clearing channels and spectrograms the Q 10A has the following features.

- Special clearing channel detecting very fast yarn surfaces changes caused by spin nozzle blockages. The detection is within 10 m and the fault can be removed easily.

- Unlike any other yarn clearing sensor, Q 10A provides a direct digital output out of the measurement. This guarantees maximum exactness in detecting yarn fault size, e.g. small but long yarn count deviations.

- Q 10A supports and monitors with a special channel the proper function of the new polyester attachment. The Q 10A detects smallest yarn deviations caused by malfunction of the attachment.

- A specially designed spectrogram helps to set individual limits for warnings and alarms and provides reliable detection and data to analyze the cause of periodic faults.
Piecing Technology
Yarn-like piecings always checked for quality

The downstream process requires packages tested for yarn and piecing quality for best performance and fabric quality. The yarn produced on the J 26 is 100 % checked for quality before it is wound on the package. The same applies to the yarn piecings.

Optionally the J 26 can be equipped with the Rieter optical Q 10A yarn clearer. Alternatively the Uster QC2 with capacitive or optical yarn clearer sensor can be ordered for the J 26. Depending on quality standards, it can optionally also feature foreign fibre detection.

Yarn-like piecings

The quality of the piecing is defined by its strength and shape where yarn figures are the benchmarks.

The piecing process on the J 26 is fully automated and features fibre end preparation and Progressive Fibre Feeding (PFF) of new fibres. The PFF executes a process where fibre integration is optimally coordinated.

The yarn clearer checks each piecing for mass, i.e. diameter, and length, and guarantees that the piecing meets the requirements of downstream processing in full.

Yarn and Piecer Strength and Elongation
Cost-Saving Concept
Space and energy savings, more package weight and longer life-time

Space

The two-sided J 26 air-jet spinning machine with large 20˝ diameter cans under the machine requires much less floor space for the same output compared to the competitor installation. This results in higher productivity for the same space, lower construction costs and also reduced air-conditioning costs.

Energy

The drive concept is based entirely on individual drives. In case of an end down, a quality cut or during maintenance work the spin unit consumes no unnecessary energy or compressed air.

The energy increase for vacuum is permanently monitored. Warning is given when the economical limit is exceeded. This can save up to 15 % of energy.

Long machines are equipped with a zoning suction system making sure the level of suction is uniform along the complete machine length and saving extra 5 % energy.

Prolonged components' life-time

The unit is equipped with the unique, patented traversing mechanism. The components (condensers, spinning nozzle, APP nozzle and yarn clearer) traverse slowly from side to side and continuously guide sliver and yarn. This has a significant effect on the lifetime of top rollers and aprons. As a result, maintenance work and spare parts costs are considerably reduced and quality is assured for a longer period.
Economy
The ways to produce yarn economically

Up to 108 % more output and 128 % higher contribution margin for the same production space

High productivity in combination with other cost-saving concepts provides the lowest yarn manufacturing costs and highest margins for applications. With the same available floor space, as in the example below of an 8 500 m² mill, output of the J 26 machine is up to 108 % higher and production margins up to 128 % higher compared to other air-jet spinning machines.

Lower labour costs thanks to:
• operator friendly machine concept of double-sided machine
• time saving sliver replacement
• less spin unit maintenance with the traversing system
• less package handling with heavyweight packages
• less package transport costs with heavyweight packages

Lower energy costs thanks to:
• optimised suction system, single drives and intelligent drive control
• reduced consumption of compressed air
• high production speeds

Less auxiliary costs thanks to:
• less spare parts thanks to the patented traversing system
• less number of empty tube thanks to high weight packages

Less capital costs thanks to:
• less floor space - less illumination and air-conditioning costs per kg of yarn
• high production speeds

Calculation example of a spinning mill capacity for 8 500 m² floor space:
Ne 30, blend polyester/cotton 40/60 %
raw material price (blend): 1.336 EUR/kg; yarn price: 2.32 EUR/kg
Independent Machine Sides
Spinning two yarn qualities simultaneously

Machine with independent sides comprising:

- independent machine settings and shift reports
- independent suction channels and waste collection boxes
- individual spinning air pressure setting
- independent empty tube supply
- two package conveyor belts

The independence of two machine sides provides flexibility of operation, i.e. two completely different articles can be spun at the same time. The independent tube supply and separate package conveyor facilitate the work of operators. Productivity savings can be achieved when conducting spinning trials and changing production schedules.

Optimised packages

The new edge displacement makes package density more homogenous and edges softer. This is a prerequisite of best performance in weaving and knitting. Homogeneity and soft edges enable excellent dye penetration.

Heavyweight packages of 300 mm diameter and up to 4.5 kg with the optimised package winding function reduce the number of package changes and thus increase machine productivity. For shipping, the more efficient utilisation of a container results in cost savings of about 20%.
Easy Operation
Clear and simple operating layout

The J 26 machine is built with two-sided sections, head stock and foot stock. The cans are located under the machine. The sliver can is therefore placed close to the associated spinning unit. The operator therefore has a clear overview of the complete position when checking the unit, feeding in the sliver or changing the can.

The size of the cans and the high capacity of the tube loader significantly reduce operator efforts.

The short path from the can to the drafting unit eliminates the risk of false drafts. This is extremely important especially for fine slivers drafted at high speeds.

Robot service concept

In case of 4 robots per machine each is allocated to a service position at the foot or head stock.
For the machine with 6 robots the working range of the 3 robots per side can be flexibly set. If a downtime with the centre robot occurs, the 2 outer robots take over the servicing of the entire machine side – the centre robot automatically opens the way on one side or the other.
Machine Data

J 26 automated air-jet spinning machine

<table>
<thead>
<tr>
<th>Spinning units</th>
<th>Sections</th>
<th>Robots</th>
<th>L [mm]</th>
<th>W [mm]</th>
<th>H [mm]</th>
<th>Crane height [mm]</th>
</tr>
</thead>
<tbody>
<tr>
<td>40</td>
<td>2</td>
<td>2</td>
<td>11 597 / 3 500</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>100</td>
<td>5</td>
<td>4</td>
<td>20 512 / 3 500</td>
<td>3 063</td>
<td>3 190</td>
<td>3 610</td>
</tr>
<tr>
<td>120</td>
<td>6</td>
<td>4</td>
<td>23 217 / 3 500</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>200</td>
<td>10</td>
<td>4</td>
<td>34 037 / 3 500</td>
<td>3 063</td>
<td>3 320</td>
<td>3 740</td>
</tr>
<tr>
<td>200</td>
<td>10</td>
<td>6</td>
<td>34 639 / 3 500</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Can height / diameter [mm] | H [mm] | Total machine height | Crane height [mm]
1 070 / up to 500 | 3 190 | 3 610
1 200 / up to 500 | 3 320 | 3 740
### Technological data

<table>
<thead>
<tr>
<th>Raw material</th>
<th>Yarn count</th>
<th>Fibre specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>100 % cellulosic fibres</td>
<td>25 - 12 tex Ne 24 - 40</td>
<td>Nm 40 - 85 ≤ 1.3 dtex and ≤ 40 mm fibre length</td>
</tr>
<tr>
<td>100 % cellulosic micro fibres</td>
<td>12 - 8.5 tex Ne 40 - 70</td>
<td>Nm 85 - 118 ≤ 1 dtex and ≤ 40 mm fibre length</td>
</tr>
<tr>
<td>100 % combed cotton</td>
<td>20 - 12 tex Ne 30 - 50</td>
<td>Nm 50 - 85 &gt; 1 5/16 length and mic. &lt; 4.3</td>
</tr>
<tr>
<td>100 % polyester</td>
<td>20 tex Ne 30</td>
<td>Nm 50 1.3 dtex and 38 mm</td>
</tr>
<tr>
<td>blends of cotton combed and cellulosic fibres</td>
<td>25 - 15 tex Ne 24 - 40</td>
<td>Nm 41 - 68</td>
</tr>
<tr>
<td>blends of cotton combed and &lt; 50 % polyester*</td>
<td>25 - 15 tex Ne 24 - 40</td>
<td>Nm 41 - 68</td>
</tr>
<tr>
<td>blends of cellulosic fibres and &lt; 50 % polyester*</td>
<td>25 - 15 tex Ne 24 - 40</td>
<td>Nm 41 - 68</td>
</tr>
<tr>
<td>blends of cotton carded and &lt; 50 % polyester*</td>
<td>29.5 - 20 tex Ne 20 - 30</td>
<td>Nm 34 - 50</td>
</tr>
</tbody>
</table>

* Blends with > 50 % polyester only possible with polyester attachment P 26

### Machine data

<table>
<thead>
<tr>
<th>Machine data</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total draft</td>
<td>mechanical 43 - 317</td>
</tr>
<tr>
<td>Technological</td>
<td>170 - 220</td>
</tr>
<tr>
<td>Total yarn count</td>
<td>29.5 - 8.5 tex / Ne 20 - 70 / Nm 34 - 118</td>
</tr>
<tr>
<td>Maximum delivery speed</td>
<td>500 m/min</td>
</tr>
<tr>
<td>Spin nozzle housing</td>
<td>spin nozzle housing for Z twist</td>
</tr>
<tr>
<td>Spin tip</td>
<td>0.9 / 1.0 / 1.2 mm ceramic spin tip for different yarn counts</td>
</tr>
<tr>
<td>Package dimension</td>
<td>cylindrical packages up to 300 mm in diameter and 4.5 kg</td>
</tr>
<tr>
<td>Tube loader capacity</td>
<td>max. 412 tubes (206 for each side)</td>
</tr>
<tr>
<td>Waxing device*</td>
<td>big wax blocks with 160 g, individually driven</td>
</tr>
<tr>
<td>Polyester attachment P 26*</td>
<td>system for spinning 100 % polyester, independent for each machine side</td>
</tr>
<tr>
<td>Machine design</td>
<td>double-sided machine with sectional construction</td>
</tr>
<tr>
<td>Spinning unit gauge</td>
<td>260 mm</td>
</tr>
<tr>
<td>Drive concept</td>
<td>individual drives for each spinning and winding unit</td>
</tr>
<tr>
<td>Winding unit</td>
<td>winding unit with linear yarn distribution and edge displacement for soft edges</td>
</tr>
<tr>
<td>Sliver and yarn traversing system</td>
<td>traversing of the sliver and yarn in the drafting zone by 3 - 4 mm</td>
</tr>
<tr>
<td>Independent machine sides</td>
<td>different article setting and reports for each machine side, two package transport belts and independent tube handling</td>
</tr>
<tr>
<td>Robots</td>
<td>up to 6* robots (3 per each side) or 4 robots with option “prepared for 6 robots”</td>
</tr>
<tr>
<td>Automated piecing preparation</td>
<td>after a quality cut the spin units stops in a controlled way, the yarn fault is removed and yarn end prepared for piecing by the spin unit</td>
</tr>
<tr>
<td>Rieter yarn quality sensor Q 10 A*</td>
<td>opto-digital sensor for Ne 20 - 60 yarn counts, special air-jet clearing channels, spectrograms</td>
</tr>
<tr>
<td>Uster yarn quality sensor*</td>
<td>Uster Quantum 2 yarn clearer (capacitive or optical) including hairiness detection optional with foreign fibre detection*</td>
</tr>
<tr>
<td>SPIDERweb*</td>
<td>interface to SPIDERweb central mill monitoring system from blowroom to spinning machines</td>
</tr>
</tbody>
</table>

* Optional
Com4®jet
Yarn of choice
The Com4®jet yarn produced on the Rieter air-jet spinning machine is formed in a compressed air flow that winds the fibres around a parallel yarn core. Typical for the yarn are the very low hairiness and the high yarn volume. Decisive features over other air-spun yarns are the yarn-like piecings and the soft feel. The downstream processor profits from a minimal fibre fly and low dyeing agent requirement for comparable color intensity. The end product excels by its low pilling tendency, high washing resistance and dimensional stability.

Yarn characteristics
- Unique low hairiness
- High volume
- Low tendency for fluff
- High abrasion resistance

Process advantages
- Low dyestuff for comparable colour intensity
- Low snagging tendency
- Lowest generation of dust and fibre fly

Fabric appearance
- Low pilling tendency
- High water absorption
- High wash resistance

Typical end products
- Knitwear in general
- Outerwear
- Underwear
- Bed linen
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 fibres. 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 fibre 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 and the longevity of the products, which remain competitive by means of retrofits. Since the company was established in Switzerland in 1795 Rieter has developed high quality standards. 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 centres and laboratories and thus ensure the excellent quality of their yarns at high production capacity.

Supportive Partnership

Numerous sales and service centres 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

- 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 close to customers
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