Fiber Preparation
High-Performance Card C 75

C 75
High-Performance Card C 75

The card for every application
The large active carding area and optimized pre- and post-carding zones of the C 75 guarantee a high production rate with top-quality results in all yarn applications.
High Production Rate Combined with the Best Card Sliver Quality
Excellent Raw Material Utilization
Selective trash extraction – thanks to the adjustable knife on the licker-in – variable inserts in the pre- and post-carding zones and varying flat speeds optimize raw material utilization.
The integrated grinding system IGS sharpens the clothing with lasting effect. This prolongs the service life of the clothing by up to 20%.
Consistent Card Sliver Quality
Large Active Carding Area
The large active carding area means a high production rate and top quality for all applications

Consistent Card Sliver Quality
IGS – ensures permanently sharp clothings and increases the clothing service life

Short Downtimes
Quick adjustment to raw materials due to modular construction

AEROfeed
Supplies up to ten cards in one line with 1 200 kg/h line production

Excellent Raw Material Utilization
Selective trash extraction in the carding process

Sophisticated Solutions from Start to Finish
Intervention-free machine operation due to absolutely uniform batt weight and web formation
Energy-Saving
Compact design with small moveable masses

OUTSTANDING ADVANTAGES

Shortened Process by RSB-Module 50

Everything Under Control
High production and card sliver quality with the reliable autoleveler of the card and controlled fiber guidance
C 75 – the Card for Every Application
This is thanks to the combination of a large active carding area and optimized pre- and post-carding zones

Key features of the carding area

The 32 engaged flats are a crucial factor in ensuring the yarn quality on the Card C 75. As well as a work area of 1.5 m, the C 75 also has one of the largest active carding areas. The active carding index (ACI) is a parameter for the effective carding area – the number of engaged flats is multiplied by the card working width. The table contains card models with different ACIs and clearly shows why the C 75 performs such good carding work.

| Active carding area |

<table>
<thead>
<tr>
<th>Working width</th>
<th>Card C 75</th>
<th>Competitor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of flats</td>
<td>99</td>
<td>84</td>
</tr>
<tr>
<td>Flats in operating position</td>
<td>32</td>
<td>28</td>
</tr>
<tr>
<td>Working width (m)</td>
<td>1.50</td>
<td>1.28</td>
</tr>
<tr>
<td>ACI</td>
<td>48</td>
<td>35.8</td>
</tr>
<tr>
<td>C 75 advantage vs competitor</td>
<td>+34%</td>
<td>–</td>
</tr>
</tbody>
</table>

Precise carding gap

The precision of the carding gap over the whole machine width remains key to achieving the right carding result. The carding gap is set according to the production and the raw material being processed. The precise guiding of the flats, tight tolerances and material combination of cast-iron plate and cast-iron drum all ensure that the carding gap remains precisely at the specified settings, even during operation.
Optimal Raw Material Utilization
Savings thanks to more selective trash extraction

Savings with selective trash extraction

With selective trash extraction, you determine the economic success based on intelligent utilization of the raw fiber material and targeted quality of the end product. Potential for savings is considerable, as is shown in the graph titled “Savings potential with the C 75 depending on the price of cotton and percentage of waste (based on an 800-kg/h card line production).”

Variable extraction distance at the licker-in

The mote knife on the licker-in can be quickly adjusted for optimal raw material utilization as well as flexible adaptation to various raw materials. The C 75 offers optimal configuration possibilities for every practical requirement. The mote knife is adjusted manually. An automated version is optionally available which makes adjustment of the mote knife possible during production.

Waste extraction

With the licker-in, the extraction width can be variably set according to the trash content of the cotton and the required waste amount.
Q-Package in pre- and post-carding zones

The optimal raw material utilization resulting from the low-wear mote knife with differing extraction width in the pre- and post-carding zones is extremely profitable. Inserts can be replaced in the shortest possible time, without using tools. Four designs are available for the different degrees of contamination – open, fine, medium and strong.

Inserts can be changed more quickly and easily for variable trash extraction.

The speed of the flats can be continuously adjusted to match the production and quality via a frequency converter – independent of the cylinder speed. This means that the card is perfectly suited to the raw material being used.

Variable flat speed

The continuously adjustable flat speed is set to the most economical level.
Separate licker-in waste disposal

The C 75 has an additional option for separate licker-in waste disposal, which has an extremely short payback time. This means that cleaner, more valuable flat waste is separated from the dirtier licker-in waste. This is either resold as valuable raw material or is fed into the spinning mill by means of a recycling line for the production of yarns.

Licker-in waste

<table>
<thead>
<tr>
<th>Example</th>
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<tbody>
<tr>
<td>Production (12 C 75 at 95 kg/h)</td>
<td>1 140 kg/h</td>
</tr>
<tr>
<td>Yearly working hours</td>
<td>8 400 h</td>
</tr>
<tr>
<td>Total card waste</td>
<td>5.5%</td>
</tr>
<tr>
<td>Licker-in waste</td>
<td>1.5%</td>
</tr>
<tr>
<td>Mixed waste without separate licker-in waste</td>
<td>USD/kg 0.72</td>
</tr>
<tr>
<td>Licker-in waste disposal</td>
<td>USD/kg 0.43</td>
</tr>
<tr>
<td>Flat and carding waste with separate licker-in waste disposal</td>
<td>USD/kg 0.97</td>
</tr>
<tr>
<td>Annual savings</td>
<td>USD 54 104</td>
</tr>
</tbody>
</table>

Features of the separate licker-in waste disposal are:
- Very economical, intermittent waste removal, which is integrated into the waste transport of the blowroom and therefore does not generate any additional air requirement.
- A visual assessment of the waste composition can be carried out at any time.
- The waste box on rollers ensures easy handling during maintenance work and repair work.
Unique Integrated Grinding System IGS
Ensures consistent quality and increases the service life of the clothing by 20%

The continual wear of the card clothing gains in importance with highly productive cards. The Integrated Grinding System (IGS) – exclusive to Rieter – solves this problem right from the start by keeping the clothing permanently sharp.

IGS-classic keeps the cylinder clothing sharp
In the IGS-classic, a grinding stone is automatically moved across the cylinder clothing during production. This operation is performed 400 times over the expected service life of the clothing. Spread over the service life of the cylinder clothing, the programming of the grinding schedule calculates the optimal distribution of the grinding cycles.
IGS-top additionally sharpens the flat clothing

The IGS-top sharpens the card flat clothing fully automatically. The control unit calculates the grinding cycles over the pre-selected service life of the card flat clothing. Numerous small grinding operations ensure that the quality is more consistent than in a flat grinding roller, with fewer, aggressive, manual grinding operations.

Clothings after 240 tons of production, with IGS-top (left), without (right)

IGS-top

IGS saves you money

In practice, it has been shown that the life cycle of the cylinder clothing is extended by 10 – 20% in all applications through the use of IGS-classic. In addition, the savings gained from the lower maintenance requirements are clear. Furthermore, the machine downtimes necessary for manual grinding are eliminated.
The Blueprint for Low Energy Consumption Is in the Machine Design

Lower energy consumption than all other cards

Card C 75 – the green card

With yarn production, energy consumption represents an important price factor. With Rieter spinning machines, the focus has always been placed on low energy consumption. With the introduction of the 1.5-m technology, the energy consumption of the cards has been drastically reduced. As a consequence of the innovations in the area of flats, the Card C 75 exhibits an energy consumption that is 20% lower (kW per kilogram of produced card sliver).

The exceptionally low energy requirement is thanks to:
• Maximum performance capacity
• Innovative machine geometry with small, movable masses, as with the cylinder with a larger working width
• Precise machine construction, e.g. exact flats distance

Transparent energy costs thanks to energy monitoring

An energy monitoring package can optionally be integrated into the C 75. Energy consumption data is transmitted to the mill monitoring system ESSENTIAL Rieter Digital Spinning Suite. This system clearly displays energy consumption values. This allows the spinning mill owner to monitor the energy consumption of the plant at any time.
The C 75 saves more than 40% energy compared to 1-m cards, with the same carding quality.

Energy consumption with man-made fibers, 100% viscose, Ne 30

Details are based on comparable quality values, i.e. the C 75 produces an equal or better card sliver at a higher production rate.
Modular design

Minimal downtimes

In addition to the modern and attractive appearance of the C 75, there are also comprehensive ergonomic improvements. These guarantee user-friendliness and minimal machine downtimes.

Modules increase productivity

Replacing the licker-in, card flat and doffer clothing with conventional cards requires time-consuming maintenance work. The modular construction of the C 75 reduces these downtimes to minimal values that had never before been achieved. All three modules are even quicker to replace with prepared optional spare modules. Each of these operations requires just one member of maintenance staff. For instance, the licker-in module can be completely replaced in less than 90 minutes. With the IGS-system and the modular machine concept, Rieter has taken an important step toward reducing machine downtimes, while simultaneously maintaining consistently better card sliver quality.
AEROfeed
Feeding up to 1 200 kg/h in a continuous line

AEROfeed

Up to 1 200 kg/h* tuft material can be most economically processed with ten cards in a continuous line. In addition, it is possible to flexibly arrange the feeding of the card line, which allows optimal utilization with various raw material lots.

*dependent on raw material
Sophisticated Solutions from Card Feed to Delivery
Uniform batt and smooth machine running

Patented pressure control

The patented pressure control in the card chute replaces the classical light barrier control. This functions by giving a precise batt weight at the card feed, taking into account the raw materials and their characteristics. The result is a minimal variation [CV\%] of the batt weight.

Effective card protection with a metal detector at the card infeed

In a modern blowroom line, various extractor modules are installed before the card to remove foreign matter. Despite this, metal parts still sometimes get into the card, which can cause serious damage to the machine. A metal detector at the card infeed detects the smallest metal parts and stops the machine in time. Unwanted metal parts can be easily removed. This increases the availability of the cards and ensures reliable production.
Quickly removable web bridge – a tidy solution

Man-made fibers with strongly lubricating fiber finish or cotton with honeydew tend to contaminate fiber guiding elements. The web bridge must be cleaned frequently to maintain the quality level. The solution for this time-consuming undertaking is the new, patented web bridge. In the shortest possible time, it can be removed, cleaned and reinstalled. If there is an appropriate replacement component in the spinning mill, the downtime can be reduced to a few minutes. The new web bridge enables a perfect, uniform web and ensures continuous operation of the card. Thick places are substantially reduced.

Fast servicing of the card flat cleaning rollers with the system EVObrush

Both card flat cleaning rollers for the flat cleaning unit of the C 75 are fitted with the unique system EVObrush. The system is made up of six easily connectable segments with cleaning clothing. The colored labeling and marking of the twist direction means that replacing the cleaning clothing is easy. The replacement does not require any special equipment and can be carried out quickly and easily directly on the card.
From the Batt to the Card Sliver
Perfect inspection of the fibers for unequaled card sliver quality

Card sliver formation

The card sliver formation takes place over a dynamically controlled web transport that consists of two cross aprons and a pair of disk rollers. It is therefore possible to reliably produce fine slivers [4 ktx] at a high delivery speed.

Card leveling

Short-term leveling

The feed trough measures the thickness of the supplied batt. The speed of the card feed roller adjusts automatically according to the values determined, so that a uniform card sliver fineness is achieved.

Long-term leveling

The card sliver fineness is measured by a disk roller pair at the sliver delivery. The measured signals are processed and used to control the feeding system.
The card sliver coiler is extremely space-saving and is optimally adapted to the C 75. A compact card sliver separation integrated in the calendar unit operates reliably at full production. The sliver weight remains the same from start to finish during can filling.

Can change without loss of production and quality

The card sliver coiler is extremely space-saving and is optimally adapted to the C 75. A compact card sliver separation integrated in the calendar unit operates reliably at full production. The sliver weight remains the same from start to finish during can filling.

Optimized processes with cans with a diameter of 1 200 mm

For the card sliver coiler, Rieter offers cans with a diameter of 1 200 mm. The capacity of the cans is 43% higher than for cans with a diameter of 1 000 mm. This minimizes the number of can transports and sliver piecings in downstream processes. Processes and costs in the spinning mill process are therefore optimized. Two different layout variations are available to ensure optimal placement in the building.
The Best-in-Class Short Process

Draw frame module RSB-Module 50 with unique technology

New benchmarks in process shortening

The new draw frame module RSB-Module 50 on the Card C 75 improves the efficiency of the spinning mill. In rotor spinning in particular, the direct process also increases yarn quality when processing material with a high short-fiber content or recycled fibers. A shorter draw frame process is also partly conceivable for other spinning processes such as air-jet spinning.

The RSB-Module 50 is based on the proven drive and drafting technology of the autoleveler draw frame RSB-D 50. In addition, the draw frame module features a completely new type of scanning technology for autoleveling and monitoring of the delivered card sliver. This guarantees even better card sliver and yarn quality.
High-frequency technology for precise autoleveling

On a draw frame module of the card, the feed speed of the card sliver is significantly faster than on an autoleveler draw frame due to the lower total draft. In addition, only one single card sliver is scanned, in contrast to a draw frame. In both cases, the requirements for scanning accuracy are greater; this is where mechanical sensor systems reach their limits.

The scanning of the draw frame module works contact-free which results in more accurate scanning values and therefore more precise autoleveling. The card sliver and yarn quality is better with this sensor technology. If the raw material or card sliver weight is changed, no scanning rollers must be replaced. This increases flexibility and reduces costs.

The delivered card sliver is also monitored by the new type of technology. This occurs via the Rieter Quality Monitor (RQM). The RQM is positioned in front of the calendar rollers and stops the machine if the pre-selected limit values are exceeded.

Proven technology of the RSB-D 50 draw frame also in the draw frame module

In contrast to conventional models with only one drafting zone, the 4-over-3 drafting system with two drafting zones has significant benefits in terms of yarn evenness. Narrow cylinder distances can be set on the drafting system, which means that short fiber lengths can be processed well. The large top rollers guarantee interruption-free operation without lap formation as well as a long service life. The automatically lifting cleaning lips reduce the formation of deposits on the top rollers of the drafting system and consequently the associated cleaning procedures.

With 45% fewer belts and drive elements, the patented drive concept ECOrized is the basis for low energy consumption. With two servo drives on the drafting system, a total draft up to five-fold can easily be set on the operating unit. The separate drive of the coiler results in straight belt tracking and a considerably longer service life.
Card C 75 for All Applications
Natural or man-made fibers – the C 75 processes them

From cotton to man-made fibers

All the features described make the Card C 75 the ultimate universal card, which is at home in every area of application. It is ready for any requirement profile, be it man-made fibers, fine or coarse cotton or blends with man-made fibers.

Example of a highly flexible blowroom and carding line where two different blends of cotton and man-made fibers are simultaneously produced.
The C 75 for man-made fibers

The advantage of the C 75 as a modular designed card is that it can be quickly adapted to new and familiar challenges of man-made fibers, without high-performance carding having to be reinvented. Compared to the version for cotton, several differences are visible and others can only be recognized when taking a closer look:

- Fiber guiding components are made of chromium (specially coated sheet metal).
- Licker-in, cylinder, flats and doffer clothings are specifically designed for man-made fibers produced from natural or synthetic polymers.
- The pre- and post-carding zone is accordingly equipped with carding elements (see graph).

The latest development CLEANcoil-PES with a new type of coating offers unique advantages in coiling. Even with critical polyester fibers, the cleaning cycle can be extended by at least 100%. This also leads to more consistent sliver and yarn quality.
Machine Data
Card C 75

Technological data
Raw material: Cotton and man-made fibers up to 65 mm
Production: up to 225 kg/h
Card sliver count: 4 – 20 ktx
Batt weight: 350 – 900 g/m²

Technical data (C 75 without card sliver coiling)
Installed power*: 23.5 – 29.8 kW
Delivery speed: up to 330 m/min
Compressed air: 0.7 Nm³/h
Exhaust air: 1.20 m³/s
Waste removal: Central suction, separate licker-in waste disposal
Cylinder speed: 600 – 900 rpm

Machine Data
Machine length (with standard chute): 3 325 mm
Machine width: 2 380 mm
Machine weight (with standard chute): 5 575 kg
Working width: 1 500 mm

* JUMBOfeed
** with frequency converter, incl. chute
Card C 75 with sliver coiler CBA

Can dimensions

| Cans Ø (mm) | 1 000 |
| Can height (mm) | 1 200, 1 300, 1 500 |

Technical data sliver coiler CBA

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<table>
<thead>
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<tbody>
<tr>
<td>Installed power</td>
<td>1.4 kW</td>
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<tr>
<td>Compressed air</td>
<td>0.05 Nm³/h</td>
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<tr>
<td>Exhaust air</td>
<td>0.1 m³/s</td>
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Card C 75
with sliver coiler for 1 200-mm can diameter

Technical data sliver coiler for 1 200-mm cans

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<tbody>
<tr>
<td>Installed power</td>
<td>2.32 kW</td>
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<tr>
<td>Can heights</td>
<td>1 200/1 300 mm</td>
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Card C 75
with RSB-Module 50

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<thead>
<tr>
<th>Cans Ø [mm]</th>
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<tr>
<td></td>
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<td>A</td>
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<tr>
<td>400</td>
<td>5</td>
<td>4 790</td>
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<td>420</td>
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<td>450</td>
<td>4</td>
<td>4 565</td>
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<tr>
<td>600</td>
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<td>4 750</td>
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Technical data RSB-Module 50

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<tbody>
<tr>
<td>Delivery speed</td>
<td>Maximum 900 m/min</td>
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<tr>
<td>Drafting system</td>
<td>4 over 3</td>
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<tr>
<td>Total draft</td>
<td>up to five-fold</td>
</tr>
<tr>
<td>Installed power</td>
<td>9.65 kW</td>
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<td>Compressed air</td>
<td>0.16 Nm³/h</td>
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<tr>
<td>Exhaust air</td>
<td>0.28 m³/s</td>
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