RIETER

R 37

Semi-Automated Rotor Spinning Machine R 37

Economic rotor spinning with more flexibility in raw material use
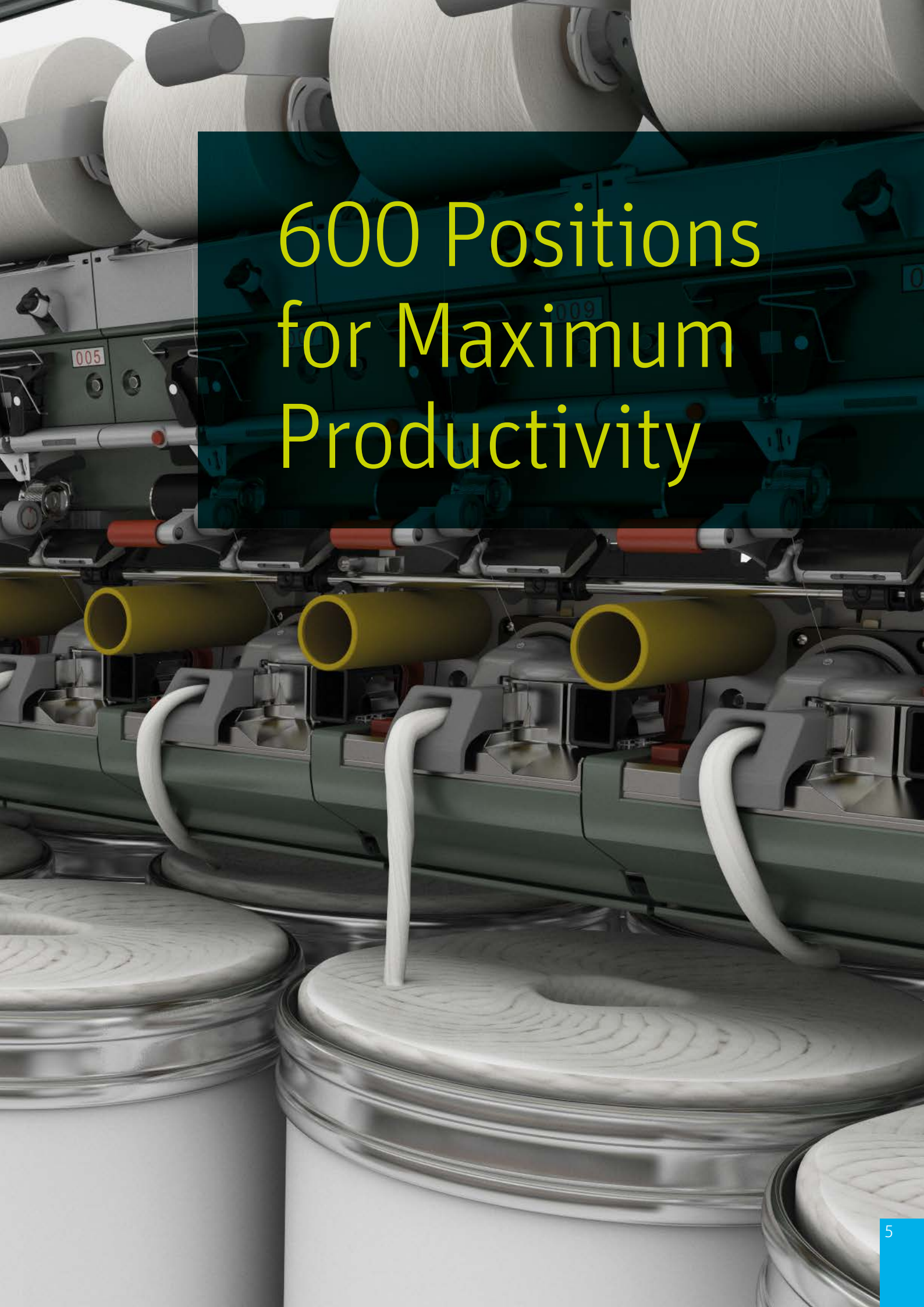
More Options
for Raw Material
Selection

The redesigned spin box with exchangeable trash channels enables higher levels of trash extraction, which offers more options when selecting raw materials.

R 37

R 37

The R 37 is able to run full speed on full machine length thanks to its sturdy design. The R 37 is able to produce yarn with delivery speeds of 200 m/min in various blends of raw materials. Rapid start-up after stop secures continuously high productivity.
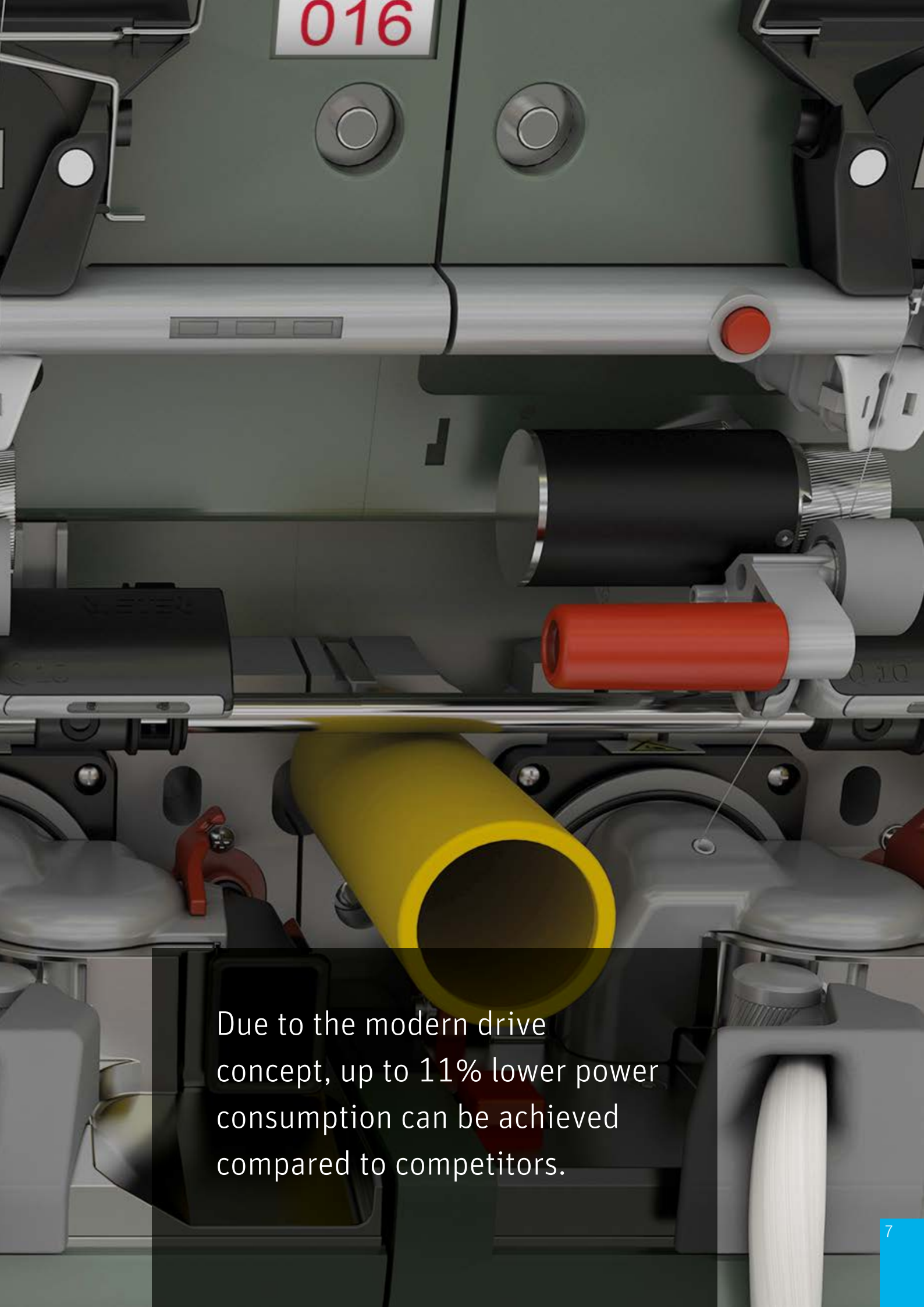
600 Positions for Maximum Productivity

014

Save Energy

016

Due to the modern drive concept, up to 11% lower power consumption can be achieved compared to competitors.

OUTSTANDING
ADVANTAGES

R 37

Maximum Productivity

Up to 600 spinning positions with
up to 200m/min

Energy Saving

Low power consumption

Energy monitoring device
with interface to ESSENTIAL –
Rieter Digital Spinning Suite

Doffing Automation

ROBOdoff replaces the
exhausting process of manual
doffing without interrupting
the spinning process

Constant High Yarn Quality with High Efficiency

The spin box of the R 37 for high yarn tenacity,
minimum imperfections and high spinning stability

Automated Spinning-In with a single push of a button

Quality Spinning-In for power saving start-up with
100% checked piecings

Adaptable Trash Extraction

Higher trash extraction with the redesigned spin box

Adaptable thanks to exchangeable trash channel

100% Proven Yarn Quality

Yarn clearer Q 10 checks yarn and piecing quality

Yarn clearer Q 20 for additional detection of foreign fibers

Full Flexibility

Two lots at same time with fully independent machine sides
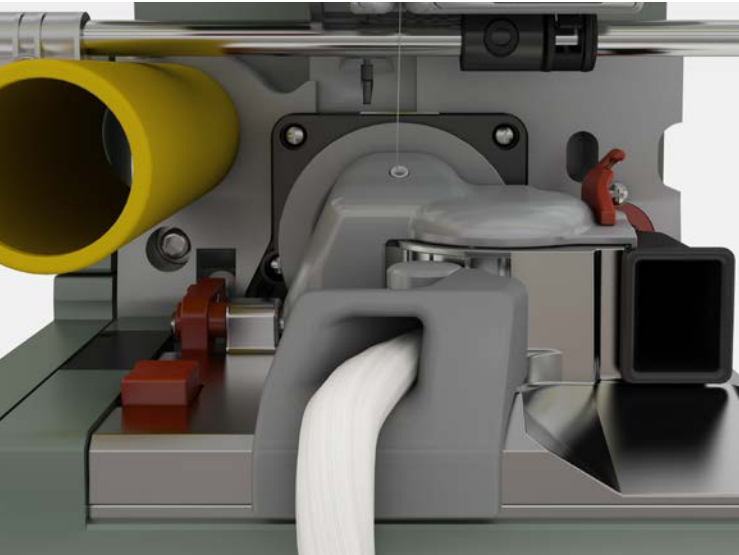
Excellent Piecings, Easy to Operate

Piecing technologies AMIspin and AMIspin-Pro

Easy and Ergonomic Operation

Reduced personnel requirements thanks to perfect operating height

Constant High Yarn Quality Regardless of Raw Material

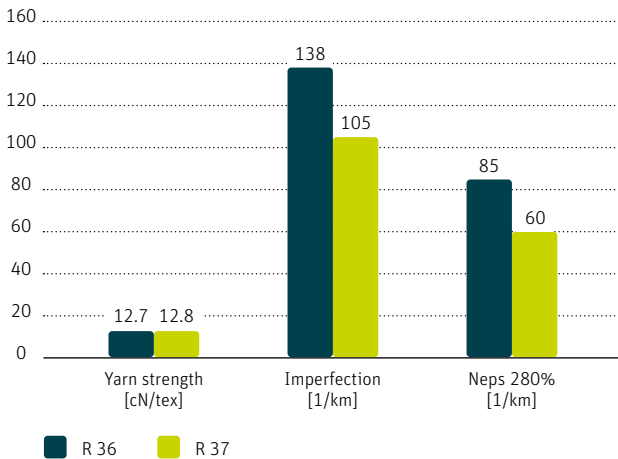## New spin box technology for competitive yarn quality

Decisive advantages thanks to new spin box technology

The redesigned spin box with exchangeable trash channels enables higher levels of trash extraction, which offers more options when selecting raw materials. Compared to the previous model, a reduction of up to 20% imperfections (mainly neps) can be achieved by the R 37. This guarantees better CV% and IPI values, even when processing low-cost material blends. This results in lower ends down rates and leads to a very economic production.
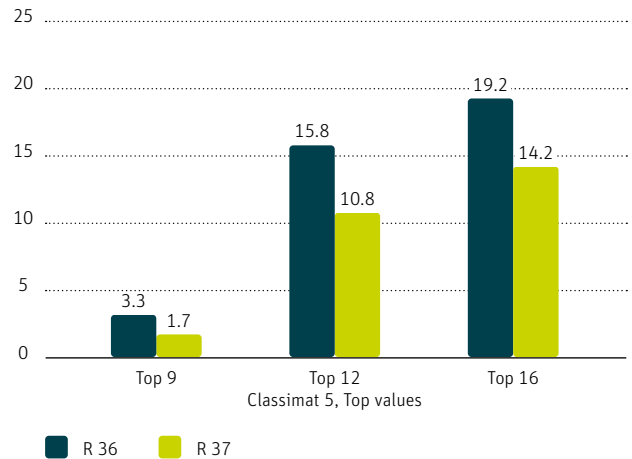
Constant yarn quality and high yarn strength

The spin box of the R 37 realizes an optimized fiber flow which results in better yarn strength. An ideal handling of the fibers secures a more consistent yarn quality. The advantage is visible compared to the previous models R 35 and R 36.

High Yarn strength, lower IPI and Neps
Ne 20, cotton waste mixing
SFC 30.9%, 474 Neps/g in finisher sliver
100 000 rotor rpm

Yarn strength [cN/tex]: R 36 12.7, R 37 12.8
Imperfection [1/km]: R 36 138, R 37 105
Neps 280% [1/km]: R 36 85, R 37 60

■ R 36   ■ R 37

Classimat analysis thick/thin places – IPI reduction
Ne 20, cotton waste mixing
1% hard trash in finisher sliver
100 000 rotor rpm

Top 9: R 36 3.3, R 37 1.7
Top 12: R 36 15.8, R 37 10.8
Top 16: R 36 19.2, R 37 14.2
Classimat 5, Top values

■ R 36   ■ R 37

Best Use of Raw Material
Exchangeable trash channel allows
to extract more trash

The spin box of R 37 is now equipped with an exchangeable trash channel for more trash extraction than before. All trash, neps and distrubing particles can be removed selectively; good fibers are kept in the spinning process.
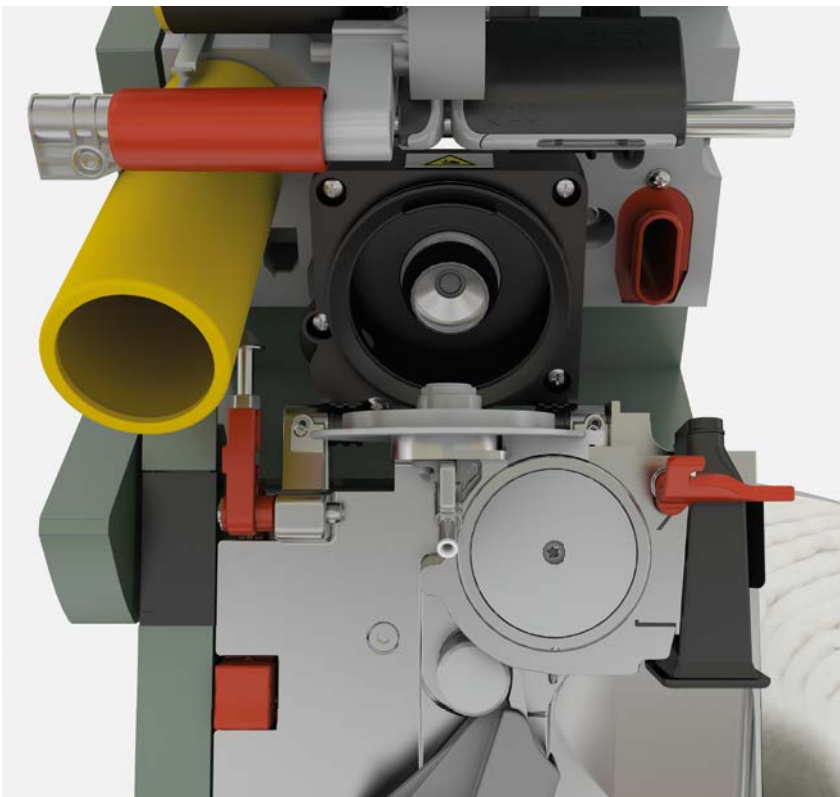
Unique possibilities to adapt to fiber material

Several trash channels are available for clean raw materials as well as for fibers like linen, regenerated wool etc. The new design also allows changing the fiber channel in case of high wear e.g. due to spinning of highly abrasive raw materials. Cost savings of up to 2% can be achieved.

11

Up to 10% Higher Productivity
Higher rotor speed for an increased production

Excellent spinning stability

Based on its very good spinning stability, the R 37 enables a delivery speed up to 8% higher than other machines. Thanks to the low ends down rate and the unique time-saving piecing procedure with support of the piecing device AMIspin, the R 37 achieves consistently high machine efficiency.
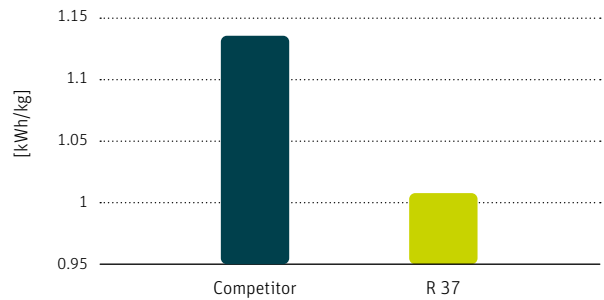
Up to 200 m/min for full machine length

Due to its robust design, the R 37 is able to run full speed with 200 m/min at full machine length. A fast start-up makes sure that the machine returns quickly to full production after a machine stop.
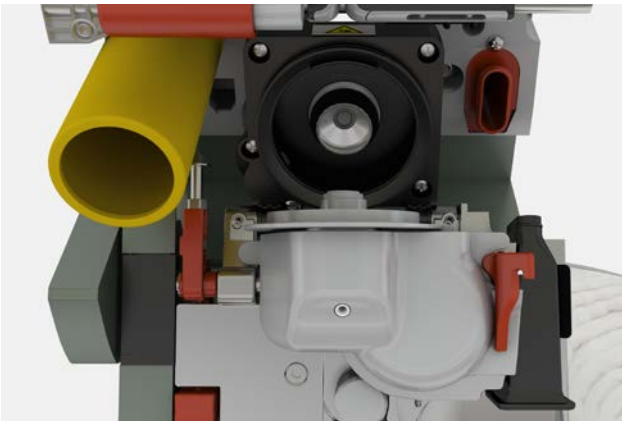
Low power consumption

Power consumption
Cotton waste blend, Ne 21

Up to 11% lower power consumption per kilogram can be achieved by the R 37 compared to competitor models. This is due to the modern drive concept which saving reasonable cost for energy.

Monitoring of the energy consumption

The R 37 can be equipped with energy monitoring devices that measure the actual energy consumption of the machine. The data are shown on the operating unit and can be transmitted to the central data system of ESSENTIAL – Rieter Digital Spinning Suite.

Increased Machine Efficiency

Fast automatic machine start-up after power failure

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

Keeping a high production is challenging especially with long machines, when frequent power interruptions occur. With the new Automated Spinning-In the R 37 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.
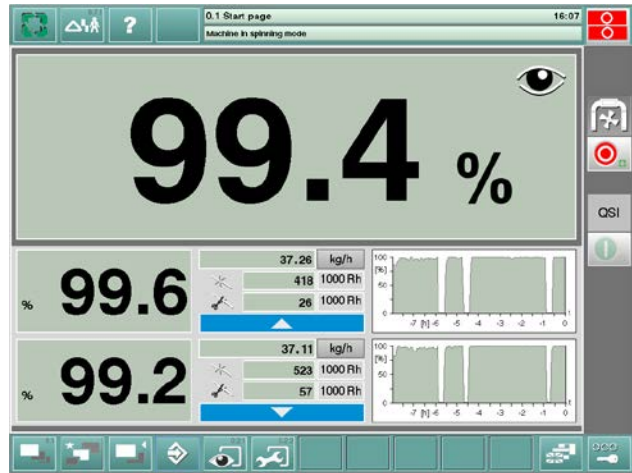
ASI allows to keep high machine performance despite frequent power interruptions.

### Fast Spinning-In (FSI): Drastic reduction of piecing time

The new Fast Spinning-In system on the R 37 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): Start-up with 100% piecing quality

The unique Quality Spinning-In process with AMIspin offered by R 37 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 37 with 600 spinning positions and 6 operators
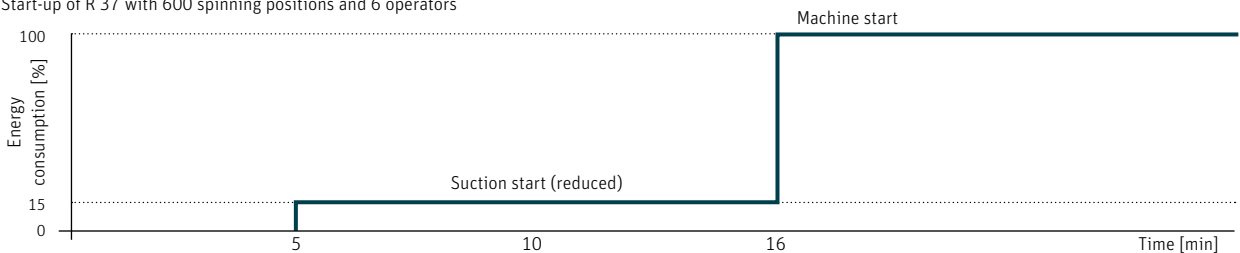
Easy Operation

## Continuously good operator performance

Perfect machine height for easy access

The R 37 is designed with very low height for easy 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 to operate and maintain

The production of a wide range of yarn counts with various raw materials can be covered with only a few technological components on the new spin box of the R 37. The simplified and optimized design allows direct access to the components, the exchangeable trash removal channel and the fiber channel. The trash channel can be exchanged for adaption quickly without using tools. Easy access saves operating time during lot change and maintenance and helps to ensure constantly precise working of the operator.
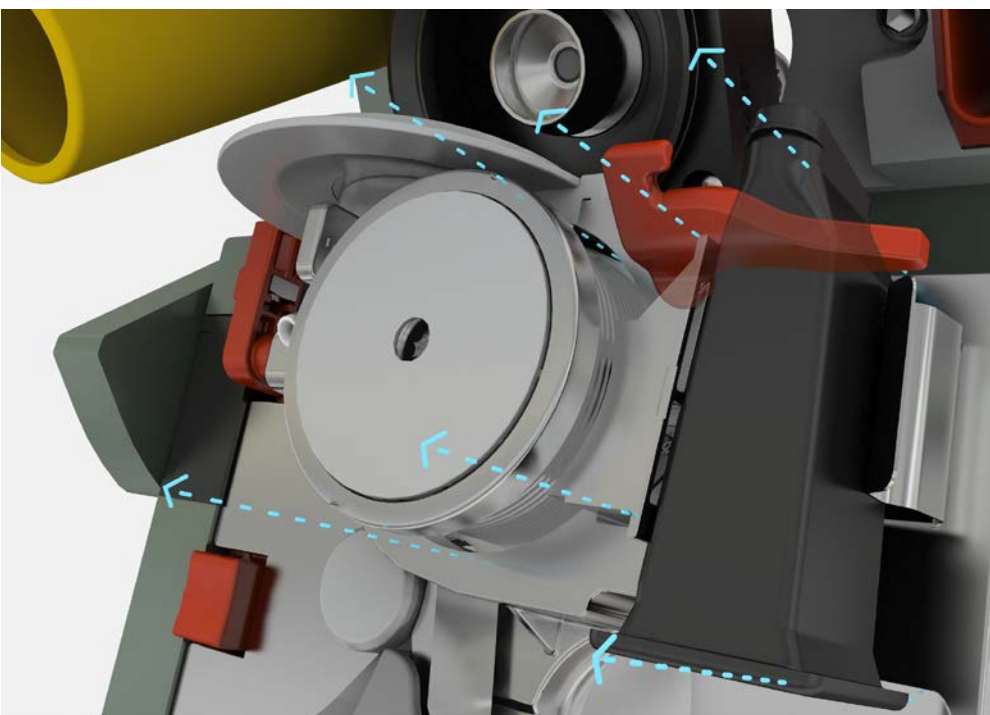
Easy operation on operating unit

The easily understandable operating panel is clear and intuitive for use in machine operation. The graphics are easy to understand. For fast documentation the screen data can be saved on a USB stick.

AMIspin Piecing

AMIspin and AMIspin-Pro piecing technology – excellent piecings with easy operation

The unique QSI process with AMIspin optimizes the start-up of a complete machine within minimum operating time and with minimized energy consumption. The AMIspin piecing technology offers excellent piecing quality with high operator efficiency thanks to easy operation.

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.

Optimised AMIspin

AMIspin-Pro with single motor delivery drive

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 optional AMIspin-Pro technology offers even higher standards of quality as well as increased success rates in piecings.

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 20, AMIspin-Pro

Ne 20, AMIspin

Ne 12, AMIspin-Pro

Ne 12, AMIspin
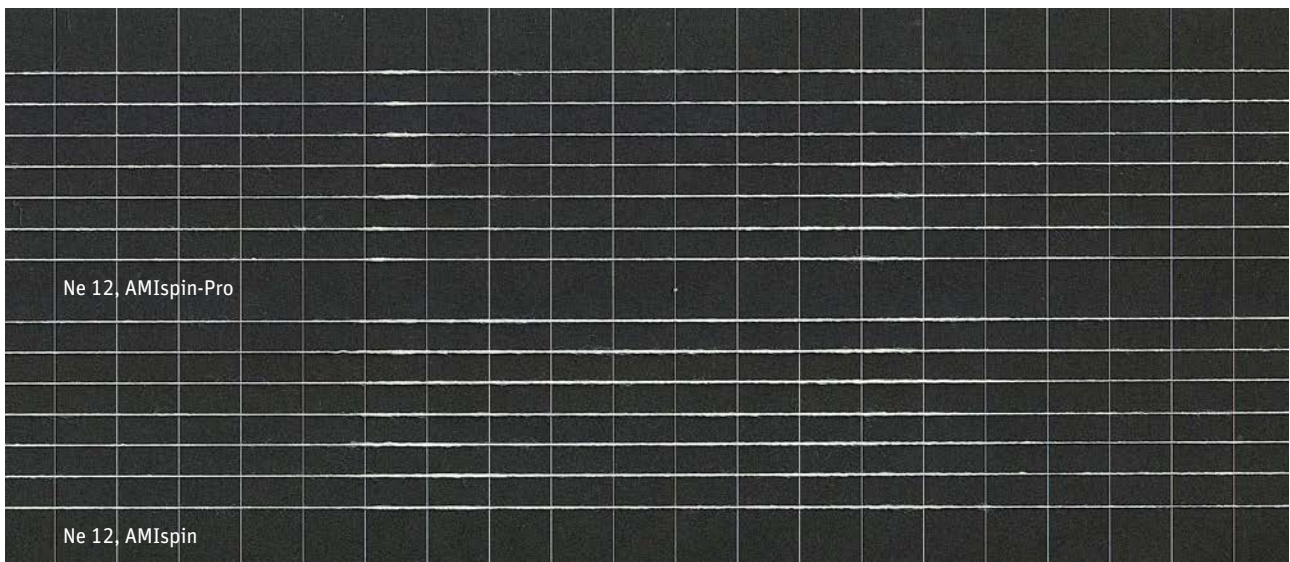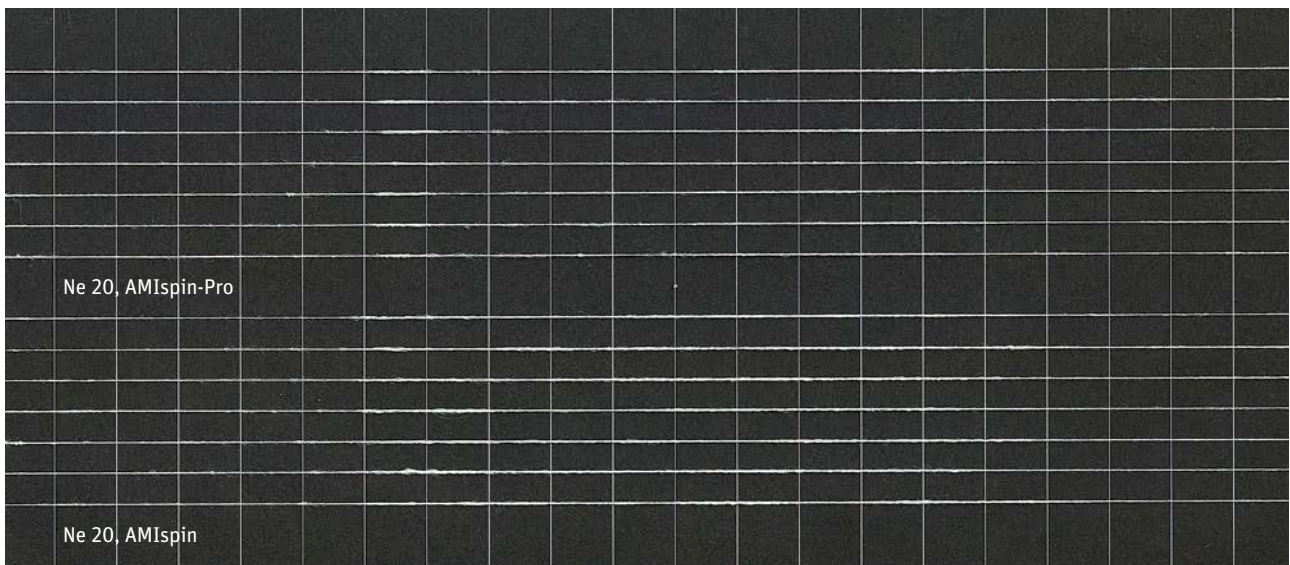
Fast and easy piecing operation with optimum yarn entry

The operator has prepared the yarn end, the design of the new spin box of the R 37 enables it to be easily inserted in the exit tube. Access from the front simplifies the operation and reduces the risk of any faults. Compared to laborious processes on other machines, the operator can leave earlier for the next position. Due to the easier operation and maintenance, the operator can handle about 40 positions more.

All elements the operator need to touch are easily reachable in a logic line from top to bottom. The AMIspin process starts automatically after the box is closed.
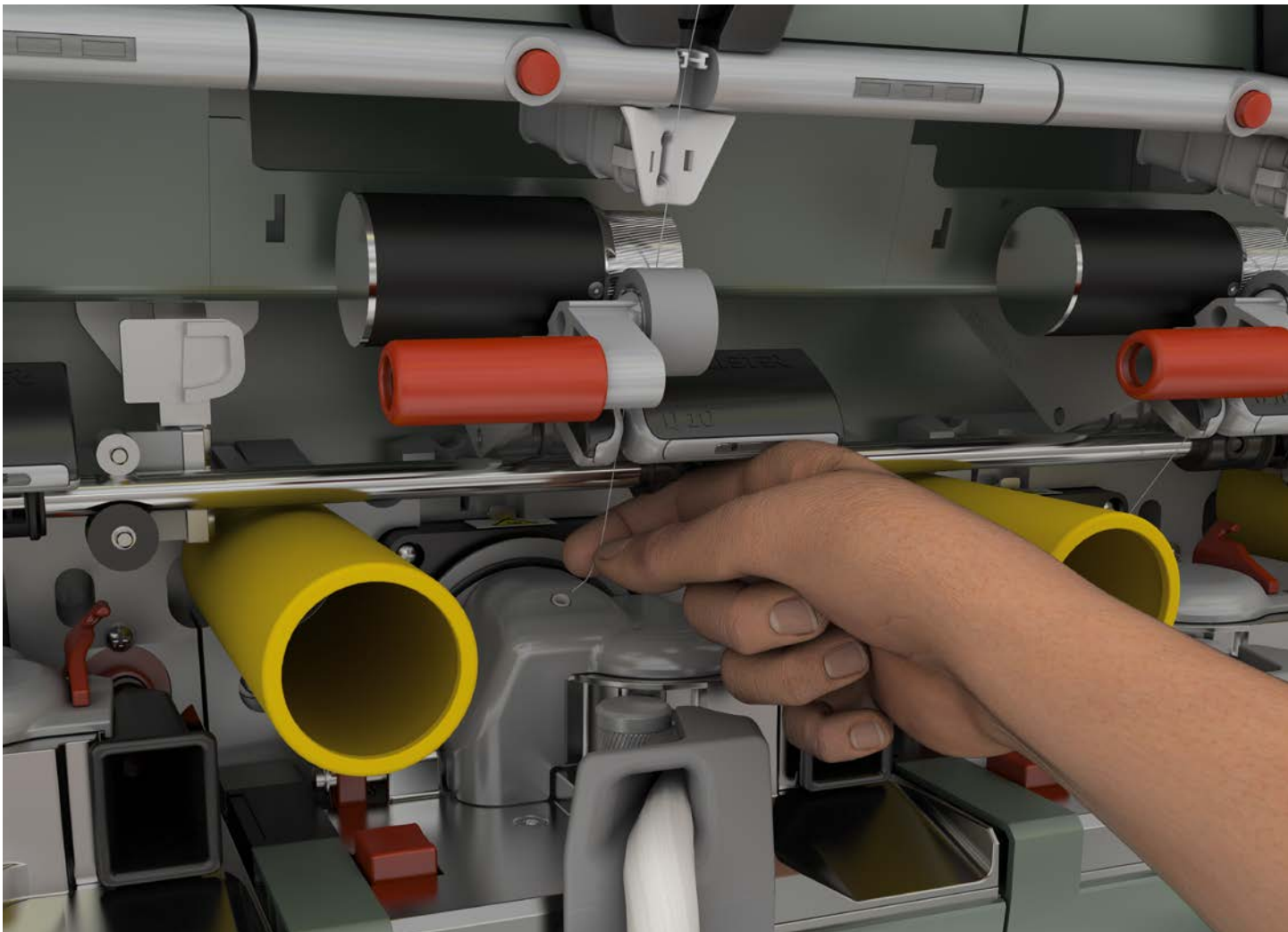
Maximum Flexibility

Designed for easy and effective operation

Fashionable slub yarns with VARIOspin

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

The VARIOspin package enables the R 37 to produce slub yarns with especially distinctive and symmetrical effects. The system can produce up to 2.3 slubs per meter of yarn.

Fully independent machine sides to spin two lots simultaneously

The R 37 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.

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 37 increases overall efficiency with more lot changes and reduces production losses for maintenance.
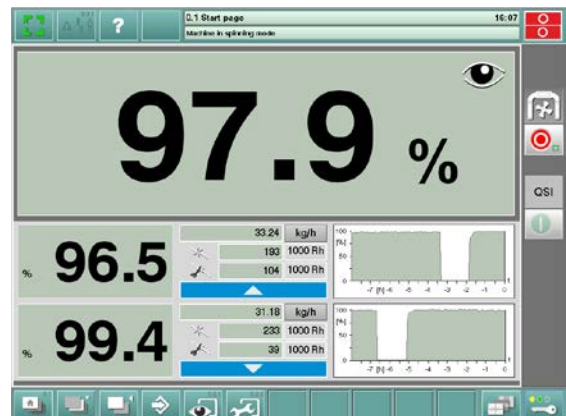
Assured Quality

Key devices control the quality

Digital yarn clearer Q 10

The R 37 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

New option for clearing foreign fibers

The R 37 can alternatively be equipped with the yarn clearer Q 20AF. This yarn clearer contains an additional optical detection device for foreign matters, e.g. foreign fibers with different color.

Simplified handling of quality cuts
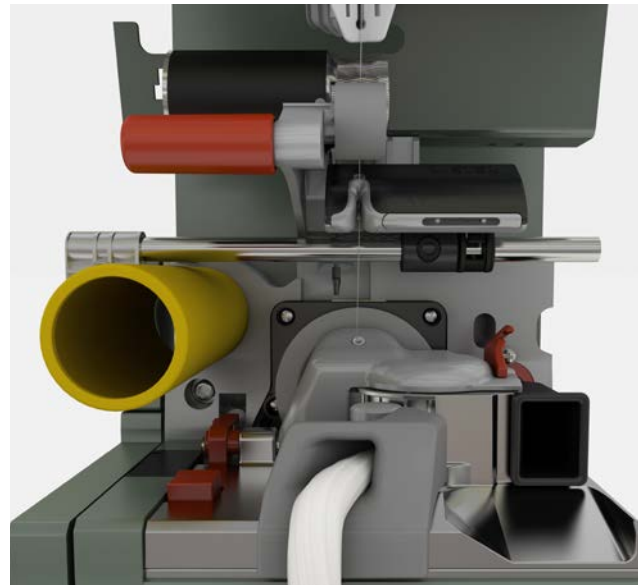
Each quality fault detected by the yarn clearer is followed by the immediate reaction of the machine. To support the operator the new improved arm-lifting mechanism immediately stops the package. The yarn end remains visible to the operator and encourages the operator to remove the yarn fault. This Fast 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 37 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.

Delivery with single drive of AMIspin-Pro (above) or with delivery shaft of AMIspin (right)

Yarn

Surplus of yarn

Ceramic entry

Compensator

Delivery roller

Delivery shaft
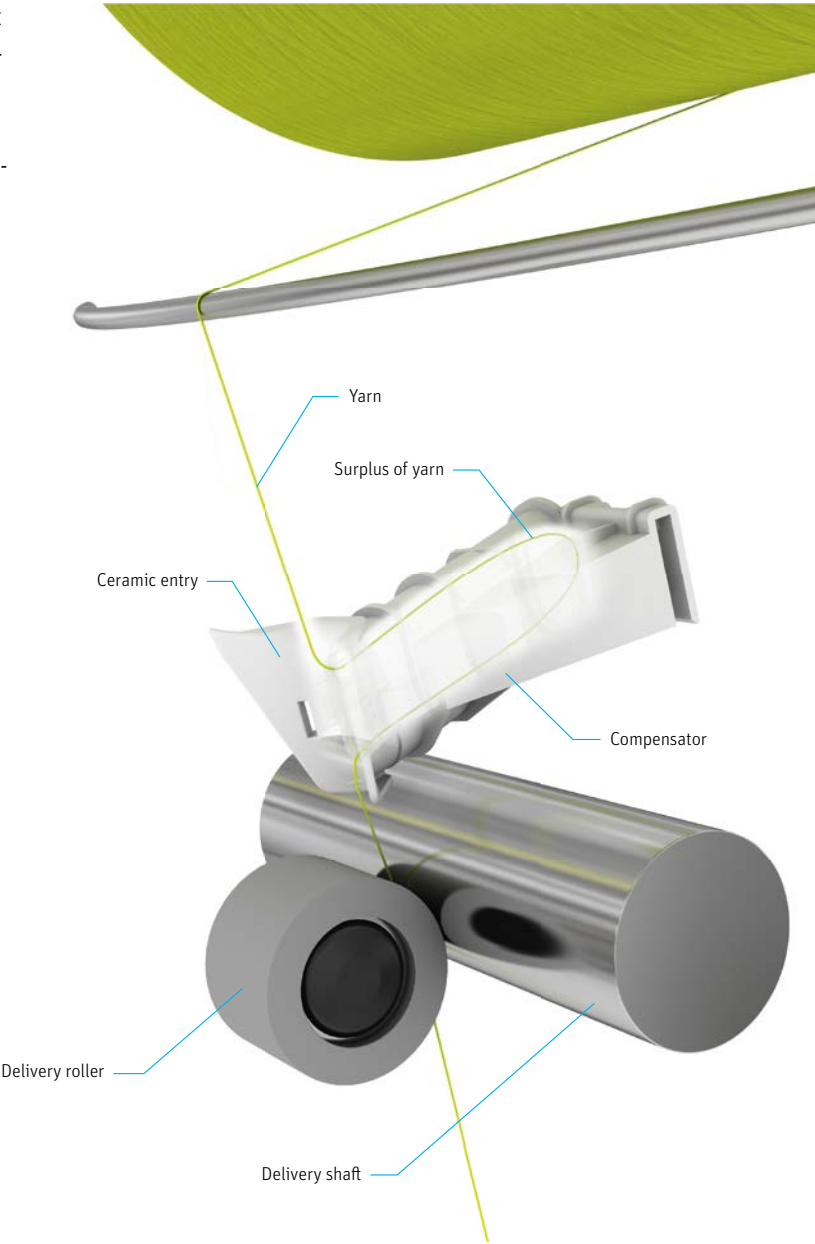
More Effective Work with a Central Waste Collection
Keeping up the machine efficiency

One of the characteristics of R 37 is the successful processing of cheap fiber material. With such material the amount of trash removed with the optimized trash extraction of the R 37 spin box is high. As a consequence the filter chamber of the suction is filled very fast. For such applications the R 37 can be optionally prepared for a central trash collection in the suction central of a mill. This adaption can save labor significantly. Additionally the possible influence of a delayed filter cleaning to the machine efficiency is reduced and the environment around the rotor spinning machine is kept cleaner.

Package Change Without Operator

Doffing automation ROBOdoff without interrupting the spinning process

Replaces most exhausting work and saves operator cost

The ROBOdoff for R 37 is a device for automated package change. The robot replaces full packages with a prepared empty tube along each machine side. For the doffing of a spinning position, ROBOdoff does not interrupt the spinning process.
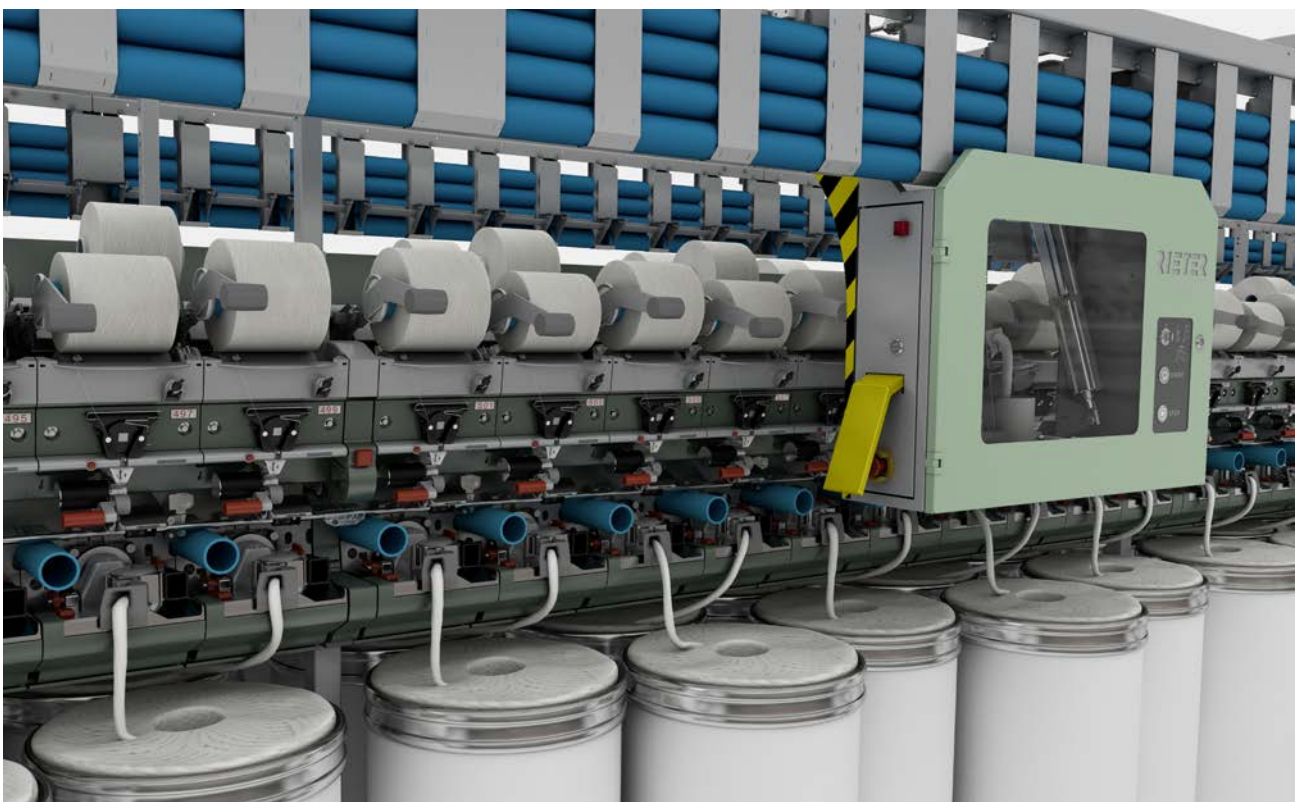
Constant package length within defined tolerances

The ROBOdoff considers the actual package length. This guarantees that all doffed packages have a package length exactly within the defined tolerance. A consistent and proper formation of the transfer tail is also the result of the ROBOdoff.

Smart settings to ease work

The doffing starts when the defined target length of the package is reached. ROBOdoff can be programmed that instead of a single doffing of a package a block doffing will be conducted. The robot can also be used just as blower.

Machine Data

## Semi-automated rotor spinning machine R 37

1 880				
2 615	2 350	2 350	2 350	2 750

L = 12 415

1 660

L = 12 415
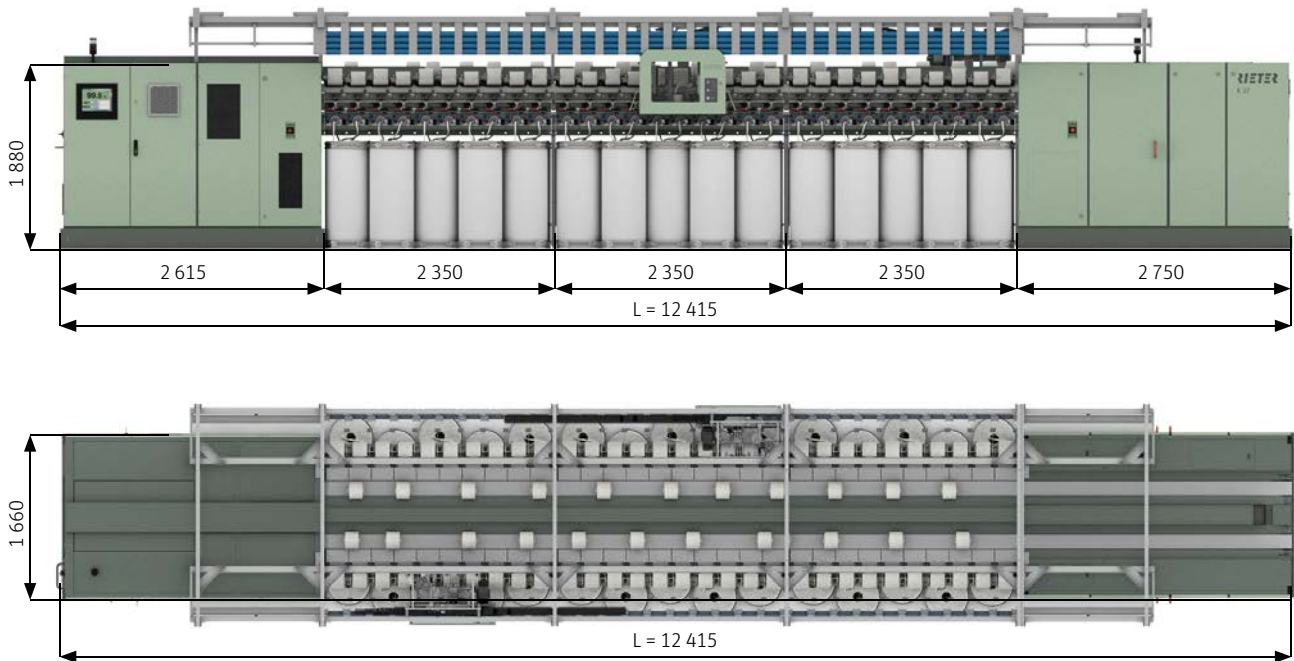
*   Machine height for can height 900 mm
**   Machine height for can height 1 070 mm
***   Machine height for can height 1 200 mm

Length Dimension

L = Total length of machine [mm]
n = Number of sections (minimum 2, maximum 30)

L = 2 615 + (n × 2 350) + 2 750

Technological Data

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

Machine Data

Design	Double sided semi-automated rotor spinning machine with independent driven machine sides and with two separate package transport belts
Gauge	230 mm
Number of spinning units	20 per section; maximum 600 spinning units (30 sections)
Can diameter	Up to 400 mm (16") in two rows under the machine up to 500 mm (20") in three rows
Can height	915 mm (36"), 1 070 mm (42") and 1 200 mm (48")
Package size	Cylindrical package up to 320 mm or 4.5 kg Conical package 1°51 up to 320 mm or 4.2 kg
Waxing device	Online application of wax to the produced yarn, with individual drive on each spinning position
Piecing	AMIspin or AMIspi-Pro* with front yarn entry and loop compensation
Yarn quality monitoring	Rieter yarn clearer Q 10 for monitoring yarn as well as piecing quality Rieter yarn clearer Q 20AF with optical foreign fiber detection*
ESSENTIAL	Mill management system
Rotor speed	With frequency converter 25 000 – 120 000 rpm
Opening roller speed	Adjustable 7 000 – 10 000 rpm, with frequency converter* 6 000 – 10 000 rpm
Delivery speed	Up to 200 m/min with full machine length (cyl. packages, up to 36° winding angle). Max. 180 m/min for conical packages
Frequency inverter	Infinitely variable adjustment of sliver feed, delivery speed, winding speed, central vacuum for technological air and trash, rotor and opening roller*
Arm-lifting	Automatic lifting and fast turning stop of the package after yarn break
Yarn break sensor	For immediate interruption of feeding in the event of yarn break
AUTOvac	Automatic levelling of spinning vacuum
Waste collection	For easy removal in filter chamber at end stock. Alternatively prepared for central waste collection*
Blower	For cleaning of the machine*
VARIOspin fancy yarn application	For production of fancy (slub) yarn.*
Rotor drive	Frequency inverter controlled with tangential belt, up to 120 000 rpm
Rotors	33 to 68 mm with rotor grooves in various designs
Opening rollers	64 mm diameter
Nozzles	Ceramic and steel nozzles in various designs
TWISTstop	Ceramic type elements in 3 designs U-Segment, V-Segment and TWIST FIX
Insert	Exchangeable elements (three types) for adaption to the rotor diameter
Trash channel	Exchangeable elements to adapt for different levels of trash extraction
Fiber channel	Exchangeable
ROBOdoff	Device for automated package exchange
*	Option
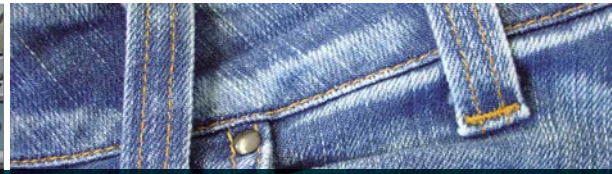
Rieter Machine Works Ltd.
Klosterstrasse 20
CH-8406 Winterthur
T +41 52 208 7171
F +41 52 208 8320
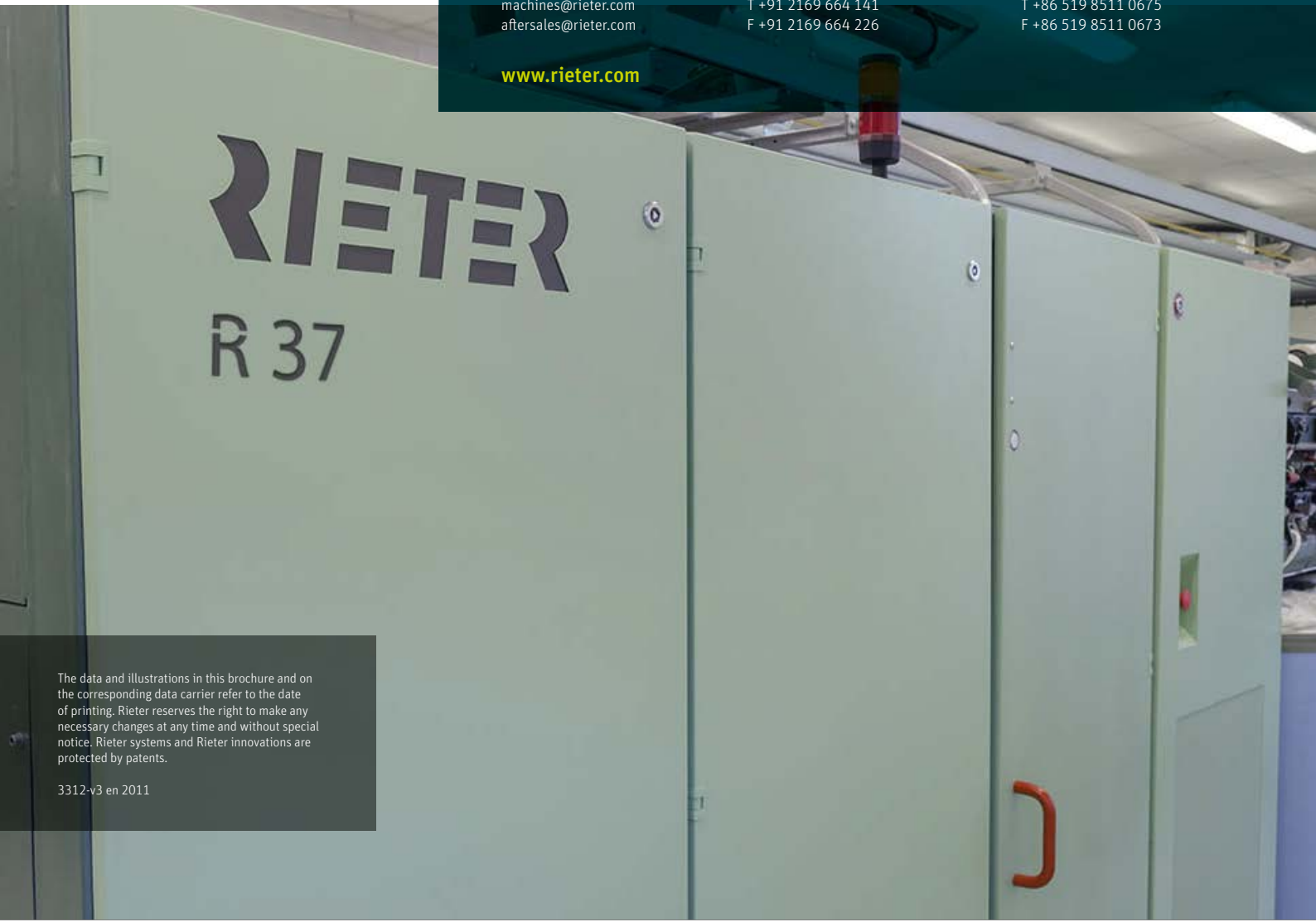machines@rieter.com
aftersales@rieter.com

Rieter India Private Ltd.
Gat No. 768/2, Village Wing
Shindewadi-Bhor Road
Taluka Khandala, District Satara
IN-Maharashtra 412 801
T +91 2169 664 141
F +91 2169 664 226

**Rieter (China) Textile
Instruments Co., Ltd.**
390 West Hehai Road
Changzhou 213022, Jiangsu
P.R. China
T +86 519 8511 0675
F +86 519 8511 0673

www.rieter.com

RIETER

R 37