

Draw Frame Enhancements



Maintain high productivity
and superb sliver evenness

Draw Frame Enhancements Overview

Highest delivery speed and superb sliver evenness thanks to dedicated spare parts and modules

If the draw frame has come of age and some repairs are due, an overhaul strategy is key. In this case, Rieter recommends upgrading the SERVomotor, the sensors and the fibre touching parts to optimize production, reduce downtime and save maintenance costs. Learn all about the details in this brochure.

Flexible Parts Arrangement

Perfect sliver evenness thanks to material matching parts. *Refer to page 10.*

Maintenance-Free Drafting System

One-to-one replacement of top rollers with factory lubricated and sealed bearings.

Refer to page 9.

Precise Sensors

Replacement of analog to digital sensor with superior scanning precision.

Refer to page 6.

Coiling with Less Cleaning Interventions

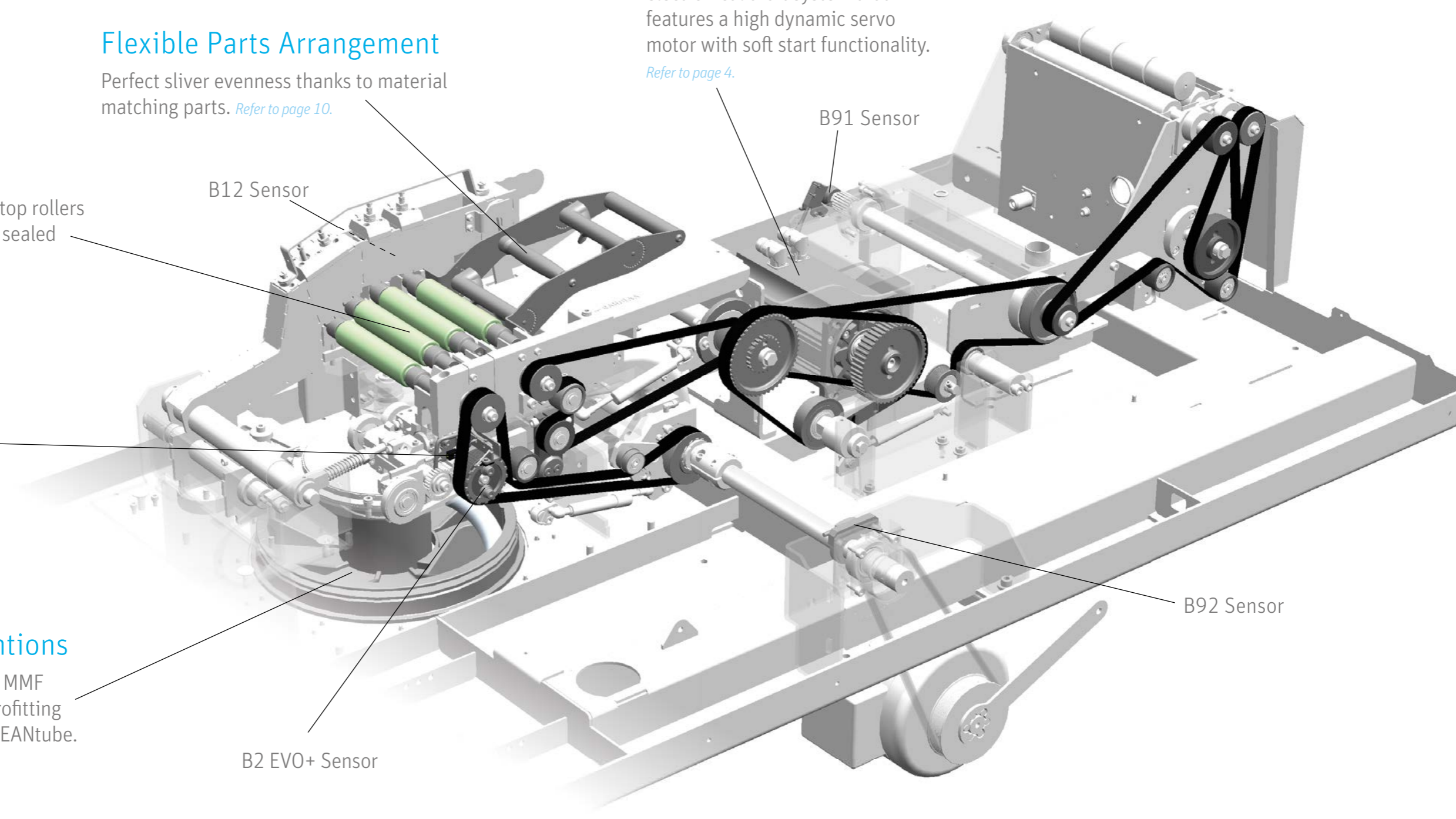
Coiler with honeycomb or MMF surface structure with retrofitting options CLEANcoil and CLEANtube.

Refer to page 8.

Modern Drive Unit

Upgrade of mechanical to electronical draft system that features a high dynamic servo motor with soft start functionality.

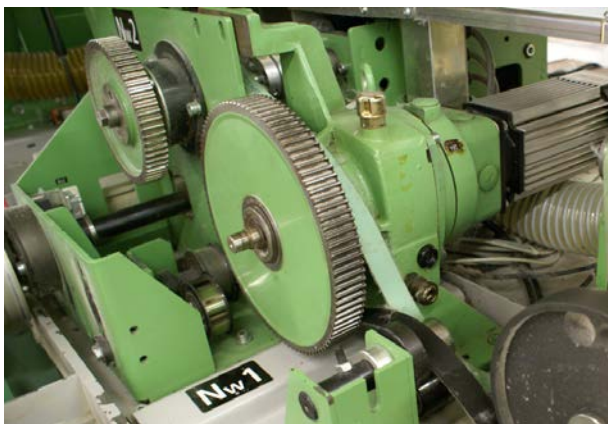
Refer to page 4.



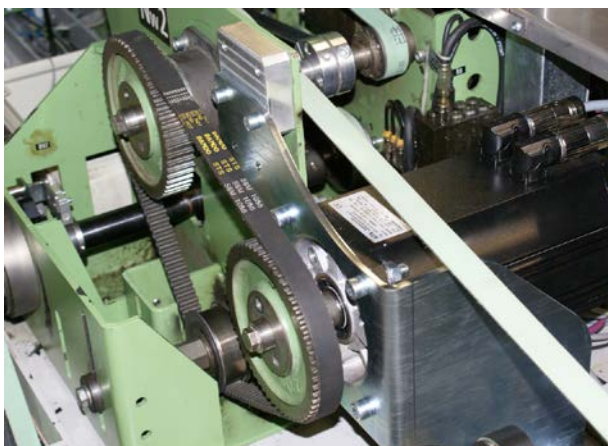
SERVODrive Featuring New Levelling System

Maintenance-free and dynamic auto-levelling

This upgrade package is an adaptation of the latest drafting system generation as used in the RSB-D 50. It replaces the M90 servo motor and gearbox with the new all-in-one SERVODrive. Previously, the main motor drove a belt that was coupled with a differential gear with the servo motor. With the upgrade, the load and the levelling are now decoupled which leads to a new direct levelling. This makes the system more dynamic, as less parts and mass must be accelerated. With its gearless construction, the labor-intensive gearbox maintenance including changes for oil, gear or brake pads are a thing of the past.



Servo motor with gearbox



New SERVODrive without gearbox

The G90 controller with its single status LEDs and trimming potentiometer for offset and speed will also be replaced by a new one. It features a panel with a seven-segment LED display and input keys to digitally display and alter the servo motor speed and settings.

The new electrical soft starter device for the main motor reduces torque during start-up which implicates less mechanical loads on belts and gears.

The upgrade includes:

- New SERVODrive
- New G90 controller
- New soft starter
- New brake resistor
- New B92 sensor for main shaft
- Adapter plate, belt and small parts

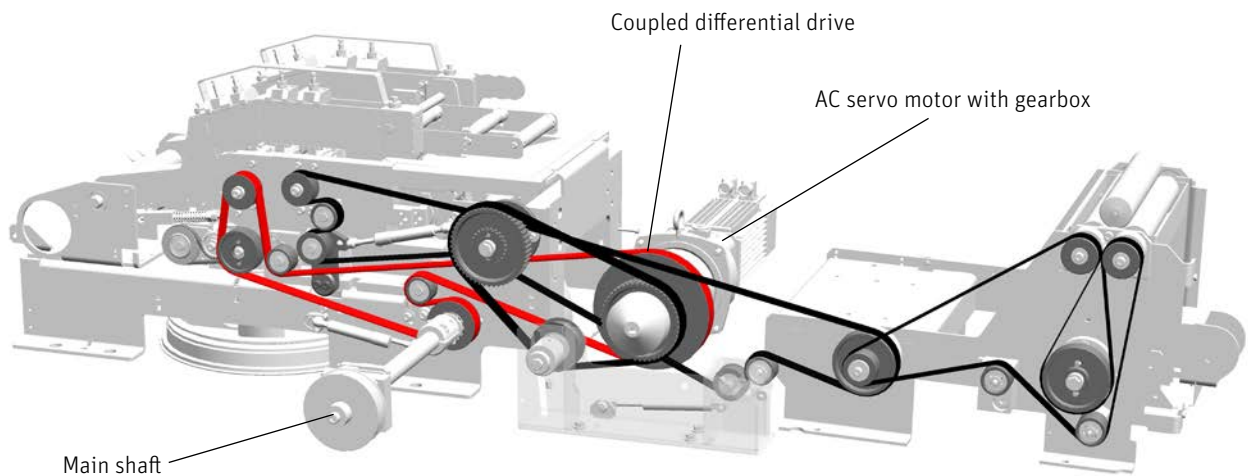
Benefits

- Fast in response, simple in operation
- Reduced maintenance costs due to the elimination of the differential gearbox
- Upgrade installation takes a work day
- No software update required
- Belts can be re-used
- No special tools necessary



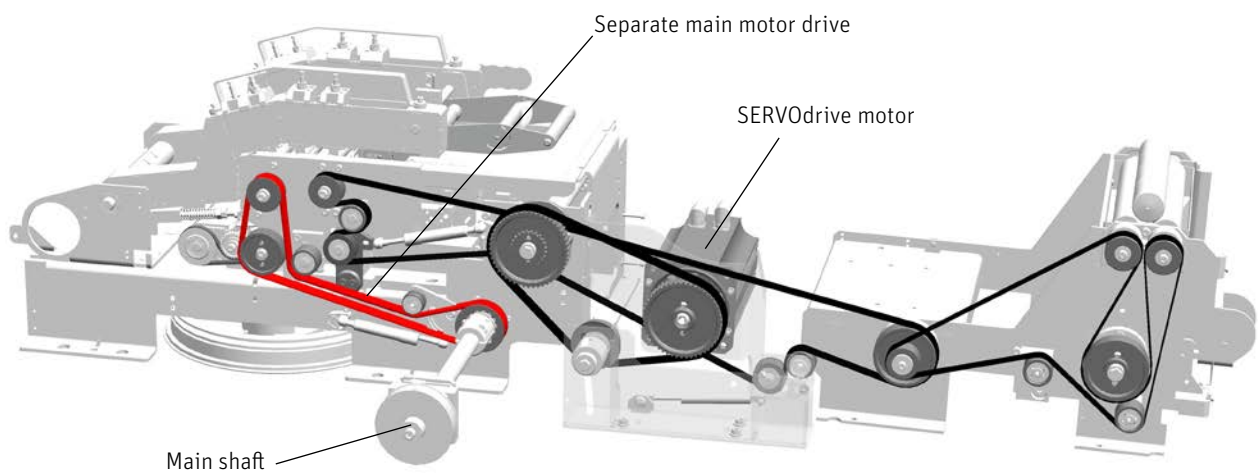
New G90 servo controller

Mechanically coupled levelling system with differential gear



The infeed, drafting system and outfeed are driven by the main motor via a belt and gearbox. Leveling is performed by varying the speed of the differential drive.

Autonomous levelling system with new SERVODrive



Infeed and drafting system are mechanically decoupled from the main motor. Levelling is dynamically done by varying the speed of the SERVODrive.

Wear-Free And Reliable Sensors

Monitoring machine operation with digital sensors

In addition to the SERVODrive upgrade, which already includes the B92 sensor, Rieter recommends replacing the sensors at the sliver entry (B91) and exit point (B2) of the drafting area as well to increase the machine reliability. This due to the fact that these sensors are directly connected with the digital signal processor D295 which calculates the speed of the SERVODrive for auto levelling.

The sensors measure acceleration and speed. They convince with their wear-free design based on a magnetic ring attached to the shaft. This ring enables contactless measurement and replaces the conventional bearing-based design. The word EVO is the abbreviation of EVOLution and stands for the latest sensing technology. Each sensor comes with cables and mechanical parts for mounting. The connectors fit into the existing terminals and no software update is necessary. The quick and simple installation minimizes the downtime of the draw frame.

Furthermore, the exact recording of speeds at important process stages has a direct effect on key parameters such as delivery speed, sliver evenness or can filling quantity. The processing parameters are displayed directly on the screen of the machine control system to monitor operation.

B91 EVO

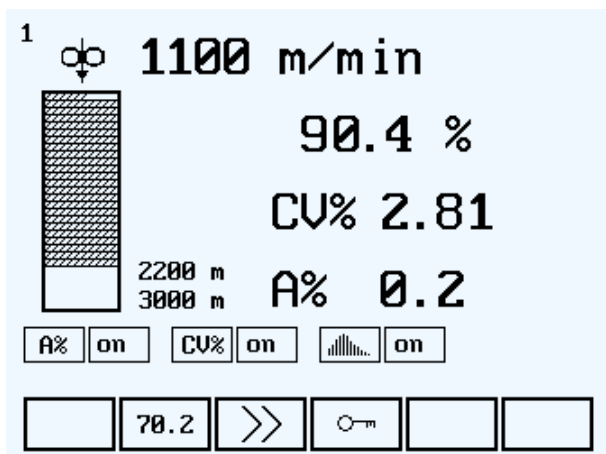
Precise scanning, immediate levelling

Highly accurate sliver scanning and precise control of drafting system speed is the key to an optimum sliver quality. The magnetic sensing principle of the B91 EVO sensor allows virtually error-free operation of the leveling system with accurate measurements, even under stringent conditions.

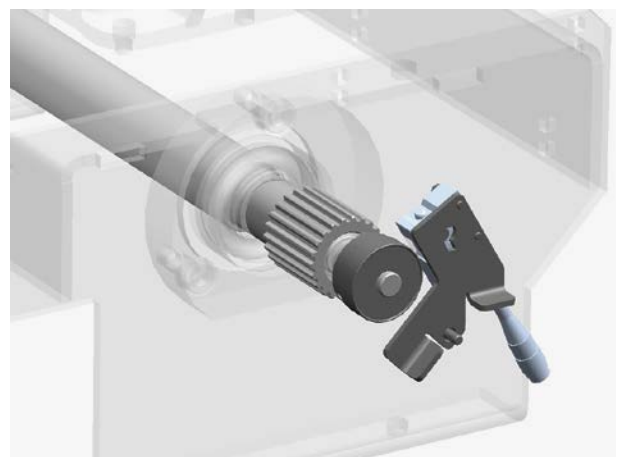
This digital sensor in combination with the draw frame's unique AUTOset function calculates the Levelling Action Point (LAP) at the right spot for high speed and best quality values.

Benefits

- Control leveling system for consistent sliver quality
- Bearingless, magnetic scanning
- Wear-free system for longer service life
- Resistant to dirt, shocks and vibration



Machine control screen



B91 EVO on the scanning

B92 EVO

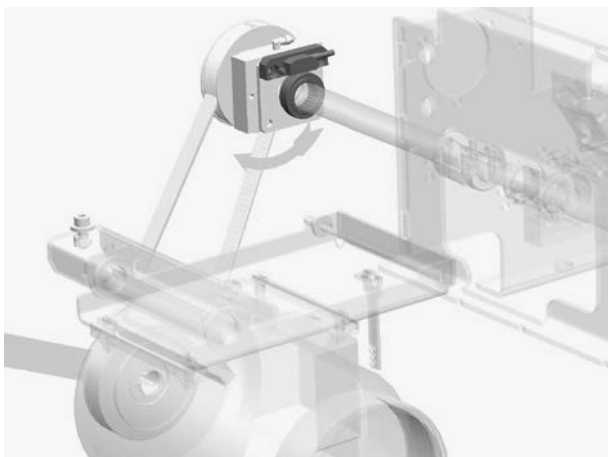
Continuous speed, fabulous quality

The B92 EVO sensor measures the speed of the main shaft. The main shaft is connected to the main motor, which provides the constant speed to the entire system. This is also used to derive the speed of the SERVOdrive for leveling the sliver. Precise measurement and control of the speed is the key to accurate automatic leveling.

The new magnetic measuring system for the main shaft provides trouble-free use even under adverse environmental conditions, such as fiber fly in the draw frame. A shaft is also available for older draw frame models.

Benefits

- Control main motor speed for consistent output
- Sensor already included in the SERVOdrive upgrade
- Bearingless, magnetic scanning
- Wear-free system for longer service life
- Resistant to dirt, shocks and vibration



B92 EVO on the main shaft

B2 EVO+

Monitoring perfection

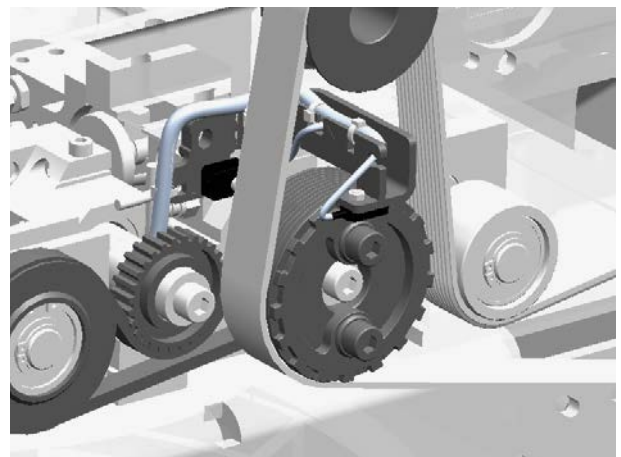
The B2 EVO+ package contains the B200 belt monitor and the B2 EVO speed sensor. Together they ensure the function of the calander discs at the end of the drafting zone.

The B200 is a newly added optoelectronic light sensor that monitors the availability of the calander disc timing belt.

The B2 EVO is a capacitive sensor that is externally mounted and measures the signal radially. Previously, the speed was determined axially with an index ring that ran close to the internally mounted sensor. This posed the risk of clogging through fiber fly due to the narrow gap between the sensor and the rotating index ring.

Benefits

- Continuous good sliver quality
- Increased sensor lifetime and robustness as sensor is moved away from rotating parts
- Fast belt breakdown detection with the belt monitor B200 and immediate shutdown of the draw frame to avoid production of faulty sliver



B2 EVO on the calander discs

Coiler Upgrade for Deposit-free Output

Precise sliver coiling and low cleaning operations

CLEANcoil

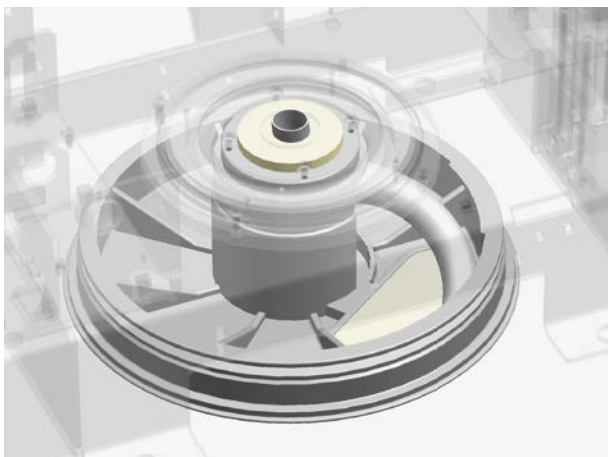
For less coiler cleaning

CLEANcoil is the standard coiler for all fibre materials and therefore offers maximal flexibility. The spiral coiling tube ensures coiling, which is free of drafting faults, even at high delivery speeds. A unique surface finish with a honeycomb structure reliably prevents deposits on the underside of the coiler.

For the processing of 100% polyester, the latest development CLEANcoil-PES offers unique advantages in coiling. Thanks to the smooth surface with its novel coating, the cleaning cycle can be halved even for critical polyester fibers. This leads to a continuous uniform sliver and yarn quality. The surface of the coiler depends on the material to be processed, whereas its sliver duct diameter relates to the spinning application.

Benefits

- Extended cleaning intervals and therefore longer operating time
- No coiler surface deposits and therefore perfect sliver laydown
- Precise, consistent coiling quality and good downstream processing



CLEANcoil coiler

CLEANtube & B12 EVO Sensor

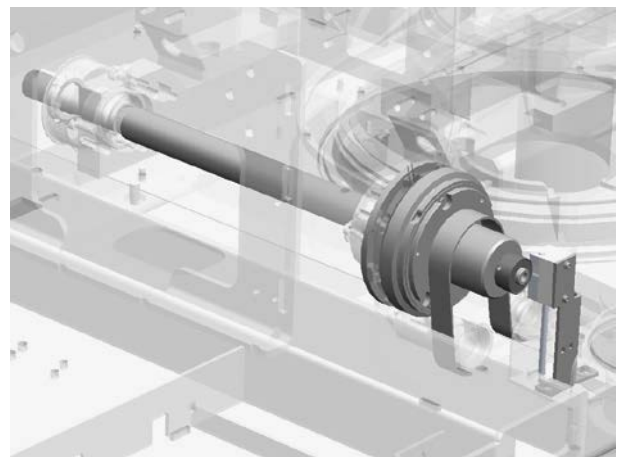
Cleaning option for mouse-free perfection

The CLEANtube is an optional control of the coiler drive that prevents trash particles and short fibres accumulating in the sliver duct by periodic cleaning intervals. Simply put, this option removes the gray fiber mouse that is normally dragged along when the sliver end drops out the sliver duct following a can change or machine stop. With this automation, the manual removing of the mouse is omitted.

The CLEANtube conversion kit comes with the new B12 EVO sensor featuring contactless, wear-free measurement. If the CLEANtube option is already installed, the existing sensor can be upgraded with the B12 EVO.

Benefits

- Manual removal of the fibre mouse from the can is no longer necessary, as the cleaning cycle continuously and reliably cleans the sliver duct
- Quality assurance through automation. Process lowers yarn defects which maintain high production efficiency and high yarn quality



CLEANtube control

Permanently Lubricated Top Rollers

Interference-free and continuous production

This upgrade comprises an improved axle and bearing system that fits perfectly into the existing mounts and uses the same cots as the previous top rollers. The newly developed bearings are lubricated for life and sealed at the factory, which prevents grease from escaping and dust and fibers from accumulating. Finally, it saves the tedious task of cleaning before greasing and manually injecting grease with a grease gun. But don't forget to clean and grind the top rollers.

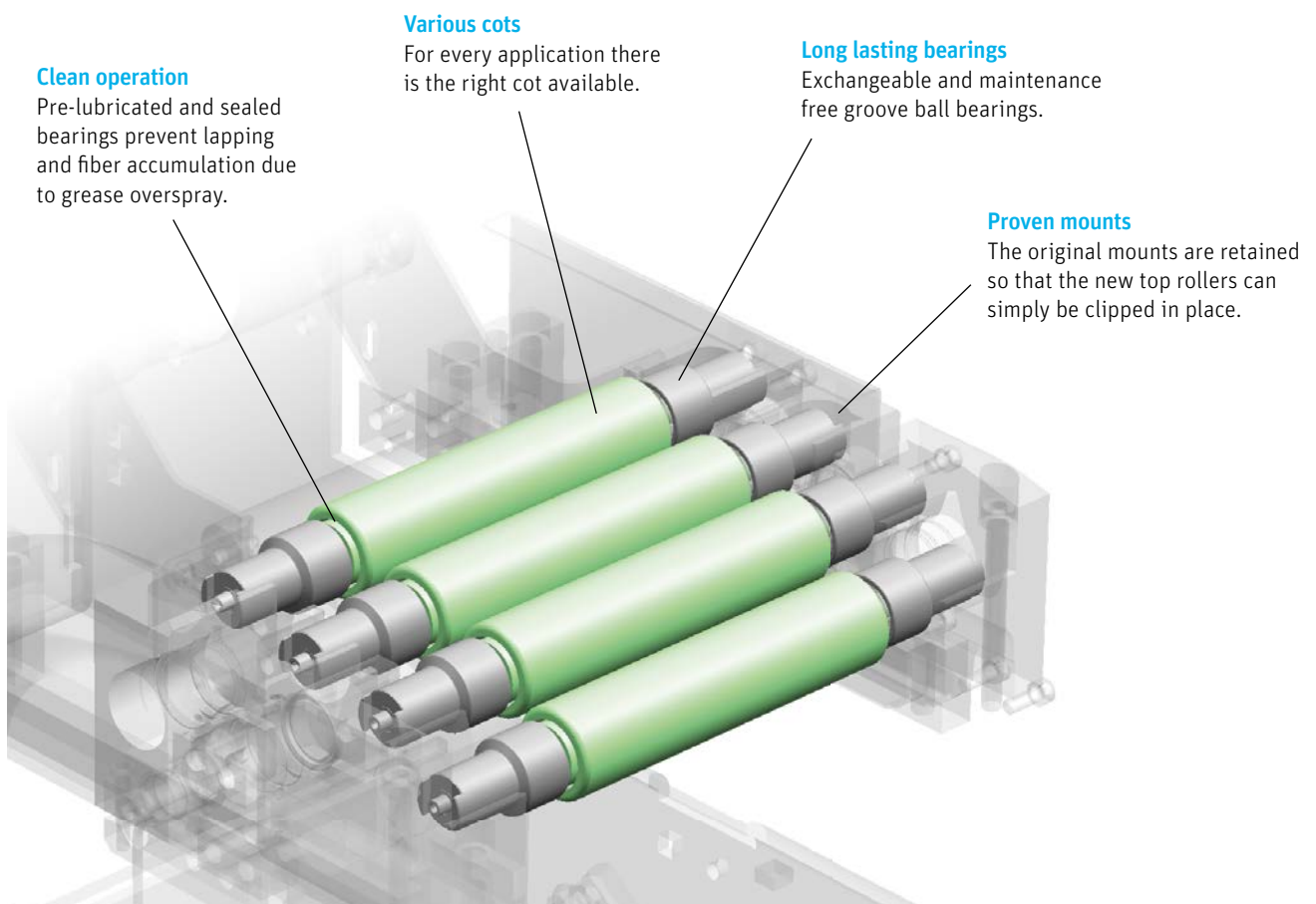
To achieve the best results with the top roller upgrade, change or revise the saddles at the same time.

The upgrade includes:

- New top rollers complete
- New accessories for mounting
- New tool to press-in and press-off bearings

Benefits

- Reduced maintenance and cleaning cost due to the long-lasting lubricated bearings
- Constant and clean sliver quality
- High performance bearing system



Top rollers mounted on the weighting arm

Technology Parts for Sliver Guiding

Perfect sliver evenness thanks to tailored parts

The drafting arrangement consists of technology parts, machine and user interface settings. It is the heart of the draw frame and has the biggest impact on quality. The technology parts are fiber touching parts and offer a high degree of flexibility to adapt the machine to all kinds of raw materials and sliver weights. They ensure the highest sliver quality and the optimum subsequent processing.

The draw frame consists of three process stages where fiber touching parts play a key role. They allow flexible adaptations depending on the material input. The part spectrum is indicated with a letter and a range, where B

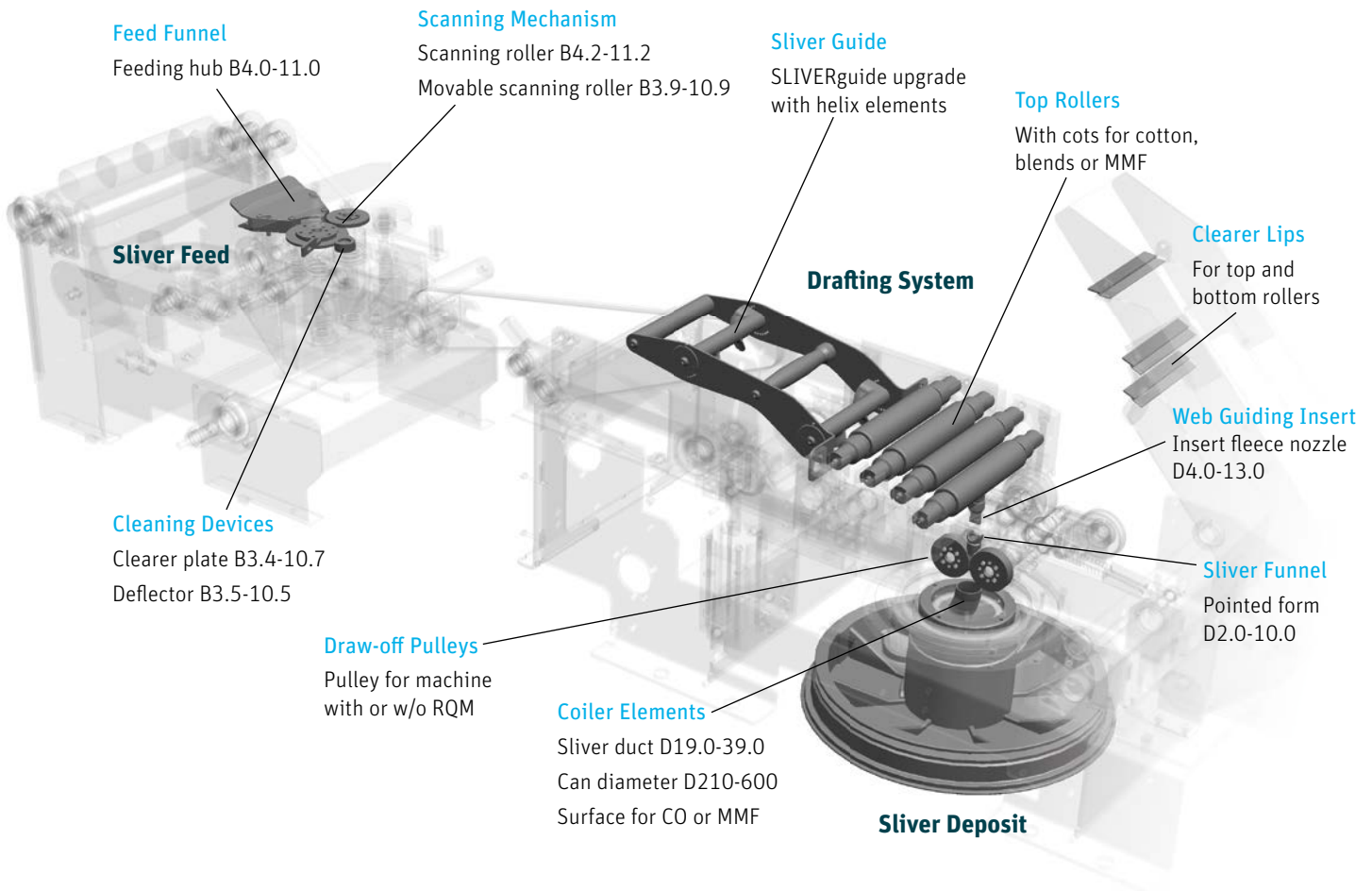
stands for the thickness and D for the diameter, both in relation to the incoming sliver.

The sliver is processed in the following stages:

- Sliver feed: doubled and scanned
- Drafting system: paralleled and levelled
- Sliver deposit: condensed and coiled

The flexible use of technology parts results in perfect sliver evenness for each material and allows a maximum output. For detailed setting, please refer to the tables in the machine operating manual.

Drafting arrangement



Compatibility Overview

Specific upgrades for legacy machines

Rieter offers a comprehensive after sales service portfolio: From the replacement or repair of single parts, to the overhaul of a single machine up to a complete spinning mill optimization. Before a major upgrade, Rieter recommends an inspection of the machine by a Rieter service technician. Not only to ensure the compatibility of the upgrade and its correct installation, but also to determine which condition the machine is in and which parts should be replaced at the same time. The full benefit of an upgrade is obtained only if the machine is also in good technical condition.

	Order No.	Upgrade	Feature	RSB-D	30	35	40	45	22	24
				SB-D	10	15	40	45	22	22
Parts & Kits	40028502	SERVOdrive	Gear box replaced by servo motor		X*	X*	X*	X*	X**	X**
	40026492	Top Roller	Maintenance-free bearings		X	X	X	X	X	X
	Machine specific	CLEANcoil CLEANcoil-PES	New coatings with less cleaning cycles		X	X	X	X	X	X
Sensors	40023480	B91 EVO	Better levelling of device speed (Encoder at Feed)		X	X	X	X	X	X
	40023514	B92 EVO	Measures revolutions for regulation (Encoder at Delivery)		X*	X	X	X**	X	
	40025631	B11 EVO	No sliver jamming		X	X	X	X	X	X
	40026053	CLEANtube ^o	Minimizes downtime related to coiler (mice free)		X	X	X			
	11046950	B12 EVO ^{oo}			X	X	X			
	40026053	B43 EVO	Exact sliver coiling in aged cans		^	^	^	X^^	?	?
					^	^	^	X^^	?	?
	40023511	B2 EVO+	New sensor setup that eliminates fibre fly clogging		X	X	X	X	X	X
				X	X	X	X	X	X	

* Only 380/400 VDC and without CUBIcan

** Available soon

+ Shaft available for older versions

** For RSB-D45 V1 only, sensor included from V2 onwards

^o Conversion kit to add CLEANcoil

^{oo} Option CLEANcoil must be installed and only sensor will be replaced (analog to digital)

[^] Conversion kit to add Coiling Sensor

^{^^} Option Coiling Sensor must be installed and only sensor will be replaced (analog to digital)

? On request

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

The data and illustrations in this brochure and on the corresponding data storage device refer to the date of printing. Rieter reserves the right to make any necessary changes at any time and without special notice. Rieter systems and Rieter innovations are protected by patents.

3419-v1 en 2105