Spinning Preparation RSB-D 50 Autoleveller Draw Frame and SB-D 50 Draw Frame

XIETEX





RSB-D 50 Autoleveller Draw Frame and SB-D 50 Draw Frame



A new dimension in productivity, quality and easy operation



RSB-D 50

Best Quality at Highest Productivity The rise in productivity of up to 33 % is based on innovative autolevelling, drive technique and fibre guidance.

The Most Energyefficient Draw Frame on the Market

25 % less belts and drive elements reduce friction and thus the energy costs up to 1 000 Euro per RSB and year.

METER

RSB-D50

Integrated Know-how





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The SLIVERprofessional expert system on the touchscreen enables a rapid assortment changeover at optimal sliver quality.

Outstanding Sliver Evenness

RSB autolevelling quality through excellent scanning precision and highest levelling dynamics

ISB-D 50

Wide Draw Frame Portfolio

With 1 and 2 head draw frames, the right draw frame for every requirement

Efficient Suction

Frequency-controlled drive, automatic filter cleaning, lifting cleaning lips on top rollers

Energy Saving

25 % less belts and drive elements, energy-efficient drive ECOrized

Unique Sliver Coiling

Individual drive, sliver sensor, CLEANcoil, CLEANcoil-PES, CLEANtube

OUTSTANDING FEATURES B

Know-how in the Machine Display

The SLIVERprofessional expert system is integrated in the machine

Efficient Operator Guidance

Touchscreen, LEDs visible from a distance, USB interface

Modern Drafting System

Improved fibre guiding, large top rollers with lifetime lubricated bearings

High Productivity

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VELES

Delivery speed of up to 1 200 m/min at best quality

Low Energy Consumption New drive concept ECOrized

Less friction and less noise

With the patented drive concept ECOrized, 25 % of the belts and drive elements are saved compared to the previous model. Two servo-motors drive the drafting system. Unique are the frequency-controlled drive for the suction and the individual drive for the coiler. The new drive solution for the coiler leads to straight belt tracking and a far longer lifetime. The quiet machine is the evidence for low friction.

Saving power

The new drive solution generates yearly savings up to 1 000 Euro for each RSB-D 50. If the saving over the lifetime of the machine is compared with the investment, a very attractive ratio results. As a standard feature, the draw frames are now equipped with integrated energy measuring. A significantly increased power consumption of an individual machine could indicate an arising problem allowing thereby preventive maintenance.





Sturdy with power fluctuations

With a short power fluctuation, the control voltage is supplied from the drive converter. This energy store can compensate short-term voltage interruptions and reductions – the draw frame keeps running. With longer interruptions, the draw frame with active autolevelling shuts down in a controlled manner. The web remains in the threaded condition and allows a rapid restart.

Increased Productivity

High delivery speed at consistent quality

High delivery speeds

The SB-D 50 draw frame without levelling and the RSB-D 50 autoleveller draw frame produce, in practice, at a delivery speed of up to 1 200 m/min. Even more important than an increase of the maximal speed is that according to the fibre material, the speed could be increased by up to 33 %. The reasons are numerous:

- Excellent scanning precision by means of small scanning discs
- Improved sliver and fibre guiding
- Levelling motor with highest dynamics
- Precise sliver coiling by means of the CLEANcoil coiler (and CLEANcoil-PES coiler for 100 % PES)

Efficiency at the highest level

Production efficiency also lies at a high level. The following factors are some that are responsible for this:

- Lower maintenance and cleaning
- Integrated know-how, for instance SLIVERprofessional expert system for rapid assortment changeover
- Less number of lappings thanks to large top rollers and lifting cleaning lips
- Reliable rotational can changer with short changeover times



Outstanding Sliver Evenness

The RSB autolevelling with highest scanning precision and levelling dynamics

Levelling begins with scanning precision

Perfect levelling begins with the precision of the feed sliver scanning. In comparison to other "tongue and groove" systems, the RSB scanning is remarkable due to the smallest scanning rollers. Thus, a short piece of sliver is located between the rollers. This gives a high measurement resolution and is the prerequisite for exact levelling.

Levelling demands dynamics

The drive concept ensures that the precise scanning values are also transmitted right into the drafting system and improve the sliver quality. This requires a high dynamic level in the power transmission. This is achieved by means of fewer movable parts as well as a high dynamic level of the servomotors. This results in superb sliver evenness, even at highest deivery speeds – from the first to the last centimetre.

The RSB levelling principle

A digital signal processor processes the signals of the scanning discs on the basis of a sophisticated algorithmic calculation. The value is then precisely transmitted to the drive, when the measured sliver piece is found at the drafting point of the main drafting field. The result is a sliver resp. yarn with excellent short, middle and long-term evenness.





Online Quality Monitoring Reliability due to Rieter Quality Monitor

The Rieter Quality Monitor (RQM) reliably prevents the production of faulty sliver. It operates independently of the autolevelling unit. The RQM continuously monitors the thickness of the delivered sliver by means of the moveable calander disc roll and stops the draw frame automatically if the pre-determined limits are exceeded. The spectrogram already detects shortest wavelengths and thus substantiates the precision of the measurement. This reduces the number of sliver tests in the laboratory. For more advanced analyses, connection to the SPIDERweb mill control system is possible.

Quality data of the RQM

- Sliver count A %
- Sliver evenness CV % and length variation values for 5 cm, 10 cm, 25 cm, 50 cm, 1 m, 3 m, 5 m
- Actual spectrogram
- Presentation of the quality diagram up to 20 days
- Recording of thick places > 2 cm

Advantages of thick places detection

- Monitoring of the cleaning and maintenance services on the card, comber and draw frame
- Monitoring of the sliver piecings
- Support with technological optimisations
- Improvement of the sliver and yarn quality
- Securing high productivity on the roving frame, end spinning machine and winder







Efficient Suction Concept

Consistent yarn quality in downstream processing

Lifting cleaning lips on the top rollers

Trash accumulations on the cleaning lips are drawn directly into the suction through the intermittent lifting of the lips. Practical tests confirmed that fewer sliver funnel blockages due to dust accumulation on the pressure bar occurred. The increased yarn cleanliness is shown in reduced IPI and Classimat faults as well as in a lower number of yarn clearer cuts.





Less frequent cleaning of top rollers

The patented cleaning lips and their layout reduce formation of deposits on the top rollers of the drafting system and consequently the associated cleaning procedures. Also with the processing of cotton containing honeydew, the cleaning lips have a positive effect. Fewer stops due to cleaning work and fewer laps in the drafting system increase the productivity of the machine.

Frequency-controlled suction motor

Only on the Rieter draw frame can the operator set the suction intensity easily and rapidly on the machine display. The setting is easy to reproduce. This simplifies not only material change but also eliminates quality deviations when, for instance, several draw frames are feeding sliver to one assortment.



Constant suction

The automatic filter cleaning system keeps the filter screen clean with the help of a wiper. An innovative measurement of differential pressure in the suction box controls the automatic cleaning cycle and keeps the vacuum absolutely constant. The result is consistent sliver and yarn quality as well as running performance in the subsequent process.



Vacuum / cleaning efficiency



Modern Drafting System Engineering Quality through specific sliver and fibre guidance

Optimised fibre guidance

Conventional sliver guides in front of the drafting unit are often wrongly adjusted. The most frequent fault is non-centrical guidance of the sliver. The patented sliver guide guarantees centrical sliver guidance and consistent sliver quality at all times. The web width is reproducibly set by simple turning of the guide elements.

The geometry of the 4 over 3 drafting system allows close cylinder spacing and therefore also good processing of short fibre lengths. Additional fibre guides in the main drafting field prevent lateral slipping of the edge fibres. Fewer disturbing faults in the yarn are the result.



Innovative top roller engineering

The large top rollers guarantee interruption-free operation without lap formation as well as high service lives. They keep the rotational speed and consequently the temperature of the top roller cots low. This is the basis for high delivery speeds. The load of the top rollers can be set variably, the top roller bearings are lifetime lubricated.





Easy operation

If a lap occurs in the drafting system, the rapid discharge already during the stopping of the machine prevents formation of hard laps. Easy removal of laps ensures the quality of the cots and therefore the running behaviour of the draw frame. Threading a sliver into the web nozzle is very easy. The motors of the drafting system produce a finer sliver peak which is automatically threaded in by compressed air, quickly and reliably. The central setting of the drafting system distances without gauges allows rapid assortment change.

Innovations in Coiling

Precise, consistent coiling quality and good downstream processing

CLEANcoil and CLEANcoil-PES coilers



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 honeycomb structure on the coiler underside reliably prevents deposits.



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

CLEANtube - coiling without trash accumulations

With the processing of cotton or its blends with man-made fibres, trash particles as well as short fibres can accumulate during can filling in the sliver duct of the coiler. When the can filling quantity is reached, the draw frame stops and this accumulation, known amongst experts as "mouse", comes to rest on the top sliver layer.

The optional equipment CLEANtube is an intelligent control of the coiler drive, that prevents trash particles and short fibres accumulating in the sliver tube. Per year and draw frame, CLEANtube saves up to 300 hours of work for the manual removal of the "mouse" as well as up to approximately 0.6 % sliver waste. CLEANtube avoids up to 200 000 defective places per year and draw frame and thus keeps the production efficiency in subsequent processing as well as the yarn quality high.

Unique sensor for exact first sliver coils

A contact-free precision light barrier detects when the first sliver coils make contact with the coiler and only then switches the machine from the slow mode to full production speed. This guarantees controlled sliver coiling even in cans where the plates are too low, and ensures consistent sliver and yarn quality. Precise sliver coiling from the first metre prevents tangles in the subsequent process and breaks when drawing the sliver out of the can. The cans therefore run without interruption until they are completely empty. This maintains machine efficiency at a high level, reduces operator intervention and eliminates sliver waste.





Quality without outliers

Even when only a small number of can plates are too low in a spinning mill, the new sliver sensor brings considerable advantages. Assuming 1 % of the annual number of filled cans are affected, then that means for each draw frame a figure of up to 4 000 cans. Thanks to the sliver sensor, faultless first sliver coils are guaranteed in all these cans – despite difficult conditions. This is a further step towards perfect quality without outliers. A patent is pending for this innovation.



Reliable sliver separation

When processing fibres with high fibre-fibre friction, as is often the case with man-made fibres, active sliver separation is necessary for a trouble-free can change. To achieve this, the motors of the autoleveller drafting system create a thin place, which is transported below the coiler and deliberately breaks at can change.

Efficient Operator Guidance

The new dimension in operator-friendliness

Touch display for intuitive operating

The SB-D 50 and RSB-D 50 use the latest control generation as well as a coloured touch display with a high resolution. This allows intuitive and easy operator guidance.



Modern interfaces for fast lot change



By means of the USB interface, the data is quickly and easily transferred to other machines. Connection to the Rieter data system SPIDERweb is possible as a standard feature.

LED lights help the operator



Clear indications are of decisive importance for the operator when it concerns keeping distances short. Therefore, visible LEDs continue to indicate the condition of the draw frame. This enormously simplifies the work for the operator.

Versatile information

The display offers, in addition to data on production and sliver quality, helpful extra information: for example, a logbook for the complete documentation of the machine settings or detailed notification of machine downtimes with cause and duration. These are helpful tools for problem analysis on shifts with few personnel, for instance, at night.

Know-how in the Machine Display Produce quality thanks to integrated know-how

Availability of personnel

Frequent personnel changes or shortage of specialists are an increasing problem for spinning mills. Consequently, Rieter helps its customers with attractive supporting measures direct on the machine display.

SLIVERprofessional expert system on the machine

The SLIVERprofessional expert system is, for the first time, integrated into the machine display and offers valuable technological support. This unique tool offers a setting recommendation, after entering the raw material data, for the entire machine. This can be transmitted as a data record onto the machine. In addition, SLIVERprofessional assists with the analysis of spectrogram faults such as periods and draft waves. This leads to a rapid fault correction and higher availability of the machine.

Settings on the display

The following settings can be conveniently made on the display and the time for a lot change is significantly reduced.

- Coiler speed (USP)
- Suction intensity (USP)
- Total draft
- Delivery speed

Operating manual on the machine

Printed operating manuals are often not accessibly stored. For this reason, the SB-D 50 and RSB-D 50 make the essential chapters of the operating manual available on the display of the draw frame. This creates new possibilities and saves time.







Well-thought-out Service and Maintenance Concept High availability of the machine at low costs

High service lives

Excess pressure in the interior of the machine forces the heat outwards. This leads to high service lives of electronic and mechanical components. All essential fibre guiding parts have a resistant coating and thus ensure a long service life.



Self-setting autolevelling AUTOset

With a lot change, the levelling action point is the most important setting value of the autolevelling. The self-setting autolevelling AUTOset determines the levelling action point automatically and thus saves valuable time. AUTOset guarantees the correct settings even with inexperienced personnel and ensures the high quality level of the draw frames from Rieter.



Automatic setting of the levelling action point by means of AUTOset in approx. 1 minute



Convenient lubrication

The SB-D 50 and RSB-D 50 have two possibilities to lubricate the machine. The machine is equipped with a central lubricating strip as a standard feature. This is easily accessible and ensures that no lubricating point is forgotten. Optionally, the draw frames are also available with a central lubricating point, which offers maximal maintenance convenience.

Quick tensioning device

Quick tensioning devices for the belts guarantee the right belt tension force, independent of maintenance personnel. This ensures a rapid belt change as well as a long lifetime of the belts and bearings.



Training videos on CD

Rieter supports its customers with an electronic instruction manual on CD which contains videos. The videos clearly describe the correct setting and maintenance of the machine and can be used for training the employees. Competent employees keep the service costs low. Productivity and sliver quality remain at a constantly high level.



Minimal Space Requirements

Machine layouts for all space conditions

Sliver feed versions

The draw frame feed can be executed as actively driven roller feed or as creel without drive, for 6- to 8-fold doubling. The height of the supports is adjustable and can be adjusted to the respective can heights up to 1 520 mm.





Minimal machine length due to shortened empty can supply (example with an empty can)



Minimal machine width due to joint platform with neighbouring draw frames

Assembly on/recessed into floor

The SB-D 50 and the RSB-D 50 allow, as previously, assembly on the floor, which makes very flexible positioning possible. A new option is recessed into the floor. In this case, the transfer height of the can on the empty can magazine is lower and thus more convenient. The full cans are pushed out directly onto the spinning mill floor.



Space requirements

To adjust to confined space conditions in the spinning mill, the following variations are available:

- Shortened spare can supply for short machine lengths
- Compact arrangement by joint platform with neighbouring draw frames for compact machine width

Product Range

The right draw frame for your individual needs

With more than 40 000 installed RSB/SB draw frame heads, Rieter is the globally leading draw frame manufacturer. The draw frame innovations provide our customers with competitive advantages. With the versatile draw frame range, Rieter offers the right draw frame for every requirement in respect of quality, productivity, operator convenience and space requirements. All autolevelling draw frames from Rieter use the highly dynamic RSB autolevelling technique. This ensures highest quality standards in the yarn and in the end product as well as excellent running properties in the subsequent manufacturing stages.



Draw frame without autolevelling





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Machine Data

RSB-D 50 autoleveller draw frame and SB-D 50 draw frame





Coiling with can changer													
K2 [mm] Number of empty cans		A [mm]	B [mm] ejected onto floor	B [mm] ejected onto trolley	C [mm] cans with castors	C [mm] cans without castors	D [mm]						
350	5	2 380	1 300	1 600	3 302	2 422	1 960						
400	5	2 380	1 300	1 600	3 302	2 422	1 960						
450	4	2 380	1 300	1 800	3 302	2 422	1 960						
470	4	2 380	1 300	1 880	3 302	2 422	1 960						
500	4	2 380	1 300	2 000	3 302	2 422	1 960						
600	4	2 380	1 406	2 540	3 360	2 280	1 960						
1 000	1	2 935	940	_	2 430	-	1 960						

(1 [mm]	L6 [mm]	L8 [mm]
500	2 850	3 350
600	2 850	3 350
800	3 700	4 750
900	3 700	4 750
1 000	3 700	4 7 5 0

KH [mm]	A2 [mm]
900	0
≥1 000	236
≥1 150	478

Technological data

Туре		RSB-D 50	SB-D 50	RSB-D 50c					
Material		Cotton, man-made fibres, blends, fibre length up to 60 mm							
Doubling [fold]		up to 8	up to 8	up to 8					
Feed [ktex]		12-50	12-50	12-50					
Draft [fold]		4.0-11.6	4.5-11.6	4.0-11.6					
Delivered sliver weight [kte	k]	1.25-7	1.25-7	1.25-7					
Technical data		·	·	<u>.</u>					
Delivery		single	single	single					
Delivery speed [m/min]		up to 1 200	up to 1 200	up to 600					
	Main motor [kW]	3.90	5.00	3.90					
	Intake motor [kW]	3.90	-	3.90					
T . U I	Suction motor [kW]	1.50	1.50	1.50					
Installed power	Machine control [kW]	0.50	0.26	0.50					
	Coiler motor [kW]	1.10	1.50	1.10					
	Can changer [kW]	0.25	0.25	0.25					
Compressed air/consumptic	on [m³/h] min. 6 bar	0.08	0.08	0.08					

Standard equipment

- Energy-saving drive concept ECOrized (patented)
- Max. delivery speed 1 200 m/min (RSB-D 50c: 600 m/min)
- Frequency-controlled drive for coiler, suction, drafting and delivery speed (SB-D 50: without drafting)
- Rieter spring-loaded 4 over 3 drafting system
- Drafting system suction unit with cleaning lips on top and bottom rollers
- Automatic filter cleaning
- · Rapid top roller load relief in the event of stoppages or lap formation
- Central drafting system setting without gauges
- · Pneumatic sliver threading-in with sliver refinement
- CLEANcoil coiler with honeycomb structure (standard)
- Sensor for sliver coiling
- Sliver separation by means of draw frame draft (only RSB)
- Automatic can changer
- Spare can supply for up to 5 reserve cans
- Highly dynamic levelling system with "tongue and groove" scanning rollers (RSB)
 Self-adjusting autolevelling AUTOset (RSB)
- Quality monitoring Rieter Quality Monitor RQM
- Central lubricating strip
- · Lifetime lubricated top roller bearings
- Quick tensioning device for belts
- Machine display as touchscreen for intuitive operation
- · Operating manual integrated in the machine display
- · LED lights for operator guidance, visible from a distance
- USB interface
- Port to data system SPIDERweb
- · Operating manual on CD with videos for setting and maintenance

Variants

- Can format infeed: Ø up to 1 000 mm, height up to 1 520 mm
- Can format delivery: Ø 350 1 000 mm, height up to 1 520 mm
- Can discharge onto floor or can trolley
- Power creel: two-row can arrangement
- Creel (not driven): two-row can arrangement
- · Integrated suction system (exhaust air into room or duct)
- Central suction system
- · Machine assembly recessed into floor or on floor

Options

- Pneumatic top roller load
- CLEANtube sliver coiling without trash and short fibre deposits
- Coiler CLEANcoil-PES (100 % PES)
- Central lubrication (central nipple)
- Shortened spare can supply (on consultation)
- Docking unit for can trolleys
- Connection platform for space-saving machine layout
- · SLIVERprofessional expert system integrated in machine display



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 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 realisation
- · 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 optimise 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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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

www.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 304 141 F +91 2169 304 226

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Rieter (China) Textile Instruments Co., Ltd. Shanghai Branch Unit B-1, 6F, Building A, Synnex International Park 1068 West Tianshan Road CN-Shanghai 200335 T +86 21 6037 3333 F +86 21 6037 3399

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