



ELSMART

**Web guiding
and spreading systems**



Precise guiding and spreading
of textile webs



SWA 95 or SWS 95 in combination with LGA 06 and rotary tensioner

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Web guiding with ELSMART

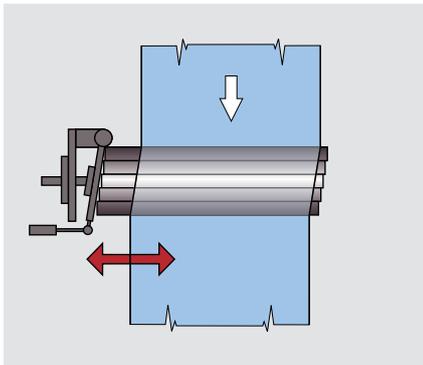
ELSMART is the optimum web guiding system for all applications across the entire textile processing spectrum. The segmented roller guiders in the SW 9 series guide woven, knitted, tricot and to a certain extent non-woven fabrics in dry, damp or dripping wet conditions, in steamers exposed to high temperatures and finishing chemicals. Even in the event of major corrections, the segmented roller guider maintains a uniform distribution of tension across the full width of the web, thus minimizing weft distortion.

ELSMART, an “allrounder” in the field of textile web guiding.

The whole width of the web lies on the guiding slats. The offset on the guiding slats that pass on the web to each other is very small. Skew due to this offset can be excluded. If the ELSMART roller guider is equipped with split guiding slats, the system undertakes two tasks simultaneously:

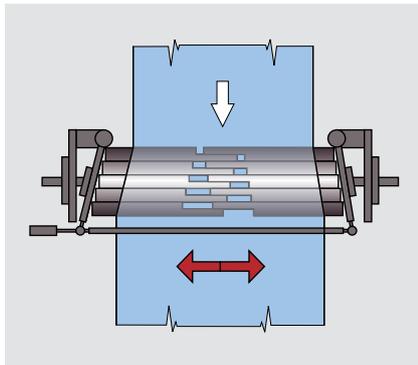
- + Guiding the textile web
- + Spreading the web

A good degree of friction between the segmented roller guider guiding slats and the textile web is essential for an efficient web guiding process. Many modern quality wovens feature extremely sensitive surfaces that may be slightly degraded by the contact areas of the guiding slats should these be too aggressive.



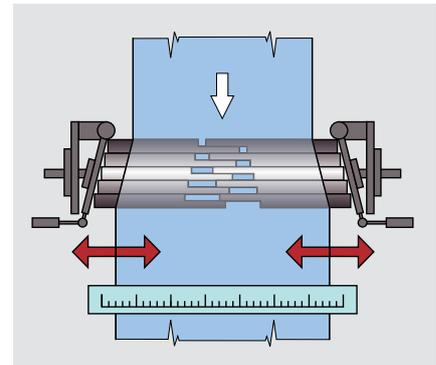
Web guiding only

The version with continuous guiding slats across the full web width offers a particularly economical solution.



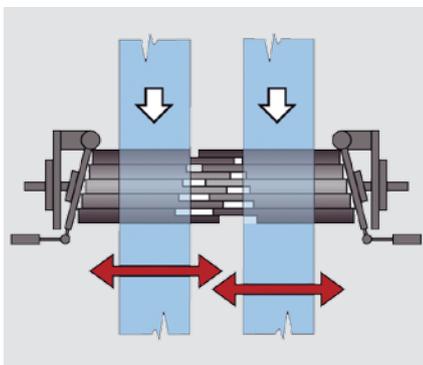
Web guiding with spreading

With split guiding slats the web may be guided and spread as well.



Width regulation

This design has a control loop on the left and right. In this way the web edge on elastic textiles is precisely guided to the specified position on both sides and therefore also spread into the required position overall.



Two-lane operation

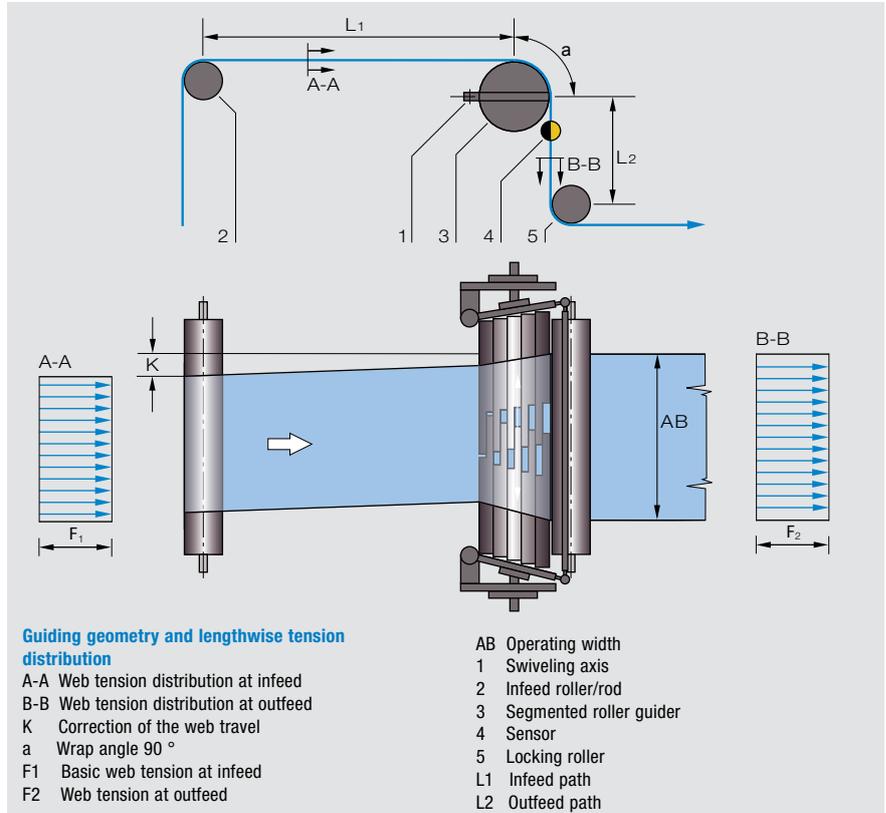
With this design two webs can be controlled independently of each other using split guiding slats and two independent drives. Spreading is not possible in this mode.

Usage

Due to the minimum degree of material stressing by the segmented roller guider, implementation in practically all textile production processes is possible.

Application

The pre-entry path should be the equivalent of at least one web width to ensure reliable guiding. However, the correction to be performed and the web properties are also of critical importance.



Guiding slat facing variants

With a selection of different material facings, ELSMART offers the possibility of optimally adapting the surface of the guiding slats to the webs to be processed.

Mohair facing

This is the most universal facing when processing dry webs only. The surface structure ensures excellent contact with the web to be guided and thus guarantees trouble-free web travel.

PVC facing

PVC facings offer benefits when processing damp and dry webs alternately. This facing surface provides a good degree of guiding slat friction with dry webs and excellent degrees of friction with damp webs.

High grade steel

On guiding wet textile webs, the high grade steel surface offers good friction-locking with the web. In addition this material is both highly resistant to corrosion and hard-wearing.

Perforated high grade steel slats

A perforated high grade steel guiding slat was developed for extremely damp and, in the majority of cases, very slippery web surfaces, which even in these difficult conditions provi-

des sufficient friction for precise web guiding. At high speeds especially, the presence of “aqua-planing” is minimized.



ELSMART SW 95

The new innovative segmented roller guider system, ELSMART SWS 95

One design, two different concepts for the standard application and for applications with very high web speed and/or very high guiding accuracy. The new ELSMART SW 95 has eight guiding slats of completely new design on the roller periphery. The wide guiding slats provide a large support area. Due to the optimized shape of the slats, there is still enough space between the guiding slats to ensure the web is guided reliably and without damage even at maximum speed. The new slat shape also provides very high torsional stiffness; the low tolerance on the guiding points provides very quiet running.

The newly developed digital infra-red broadband sensor determines the position of the edge of the web without using the conventional method of the comparison of light intensity. The sensor features high sensitivity with transparent webs and also insensitivity to fluctuations in the transparency and to external light. With the connection of an additional DO, a width measurement can be realized. As usual, we supply our systems fully wired and tested; they are therefore easy to install. The electrical components for the control technology are integrated into the sides of the system.



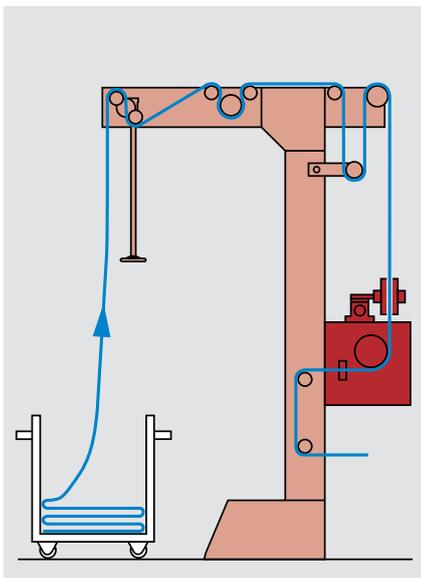
ELSMART SWS 95

SWA 95 - The upper middle class in textile web guiding

A digital controller, digital broadband sensor and a pneumatic actuator ensure full functionality at speeds up to 130 m/min.

SWS 95 - The best in textile web guiding

A digital controller, digital broadband sensor or digital infrared sensor and an electrical actuator realize an appropriate closed control loop. Very high guiding accuracies, as required for textile printing or for web laminating, and web speeds up to 220 m/min characterize the performance of this system; performance that is not achieved by any other web guiding system on the market.



SWS 95/LP 03 in the entry framework with feed units



SWS 95 with LG 066 and rotary tensioner

ELSMART SW 95 – combinations

ELSMART with ELSREADER

- + Reliable spreading of folded web edges and curled edges on the opposite side to the guiding slat
- + Complete spreading even of webs with a high Lycra content or knitted fabrics with manifold curled edges
- + On a system combination it is generally sufficient to equip the segmented roller guider with continuous guiding slats
- + The lower cost of a simpler segmented roller guider design partially compensates for the additional costs of the motorized spreader roller spreading unit



SWS 95 in combination with LGA 06

SWA 95 and SWS 95 combined with LG 06 and rotary tensioner

- + Due to the modular construction, web guiding systems and spreading systems are connected to each other by only a few screws
- + The control for the ELSREADER is integrated into the side part on the ELSMART
- + The extension of the system with a rotary tensioner turns it into a complete machine infeed
- + Simple installation of the complete system on the machine line by fastening the segmented roller guider



SWA 95 und SWS 95 in combination with LGA 06 and rotary tensioner

ELSPREADER LGA 06

- + Spreading system bearings housed in box enclosures located on both sides
- + Spreading rollers driven in opposite directions can be pivoted into the web centrally around their imaginary central axis
- + Accident prevention due to 120 mm gap between the spreading rollers
- + The spreading rollers are driven by an integrated gear drive



ELSPREADER LGA 06

Technical data

Type	SWS 95	SWA 95
Guiding accuracy	± 5 mm (broadband sensor FE 45), ± 1 mm (edge sensor FR 52)	± 10 mm (broadband sensor FE 45)
Correction range	Max. ± 300 mm dependent on web width, pre-entry path and web properties	Max. ± 300 mm dependent on web width, pre-entry path and web properties
Web speed	Max. 220 m/min	Max. 130 m/min
Web tension	Max. 1000 N	Max. 1000 N
Operating width AB	1600 to 3600 mm (steps of 100 mm)	1600 to 3600 mm (steps of 100 mm)
Ambient temperature	0 to 60 °C	0 to 60 °C
Operating voltage nominal value	24 V DC	24 V DC
Operating voltage nominal range	20 - 30 V DC	20 - 30 V DC
Protection class	IP 54	IP 54
Subject to technical change without notice		

ELSMART SW 94

ELSMART SWS 94 (digital)

The segmented roller guider of the type series SW 94 represents tried and tested technology and functionality. The SWS 94 and SWS 95 are identical in construction and function.

Advantages

- + Can be integrated into nearly every application, as the roller body can be rotated in the side securing flanges and can therefore be adapted optimally to the existing web travel
- + Compact construction
- + Advantages during winding due to optional, sophisticated oscillation functions
- + Customer-specific special designs have been completely integrated into the system side walls in numerous machines such as thermo-calenders or shrinkage machines for optimum benefit to the user

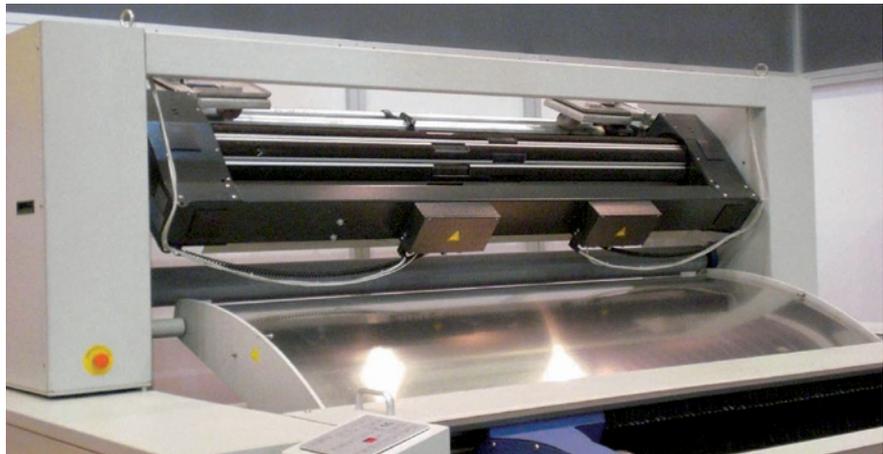
ELSMART in printing machine infeeds

To be able to print webs with only half the maximum operating width on wide printing machines, the segmented roller guider must be moved on the printing machine. The necessary mechanism is very expensive and the necessary space generally not available.

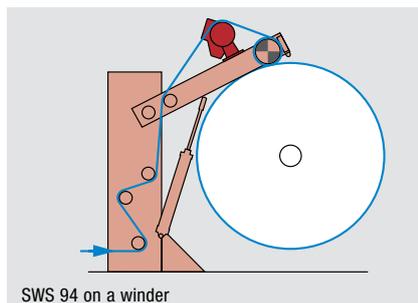
The patented, asymmetric guiding slat profile allows you to realize an operating width area of half the maximum operating width of the system without moving the web guiding. Elastic webs can be printed to an exact finished width using an optional web width regulation system. The pneumatic and non-contact web spreader ELSPREADER LPA is unrivalled in its flexibility and effectivity, above all for knitted or tricot fabrics or fabrics with a high Lycra content.



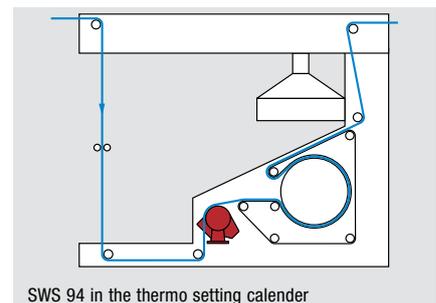
SWS 94 with broadband sensor FE 45



SWS 94, each with two actuators, edge sensors and pneumatic spreading system LP 03



SWS 94 on a winder



SWS 94 in the thermo setting calender

Technical data

Type	SWS 94
Guiding accuracy	±5 mm (broad band sensor FE 45), ±1 mm (edge sensor FR 52)
Correction range	Max. ± 300 mm dependent on web width, pre-entry path and web properties
Web speed, web tension	Max. 200 m/min, max. 1000 N
Operating width AB	1600 mm to 3600 mm
Ambient temperature, ambient conditions	0°C to 60°C, dry, damp (not dripping)
Operating voltage nominal value / nominal range	24 V DC / 20 - 30 V DC
Supply voltage additional drive	3 x 400 V AC, 50/60 Hz
Protection class	IP 54
Subject to technical change without notice	

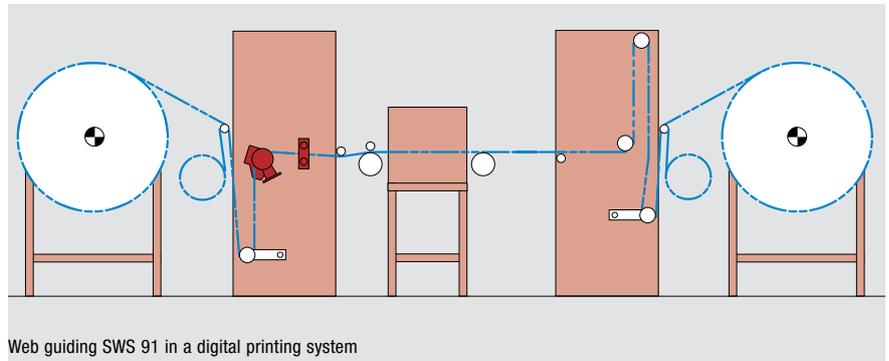
ELSMART SW 91 / SW 9311

New requirements from our customers require new solutions

Digital printing machines are becoming increasingly common in the series production of textiles. Smaller order quantities per design, greater design variations and continuously increasing production rates on these machines are the reasons for this shift.

Compactors for improving the residual shrinkage on knitted fabrics are state-of-the-art these days and have a similar requirement profile to digital printing machines in relation to the web guiding.

Neither type of machine has a production speed higher than 35-45 m/min, the operating widths are mostly not larger than 2400 mm and the web tensions are generally below 100 N. Digital printing machines are, depending on the design, significantly more compact than conventional printing machines, for this reason professional web guiding must also be of very compact design.



Web guiding SWS 91 in a digital printing system

SWS 91

The digital web guiding system in the so-called flange design is very compact and has facings on the guiding slats made of mohair or PVC like the large systems SWS 94 and SWS 95. All sensors, such as the infrared edge sensor FR 5, the broadband sensor FR 60 (+/-80 mm) and the broadband sensor FE 45 are available depending on the requirement so that exactly the same guiding accuracies as on the SWS 94 and SWS 95 designs can be achieved. Due to the smaller

roller cylinder (d=160 mm) and the deflection of the guiding slats using rollers, minimum rolling resistance at the roller is ensured. An additional drive with integrated frequency converter is available as an option.

The SWS 91 offers ideal pre-conditions for installation in a digital printing machine. Direct integration in the side frames on the customer's machine is also possible without problems.



Technical data

Type	SWS 91
Guiding accuracy	±5 mm broadband sensor FE 45, ±1 mm edge sensor FR 52 / FR 60, ±1 mm CCD camera OL 8
Correction range	Max. ± 200 mm dependent on web width, pre-entry path and web properties
Web speed, web tension	Max. 50 m/min, max. 500 N
Operating width AB	300 to 2600 mm
Ambient temperature, ambient conditions	0°C to 60°C, dry, damp (not dripping)
Operating voltage nominal value / nominal range	24 V DC / 20 - 30 V DC
Supply voltage additional drive	3 x 400 V AC, 50/60 Hz
Protection class	IP 54
Subject to technical change without notice	

SWS 9311

Is functionally completely identical to the SWS 91. However the needs of a machine infeed, e.g. on a compactor on which the web is moved from both the vat and also from the stack, are taken into account; an upstream spreading roller unit for complete spreading of the web is essential here.

For straightforward assembly on the customer's machine, a version with side pieces in the box design is advantageous in this case. For a design as small as possible, the segmented roller guider and the spreading roller unit are integrated into a common side piece. The SWS 9311 is therefore only available

as a unit comprising segmented roller guider and spreading roller unit.



Technical data

Type	SWS 9311
Guiding accuracy	±5 mm (broad band sensor FE 451), ±1 mm (edge sensor FR 52/FR 60)
Correction range	Max. ± 200 mm dependent on web width, pre-entry path and web properties
Web speed, web tension	Max. 50 m/min, max. 500 N
Operating width AB	Max. 2600 mm
Ambient temperature, ambient conditions	0°C to 60°C, dry, damp (not dripping)
Operating voltage nominal value / nominal range	24 V DC / 20 - 30 V DC
Supply voltage additional drive	3 x 400 V AC, 50/60 Hz
Protection class	IP 54
Subject to technical change without notice	

ELSMART SW 96

ELSMART SWS 96

Largely corresponds to the mechanical design of the SWS 97. The system is designed for wet operation with the usage of finishing chemicals. The system includes an electrical actuator, the digital broadband sensor FE 45 and a digital controller.

A choice of guiding slat facings made of PVC as well as perforated and bare high grade steel guide profiles are available.



ELSMART SW 96



SWS 96 with LG 066 in a rope detwisting device

ELSMART SW 96 – combination

ELSMART with ELSREADER

- + Reliable spreading of folded web edges and curled edges on the opposite side to the guiding slat
- + Complete spreading, even of webs with a high Lycra content or knitted fabrics with manifold curled edges
- + On a system combination it is generally sufficient to equip the segmented roller guider with continuous guiding slats
- + The lower cost of a simpler segmented roller guider design partially compensates for the additional costs of the motorized spreader roller spreading unit

ELSPREADER LGA 06 stainless steel

- + Spreading system bearings housed in box enclosures located on both sides
- + Spreading rollers driven in opposite directions can be pivoted into the web centrally around their imaginary central axis
- + Accident prevention due to 120 mm gap between the spreading rollers
- + The spreading rollers are driven by an integrated gear drive



SWS 96 in combination with LGA 06

Technical data

Type	SWS 96
Guiding accuracy	±5 mm
Correction range	Max. ± 300 mm dependent on web width, pre-entry path and web properties
Web speed, web tension	Max. 100 m/min, max. 1000 N
Operating width AB	1600 to 3600 mm
Ambient temperature, ambient conditions	0 to 60 °C, damp, wet
Operating voltage nominal value / nominal range	24 V DC / 20 - 30 V DC
Supply voltage additional drive	3 x 400 V AC, 50/60 Hz
Protection class	IP 54
Material	Stainless steel V2A
Subject to technical change without notice	

Technical data

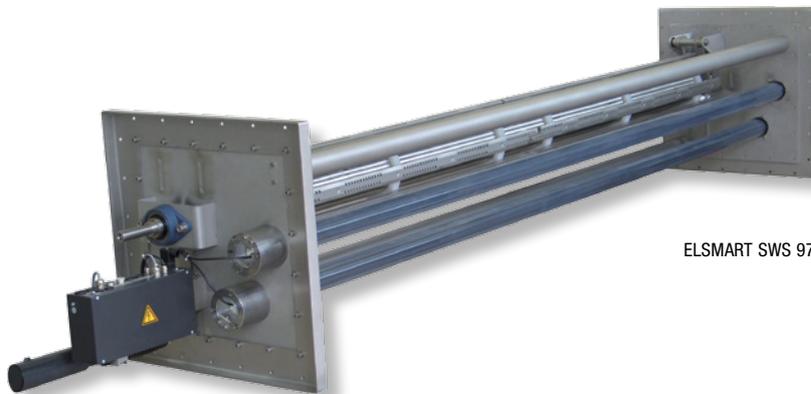
Type	LGA 06 Stainless steel
Operating width AB	1000 to 3600 mm (gradation 100 mm)
Ambient temperature, ambient conditions	0 °C to +60 °C, damp wet
Speed of spreading rollers	213 rpm (at 50 Hz), 255 rpm (at 60 Hz)
Power consumption	0.55 kW
Operating voltage	220-242 / 380 - 420 V (at 50 Hz), 254-280 / 440 - 480 V (at 60 Hz), other voltages available on request
Protection class	IP 54
Material	Stainless steel V2A
Subject to technical change without notice	

ELSMART SW 97

ELSMART SWS 97 (digital)

This digital segmented roller guider system allows the most efficient web guiding technology in enclosed machines in which extreme requirements are placed on the system at temperatures of up to 100°C along with steam and chemicals.

Perforated high grade steel guiding slats were developed for extremely damp and, in the majority of cases, very slippery web surfaces, which even in these difficult conditions provide sufficient friction for precise web guiding. At high web speeds especially, the presence of “aqua-planing” is minimized. The digital con-



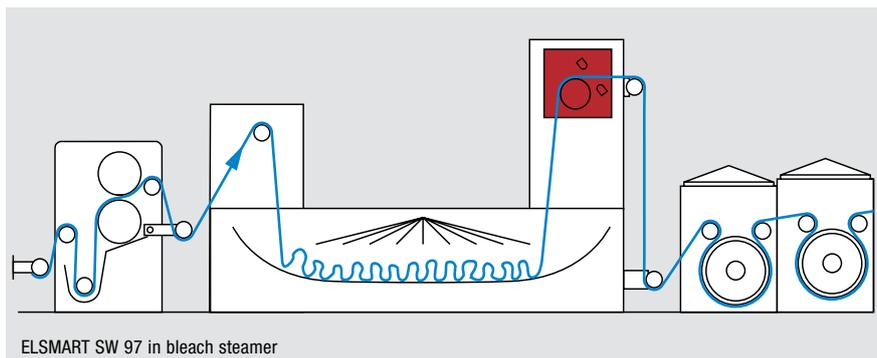
ELSMART SWS 97



SWS 97 + LG 052 in bleach steamer

roller and an electrical actuator permits web speeds of up to max. 100 m/min. These high speeds in connection with the integrated multifunctionality remain unsurpassed by any other web guiding system in this process environment worldwide.

A high temperature version (up to 100°C) of the digital broadband sensor FE 4514 guides the web centrally as is typical for the process. A frequency-controlled additional drive can be mounted to overcome friction forces and to guarantee minimal web tension.



ELSMART SW 97 in bleach steamer

ELSMART SW 97 – combination

ELSPREADER LGA 05

- + Spreading device in flange design
- + The spreading rollers wound with the R=2.1 mm profile are driven in opposite directions and can be pivoted into the web centrally around their imaginary axis
- + Each spreading roller is driven with a 0.55 kW motor



ELSPREADER LGA 05



ELSMART SWS 97

Technical data

Type	SWS 97
Guiding accuracy	±10 mm
Correction range	Max. ± 200 mm dependent on web width, pre-entry path and web properties
Web speed, web tension	Max. 100 m/min, max. 1000 N
Operating width AB, framework width GA (outside)	1600 to 3600 mm, AB + 406 mm
Ambient temperature, ambient conditions	0 to 100 °C, damp, wet, saturated steam
Operating voltage nominal value / nominal range	24 V DC / 20 - 30 V DC
Supply voltage additional drive	3 x 400 V AC, 50/60 Hz
Protection class	IP 65 / IP 54
Material	Stainless steel V4A
Subject to technical change without notice	

Technical data

Type	LGA 05
Framework width GA	1600 to 3600 mm
Ambient temperature, ambient conditions	100 °C, damp, wet, saturated steam
Speed of spreading rollers	245, 50 Hz / 395, 60Hz
Supply voltage	220 - 242 / 380 - 420 V, 50 Hz 254 - 280 / 440 - 480 V, 60 Hz
Protection class	IP 54
Web tension	Max. 1000 N
Power	0.55 KW
Material	Stainless steel V4A
Subject to technical change without notice	

Web guiding with ELSWING

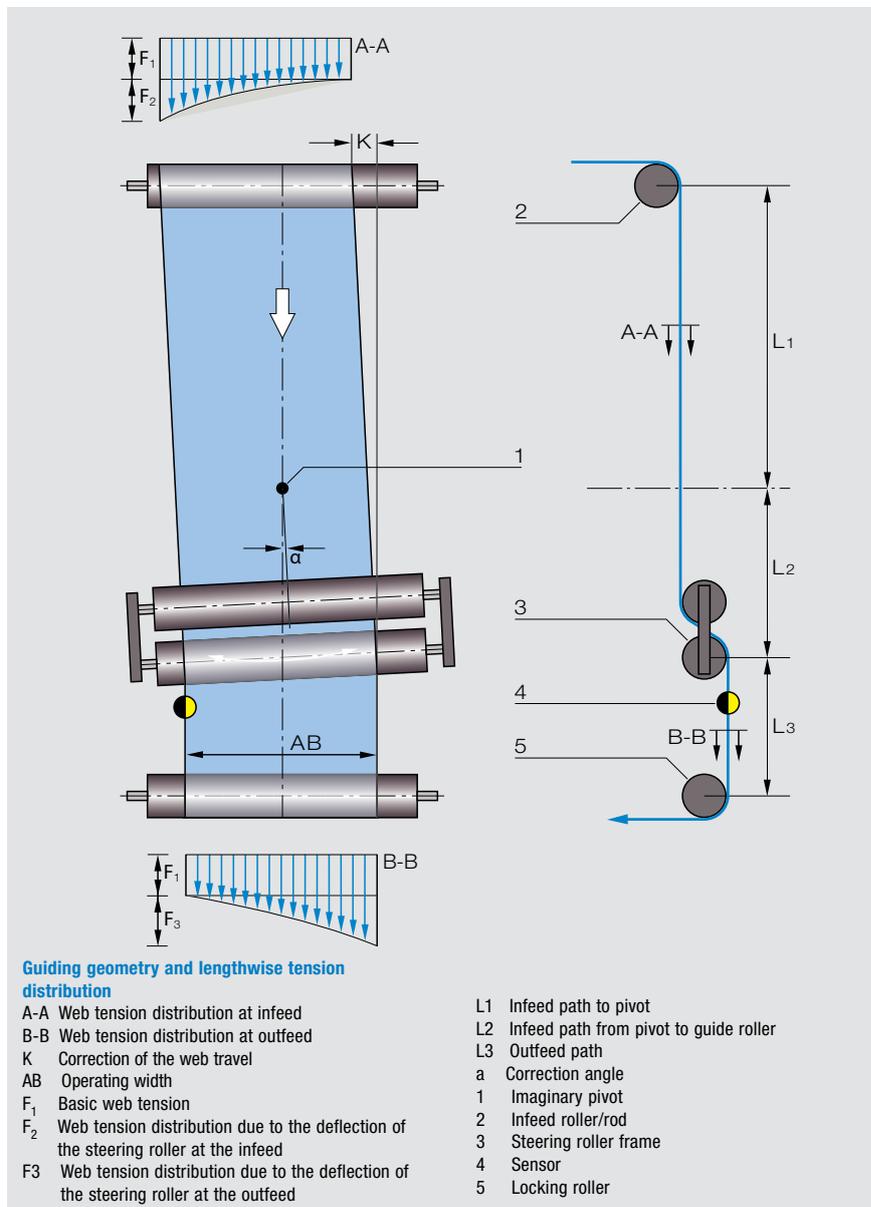
The term “steering roller” ELSWING is derived from the corrective behavior of this actuator.

Function

A roller assembly consisting of two or more rollers performs two different movements in one correction procedure. Firstly, tilting towards the web direction of travel to achieve a continuous correction of the moving web and secondly, a lateral offset perpendicular to the web direction of travel to effect an immediate correction. This corrective action is achieved by a lever system as shown in the sketch. The web must be friction-locked to the guide rollers.

Application

The length of the entry path depends on the web properties. In the case of very flexible webs, the entry path should be at least one web width. The greater the surface density of the web and the greater the necessary correction may be, the longer the entry path that must be selected. In contrast, the exit path after a followup locking roller must be as short as possible. Vertical web travel from top to bottom is recommended for mounting purposes.



Technical data

Type	SRA 83
Guiding accuracy	± 25 mm
Actuator speed	Approx. 40 mm/s
Actuator speed operating pressure	4 to 6 bar
Web speed	Max. 150 m/min
Web tension	Max. 1000 N
Operating width AB	Max. 1600 to 3400 mm (steps of 100 mm)
Ambient temperature	0 to + 60 °C
Operating voltage nominal value, nominal range	24 V DC, v
Protection class	Max. IP 54
Subject to technical change without notice	

ELSWING

ELSWING SRA 83

Is used to guide woven or knitted fabrics by web edge or web center to a processing stage. In this system two path rollers are fitted in a pivoting frame. A digital controller, an FE 45 digital broadband sensor for the web center guiding and web edge guiding, and a pneumatic actuator form the control loop.

Edge guiding with the FE 45 is realized by moving the operating point in the FE 45 digital broadband sensor itself. This type of web edge guiding is an innovation in textile web guiding. Because the FE 45 detects the edge position, inhomogeneous transparency (e.g. on net curtains, etc.) does not produce an undesired offset in the web center guiding.

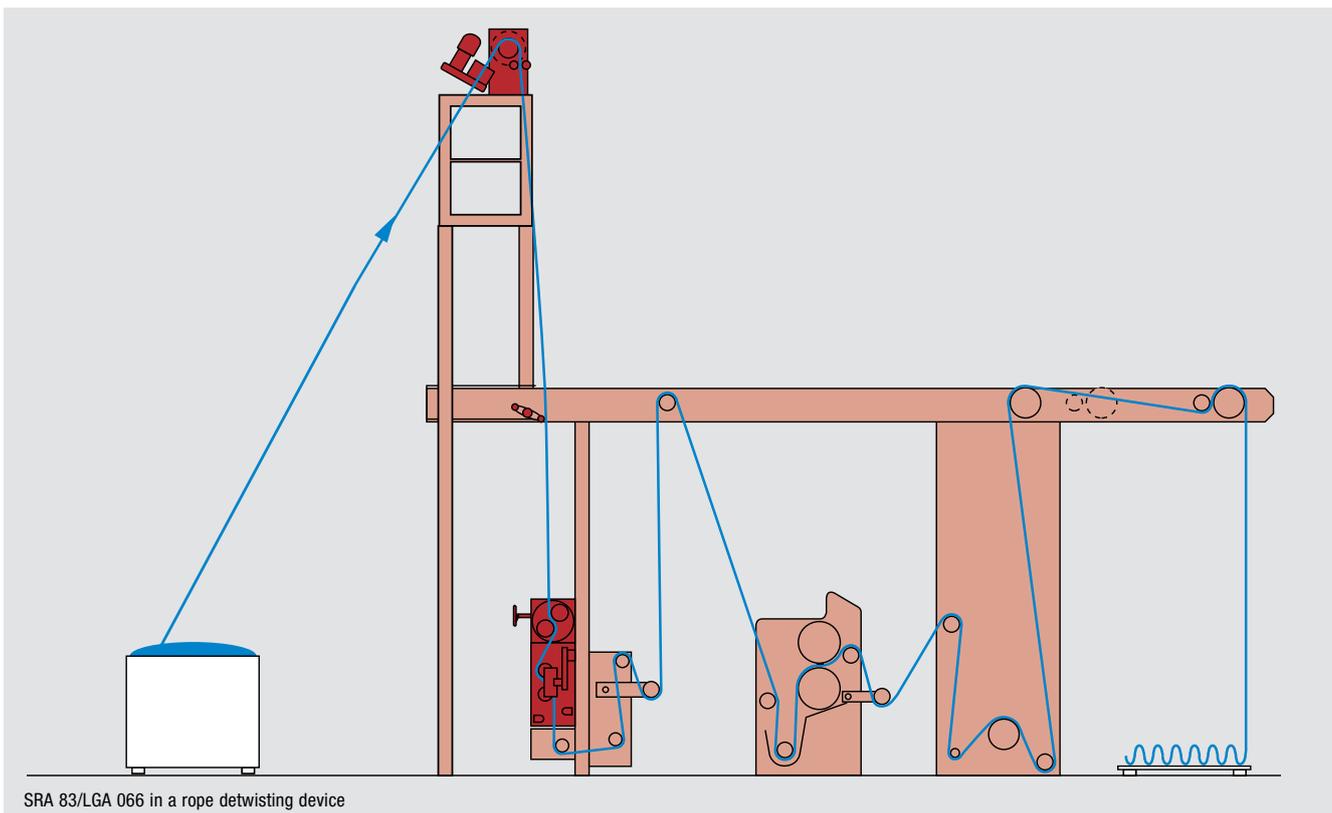
Depending on the application, a design in painted steel or in high grade steel is available.



ELSWING SRA 83

Combination with ELSPREADER LGA 06

For spreading folded edges or curled edges on knitted fabrics, the SRA 83 may be combined with the LGA 06 spreading device. The counter-rotating motor-driven spreading rollers may be pivoted into the web via a pivoting gearing.



SRA 83/LGA 066 in a rope detwisting device

Web guiding with ELTWIN

ELTWIN KF 20

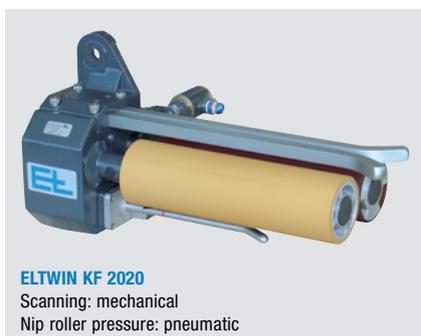
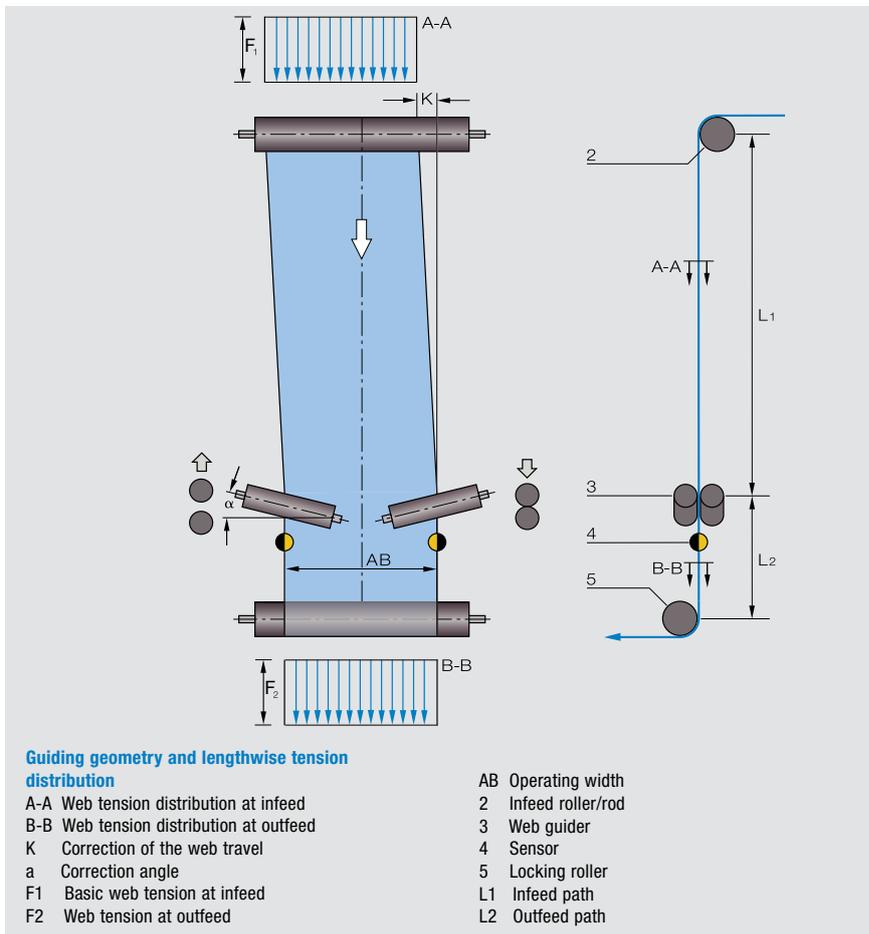
The ELTWIN web guiders are the most economical solution for the alignment of webs in the E+L range of web guiding systems.

Function:

The web edge is scanned either mechanically by a sensor lever or without contact using optoelectronics. The sensor signal controls a diaphragm cylinder or a lifting magnet that presses the control roller against the counterpressure roller. The web edge is controlled by roller offset and nip pressure. The KF20 systems are compact in construction and are always used in pairs. A VWG adjustment support is available in various versions for positioning the web guider.

Features

- + Mechanical scanning: Insensitive to soiling, can be used in wet treatment machines and in potentially explosive areas
- + Optoelectronic scanning: Infra-red sensor, reflection and light-sensitive barrier principle, not affected by external light or color contrast
- + Rollers: Depending on the conditions, different roller facings can be chosen: Rubber/hard fabric (standard), Perbunan and stainless steel. The KF 2020, KF 2040 and KF 2060 are available in two roller lengths (280 and 400 mm).
- + Additional drive: This additional electrical drive for the top roller ensures that the friction torque on the rollers is compensated and longitudinal distortion of the web is avoided. We recommend the additional drive for particularly delicate webs
- + Solo control: Instead of the web center, a web edge can be used as the reference



Web width measurement

Digital broadband sensor FE 45

The FE 45 operates with infra-red light and scans the web edges using a scanning technique. The sensor features high sensitivity with transparent webs and also insensitivity to fluctuations in the transparency and to external light. The system is extremely compact and does not need to be calibrated.

The sensor is self-supporting due to an internal aluminum profile. The continuous protective tubes can be supplied in Plexiglas for dry and damp operation, and in glass for the wet area.

The maximum web width is 3800 mm. The sensor can be used up to 60°C.



Digital broadband sensor FE 45



FE 4513



FR 60

Applications:

- + In conjunction with E+L-web guiding devices SWA, SWS and SRA for web guiding and width measuring
- + As stand-alone device for width measurement
- + For upgrading older web guiding or custom-er web guiding systems complete with control card

Functions:

- + Web guiding by web center
- + Web guiding by web edge
- + Measurement of the web width

Other variants

- + FE 45x3 wet design with glass tubes
- + FE 45x4 high temperature version, resistant against chemicals



User interface RT 4008

Technical data

Type	FE 45	FR 60
Operating voltage nominal value, nominal range	24 V DC, 20 - 30 V DC	24 V DC, 20 - 30 V DC
Current consumption	Max. 0.4 A	Max. 0.15 A
Ambient temperature	0 °C to +60 °C	0 °C to +60 °C
Storage temperature	0 °C to +85 °C	-10 °C to +80 °C
Operating width (AB)	Up to 3800 mm	-----
Measuring range	Depends on version (max. 3400 mm)	+/- 79 mm
Accuracy of web edge and web center recording	(Dependent on the condition of the web edge)	+/- 0.2 mm
"Standard"	± 5 mm	
"High"	± 3 mm	
"Premium"	± 1 mm	
Width measurement accuracy	(Dependent on the condition of the web edge)	+/- 0.4 mm
"Standard"	± 10 mm	
"High"	± 6 mm	
"Premium"	± 2 mm	
Web position	In the middle between the transmitter and receiver	
Max. height fluctuation	±10 mm	
Scan rate	200 Hz	200 Hz
Max. sensor cable length	25 m	10 m
Protection class	Max. IP 54 with suitable connector connected	Max. IP 54 with suitable connector connected
Weight	AB 1600 mm approx. 15 kg, AB 3200 mm approx. 30 kg	Approx. 1.2 kg
Subject to technical change without notice		

Spreading rollers

A top-technology product

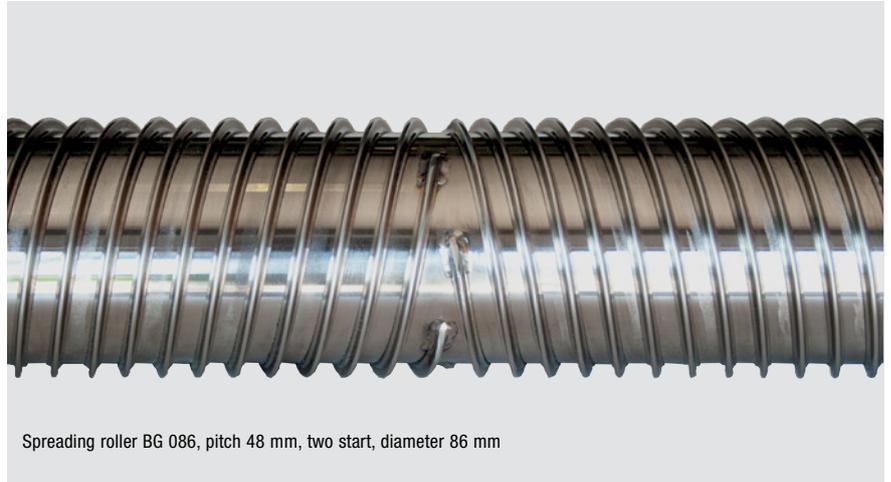
All spreading systems with motor-driven spreading rollers feature a high grade steel profile specially developed for E+L.

The profiles attain an excellent surface quality (surface roughness Ra 1 µm) in the course of a two-stage rolling process with integrated vacuum annealing, thus ensuring as gentle a spreading action as possible. The rollers are wound at a constant force with the aid of web tension control. As such, it is sufficient that only the profile ends are welded to the roller. This eliminates the risk of damage caused by further welding points.

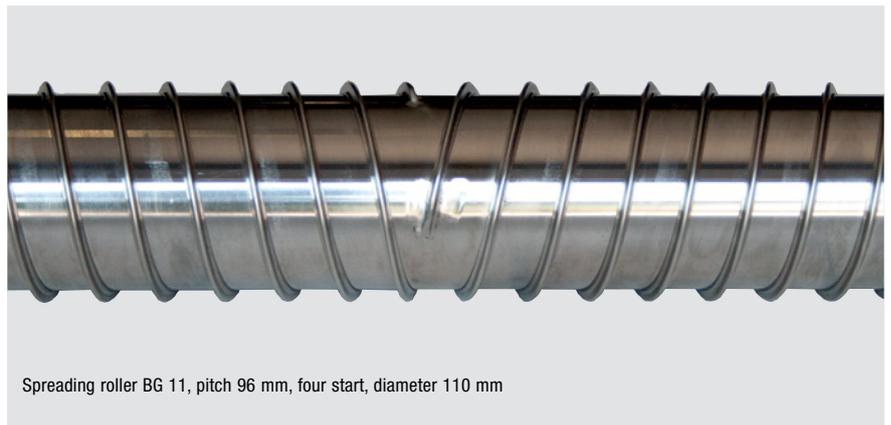
The standard profile has a 1 mm radius and 5 mm height at the contact surface while a further optionally available profile has a 2.1 mm radius and the same height. The profile has a shaped fit in the roller body with its horizontal 5 - 6 mm wide profile base. Residual soiling between the roller profile and roller tube as is found, e.g. if round materials are wound, is thus excluded. Successful implementation in numerous dyeing plants in which free residual dyes would have seriously degraded quality demonstrate this issue.

Optimal and at the same time gentler spreading process

The smaller the profile radius, the greater the spreading effect. Although larger radii reduce the spreading effect, the web is spread more gently. To avoid lines or crests in the center of delicate webs, the type of winding in the center of the spreading roller is of major importance.



Spreading roller BG 086, pitch 48 mm, two start, diameter 86 mm



Spreading roller BG 11, pitch 96 mm, four start, diameter 110 mm

Long lifetime with consistently high quality

Even after a decade of usage, the profile contours in the contact area with the web remain unchanged. The formation of a burr due to wear on the profile side located opposite the spreading device is completely excluded. An impressive demonstration of the high quality of E+L spreading rollers is the steady increase in demand for this product in the worldwide textile machine manufacturing sector.

Accessories: ELSREADER

ELSPREADER LPA 03

The pneumatic selvedge opener, ELSREADER LPA 03, is used for spreading very delicate knitted and woven fabrics that are particularly susceptible to curling. Depending on the characteristics of the curled edge or sometimes even fringed edges, jets can be used on one side or both sides. Furthermore, the air outlet angle on each jet can be adjusted to suit the requirements. The air flow, very carefully directed via the optimally adjusted jets, reliably spreads any curled or folded web edges. The regulation of the air flow rate is a further parameter for optimizing the spreading results.

The ELSREADER LPA 03 is the only system in the world that functions efficiently without mechanical contact with the surface of the web. Due to the compact design, the LPA 03 system can be fitted, e.g., in the infeed for a segmented roller guider ELSMART so close to the guiding slat that the spread web can be transferred directly to the guiding slats at the end of the spreading system.

It is then impossible for the edges to curl back. As a result a knitted fabric can be passed fully spread, e.g. to the printer's blanket on a prin-



ELSPREADER LPA 03

ting machine. The technologically demanding web infeed on a textile printing machine would be inconceivable without this pneumatic, non-contact, spreading system. Spreading systems that place a mechanical load (abrasive action) on the textile web cause the production of large amounts of fluff and dust. These particles block the perforation on the printing templates and as a result cause a repetitive fault in the pattern. This type of faulty web cannot be sold in the normal manner and has a serious im-



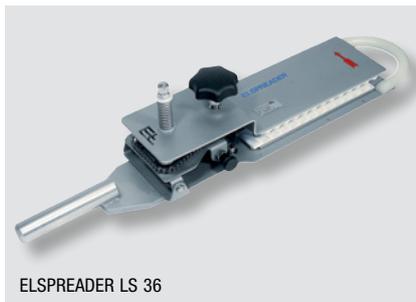
pact on profitability. The device's compact design, high performance and its variability are features that also make the application of the ELSREADER LPA 03 in the infeed on tenters the best of recommendations.



ELSPREADER LS 30

ELSPREADER LS 30

The mechanical edge spreaders LS 30 achieve their spreading action by means of plastic spreading plates with angled profiles that spread out the folded and curled edges on woven and knitted fabrics. Without the use of additional external energy, this form of spreading is very economical. The LS 30 are used, e.g., on tenter infeeds (pin chains), wet finishing machines (e.g. on mercerizing lines) and dry finishing machines (e.g. on calender and shearing machines).



ELSPREADER LS 36

ELSPREADER LS 36

The LS 36 mechanical edge spreaders are similar to the LS 30, however they are of a more compact design and can therefore be used in situations where there is little space. The LS 36 are used, e.g., on tenter infeeds (clip chains and combined chains), wet finishing machines (e.g. on mercerizing lines and squeezing), dry finishing machines (e.g. on calender and shearing machines), knitting machines, circular knitting machines and winders.



ELSPREADER LS 50

ELSPREADER LS 50

The LS 50 mechanical edge spreaders also use plastic spreading plates with angled profiles and have a large spreading range due to their large spreading lengths. The LS 50 systems are used on wet finishing machines (e.g. on washing machines, mercerizing lines, squeezing and foulards), dry finishing machines (e.g. on calender and shearing machines) and winders.



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