# ELSMART

## Web guiding and spreading systems

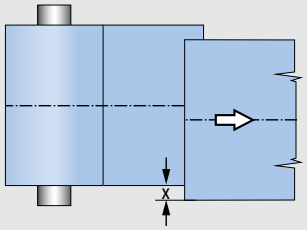
Precise guiding and spreading
of textile webs

# Contents

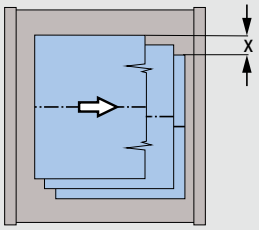
# Problems in the production process

## Typical position errors

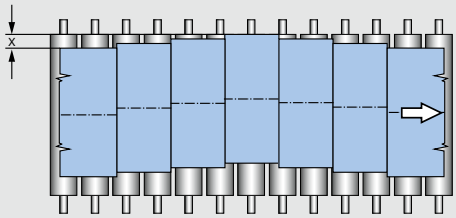
Web offset on batch change




Lateral web movement from the plaiter carriage

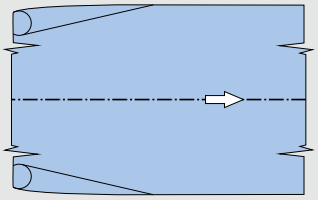



Lateral web movement in the process

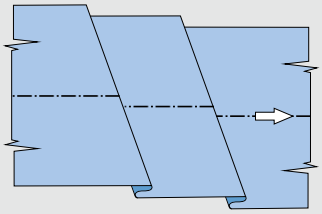



## Typical creasing and width errors

Curled/folded-over edges

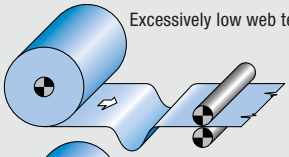


Diagonal creases

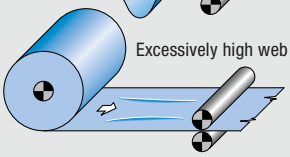


## Typical web tension errors

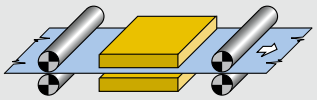
Excessively low web tension at the unwinder



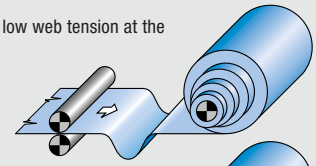
Excessively high web tension at the unwinder



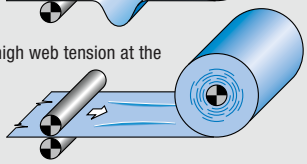
Excessively low or high web tension in the process



Excessively low web tension at the rewinder

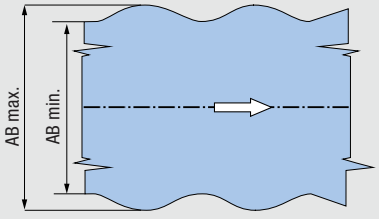


Excessively high web tension at the rewinder



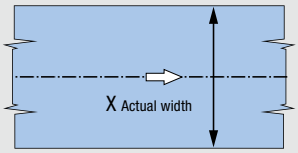
## Typical width tolerance for web with lateral elasticity

Width tolerances (lateral elasticity)

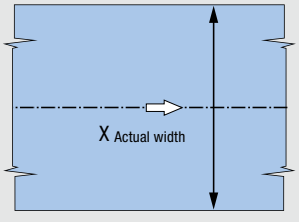



## Typical width errors

Web too narrow

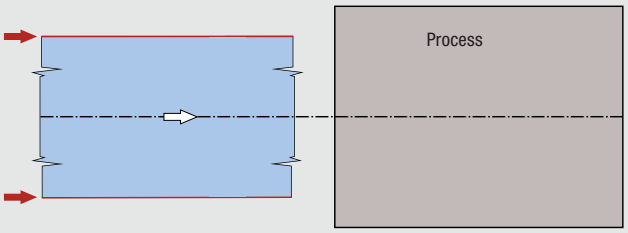



Web too wide

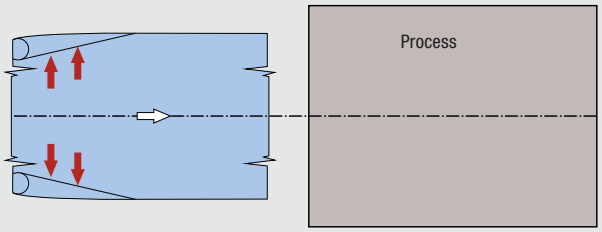


# Solutions from Erhardt+Leimer

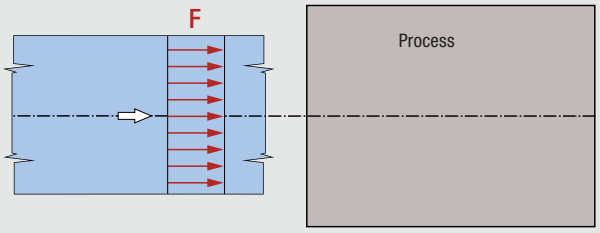
**Web guiding**
+ Guiding by web edge or web center
+ Correction of infeed and seam offset errors



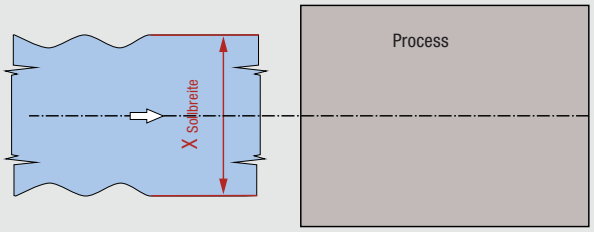

**Web spreading**
+ Reliable uncurling of the web edges
+ Spreading of creases and folded-over edges



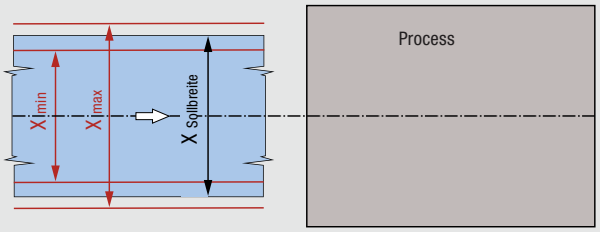

**Web tension control**
+ Constant web tension through the entire process
+ Reproducible production




**Web width control**
+ Defined target width for web with lateral elasticity

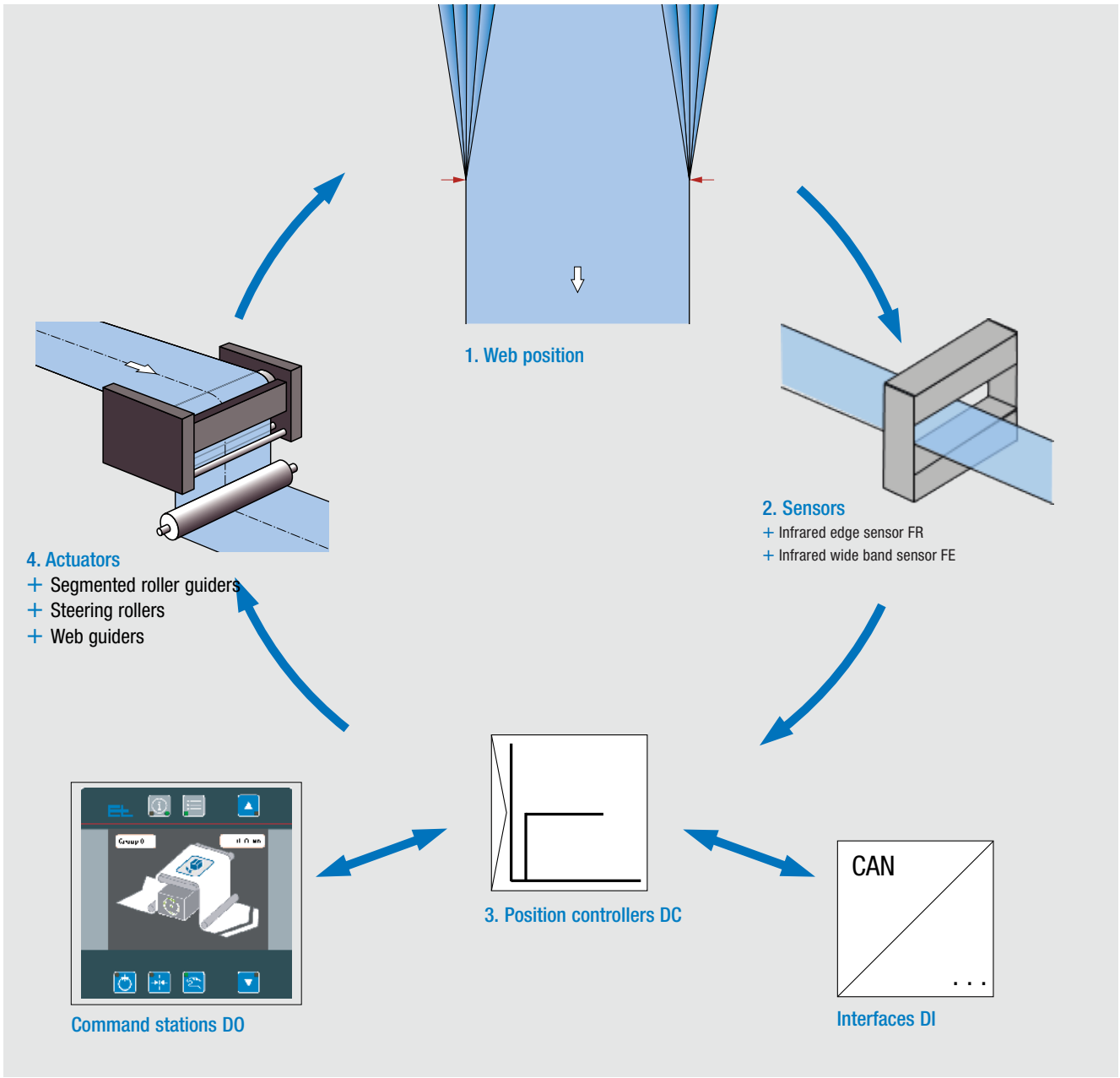



**Web width monitoring**
+ Width measurement with width monitoring



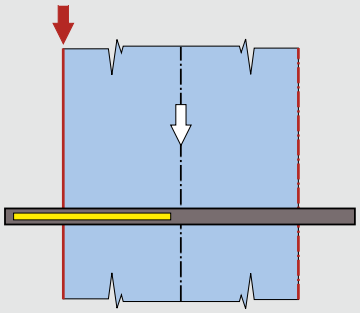
# Control loop

1. The starting point is the actual web position.
2. A sensor acquires the actual position of the web without contact. Depending on the task, this sensor can be an edge sensor or a wide band sensor.
3. The controller compares the actual position of the web with the pre-defined target value and sends a corresponding correction signal to the actuator.
4. The actuator corrects the lateral position of the moving web.

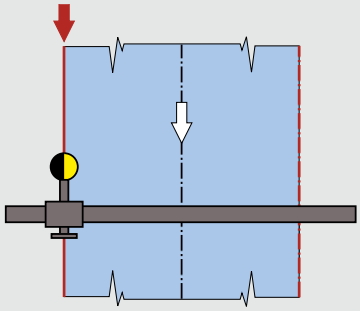


# Position control methods

## Web edge guiding

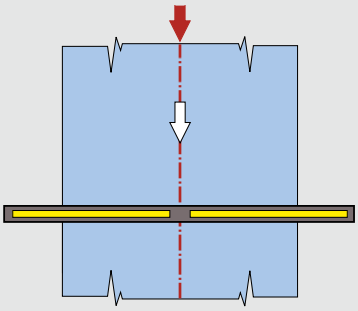


Edge acquisition using wide band sensor
Control by the right or left web edge

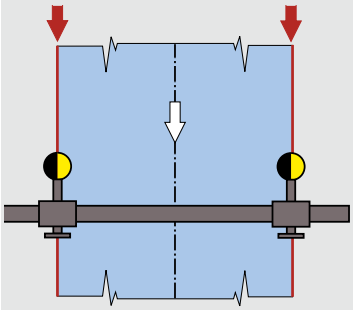


Edge acquisition using edge sensor
Control by the right or left web edge

## Web center guiding



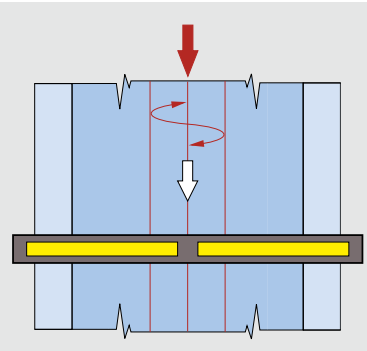
Guiding by the web center using wide band sensor



Guiding by the web center using two edge sensors

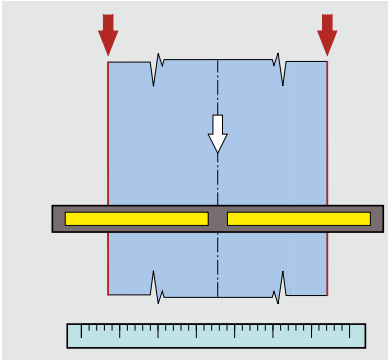
## Web oscillation

Oscillation refers to controlled changes in the position of the web following a specific cycle. This cycle can be time-based or length-based.



## Web width measurement

If both web edges are acquired using a wide band sensor, the actual web width can also be calculated and displayed.



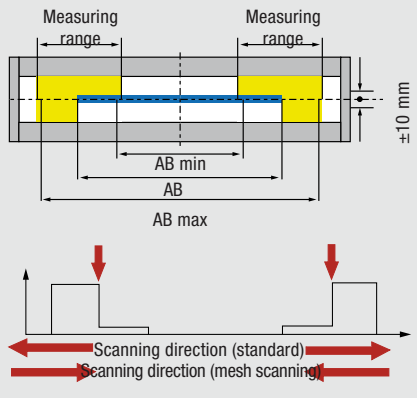
# Infrared wide band sensor FE 45

+ Digital wide band sensor for web center, web edge acquisition and width measurement up to a maximum operating width of 3800 mm (special widths up to 5000 mm)
+ Reliable scanning principle with infrared light
+ High immunity to transparency fluctuations and external light
+ Protective tubes made of Plexiglas for dry and damp operation and made of glass for wet areas
+ Special version for steam and chemical area

Infrared wide band sensor FE 45

## Selection table

| For dry and damp environment | | |
|---|---|---|
| **Type** | **Resolution** | **Material** |
| FE 4511 | ±5 mm | Plexiglas |
| FE 4521 | ±3 mm | Plexiglas |
| FE 4531 | ±1 mm | Plexiglas |
| **For wet environment** | | |
| **Type** | **Resolution** | **Material** |
| FE 4513 | ±5 mm | Glass |
| FE 4523 | ±3 mm | Glass |
| FE 4533 | ±1 mm | Glass |
| **Flange version for steamer** | | |
| **Type** | **Resolution** | **Material** |
| FE 4514 | ±5 mm | PTFE |
| FE 4524 | ±3 mm | PTFE |
| FE 4534 | ±1 mm | PTFE |




Funktionsprinzip FE 45

## Technical data

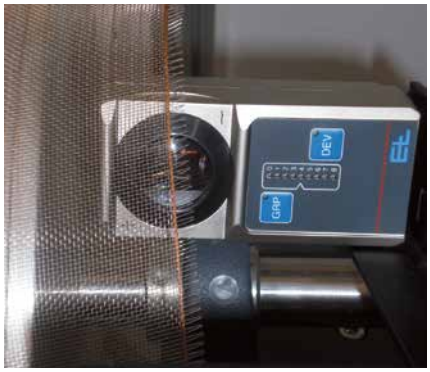
| | | Web edge | Web center |
|---|---|---|---|
| Measuring range | Standard<br>High<br>Premium | Max. 1700 mm<br>Max. 1700 mm<br>Max. 900 mm | Max. 3400 mm<br>Max. 3400 mm<br>Max. 1800 mm |
| Operating width | | Min. 400 mm<br>Max. 3800 mm<br>Special design up to 5000 mm | |
| Clear width | Plexiglas<br>Glass | 80 mm<br>75 mm | |
| Resolution | Standard<br>High<br>Premium | ±5 mm<br>±3 mm<br>±1 mm | |
| Width measurement accuracy | Standard<br>High<br>Premium | ±10 mm<br>±6 mm<br>±2 mm | |
| Web position (height fluctuation) | | Max. ±10 mm around the sensor center axis | |
| Operating voltage | Nominal value<br>Nominal range | 24 V DC<br>20 to 30 V DC (ripple included) | |
| Current consumption | | 200 mA | |
| Wavelength | | 850 nm | |
| Scan rate | | 200 Hz | |
| Length of sensor cable | | 25 m | |
| Interface | | Sensor CAN, protocol 2.0/M16 | |
| Ambient temperature | | +10 to +60 °C<br>+10 to +100 °C (FE 4514/24/34) | |
| Storage temperature | | +0 to 85 °C | |
| Atmospheric humidity | | 15 to 95 % (non-condensing) | |
| Protection class | | IP 54 | |
| Weight Premium | | Approx. 15 kg (AB 1600 mm)<br>Approx. 30 kg (AB 3200 mm) | |

# Infrared edge sensor FR 52

+ Infrared edge sensor based on the principle of retroreflection
+ Measuring range ±10 mm with a resolution of 0.02 mm
+ Distance-independent edge evaluation based on parallel light beams
+ Acquisition of edges and threads
+ Scanning with CCD array guarantees a stable operating point independent of the material transparency
+ Exposure controller for the compensation of soiling
+ Optional integrated air purge system for extreme dust conditions
+ Bar display for the indication of the current edge position or diagnostic information

Infrared edge sensor FR 52

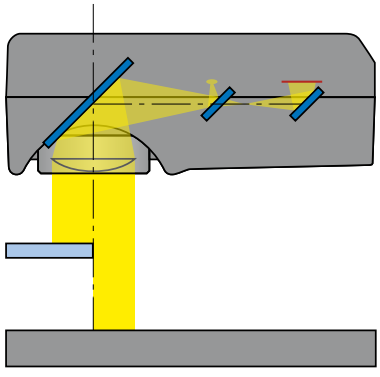

FR 52 with reflector bar



Infrared edge sensor FR 52 for mesh fabric acquisition

## Selection table

| Reflector bar | |
|---|---|
| Type | Fork width (mm) |
| FR_5000-95 | 30 |
| FR_5000-97 | 75 |
| FR_5000-98 | 160 |

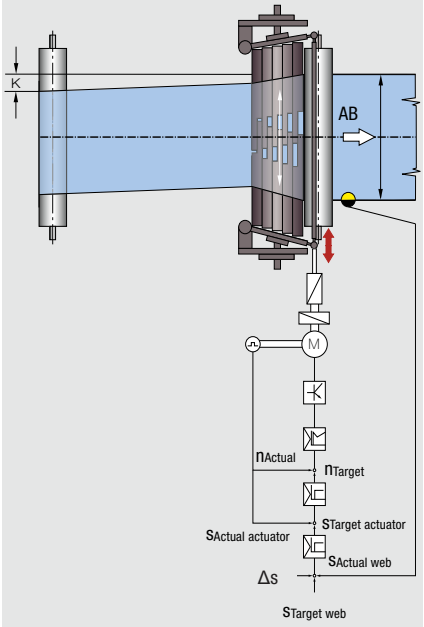

Principle of operation FR 52

## Technical data

| Infrared edge sensor FR 52 | |
|---|---|
| Measuring range<br>Resolution | +/- 10 mm<br>0.02 mm |
| Linearity | +/- 0.1 mm |
| Operating voltage<br>Nominal value<br>Nominal range (ripple included) | <br>24 V DC<br>20 to 30 V DC |
| Current consumption | 80 mA DC |
| Wavelength | 850 nm |
| Scan rate | 200 Hz |
| Cable length | Max. 10 m |
| Interface | Sensor CAN, protocol 2.0/M16 |
| Dimensions (L x W x H) | 105 x 50 x 40 mm |
| Ambient temperature | +10 to +50 °C |
| Atmospheric humidity | 15 to 95 % (non-condensing) |
| Protection class | IP 54 |
| Weight | 0.3 kg |
| Air purge system operating pressure | Min. 0.1 bar; max. 0.2 bar |
| Service unit filter | 5 µm |
| Service unit residual oil content | < 0.01 mg/m³ |

# Position controller RK 4004

- Digital position controller with integrated output stage for the operation of DC geared motors
- Cascaded control structure for the precise control of integral actuators
- Stable speed control loop due to incremental acquisition of the speed and calculation of the actual speed
- Integrated CAN bus for network of E+L control systems
- Backup solution for saving the parameters and device settings




**Legend**

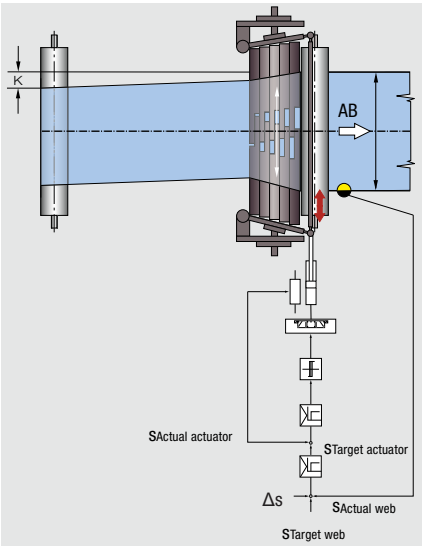
| | |
|---|---|
| K | Infeed error |
| AB | Operating width |
| $s_{Actual\ actuator}$ | Actual position, actuator |
| $s_{Target\ actuator}$ | Target position, actuator |
| $s_{Actual\ web}$ | Actual position, web |
| $s_{Target\ web}$ | Target position, web |
| Δs | Web offset |

## Technical data

| | | |
|---|---|---|
| Operating voltage | Nominal value<br>Nominal range | 24 V DC<br>20 to 30 V DC |
| Current consumption | Without motor<br>With motor | 0.2 A DC<br>5.2 A DC |
| Output voltage | At motor terminal | ±22 V (pulse width modulated) |
| Output current | | Max. 5 A |
| Cycle time | | 6 ms |
| Ambient temperature | | +10 to +50 °C |
| Relative atmospheric humidity | | 15 to 95 % (non-condensing) |
| Protection class | Without housing<br>With housing | IP 00<br>IP 54 |
| Fieldbus | | CAN bus / 250 kbit/s |
| Digital inputs | | 5x configurable<br>Low = 0 to 3 V DC<br>High = 10 to 30 V DC |
| Digital output | | 1x configurable<br>PNP, max 0.1 A |

# Position controller RK 4310

+ Digital position controller for the operation of pneumatic valves
+ Control structure with three-point controller for integral actuator
+ Integrated CAN bus for network of E+L control systems
+ With USB connection for service tool ELBUDDY
+ Backup solution for saving the parameters and device settings




### Legend

| | |
|---|---|
| K | Infeed error |
| AB | Operating width |
| SActual actuator | Actual position, actuator |
| STarget actuator | Target position, actuator |
| SActual web | Actual position, web |
| STarget web | Target position, web |
| Δs | Web offset |

### Technical data

| | | |
|---|---|---|
| Operating voltage | Nominal value<br>Nominal range | 24 V DC<br>20 to 30 V DC |
| Current consumption | | 0.2 A DC |
| Cycle time | | 6 ms |
| Ambient temperature | | +10 to +50 °C |
| Relative atmospheric humidity | | 15 to 95 % (non-condensing) |
| Protection class | Without housing<br>With housing | IP 00<br>IP 54 |
| Fieldbus | | CAN bus / 250 kbit/s |
| Digital inputs | | 1x inversion of scanning direction, floating<br>1x configurable, floating<br>"0" signal = 0 to 3 V DC<br>"1" signal = 10 to 30 V DC |
| Digital output | | 2x configurable, floating and short circuit proof<br>"High" signal = supply voltage<br>Output current 1 A (briefly 1.9 A) |

# Function of segmented roller guider ELSMART

## Function

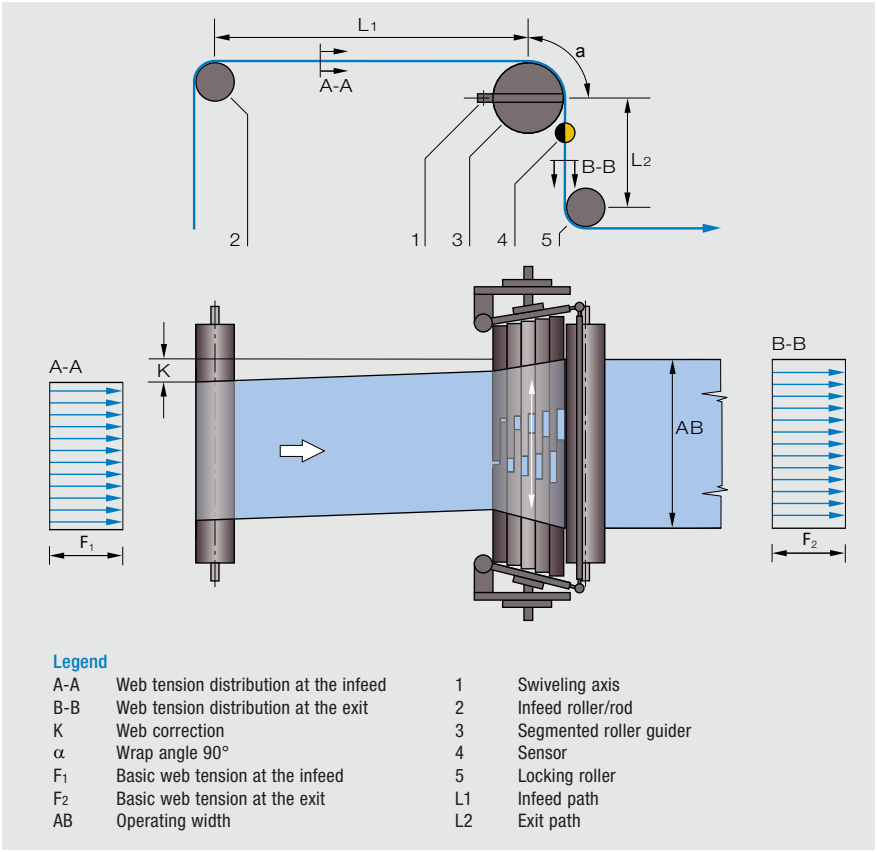
Guiding slats arranged around the circumference form the basis of the web guiding. In the basic version, the guiding slats are fixed to a guide plate so that they can be adjusted to the side via an actuating drive. In the case of segmented guiding slats, both guide plates are connected with a push rod and adjusted synchronously via an actuating drive. In this way web guiding with superimposed web spreading is realized.
If two actuating drives are used, a laterally elastic web can be regulated based on a defined target width or adjustable spreading. Alternatively, two webs can also be guided independently of each other by edge or web center.

## Area of use

Due to the minimum stress applied to the material by the segmented roller guider, the ELSMART system for web guiding and spreading can be used in almost all textile production processes. It is a prerequisite here that the textile web does not display high surface stability.

## Application

Segmented roller guiders can be used freely in terms of position.
Wrapping of 90° is always required. Entry point 90°, exit point 180°. The infeed path should be at least one web width. By contrast, the exit should be kept as short as possible. Curled edges can be uncurled in the infeed plane with the aid of an additional spreading device.




**Legend**

| | | | |
|---|---|---|---|
| A-A | Web tension distribution at the infeed | 1 | Swiveling axis |
| B-B | Web tension distribution at the exit | 2 | Infeed roller/rod |
| K | Web correction | 3 | Segmented roller guider |
| α | Wrap angle 90° | 4 | Sensor |
| $F_1$ | Basic web tension at the infeed | 5 | Locking roller |
| $F_2$ | Basic web tension at the exit | L1 | Infeed path |
| AB | Operating width | L2 | Exit path |

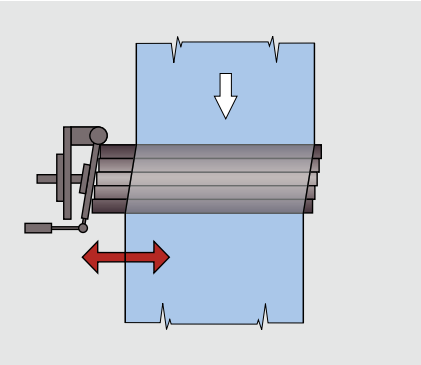
## Selection of facings

| Type | **Mohair** Standard facing with good surface structure for dry/damp webs | **PVC** For dry and wet webs | **Stainless steel** For wet (chemically laden) webs | **Stainless steel with nubs** For wet (chemically laden) and dry webs | **Perforated stainless steel** For wet and chemically laden webs in steamers and washing machines |
|---|---|---|---|---|---|
| SWS91 | ■ | ■ | | | |
| SWS93 | ■ | ■ | | | |
| SWS94 | ■ | ■ | | | |
| SWS95 | ■ | ■ | | | |
| SWA95 | ■ | ■ | | | |
| SWS96 | | ■ | ■ | ■ | |
| SWS97 | | | | | ■ |

# Web guiding functions

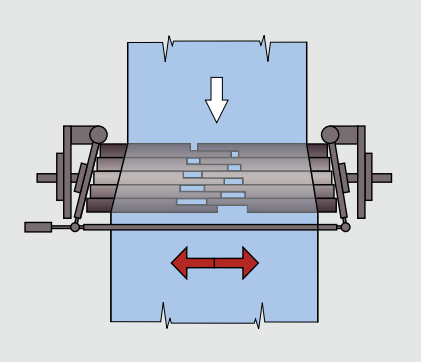
### Web guiding

+ Version with continuous guiding slats over the entire width of the web
+ Cost-effective solution for pure web guiding



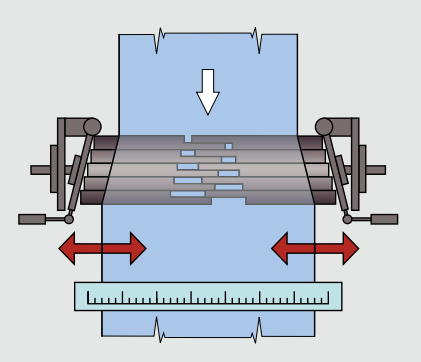
### Web guiding with spreading

+ Version with segmented guiding slats
+ Additional spreading along with web guiding
+ Spreading mechanically adjustable



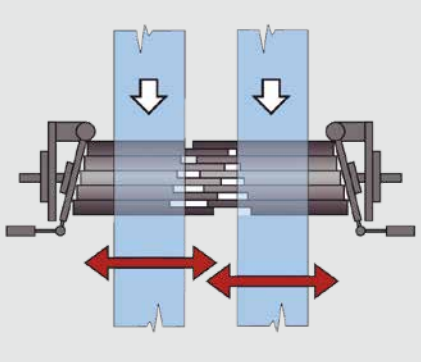
### Web width control

+ Version with segmented guiding slats and two separate control loops
+ Width control for laterally elastic fabric webs
+ Spreading electrically adjustable



### Guiding two webs

+ Version with segmented guiding slats and two separate control loops
+ Parallel web guiding for two fabric webs by web edge and web center
+ Spreading not possible



# Segmented roller guider system SWA95

+ Precise guiding of woven and knitted fabrics in dry and damp operation
+ Integrated edge acquisition with wide band sensor or infrared edge sensor
+ Gentle and reliable control of the textile web using pneumatic actuating drive on the segmented roller guider up to a machine speed of 130 m/min
+ Continuous guiding slats for web guiding, segmented guiding slats for web guiding with superimposed spreading
+ Optionally with web tension-controlled additional drive for constant web tension in the downstream process

Segmented roller guider SWA95

Segmented roller guide system SWA9501 on the exit from a tumbler

## Technical data

| | |
|---|---|
| Positional accuracy | ±10 mm (wide band sensor FE 45, standard resolution) |
| Correction range | ±300 mm (depending on web width, infeed path and web type) |
| Spreading | 0 to 12 mm (works setting 9 mm) |
| Web speed | Max. 130 m/min |
| Web tension | Max. 1000 N |
| Operating width | 1600 to 3600 mm (roller diameter 215 mm) |
| Operating voltage | 24 V DC |
| Ambient temperature | 0 to +60 °C |
| Ambient conditions | Dry and damp |
| Protection class | IP 54 |

## Selection table, segmented roller guiders SWA95 with pneumatic adjustment

| System | Actuator | Area of application | Mounting | Drive | Guiding slat | Sensor | Type of control | Spreading | Rotary tensioner |
|---|---|---|---|---|---|---|---|---|---|
| SWA9501 | SW 9562 | Dry, damp | Box | 1x pneum. drive | Continuous | FE 45 | Web center | without | without |
| SWA9551 | SW 9570 | Dry, damp | Box | 1x pneum. drive | Segmented with push rod | FE 45 | Web center | without | without |
| SWA9511 | SW 9562 | Dry, damp | Box | 1x pneum. drive | Continuous | FE 45 | Web center | LG 0671 | without |
| SWA9561 | SW 9570 | Dry, damp | Box | 1x pneum. drive | Segmented with push rod | FE 45 | Web center | LG 0671 | without |
| SWA9511 | SW 9562 | Dry, damp | Box | 1x pneum. drive | Continuous | FE 45 | Web center | LG 0671 | DS 11 |
| SWA9561 | SW 9570 | Dry, damp | Box | 1x pneum. drive | Segmented with push rod | FE 45 | Web center | LG 0671 | DS 11 |

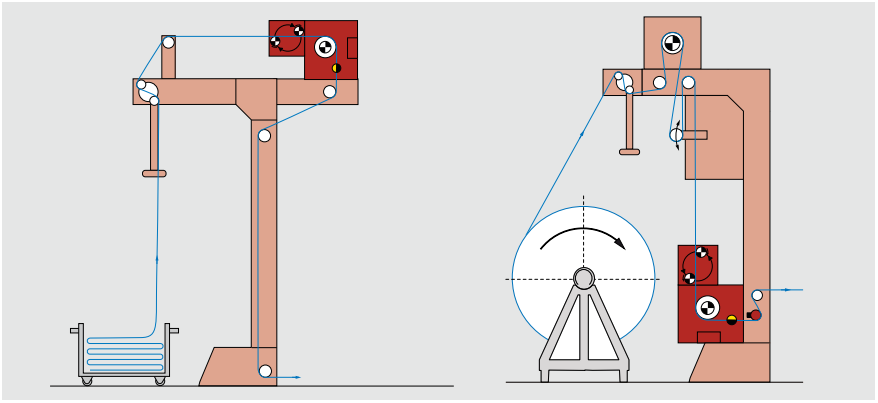
# Spreading device and rotary tensioner variant

## Segmented roller guider system SWA95 combined with spreading system LG 0671

+ Along with the web guiding, this combination ensures reliable spreading of folded webs and curled edges
+ Complete spreading, even of webs with a high Lycra content or knitted fabrics with manifold curled edges

Segmented roller guider SWA95 with spreading device LGA06

Segmented roller guider system SWA9511 after the J-box before a tenter

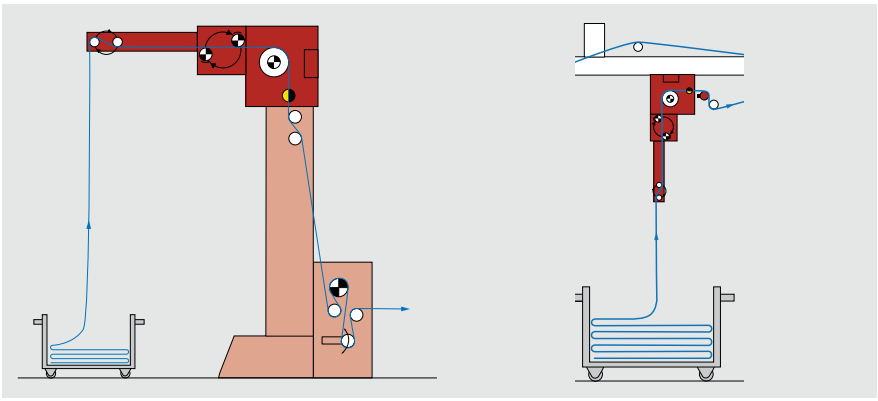


## Segmented roller guider SWA95 combined with spreading system LG 0671 and rotary tensioner DS 11

+ Along with web guiding and spreading, the combination with an additional rotary tensioner ensures optimal, cost-effective machine infeed
+ Simple mounting of the complete system on the machine line by fastening the segmented roller guider

Segmented roller guider SWA95 with spreading device LGA06 and rotary tensioner DS 11

Segmentregelwalzenanlage SWA9511 am Einlauf Rotationsdruckmaschine



# Segmented roller guider system SWS95

+ Precise guiding of woven and knitted fabrics in dry and damp operation
+ Integrated edge acquisition with wide band sensor or infrared edge sensor
+ Gentle and reliable control of the textile web using electrical actuating drive on the segmented roller guider up to a machine speed of 220 m/min
+ Continuous guiding slats for web guiding, segmented guiding slats for web guiding with superimposed spreading
+ Optionally with web tension-controlled additional drive for constant web tension in the downstream process

Segmented roller guider SWS95

## Technical data

| | |
|---|---|
| Positional accuracy | ±1 mm (infrared edge sensor FR 52)<br>±5 mm (wide band sensor FE 45, standard resolution) |
| Correction range | ±300 mm (depending on web width, infeed path and web type) |
| Spreading | 0 to 12 mm (works setting 9 mm) |
| Web speed | Max. 220 m/min |
| Web tension | Max. 1000 N |
| Operating width | 1600 to 3600 mm (roller diameter 215 mm) |
| Operating voltage | 24 V DC |
| Ambient temperature | +0 to +60 °C |
| Ambient conditions | Dry and damp |
| Protection class | IP 54 |

## Selection table, segmented roller guiders SWS95 with electrical drive

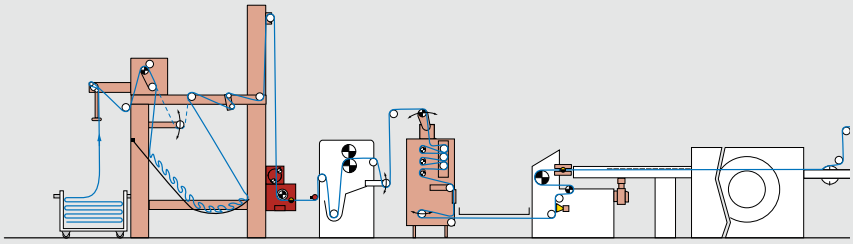
| System | Actuator | Area of application | Mounting | Drive | Guiding slat | Sensor | Type of control | Spreading | Rotary tensioner |
|---|---|---|---|---|---|---|---|---|---|
| SWS9501 | SW 9562 | Dry, damp | Box | 1x elec. | Continuous | FE 45 | Web center | without | without |
| SWS9503 | SW 9562 | Dry, damp | Box | 1x elec. | Continuous | FR 52 | Web edge | without | without |
| SWS9551 | SW 9570 | Dry, damp | Box | 1x elec. | Segmented with push rod | FE 45 | Web center | without | without |
| SWS9553 | SW 9570 | Dry, damp | Box | 1x elec. | Segmented with push rod | FR 52 | Web edge | without | without |
| SWS9554 | SW 9570 | Dry, damp | Box | 1x elec. | Segmented with push rod | 2x FR 52 | Web center | without | without |
| SWS9594 | SW 9580 | Dry, damp | Box | 2x elec. | Segmented | 2x FR 52 | Web width Web center | without | without |
| SWS9584 | SW 9580 | Dry, damp | Box | 2x elec. | Segmented | 2x FR 52 | Web width Web center | LP 03 | without |
| SWS9511 | SW 9562 | Dry, damp | Box | 1x elec. | Continuous | FE 45 | Web center | LG 0671 | without |
| SWS9561 | SW 9570 | Dry, damp | Box | 1x elec. | Segmented with push rod | FE 45 | Web center | LG 0671 | without |
| SWS9511 | SW 9562 | Dry, damp | Box | 1x elec. | Continuous | FE 45 | Web center | LG 0671 | DS 11 |
| SWS9561 | SW 9570 | Dry, damp | Box | 1x elec. | Segmented with push rod | FE 45 | Web center | LG 0671 | DS 11 |

# Spreading device and rotary tensioner variant

### Segmented roller guider system SWS95 combined with spreading system LG 0671

+ Along with the web guiding, this combination ensures reliable spreading of folded webs and curled edges
+ Complete spreading, even of webs with a high Lycra content or knitted fabrics with manifold curled edges

Segmented roller guider SWS95 with spreading device LGA06



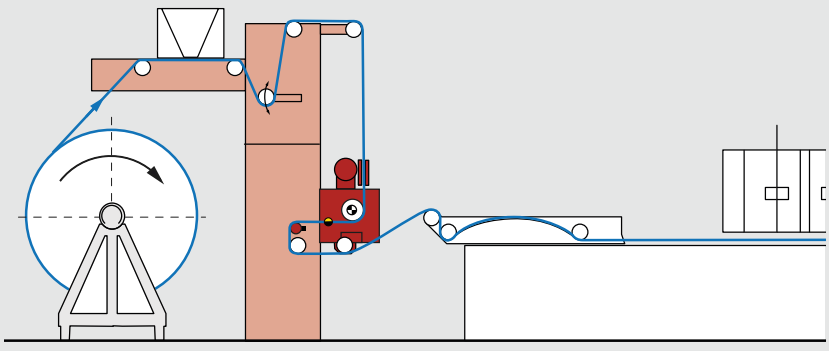
Segmented roller guider system SWS95 on tenter infeed

### Segmented roller guider system SWS95 combined with pneumatic selvedge opener LP03

+ Along with web guiding, the pneumatic selvedge openers ensure optimally uncurled web edges immediately in front of the printing blanket
+ Simple mounting of the complete system on the machine line by fastening the segmented roller guider

Segmented roller guider SWS95 with pneumatic selvedge opener LP 03

Segmented roller guider system SWS95 on rotary printing machine infeed

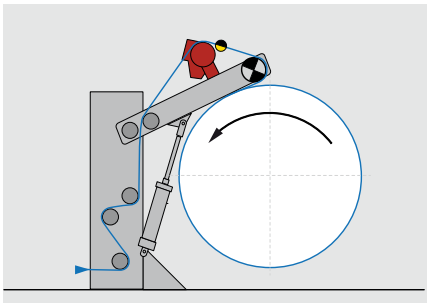


Segmented roller guider system SWS95 on digital printing machine infeed

# Segmented roller guider system SWS94

+ Precise guiding of woven and knitted fabrics in dry and damp operation
+ Compact, lightweight version with adjustable mounting bracket for adaptation to existing direction of web travel
+ Integrated edge acquisition with wide band sensor or infrared edge sensor
+ Gentle and reliable control of the textile web using electrical actuating drive on the segmented roller guider up to a machine speed of 200 m/min
+ Continuous guiding slats for web guiding, segmented guiding slats for web guiding with superimposed spreading
+ Optionally with web tension-controlled additional drive for constant web tension in the downstream process

Segmented roller guider SWS94



Segmented roller guider system SWS94 on Sochor arm in front of rewinder

Segmented roller guider system SWS94 on rotary printing machine infeed

## Technical data

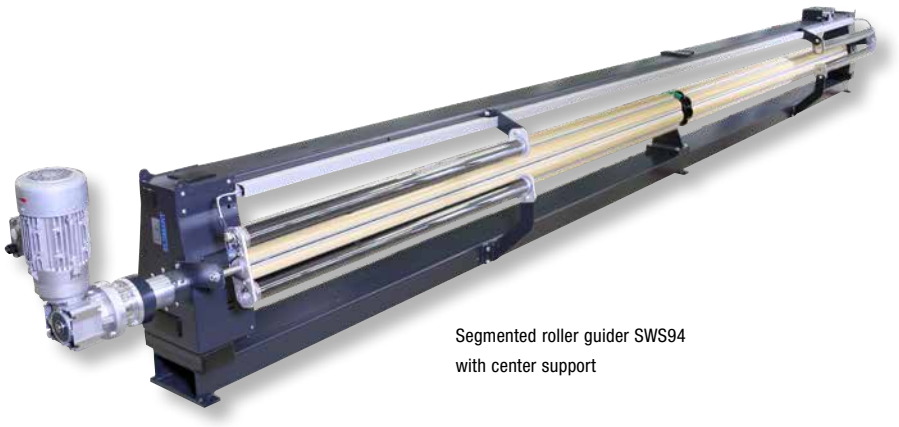
| | |
|---|---|
| Positional accuracy | ±1 mm (infrared edge sensor FR 52), ±5 mm (wide band sensor FE 45, standard resolution) |
| Correction range | ±300 mm (depending on web width, infeed path and web type) |
| Spreading | 0 to 12 mm (works setting 9 mm) |
| Web speed | Max. 200 m/min |
| Web tension | Max. 1000 N |
| Operating width | 1600 to 3600 mm (roller diameter 215 mm) |
| Operating voltage | 24 V DC |
| Ambient temperature | +0 to +60 °C |
| Ambient conditions | Dry and damp |
| Protection class | IP 54 |

## Selection table, segmented roller guider SWS94 with electrical drive

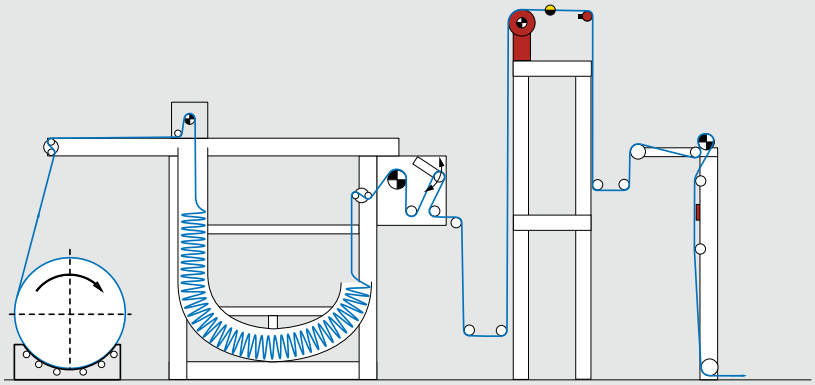
| System | Actuator | Area of application | Mounting | Drive | Guiding slat | Sensor | Type of control | Spreading |
|---|---|---|---|---|---|---|---|---|
| SWS9401 | SW 9462 | Dry, damp | Base | 1x drive | Continuous | FE 45 | Web center | without |
| SWS9403 | SW 9462 | Dry, damp | Base | 1x drive | Continuous | FR 52 | Web edge | without |
| SWS9451 | SW 9470 | Dry, damp | Base | 1x drive | Segmented with push rod | FE 45 | Web center | without |
| SWS9453 | SW 9470 | Dry, damp | Base | 1x drive | Segmented with push rod | FR 52 | Web edge | without |
| SWS9473 | SW 9470 | Dry, damp | Base | 1x drive | Segmented with push rod | FR 52 | Web edge | LP 03 |
| SWS9484 | SW 9480 | Dry, damp | Base | 2x drive | Segmented | 2xFR 52 | Web width, web center | LP 03 |
| SWS9494 | SW 9480 | Dry, damp | Base | 2x drive | Segmented | 2xFR 52 | Web width, web center | without |

# Segmented roller guider system SWS94 with SW 9430 and center support

+ Precise web guide of woven and knitted fabrics as well as carpet in dry and damp operation
+ Compact version with mounting bracket and center support for operating widths from 3700 to 6000 mm
+ Integrated edge acquisition with wide band sensor or infrared edge sensor
+ Gentle and reliable control of the textile web using electrical actuating drive on the segmented roller guider up to a machine speed of 200 m/min
+ Segmented guiding slats for web guiding with superimposed spreading
+ Optionally with web tension-controlled additional drive for constant web tension in the downstream process



Segmented roller guider SWS94 with center support



Segmented roller guider system SWS94 on carpet coating system infeed

## Technical data

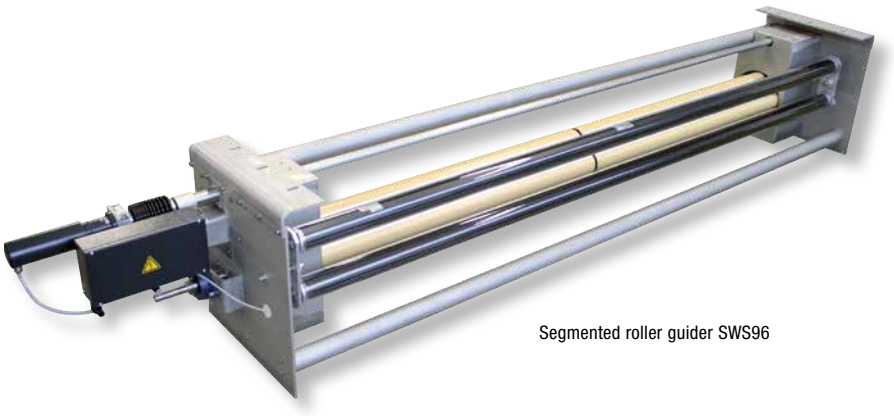
| | |
|---|---|
| Positional accuracy | ±5 mm (wide band sensor FE 45, standard resolution) |
| Correction range | ±300 mm (depending on web width, infeed path and web type) |
| Spreading | 0 to 12 mm (works setting 9 mm) |
| Web speed | Max. 200 m/min |
| Web tension | Max. 1000 N |
| Operating width | 3700 to 6000 mm (roller diameter 215 mm) |
| Operating voltage | 24 V DC |
| Ambient temperature | +0 to +60 °C |
| Ambient conditions | Dry and damp |
| Protection class | IP 54 |

## Selection table

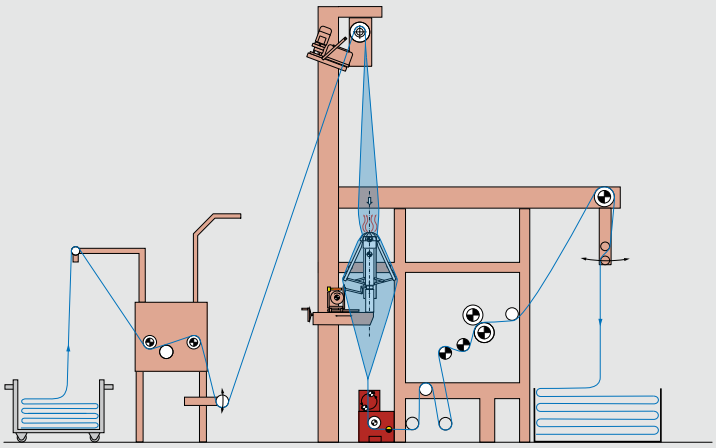
| System | Actuator | Area of application | Mounting | Drive | Guiding slat | Sensor | Type of control | Spreading |
|---|---|---|---|---|---|---|---|---|
| SWS9451 | SW 9430 | Dry, damp | Base+center | 1x drive | Segmented with push rod | FE 47 | Web center | without |

# Segmented roller guider system SWS96

+ Precise web guiding in stainless steel design for woven and knitted fabrics in wet and damp operation
+ Integrated edge acquisition with wide band sensor
+ Gentle and reliable control of the textile web using electrical actuating drive on the segmented roller guider up to a machine speed of 100 m/min
+ Continuous guiding slats for web guiding, segmented guiding slats for web guiding with superimposed spreading
+ Optionally with web tension-controlled additional drive for constant web tension in the downstream process



Segmented roller guider SWS96



Segmented roller guider system SWS96 on rope detwisting system

Segmented roller guider system SWS96 on rope detwisting system

## Technical data, segmented roller guider

| | |
|---|---|
| Positional accuracy | ±5 mm (wide band sensor FE 45, standard resolution) |
| Correction range | ±300 mm (depending on web width, infeed path and web type) |
| Spreading | 0 to 12 mm (works setting 9 mm) |
| Web speed | Max. 100 m/min |
| Web tension | Max. 1000 N |
| Operating width | 1600 to 3600 mm (roller diameter 215 mm) |
| Operating voltage | 24 V DC |
| Ambient temperature | +0 to +60 °C |
| Ambient conditions | Damp and wet |
| Protection class | IP 65 (actuating drive IP 54) |

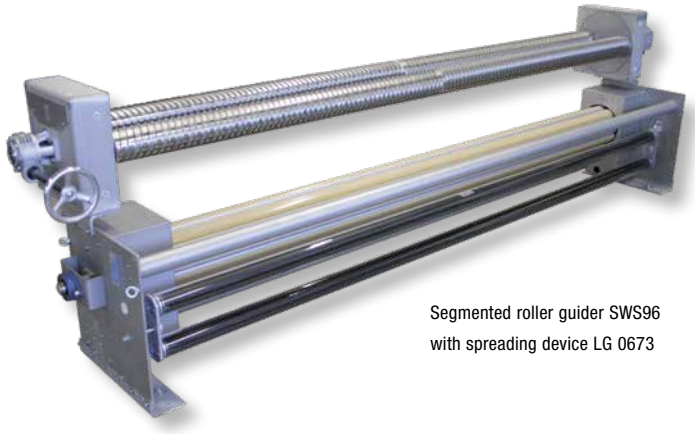
## Selection table

| System | Actuator | Area of application | Mounting | Drive | Guiding slat | Sensor | Type of control | Spreading |
|---|---|---|---|---|---|---|---|---|
| SWS9601 | SW 9662 | Damp, wet | Box | 1x elec. drive | Continuous | FE 45 | Web center | without |
| SWS9651 | SW 9670 | Damp, wet | Box | 1x elec. drive | Segmented with push rod | FE 45 | Web center | without |

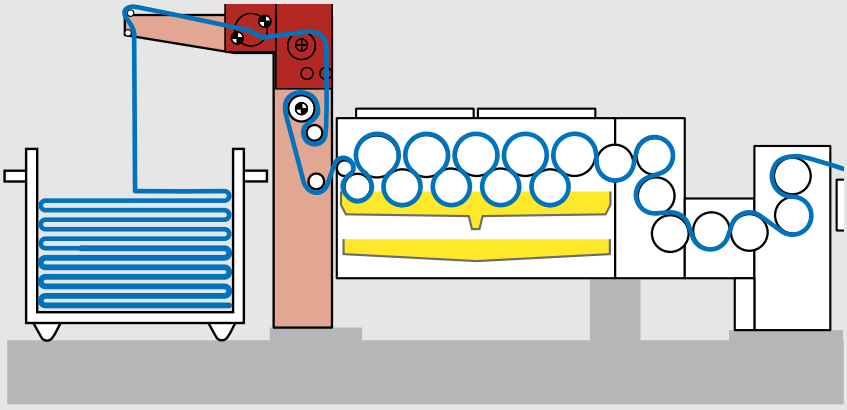
# Segmented roller guider system SWS96 with spreading device LG 0673

**Segmented roller guider system SWS96 combined with spreading system LG 0673**

+ Along with the web guiding, this combination ensures reliable spreading of folded webs and curled edges
+ Complete spreading, even of webs with a high Lycra content or knitted fabrics with manifold curled edges



Segmented roller guider SWS96 with spreading device LG 0673



Segmented roller guider system SWS9611 in front of mercerizing machine

Segmented roller guider system SWS9611 in front of padder

## Technical data, spreading device

| | |
|---|---|
| Operating width | 1000 to 3600 mm (steps of 100 mm) |
| Diameter, spreading rollers | 86 mm (AB 1000 mm to 2400 mm)<br>112 mm (AB 2500 mm to 3600 mm) |
| Speed, spreading rollers | 268 1/min (50 Hz)<br>322 1/min (60 Hz) |
| Power consumption | 0.55 kW (50 Hz)<br>0.63 kW (60 Hz) |
| Operating voltage | 220 - 240 V / 380 - 420 (50 Hz)<br>254 - 280 V / 440 - 480 V (60 Hz) |
| Ambient temperature | +10 to +60 °C |
| Ambient conditions | Damp and wet |
| Protection class | IP 54 |

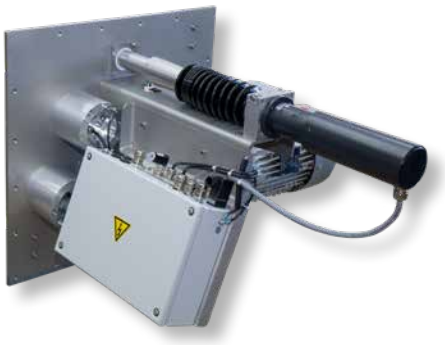
## Selection table

| System | Actuator | Area of application | Mounting | Drive | Guiding slat | Sensor | Type of control | Spreading |
|---|---|---|---|---|---|---|---|---|
| SWS9611 | SW 9662 | Damp, wet | Box | 1x elec. drive | Continuous | FE 45 | Web center | LG 0673 |
| SWS9661 | SW 9670 | Damp, wet | Box | 1x elec. drive | Segmented with push rod | FE 45 | Web center | LG 0673 |

# Segmented roller guider system SWS97

+ Precise web guiding in stainless steel design for woven and knitted fabrics in steam and wet operation to 100 °C
+ Integrated edge acquisition with wide band sensor up to 100 °C
+ Gentle and reliable control of the textile web using electrical actuating drive on the segmented roller guider up to a machine speed of 100 m/min
+ Continuous guiding slats for web guiding, segmented guiding slats for web guiding with superimposed spreading
+ Optionally with web tension-controlled additional drive for constant web tension in the downstream process

Segmented roller guider SWS97



Segmented roller guider SWS97 drive side

Segmented roller guider system SWS97 in bleaching steamer

## Technical data, segmented roller guider

| | |
|---|---|
| Positional accuracy | ±5 mm (wide band sensor FE 45, standard resolution) |
| Correction range | ±300 mm (depending on web width, infeed path and web type) |
| Spreading | 0 to 12 mm (works setting 9 mm) |
| Web speed | Max. 100 m/min |
| Web tension | Max. 1000 N |
| Operating width | 1600 to 3600 mm (roller diameter 215 mm) |
| Operating voltage | 24 V DC |
| Ambient temperature | +0 to +100 °C |
| Ambient conditions | Damp, wet and saturated steam |
| Protection class inside the machine<br>Protection class outside the machine | IP 65<br>IP 54 |

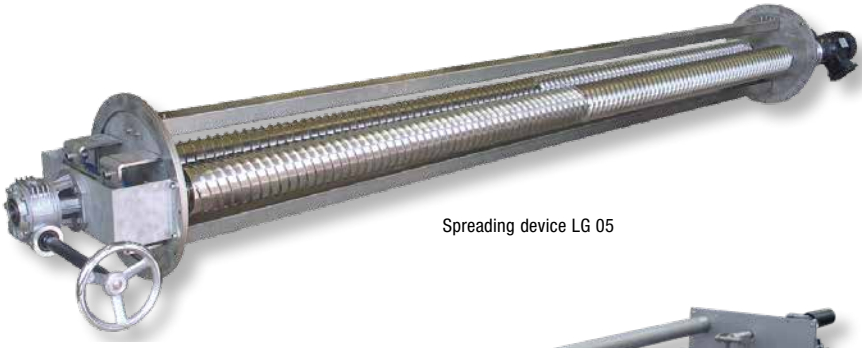
## Selection table

| System | Actuator | Area of application | Mounting | Drive | Guiding slat | Sensor | Type of control | Spreading |
|---|---|---|---|---|---|---|---|---|
| SWS9701 | SW 9762 | Damp, wet | Flange | 1x elec. drive | Continuous | FE 45 | Web center | without |
| SWS9751 | SW 9770 | Damp, wet | Flange | 1x elec. drive | Segmented with push rod | FE 45 | Web center | without |

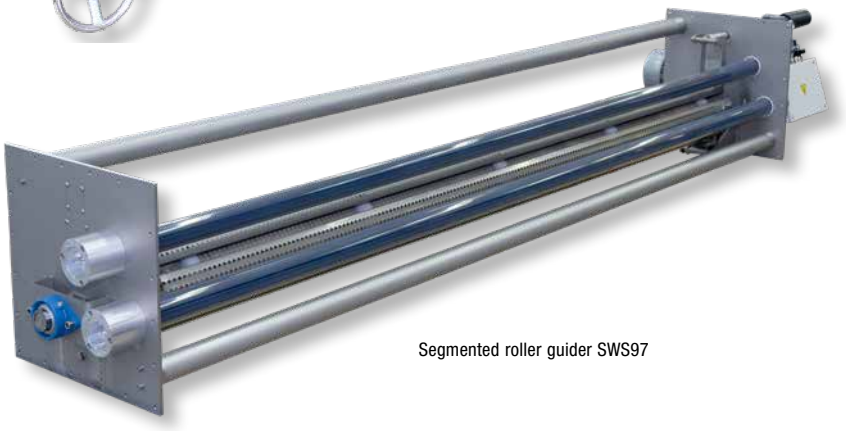
# Segmented roller guider system SWS97 with spreading device LG 05

### Segmented roller guider system SWS97 combined with spreading system LG 05

+ Along with the web guiding, this combination ensures reliable spreading of folded webs and curled edges
+ Complete spreading, even of webs with a high Lycra content or knitted fabrics with manifold curled edges



Spreading device LG 05



Segmented roller guider SWS97

Segmented roller guider system SWS97 and LG05 in bleaching steamer

### Technical data, spreading device

| | |
|---|---|
| Operating width | 1600 to 3600 mm (steps of 100 mm) |
| Diameter, spreading rollers | 112 mm (AB 1600 mm to 3600 mm) |
| Framework width GA (outside) | AB + 406 mm |
| Web tension | Max. 1000 N |
| Ambient temperature | +10 to +60 °C |
| Ambient conditions | Damp, wet, saturated steam |
| Speed, spreading rollers | 245 1/min (50 Hz)<br>295 1/min (60 Hz) |
| Power consumption | 0.55 kW |
| Operating voltage | 220 - 240 V / 280 - 420 V (50 Hz)<br>254 - 277 V / 440 - 480 V (60 Hz) |
| Protection class | IP 55 |
| Material | Stainless steel |

### Selection table

| System | Actuator | Area of application | Mounting | Drive | Guiding slat | Sensor | Type of control | Spreading |
|---|---|---|---|---|---|---|---|---|
| SWS9711 | SW 9762 | Damp, wet | Box | 1x elec. drive | Continuous | FE 45 | Web center | LG 052 |
| SWS9761 | SW 9770 | Damp, wet | Box | 1x elec. drive | Segmented with push rod | FE 45 | Web center | LG 052 |

# Segmented roller guider system SWS93

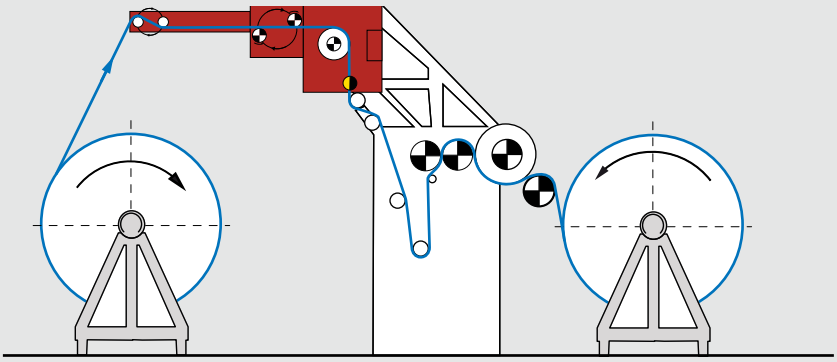
- Compact web guiding with integrated spreading rollers for woven and knitted fabrics in dry and damp operation
- Integrated edge acquisition with wide band sensor
- Gentle and reliable control of the textile web using electrical actuating drive on the segmented roller guider with a roller diameter of 160 mm
- Continuous guiding slats for web guiding, segmented guiding slats for web guiding with superimposed spreading
- Optionally with web tension-controlled additional drive and integrated frequency converter for constant web tension in the downstream process

Segmented roller guider SWS93

## Technical data

| | |
|---|---|
| Positional accuracy | ±5 mm (wide band sensor FE 45, standard resolution) |
| Correction range | ± 100 mm (depending on web width, infeed path and web type) |
| Spreading | 0 to 5 mm (works setting 5 mm) |
| Web speed | Max. 50 m/min |
| Web tension | Max. 500 N |
| Operating width | 1000 to 2600 mm (roller diameter 160 mm) |
| Operating voltage | 24 V DC |
| Ambient temperature | +0 to +60 °C |
| Ambient conditions | Dry and damp |
| Protection class | IP 54 |

Segmented roller guider system SWS93 on dying padder infeed



Segmented roller guider system SWS93 on dying padder infeed

## Selection table

| System | Actuator | Area of application | Mounting | Drive | Guiding slat | Sensor | Guiding | Spreading |
|---|---|---|---|---|---|---|---|---|
| SWS9311 | -- | Dry, damp | Base | 1x drive | Continuous | FE 45 | Web center | Integrated |
| SWS9361 | -- | Dry, damp | Base | 1x drive | Segmented with push rod | FE 45 | Web center | Integrated |

# Segmented roller guider system SWS91

+ Precise guiding of woven and knitted fabrics in dry and damp operation or rubberized webs from the loop
+ Integrated edge acquisition with wide band sensor or infrared edge sensor
+ Gentle and safe control of the textile web using the electrical actuating drive of the segmented roller guider up to a machine speed of 50 m/min
+ Continuous guiding slats for web guiding, segmented guiding slats for web guiding with superimposed spreading
+ Optionally with web tension-controlled additional drive for constant web tension in the downstream process

Segmented roller guider SWS91

## Technical data

| | |
|---|---|
| Positional accuracy | ±1 mm (infrared edge sensor FR 52)<br>±3 mm (wide band sensor FE 45, high resolution) |
| Correction range | ± 100 mm (depending on web width, infeed path and web type) |
| Spreading | 0 to 5 mm (works setting 5 mm) |
| Web speed | Max. 50 m/min |
| Web tension | Max. 500 N |
| Operating width | 300 to 2600 mm (roller diameter 160 mm) |
| Operating voltage | 24 V DC |
| Ambient temperature | +0 to +60 °C |
| Ambient conditions | Dry and damp |
| Protection class | IP 54 |

## Selection table

| System | Actuator | Area of application | Mounting | Drive | Guiding slat | Sensor | Type of control |
|---|---|---|---|---|---|---|---|
| SWS9101 | SW 9162 | Dry, damp | Base | 1x drive | Continuous | FE 45 | Web center |
| SWS9103 | SW 9162 | Dry, damp | Base | 1x drive | Continuous | FR 52 | Web edge |
| SWS9105 | SW 9162 | Dry, damp | Base | 1x drive | Continuous | FR 60 | Web edge |
| SWS9151 | SW 9170 | Dry, damp | Base | 1x drive | Sym. segmented with push rod | FE 45 | Web center |
| SWS9153 | SW 9170 | Dry, damp | Base | 1x drive | Sym. segmented with push rod | FR 52 | Web edge |
| SWS9155 | SW 9170 | Dry, damp | Base | 1x drive | Sym. segmented with push rod | FR 60 | Web edge |
| SWS9194 | SW 9180 | Dry, damp | Base | 2x drive | Symmetrically segmented | 2xFR 52 | Web edge |
| SWS9196 | SW 9180 | Dry, damp | Base | 2x drive | Symmetrically segmented | 2xFR 60 | Web edge |
| SWS9191 | SW 9180 | Dry, damp | Base | 2x drive | Symmetrically segmented | 2xFE 45 | Web width |

# Web tension control ELTENS

## Function

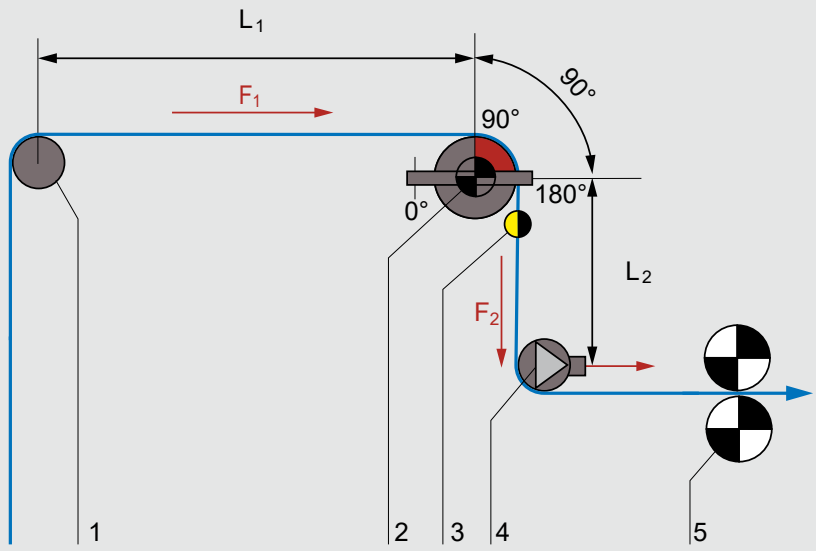
Load cells measure the actual web tension on the moving web. This value is compared with the target web tension and transferred as a control difference to the PID controller. The PID controller forms the speed correction signal ± Δv, which is added to the web speed signal. The corrected target speed is fed to the additional drive on the segmented roller guider. The change in the peripheral speed on the segmented roller guider controls the web tension to the next drive.

## Area of use

Using web tension control, knitted and woven fabrics are fed to the next process with the correct web tension and the bearing friction as well as mass inertia of the roller compensated. Due to the required wrapping of 90°, segmented roller guiders cannot be used as a transport drive.

## Application

It is to be ensured that the web tension control on a segmented roller guider is integrated correctly into the machine's drive structure. Both before and after the segmented roller guider, the web tension should be maintained constant by means of web tension control or dancer position control. In the most common applications, the segmented roller guider is in front of the main drive, in this case the locking roller can be designed as a measuring roller. If the segmented roller guider is integrated into the machine after a main drive, the infeed roller is to be defined as a measuring roller.




**Legend**

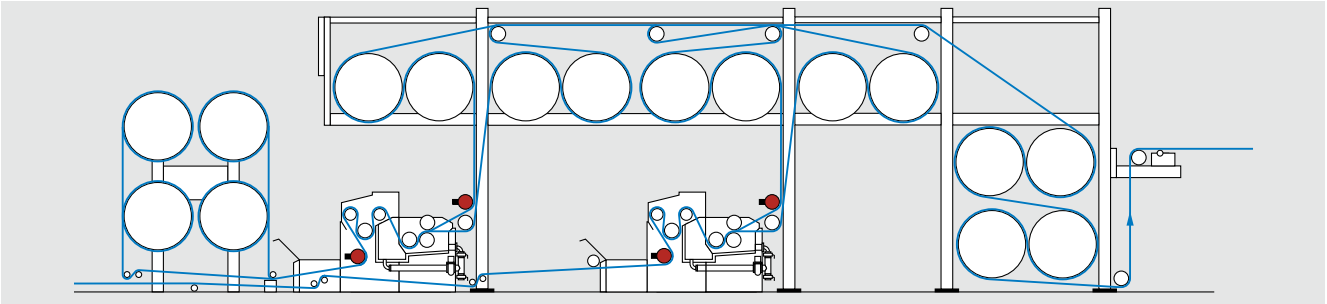
1 Infeed roller
2 Segmented roller guider with additional drive
3 Edge sensor
4 Flange load cell
5 Main drive
L1 Infeed path
L2 Exit path
F1 Web tension infeed
F2 Web tension exit

# Flange load cell PD 25

### Flange load cell PD 25

- Cost-effective aluminum flange load cell
- Compatible with the PD 21/22 standard series
- Multi-position, easy installation due to various mounting options, e.g. flange bearings, pedestal bearings, inner or outer fastening
- Maximum operational reliability due to overload protection up to 10 times the nominal measuring force
- With horizontal measuring direction, the weight of the roller does not affect the measured result
- Good temperature behavior and a high degree of linearity of the measuring elements due to strain gauge application on a flat surface
- High permissible operating speed of the measuring roller due to high web load cell spring constant

Flange load cell PD 25



Flange load cell PD 25 on sizing machine

### Selection table

| Type bore on one side | Ø (mm) | Nominal measuring force (kN) | | |
|---|---|---|---|---|
| PD 2517 | 17 | 0.1 | 0.2 | 0.5 |
| PD 2525 | 25 | 0.15 | 0.3 | 0.75 |
| PD 2535 | 35 | 0.3 | 0.6 | 1.5 |

Flange load cell PD 25 on the infeed to a sizing bath

### Technical data

| | |
|---|---|
| Accuracy class | 1 |
| Nominal characteristic value (sensitivity) | 1m V/V |
| Combined error | < 1 % |
| Characteristic value tolerance | 0.2 % |
| Measuring principle | Full bridge strain gauge |
| Nominal resistance of the strain gauge bridge | 700 Ohm |
| Bridge supply voltage, nominal value | 10 V |
| Max. permissible value | 14 V |
| Mechanical stop | 1.8 to 2.4 $F_N$ dep. on type |
| Operating load | 1.8 to 2.4 $F_N$ |
| Limit load | 10 x $F_N$ |
| Nominal measuring deflection | 0.1 to 0.25 mm depending on type |
| Nominal temperature range | -10 to +60 °C |
| Operating temperature range | -10 to +90 °C |
| Temperature coefficient | ±0.5 % / 10 K (characteristic value), ±0.5 % / 10 K (zero signal) |
| Protection class | IP 54 |
| Max. permissible axial lateral force | 1 x $F_N$ |
| Weight | 0.8 kg (Ø = 17 mm), 1.25 kg (Ø = 25 mm), 2.94 kg (Ø = 35 mm) |

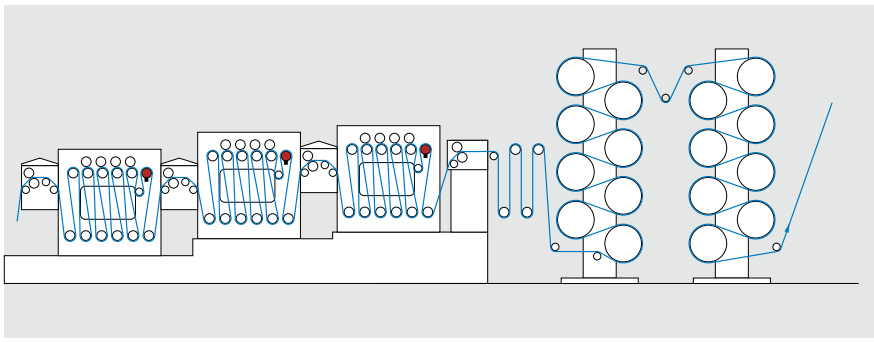
# Flange load cell PD 23

### Flange load cell PD 23/24

- + Flange load cell in stainless steel for difficult ambient conditions, e.g. washing machines and bleaching systems
- + Multi-position, easy installation due to various mounting options, e.g. flange bearings, pedestal bearings, inner or outer fastening
- + Maximum operational reliability due to overload protection up to 20 times the nominal measuring force
- + With horizontal measuring direction, the weight of the roller does not affect the measured result
- + Good temperature behavior and a high degree of linearity of the measuring elements due to strain gauge application on a flat surface
- + High permissible operating speed of the measuring roller due to high web load cell spring constant

Flange load cell PD 23

Flange load cell PD 23 on washing machine



Flange load cell PD 23 on dyeing system

### Selection table

| Type bore on one side | Type bore on both sides | Ø (mm) | Nominal measuring force (kN) | | | |
|---|---|---|---|---|---|---|
| PD 2317 | PD 2417 | 17 | 0.1 | 0.2 | 0.5 | 1 |
| PD 2325 | PD 2425 | 25 | 0.15 | 0.3 | 0.75 | 1.5 |
| PD 2335 | PD 2435 | 35 | 0.3 | 0.6 | 1.5 | 3 |

### Technical data

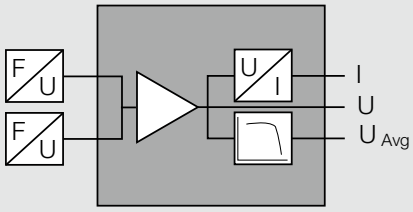
| | |
|---|---|
| Accuracy class | 0.5 |
| Nominal characteristic value (sensitivity) | 1m V/V |
| Combined error | < 0.5 % |
| Characteristic value tolerance | 0.2 % |
| Measuring principle | Full bridge strain gauge |
| Nominal resistance of the strain gauge bridge | 700 Ohm |
| Bridge supply voltage, nominal value | 10 V |
| Max. permissible value | 14 V |
| Mechanical stop | 1.8 to 2.4 $F_N$ dep. on type |
| Operating load | 1.8 to 2.4 $F_N$ |
| Limit load | 20 x $F_N$ |
| Nominal measuring deflection | 0.1 to 0.2 mm depending on type |
| Nominal temperature range | - 10 to + 60° C |
| Operating temperature range | - 10 to + 90° C |
| Temperature coefficient | ± 0.3 % / 10 K (characteristic value), ± 0.3 % / 10 K (zero signal) |
| Protection class | IP 65 |
| Max. permissible axial lateral force | 1 x $F_N$ |
| Weight | 2.3 kg (Ø = 17 mm), 3.6 kg (Ø = 25 mm), 8.5 kg (dØ = 35 mm) |

# Measuring amplifier CV 22

### Measuring amplifier CV 22

+ Single-channel measuring amplifier for connecting two fabric tension sensors with strain gauge bridge
+ Precision instrument amplifier with low temperature drift, high long-term stability and excellent linearity
+ With potentiometer for zero point and tare adjustment as well as gain setting
+ Internal reference voltage for measuring amplifier calibration without reference weights given exact knowledge of the wrapping angle and mounting position


Measuring amplifier CV 22




Block diagram CV 22

### Technical data

| | |
|---|---|
| Accuracy class | 0.1 |
| Gain range | 990 to 3400 V/V<br>400 to 1250 V/V<br>600 to 2050 V/V<br>300 to 1025 V/V |
| Input voltage | Input voltage 0 to ± 20 mV |
| Output signals<br>Voltage<br>Voltage filtered<br>Current | <br>0 to ± 10 V (rise time 5 ms)<br>0 to ± 10 V (rise time 2 s)<br>0/4 mA to 20 mA |
| Nominal temperature | 0 to 60 °C |
| Temperature coefficient<br>of the nominal value<br>of the zero signal<br>of the bridge supply voltage | <br>± 3 %/10 K<br>± 3 %/10 K<br>± 0.04 %/10 K |
| Operating voltage<br>Nominal value<br>Nominal range | <br>24 V DC<br>20 to 30 V DC |
| Current consumption | 0.2 A |
| Bridge supply voltage<br>Nominal value<br>Nominal range | <br>10 V DC<br>9 to 13 V DC |
| Protection class<br>Top-hat rail mounting to DIN EN50022<br>With housing | <br>IP 00<br>IP 54 |

# Web tension controller DC 62

### Web tension controller DC 62

The web tension controller has a variable controller structure to cover a wide variety of applications:

+ "Open-loop" with diameter signal
+ "Closed-loop" via load cell or dancer position: unwinders with electrical and pneumatic brakes; rewinders, unwinders or transport drive with electrical drives

The integrated measuring amplifier, the analog inputs and outputs and the power output stage for electrical brakes make a compact design possible. The menu-based, language-neutral commissioning wizard combined with the color touch display guarantee very straightforward, quick commissioning of the web tension control system. Integration in the customer's controller is ensured with the Ethernet interface.


Web tension controller DC 62

### Further functions:

+ Adaptive control
+ 30 recipes
+ Configurable winding characteristic (taper tension)
+ Alarm function

### Area of use

The DC 62 is universally suitable for all web tension control tasks regardless of whether in the paper, film or textile industrial sectors.

### Selection table

| Type | Plug-in | Housing | Ethernet |
|---|---|---|---|
| DC 6200 | ■ | | ■ |
| DC 6201 | | ■ | ■ |
| DC 6210 | ■ | | |
| DC 6211 | | ■ | |

### Technical data

| | |
|---|---|
| Operating voltage<br>Current consumption<br>Nominal operating temperature<br>Control cycle time | 24 V DC (20 to 30 V DC)<br>0.3 A/4.3 A (elec. brake)<br>10 to 50 °C<br>1 ms |
| Strain gauge amplifier<br>Input voltage<br>Bridge supply voltage | 2 channels<br>± 30 mV / 14 bits<br>10 V |
| Analog inputs<br>Guiding value/target value/dancer position<br>Diameter | <br>2 x 0 to ± 10 V / 14 bits<br>1 x 0 to 10 V / 12 bits |
| Analog outputs<br>Electrical brake / coupling<br>Controller actuating signal<br><br>Monitor output | <br>PWM current output 0 to 4 A/ 24 V<br>1 x 0 to ± 10 V / 14 bits<br>1 x 0/4 to 20 mA<br>1 x 0 to 10 V / 12 bits |
| Digital inputs | 3 x floating<br>"0" signal: - 5 V to +2 V<br>"1" signal : + 8 V to +30 V |
| Digital outputs<br>Output voltage | 2 x floating / short-circuit proof<br>24 V / max. 0.5 A |
| CAN interface<br>Ethernet interface (UDP) | 250 kBaud<br>RJ 45, 100 Mbit/s |
| Dimensions (W x H x D) /<br>DC 6200 plug-in<br>DC 6201 housing | <br>100 x 100 x 8 (60) mm<br>130 x 155 x 106 mm |
| Protection class, plug-in<br>Protection class, housing | IP 20<br>IP 54 |

# Additional drives for segmented roller guider

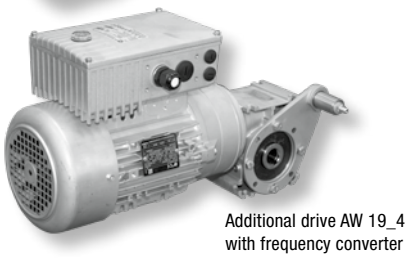
+ Additional drive with speed-controlled three-phase geared motor in flange version
+ Compensation of the mass inertia and bearing friction on segmented roller guiders
+ Usage on longitudinally elastic fabric webs, e.g. knitted fabrics with Lycra
+ Can be combined with web tension control so that the fabric web enters the next process with the correct web tension
+ Optionally with frequency converter in housing or with switch panel for control cabinet installation

Additional drive AW 10_2

Additional drive AW 11_3

Additional drive AW 11_4

Additional drive AW 12_4



Additional drive AW 19_4
with frequency converter

## Selection table and technical data

| Type | V (m/min) | Mounting | For segmented roller guider | Power | Operating voltage | Current consumption |
|---|---|---|---|---|---|---|
| AW 1002 | 1.5 to 50 | Flange with coupling | SWS94 | 0.55 kW | 3 x 220-240 / 380 – 420 V 50 Hz<br>3 x 254-277 / 440 – 480 V 60 Hz | 3 x 2.63 – 2.67 / 1.52 – 1.54 50 Hz<br>3 x 2.6 – 2.63 / 1.5 – 1.52 60 Hz |
| AW 1012 | 4 to 130 | Flange with coupling | SWS94 | 1.1 kW | 3 x 220-240 / 380 – 420 V 50 Hz<br>3 x 254-277 / 440 – 480 V 60 Hz | 3 x 4.2 – 4.17 / 2.43 – 2.38 50 Hz<br>3 x 3.69 – 3.66 / 2.13 – 2.11 60 Hz |
| AW 1022 | 7 to 200 | Flange with coupling | SWS94 | 1.1 kW | 3 x 220-240 / 380 – 420 V 50 Hz<br>3 x 254-277 / 440 – 480 V 60 Hz | 3 x 4.2 – 4.17 / 2.43 – 2.38 50 Hz<br>3 x 3.69 – 3.66 / 2.13 – 2.11 60 Hz |
| AW 1103 | 1.5 to 50 | Flange with coupling | SWS95/SWA95 | 0.55 kW | 3 x 220-240 / 380 – 420 V 50 Hz<br>3 x 254-277 / 440 – 480 V 60 Hz | 3 x 2.63 – 2.67 / 1.52 – 1.54 50 Hz<br>3 x 2.6 – 2.63 / 1.5 – 1.52 60 Hz |
| AW 1113 | 4 to 130 | Flange with coupling | SWS95/SWA95 | 1.1 kW | 3 x 220-240 / 380 – 420 V 50 Hz<br>3 x 254-277 / 440 – 480 V 60 Hz | 3 x 4.2 – 4.17 / 2.43 – 2.38 50 Hz<br>3 x 3.69 – 3.66 / 2.13 – 2.11 60 Hz |
| AW 1123 | 7 to 200 | Flange with coupling | SWS95/SWA95 | 1.1 kW | 3 x 220-240 / 380 – 420 V 50 Hz<br>3 x 254-277 / 440 – 480 V 60 Hz | 3 x 4.2 – 4.17 / 2.43 – 2.38 50 Hz<br>3 x 3.69 – 3.66 / 2.13 – 2.11 60 Hz |
| AW 1104 | 1.5 to 50 | Hollow shaft with torque arm | SWS95/SWA95 | 0.55 kW | 3 x 220-240 / 380 – 420 V 50 Hz<br>3 x 254-277 / 440 – 480 V 60 Hz | 3 x 2.63 – 2.67 / 1.52 – 1.54 50 Hz<br>3 x 2.6 – 2.63 / 1.5 – 1.52 60 Hz |
| AW 1114 | 4 to 130 | Hollow shaft with torque arm | SWS95/SWA95 | 1.1 kW | 3 x 220-240 / 380 – 420 V 50 Hz<br>3 x 254-277 / 440 – 480 V 60 Hz | 3 x 4.2 – 4.17 / 2.43 – 2.38 50 Hz<br>3 x 3.69 – 3.66 / 2.13 – 2.11 60 Hz |
| AW 1124 | 7 to 200 | Hollow shaft with torque arm | SWS95/SWA95 | 1.1 kW | 3 x 220-240 / 380 – 420 V 50 Hz<br>3 x 254-277 / 440 – 480 V 60 Hz | 3 x 4.2 – 4.17 / 2.43 – 2.38 50 Hz<br>3 x 3.69 – 3.66 / 2.13 – 2.11 60 Hz |
| AW 1204 | 1.5 to 50 | Hollow shaft with torque arm | SWS96/SWS97 | 0.55 kW | 3 x 220-240 / 380 – 420 V 50 Hz<br>3 x 254-277 / 440 – 480 V 60 Hz | 3 x 2.63 – 2.67 / 1.52 – 1.54 50 Hz<br>3 x 2.6 – 2.63 / 1.5 – 1.52 60 Hz |
| AW 1214 | 4 to 130 | Hollow shaft with torque arm | SWS96/SWS97 | 1.1 kW | 3 x 220-240 / 380 – 420 V 50 Hz<br>3 x 254-277 / 440 – 480 V 60 Hz | 3 x 4.2 – 4.17 / 2.43 – 2.38 50 Hz<br>3 x 3.69 – 3.66 / 2.13 – 2.11 60 Hz |
| AW 1904 | 5 to 70 | Hollow shaft with torque arm | SWS93 | 0.37 kW | 3 x 380-480 V 50/60 Hz | 3 x 2.3 A |
| AW 1914 | 14 to 130 | Hollow shaft with torque arm | SWA95/SWS95/<br>SWS96/SWS97 | 1.1 kW | 3 x 380-480 V 50/60 Hz | 3 x 3.1 A |

**Ambient temperature: 0 to +50 °C (AW 19: 0 to +40 °C), ambient conditions: dry and damp, protection class: IP 55**

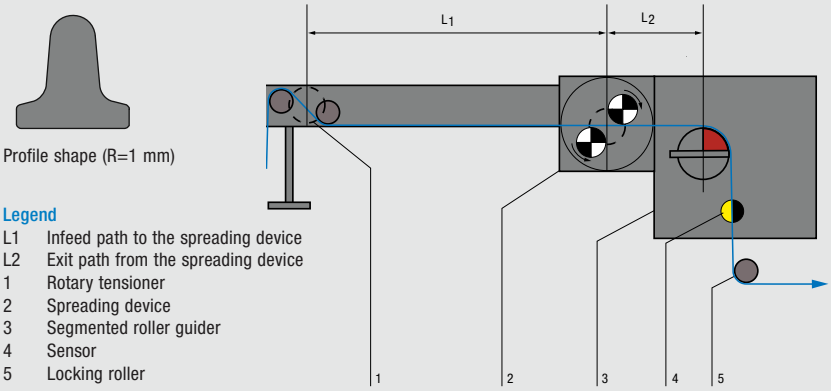
# Spreading device LG 067

+ Compact spreading system for reliable spreading of folded edges and curled edges on dry to wet woven and knitted fabrics, in painted steel or stainless steel version
+ Infinitely adjustable spreading effect due to contra-rotating spreading rollers with pivoting bearings
+ No residual soiling due to specific profile shape
+ Optimal spreading effect with profile radius of 1 mm for all knitted and woven fabrics
+ No markings on the web due to overlapping profiles in the center of the roller

Spreading device LG 067

## Application notes

+ Free infeed path L1 should be at least one web width
+ The exit path L2 is to be kept as short as possible
+ The direction of rotation of the spreading rollers must be against the direction of web travel
+ Adjustable spreading effect due to pivoting the spreading rollers synchronously into the web plane




Profile shape (R=1 mm)

**Legend**

| | |
|---|---|
| L1 | Infeed path to the spreading device |
| L2 | Exit path from the spreading device |
| 1 | Rotary tensioner |
| 2 | Spreading device |
| 3 | Segmented roller guider |
| 4 | Sensor |
| 5 | Locking roller |

## Selection table

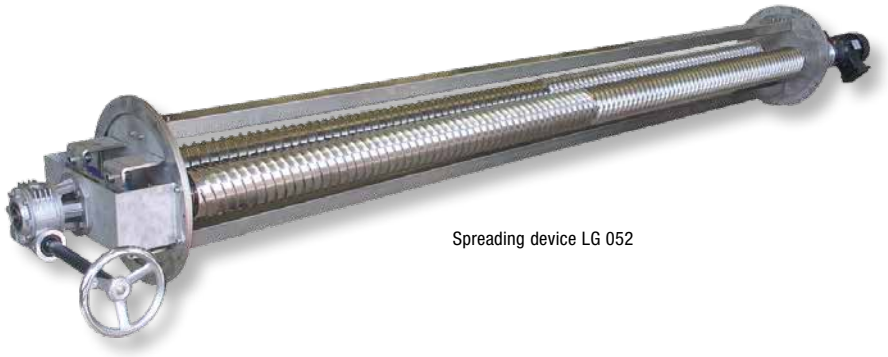
| Type | Area of application | Housing material |
|---|---|---|
| LG 0671 | Dry and damp | Painted steel |
| LG 0673 | Wet | Stainless steel V2A (AISI 304) |

## Technical data

| | | |
|---|---|---|
| Operating width AB | | 1000 to 3600 mm (steps of 100 mm) |
| Diameter of the spreading rollers | | 86 mm (AB 1000 to 2400 mm)<br>112 mm (AB 2500 to 3600 mm) |
| Winding | Pitch<br>Number of spirals<br>Profile radius | 48/96 mm (standard)<br>2/4 (standard)<br>1 mm |
| Ambient temperature | | +10 to +60 °C |
| Speed of spreading rollers | | 268 1/min (50 Hz)<br>322 1/min (60 Hz) |
| Nominal power | | 1x 0.55 kW |
| Operating voltage | | 3 x 220 – 240/380 – 420 V 50 Hz<br>3 x 254 – 277/440 – 480 V 60 Hz |
| Current consumption | | 3 x 2.63 – 2.67 / 1.52 -1.54 A 50 Hz<br>3 x 2.6 – 2.63 / 1.5 – 1.52 A 60 Hz |
| Protection class | | IP 55 |

# Spreading device LG 052

+ Compact spreading system for reliable spreading of folded edges and curled edges on dry to wet woven and knitted fabrics, in painted steel or stainless steel version, suitable for installation in closed washing machines or streamers
+ Infinitely adjustable spreading effect due to contra-rotating spreading rollers with pivoting bearings
+ Ambient temperature/conditions: +100 °C, damp, wet and saturated steam
+ No residual soiling due to specific profile shape
+ Optimal spreading effect with profile radius of 1 mm for all knitted and woven fabrics
+ No markings on the web due to overlapping profiles in the center of the roller



Spreading device LG 052

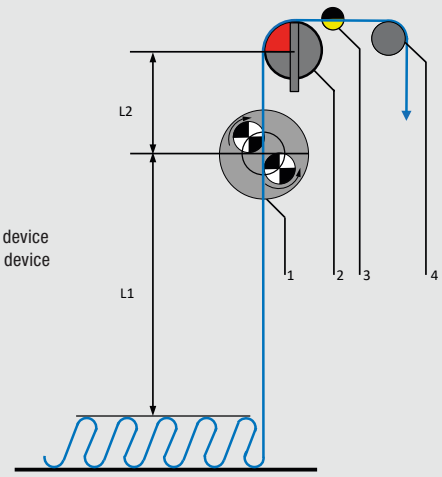
## Application notes

+ Free infeed path L1 should be at least one web width
+ The exit path L2 is to be kept as short as possible
+ The direction of rotation of the spreading rollers must be against the direction of web travel
+ Adjustable spreading effect due to pivoting the spreading rollers synchronously into the web plane

Profile shape (R=1 mm)

**Legend**

| | |
|---|---|
| L1 | Infeed path to the spreading device |
| L2 | Exit path from the spreading device |
| 1 | Spreading device |
| 2 | Segmented roller guider |
| 3 | Sensor |
| 4 | Locking roller |




## Selection table

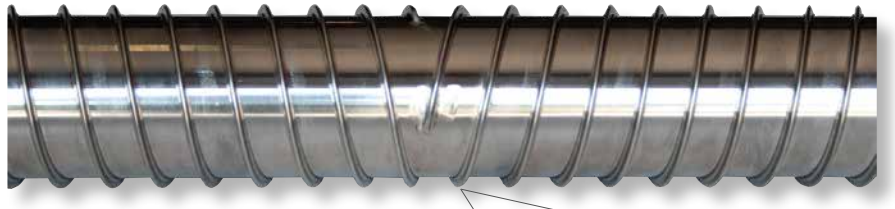
| Type | Area of application | Housing material |
|---|---|---|
| LG 0523 | Wet / steamer | Stainless steel V2A (AISI 304) |
| LG 0524 | Wet / steamer | Stainless steel V4A (AISI 316) |

## Technical data

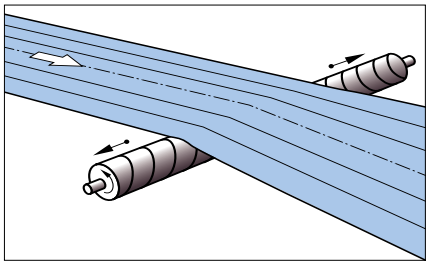
| | | |
|---|---|---|
| Operating width AB | | 1600 to 3600 mm |
| Diameter of the spreading rollers | | 112 mm |
| Spreading spirals | Pitch<br>Number of spirals<br>Profile radius | 48/96 mm<br>4<br>1 mm |
| Ambient temperature | | In steamer +0 to +100 °C<br>(outside +0 to +60 °C) |
| Ambient conditions | | Damp, wet, saturated steam |
| Speed of spreading rollers | | 245 1/min (50 Hz)<br>295 1/min (60 Hz) |
| Nominal power | | 2x 0.55 kW |
| Operating voltage | | 220 – 240/380 – 420 V 50 Hz<br>254 – 277/440 – 480 V 60 Hz |
| Current consumption | | 3 x 2.2 – 2.21 / 1.27 – 1.3 A 50 Hz<br>3 x 2.2 – 2.21 / 1.27 – 1.3 A 60 Hz |
| Protection class | | IP 55 |

# Spreading roller BG

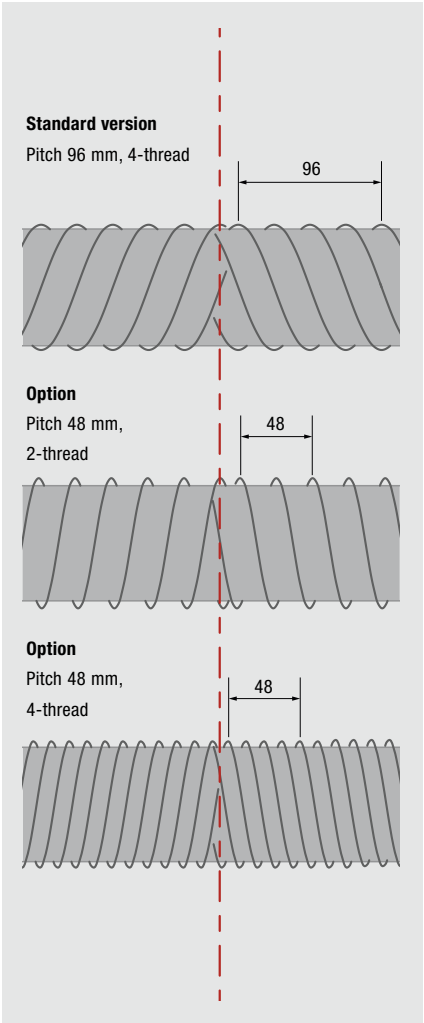
+ Stainless steel spreading roller for reliable spreading of folded edges and curled edges on dry to wet woven and knitted fabrics
+ No residual soiling due to specific profile shape
+ Optimal spreading effect with profile radius of 1 mm for all knitted and woven fabrics with counter-rotating operation
+ No markings on the web



Spreading roller BG



## Profile forms




## Technical data

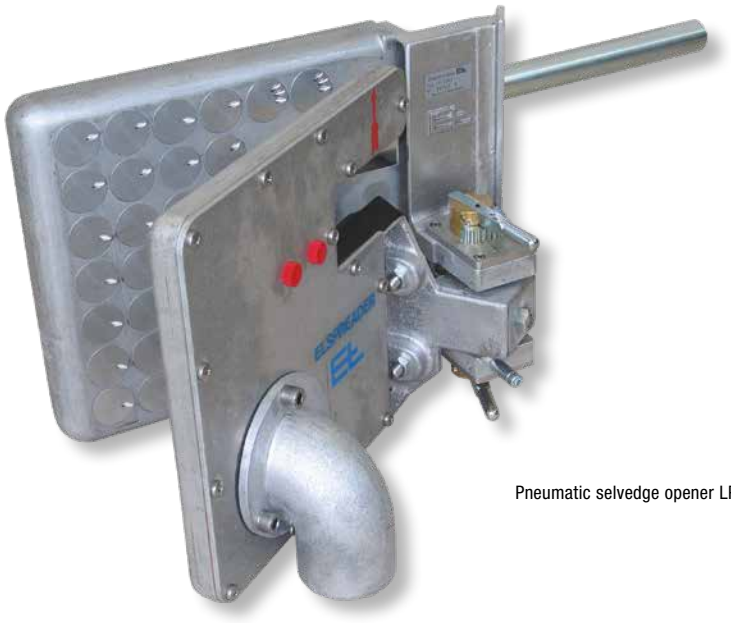
| | | |
|---|---|---|
| Nominal width NB | Ø 86 mm<br>Ø 112 mm<br>Ø 130 mm | 600 to 2600 mm<br>600 to 3800 mm<br>600 to 4200 mm |
| Spreading roller diameter | | 86 / 112 / 130 mm |
| Spreading spirals | Pitch<br>Number of spirals<br>Profile radius | 48/96 mm<br>2/4<br>1 mm |
| Concentricity | | 0.5 mm/m |
| Balance quality | | Static |
| Roller body and roller profile material | | Stainless steel V2A (AISI 304)<br>Stainless steel V4A (AISI 316) |
| Roller journal material | | Steel<br>Stainless steel V2A (AISI 304)<br>Stainless steel V4A (AISI 316) |

## Selection table

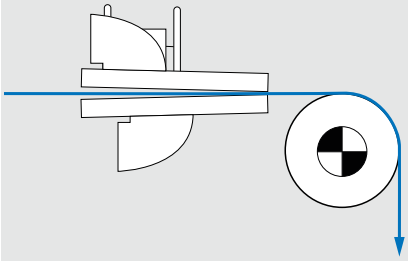
| Type | Ø (mm) | Material Roller body | Axle material | Profile radius (mm) | Profile material |
|---|---|---|---|---|---|
| BG 1086 | 86 | Stainless steel V2A (AISI 304) | Steel | 1.0 | V2A (AISI 304) |
| BG 2086 | 86 | Stainless steel V2A (AISI 304) | Stainless steel V2A (AISI 304) | 1.0 | V2A (AISI 304) |
| BG 5086 | 86 | Stainless steel V4A (AISA 316) | Stainless steel V4A (AISA 316) | 1.0 | V4A (AISI 316) |
| BG 1112 | 112 | Stainless steel V2A (AISI 304) | Steel | 1.0 | V2A (AISI 304) |
| BG 2112 | 112 | Stainless steel V2A (AISI 304) | Stainless steel V2A (AISI 304) | 1.0 | V2A (AISI 304) |
| BG 5112 | 112 | Stainless steel V4A (AISA 316) | Stainless steel V4A (AISA 316) | 1.0 | V4A (AISI 316) |
| BG 1130 | 130 | Stainless steel V2A (AISI 304) | Steel | 1.0 | V2A (AISI 304) |
| BG 2130 | 130 | Stainless steel V2A (AISI 304) | Stainless steel V2A (AISI 304) | 1.0 | V2A (AISI 304) |
| BG 5130 | 130 | Stainless steel V4A (AISA 316) | Stainless steel V4A (AISA 316) | 1.0 | V4A (AISI 316) |

# Pneumatic selvedge opener LP 03

+ Pneumatic selvedge opener for opening delicate knitted fabrics
+ Optionally with air nozzles in the bottom, top and on both sides
+ Optimized selvedge opening effect due to adjustable spacing between the top and bottom plates
+ Spring-mounted top plate so seams can pass through without problems



Pneumatic selvedge opener LP 03



Selvedge opener with LP 03

## Technical data

| Pneumatic selvedge opener LP 03 | |
|---|---|
| Web type | Woven and knitted fabrics |
| Web state | Dry, damp, wet |
| Web speed | Max. 150 m/min |
| Web weight | Max. 400 g/m² |
| Ambient temperature | Max. 80 °C |
| Spreading force at 75 mbar operating pressure | Approx. 2.3 N |
| **Blower** | |
| Differential pressure | 190 mbar |
| Power | 2.2 kW 50 Hz/ 2.55 kW 60 Hz |
| Operating voltage | 3 x 200 - 240 / 345 - 415 V 50 Hz<br>3 x 220 - 275 / 380 - 480 V 60 Hz |
| Current consumption | 3 x 9.7 / 5.6 A 50 Hz<br>3 x 10.3 / 6 A 60 Hz |
| Protection class | IP 54 |

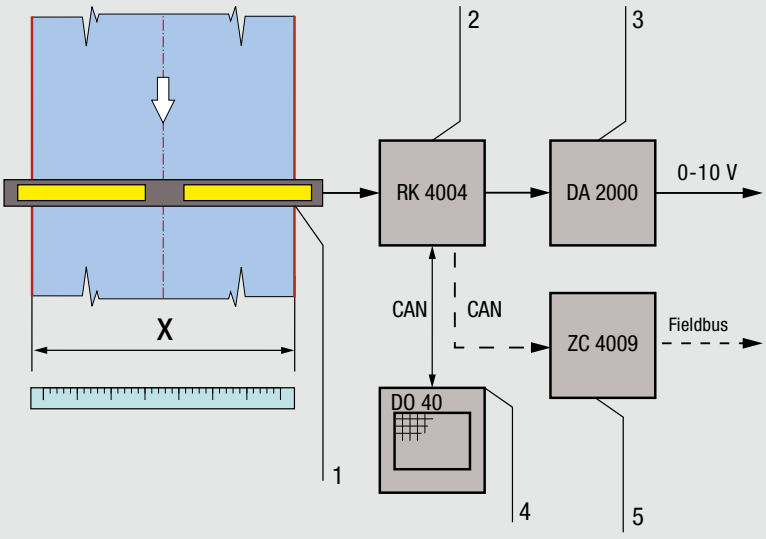
## Selection table

| Type | Nozzle mounting | Blower |
|---|---|---|
| LP 0301 | Bottom plate | 1 (for 2 bottom plates) |
| LP 0302 | Top plate | 1 (for 2 top plates) |
| LP 0303 | Bottom and top plate | 2 (for 2 bottom and top plates) |

# Integrated web width measurement

+ Web width measurement using infrared wide band sensor FE 45 integrated into the segmented roller guider with electrical actuating drive
+ Width value can be read as analog value or via fieldbus
+ Measuring accuracy dependent on the wide band sensor
  - ➢ Standard ±10 mm
  - ➢ High ±6 mm
  - ➢ Premium ±2 mm

Segmented roller guider SWS95 with wide band sensor FE 45

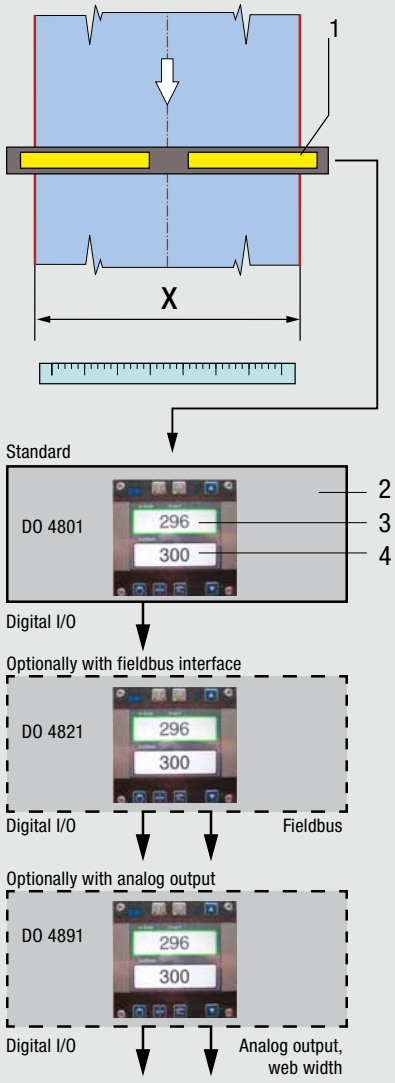



**Legend**

| | | | |
|---|---|---|---|
| 1 | Wide band sensor FE 45 | 2 | Control module RK 4004 |
| 3 | Digital-analog converter DA 2000 | 4 | Command station DO 40 |
| 5 | Interface ZC 4009 | X | Web width |

# "Stand alone" web width measurement

+ Web width measurement FES45 with infrared wide band sensor FE 45 and command station DO 48 for independent mounting in the machine
+ Indication of target and actual width on the command station
+ Width monitoring with adjustable tolerances including alarm output
+ Measuring accuracy dependent on the wide band sensor


**Legend**
1 Wide band sensor FE 45
2 Command station DO 4801
3 Actual web width
4 Target web width
X Web width

## Technical data

| | |
|---|---|
| Measuring range | 2x900 to 2x1700 mm |
| Operating width | Min. 400 mm, max. 3800 mm |
| Clear width | Plexiglas 80 mm, glass 75 mm |
| Width measurement accuracy | Standard ±10 mm, High ±6 mm, Premium ±2 mm |
| Web plane (height fluctuation) | Max. ±10 mm around the sensor center axis |
| Operating voltage | 24 V DC (20 to 30 V DC) |
| Current consumption | 1 A |
| Inputs | 2x Sensor CAN |
| Digital outputs | Upper/lower alarm limit<br>Upper/lower pre-warning limit<br>Width ok, width deviation<br>Fault indication |
| Analog output<br>DO 4891 | Configurable<br>0 to +10 V DC/-10 to +10 V DC,<br>0 to +20 mA/+4 to +20 mA/0 to +10 mA |
| Fieldbus<br>DO 4821 | 2x CAN BUS /protocol 2.0<br>2x Ethernet /protocol UDP / Ethernet IP |
| Dimensions (LxWxH) | 300x150x80 mm |
| Ambient temperature | +10 to +50 °C |
| Protection class | IP 54 |

## Selection table, command station

| Type | Option |
|---|---|
| DO 4801 | Standard |
| DO 4821 | 2x Ethernet /protocol UDP / Ethernet IP / M12 |
| DO 4891 | 2x analog output, configurable |

## Selection table, width measuring system

| Type | Measuring accuracy | Material |
|---|---|---|
| FES4571 | ±10 mm | Plexiglas |
| FES4581 | ±6 mm | Plexiglas |
| FES4591 | ±2 mm | Plexiglas |
| FES4573 | ±10 mm | Glass |
| FES4583 | ±6 mm | Glass |
| FES4593 | ±2 mm | Glass |

# Function of steering roller system ELSWING

## Function

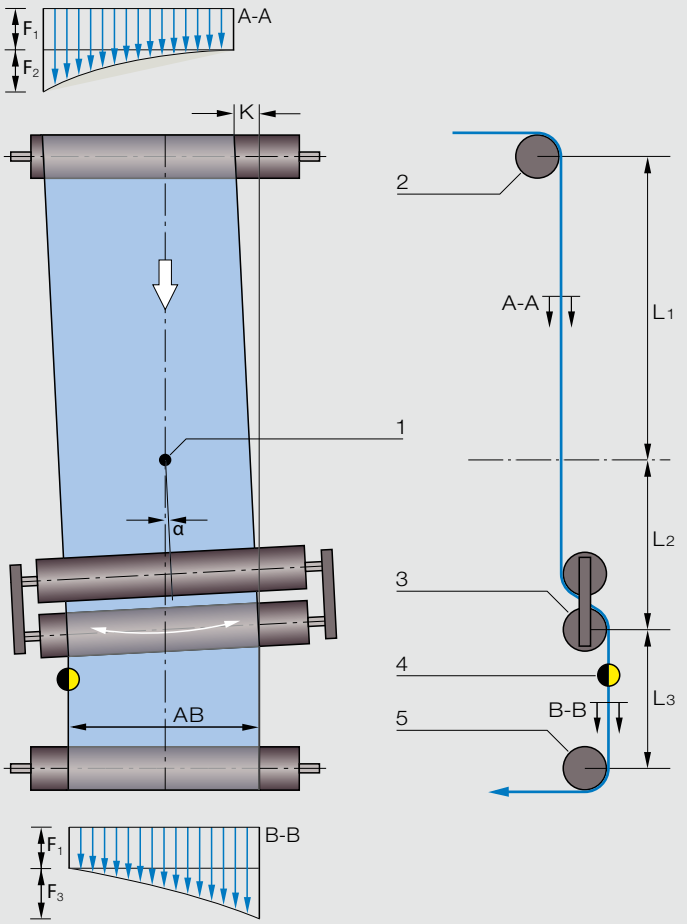
A roller arrangement consisting of two web guiding rollers pivots around an imaginary pivot point in the infeed plane immediately in front of the actuator. Immediate corrections are made via the lateral movement. The additional skewed positioning provides continuous correction of the moving web. Here, friction-locking between the web and the roller is required.

## Area of use

The steering roller systems are used predominantly in textile production systems for web guiding and spreading, where they are used for woven fabrics only.

## Application

The length of the infeed depends on the web properties. In the case of very flexible webs, the infeed should be at least one web width. The greater the surface stability of the web and the greater the necessary corrections, the longer the infeed needs to be. By contrast, the outfeed plane to the locking roller downstream must be kept short. Vertical web travel is imperative.



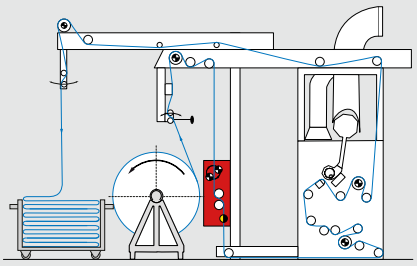

**Guiding geometry and longitudinal tension distribution**

| | | | |
|---|---|---|---|
| A-A | Web tension distribution at the infeed | L1 | Infeed path to pivot point |
| B-B | Web tension distribution at the exit | L2 | Infeed path from pivot to guide roller |
| K | Web correction | L3 | Exit path |
| AB | Operating width | α | Correction angle |
| $F_1$ | Basic web tension | 1 | Imaginary pivot point |
| $F_2$ | Web tension distribution due to the deflection of the steering roller at the infeed | 2 | Infeed roller/rod |
| | | 3 | Steering frame |
| $F_3$ | Web tension distribution due to the deflection of the steering roller at the exit | 4 | Sensor |
| | | 5 | Locking roller |

# Steering roller system SRA83

+ Steering roller system for guiding dry or damp woven or knitted fabric by web center or web edge
+ Integrated edge acquisition using wide band sensor by web center or web edge
+ Optionally with spreading device for spreading folded webs and curled edges
+ Spreading rollers infinitely adjustable
+ Guard with Plexiglas sliding doors and safety switches for clear view and direct access to the web

Schwenkschiebewalzensystem ELSWING SRA83



Steering roller system SRA83
in the infeed on a shearing machine

## Technical data

| | |
|---|---|
| Positional accuracy | ±25 mm |
| Web type | Woven and knitted fabrics |
| Web state | Dry, damp and wet |
| Operating width | 1600 to 3400 mm |
| Web tension | Max. 1000 N |
| Web speed | Max. 150 m/min |
| Actuating speed | 40 mm/s |
| Operating voltage | 24 V DC |
| Operating pressure actuating drive | 4 to 6 bar |
| Ambient temperature | +0 to +60 °C |
| Protection class | IP 54 |

## Selection table

| Type | Type of control | Sensor | Spreading device | Area of application |
|---|---|---|---|---|
| SRA8301 | Web center | FE 45 Plexiglas | without | Dry<br>Damp |
| SRA8302 | Web edge | FE 45 Plexiglas | without | Dry<br>Damp |
| SRA8311 | Web center | FE 45 Plexiglas | with LG 0671 | Dry<br>Damp |
| SRA8312 | Web edge | FE 45 Plexiglas | with LG 0671 | Dry<br>Damp |
| SRA8361 | Web center | FE 45 glass | without | Wet |
| SRA8362 | Web edge | FE 45 glass | without | Wet |
| SRA8351 | Web center | FE 45 glass | with LG 0673 | Wet |
| SRA8352 | Web edge | FE 45 glass | with LG 0673 | Wet |

# Web guiding with web guider ELTWIN

## Function

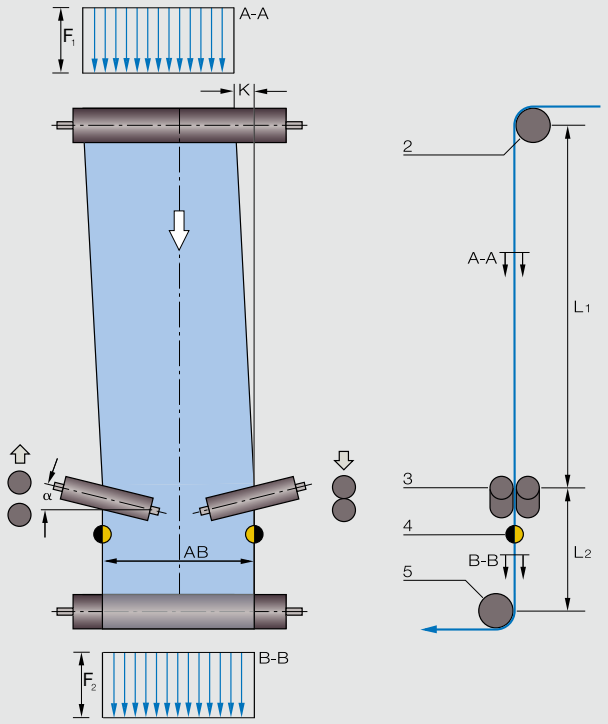
In the web guiding system, the web edge is scanned mechanically by a sensor lever or without contact using optoelectronics. The sensor signal controls a diaphragm cylinder or a lifting magnet that presses the control roller against the counterpressure roller. The web edge is controlled by the skewed positioning and contact pressure of the web guiding rollers. The web guiders have a compact design and are always used in pairs. A support beam is available in various versions for positioning the web guiders.

## Area of use

Web guiding systems are used for web guiding in textile production plants for woven and knitted fabrics.

## Application

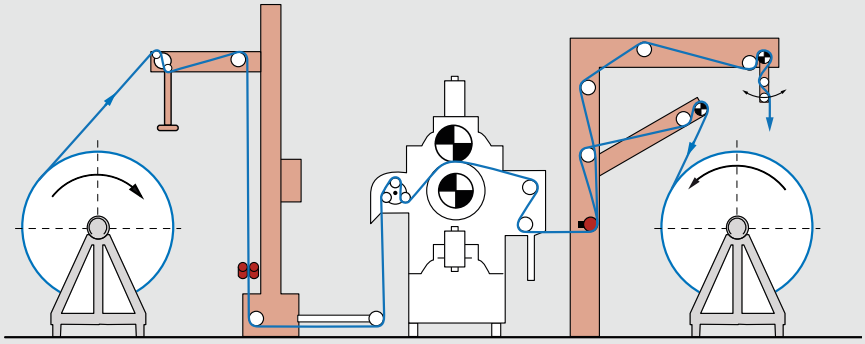
Vertical web travel is imperative for web guiders. The infeed path should be at least one web width. By contrast, the exit path to the locking roller should be kept as short as possible.




**Control geometry and longitudinal tension distribution**

| | | | |
|---|---|---|---|
| A-A | Web tension distribution at the infeed | 2 | Infeed roller/rod |
| B-B | Web tension distribution at the exit | 3 | Web guider |
| K | Web correction | 4 | Sensor |
| α | Correction angle | 5 | Locking roller |
| $F_1$ | Web tension at the infeed | L1 | Infeed path |
| $F_2$ | Web tension at the exit | L2 | Exit path |
| AB | Operating width | | |

Web guider KF 2020 in the infeed in a textile calender

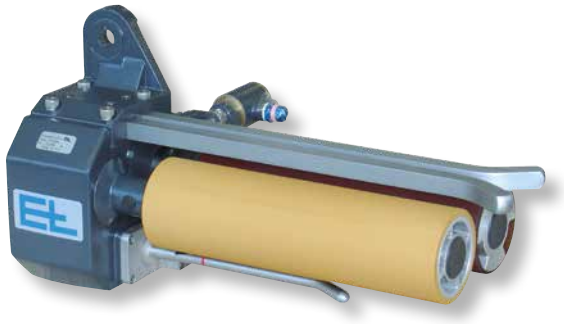


Web guider KF 2020 in the infeed in a textile calender

# Web guider KF 20

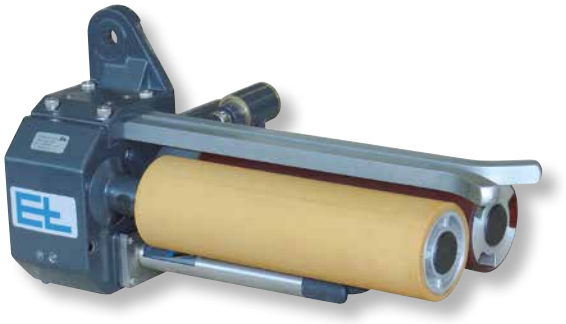
### Mechanical web guider KF 2020

+ With pneumatic operation for the control of dry or moist woven fabrics
+ Very cost-effective and robust web guiding
+ Infinitely adjustable roller distance
+ Infinitely adjustable sensor lever contact force and roller contact force



### Electrical web guider KF 2040

+ With mechanical edge acquisition for the control of dry or moist woven fabrics
+ Very cost-effective and robust web guiding
+ Infinitely adjustable roller distance
+ Infinitely adjustable sensor lever contact force



### Electrical web guider KF 2060

+ With optoelectronic edge acquisition for the control of dry or damp woven or knitted fabrics
+ Infinitely adjustable roller distance

### Technical data

| Type | KF 2020 | KF 2040 | KF 2060 |
|---|---|---|---|
| Positional accuracy | ± 1 mm | ± 1 mm | ±1 mm for woven fabrics /<br>±5 mm for knitted fabrics |
| Web type | Woven fabric | Woven fabric | Woven and knitted fabrics |
| Web state | Dry and damp (drained) | Dry and damp (drained) | Dry and damp (drained) |
| Web width<br>For roller length 280 mm<br>For roller length 400 mm | <br>650 to 3500 mm<br>900 to 4500 mm | <br>650 to 3500 mm<br>900 to 4500 mm | <br>650 to 3500 mm<br>900 to 4500 mm |
| Web speed | Max. 200 m/min | Max. 200 m/min | Max. 200 m/min |
| Web weight | Max. 500 g/m² | Max. 500 g/m² | Max. 500 g/m² |
| Ambient temperature | +0 to +60 °C | +0 to +60 °C | +0 to +60 °C |
| Operating voltage | - | 3x 400 V 50/60 Hz | 3x 400 V 50/60 Hz |
| Control voltage | - | 32 V DC | 32 V DC |
| Power consumption | - | Approx. 0.066 kW/pair | Approx. 0.066 kW/pair |
| Air pressure | 0.5 to 2 bar | - | - |
| Air consumption | Approx. 0.6 m³/h per pair | - | - |
| Protection class | - | IP 65 | IP 65 |

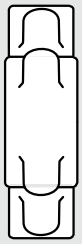
# Support beam VWG for web guider

### Support beam VWG1

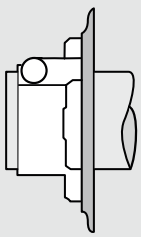
+ Support beam for positioning web guiders with short rollers
+ Symmetrical positioning of the web guider
+ Mounting as a flange or pedestal bearing

### Support beam VWG2

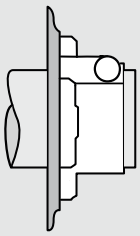
+ Support beam with torque arm for positioning web guiders with long rollers
+ Symmetrical positioning of the web guider
+ Manual or motorized adjustment possible
+ Mounting as a flange or pedestal bearing



x1 Pedestal bearing



x2 Flange bearing, inner



x3 Flange, outer

### Selection table

| Type | Positioning/sliding guides | Mounting |
|---|---|---|
| VWG1 A-X1-K3 | Symmetrically adjustable | Pedestal bearing |
| VWG1 A-X2-K3 | | Flange bearing, inner |
| VWG1 A-X3-K3 | | Flange bearing, outer |
| VWG1 AB-X1-K3 | Individually and symmetrically adjustable | Pedestal bearing |
| VWG1 AB-X2-K3 | | Flange bearing, inner |
| VWG1 AB-X3-K3 | | Flange bearing, outer |
| VWG2 A-X1-K3 | Symmetrically adjustable | Pedestal bearing |
| VWG2 A-X2-K3 | | Flange bearing, inner |
| VWG2 A-X3-K3 | | Flange bearing, outer |
| VWG2 AB-X1-K3 | Individually and symmetrically adjustable | Pedestal bearing |
| VWG2 AB-X2-K3 | | Flange bearing, inner |
| VWG2 AB-X3-K3 | | Flange bearing, outer |

### Technical data

| Type | VWG1 | VWG2 |
|---|---|---|
| Load bearing capacity per sliding guide | <25 kg | <40 kg |
| Actuating travel per revolution | 10 mm | 10 mm |
| Tube surface | Chrome-plated | |

# Questionnaire

## General data

| | | | |
|---|---|---|---|
| Customer | | | |
| Street | | | |
| Zip code | | City/town | |
| Country | | Internet | |
| Phone | | Fax | |
| Contact person | | | |
| Telephone (direct) | | E-mail | |
| Project | | | |

## Technical data

| | | | | |
|---|---|---|---|---|
| Type of machine | | | | |
| Make | | | | |
| Position on the machine | | | | |
| Web type | ❑ Woven fabric | ❑ Knitted fabric | ❑ Non-woven fabric | ❑ Foam material ❑ |
| Web surface | ❑ Not transparent | ❑ Transparent | ❑ | |
| Web edge | ❑ Straight | ❑ Frayed | ❑ Wavy | ❑ Curled |
| Web width | min. mm | | max. mm | |
| Printing width | min. mm | | max. mm | |
| Web thickness | min. mm | | max. mm | |
| Web weight | min. g/m² | | max. g/m² | |
| Web speed | min. m/min | | max. m/min | |
| Web tension | min. N | | max. N | |
| Condition in operation | ❑ Dry | ❑ Damp | ❑ Wet | ❑ |
| Ambient temperature | °C | | | |
| Ambient conditions | ❑ Dry | ❑ Wet | ❑ Alkali, acidic | ❑ |
| Infeed error | +/- mm | | | |
| Web infeed | ❑ From the car or J-box | ❑ From the A-frame | ❑ Inside the machine | |
| Positional accuracy | Desired +/- mm | | | |
| Operating pressure | bar | | | |
| Reference voltage | For machine speed, additional drive | ❑ 0-10 V DC | ❑ | |
| Control voltage | ❑ 24 V DC | ❑ V | ❑ | |
| Operating voltage | ❑ 3x V | Hz | | |

# Technical specifications, segmented roller guider, application in general

| | | | | | | |
|---|---|---|---|---|---|---|
| ❑ Segmented roller guider | Type of control | ❑ By web edge | | | ❑ Manual sensor positioning<br>❑ Motorized sensor positioning<br>❑ Wide band sensor | |
| | | ❑ By web center | | | ❑ With wide band sensor<br>❑ Motorized sensor positioning | |
| | | ❑ Oscillation | | | +/- mm | |
| | | ❑ Width measurement | | | Desired accuracy +/- mm | |
| | Sensor | ❑ Infrared edge sensor | | | ❑ Infrared wide band sensor | |
| | Mounting | ❑ Box | ❑ Base | ❑ Flange | | |
| | Facing | ❑ Mohair | ❑ PVC | ❑ Stainless steel, bare | ❑ Stainless steel with nubs | ❑ Stainless steel, perforated profile |
| | Spreading | ❑ With spreading | | | | |
| | Additional drive | ❑ With additional drive | ❑ Provided by customer | | | |
| | | Additional drive attachment | ❑ Hollow shaft (standard) | ❑ Flange | | |
| | | ❑ With frequency converter | ❑ Frequency converter provided by customer | | | |
| | Spreading device | ❑ With mechanical spreading device | ❑ With hand wheel | Hand wheel length mm | | |
| | | | ❑ With crank handle | | | |
| | | | ❑ 600 mm | ❑ 800 mm | ❑ 1200 mm | |
| | Rotary tensioner | ❑ With rotary tensioner | Length mounting bracket | | | |
| | | | ❑ 1200 mm (standard) | ❑ 800 mm | ❑ 1400 mm | |
| | | | ❑ With hand wheel | Hand wheel length mm | | |
| | | | ❑ With crank handle | | | |
| | | | ❑ 600 mm | ❑ 800 mm | ❑ 1200 mm | |
| | | | ❑ Without crank handle | | | |
| | Installation | According to company standard NOR-SW-555721 | | | | |
| | Command station | ❑ Command station with switch | ❑ Switch from customer | | | |
| | | ❑ Command station with display | Cable length controller - command station | | | |
| | | | ❑ 5 m | ❑ 10 m | ❑ m | |
| | | ❑ Web offset | Cable length | | | |
| | | | ❑ 5 m | ❑ 10 m | ❑ m | |
| | Interface | ❑ Digital I / O | ❑ Profibus DP | ❑ Ethernet IP | | |
| | | | Cable length command station - interface | | | |
| | | | ❑ 5 m | ❑ 10 m | ❑ m | |

# Technical specification, segmented roller guider, application on printing machine

| | | | | | |
|---|---|---|---|---|---|
| ❑ Segmented roller guider | Type of control | ❑ By web edge | | ❑ Manual sensor positioning<br>❑ Motorized sensor positioning | |
| | | ❑ By web center | | ❑ Manual sensor positioning<br>❑ Motorized sensor positioning | |
| | | ❑ By target width | | ❑ Manual sensor positioning<br>❑ Motorized sensor positioning | |
| | Sensor | ❑ Infrared edge sensor | | ❑ | |
| | Mounting | ❑ Box | | ❑ Base | |
| | Facing | ❑ Mohair | | ❑ PVC | |
| | Spreading | ❑ With spreading | ❑ Symmetrical profiles | | |
| | | | ❑ Asymmetrical profiles | | |
| | | | ❑ 200 mm | ❑ 300 mm | ❑ 400 mm |
| | Additional drive | ❑ With additional drive | | ❑ Provided by customer | |
| | | Additional drive attachment | ❑ Hollow shaft (standard) | ❑ Flange | |
| | | ❑ With frequency converter | ❑ Frequency converter provided by customer | | |
| | Selvedge opening device | ❑ With pneumatic selvedge opening device | ❑ Curled edge bottom<br>❑ Curled edge top<br>❑ Curled edge both sides | | |
| | Installation arrangement | According to company standard NOR-SW-555721 | | | |
| | Command station | ❑ Command station with switch | | ❑ Switch from customer | |
| | | ❑ Command station with display | Cable length controller - command station | | |
| | | | ❑ 5 m | ❑ 10 m | ❑ m |
| | | ❑ Web offset | Cable length | | |
| | | | ❑ 5 m | ❑ 10 m | ❑ m |
| | Interface | ❑ Digital I / O | ❑ Profibus DP | ❑ Ethernet IP | |
| | | | Cable length command station - interface | | |
| | | | ❑ 5 m | ❑ 10 m | ❑ m |

## Technical specification, steering roller

| | | | |
|---|---|---|---|
| ❑ Steering roller | Spreading device | ❑ Without | ❑ With |
| | Control voltage | ❑ 24 V DC | ❑ With power supply unit |
| | Installation | According to company standard NOR-SR_83 - 555723 | |

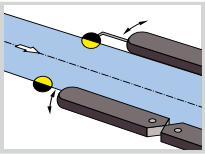
## Technical specification, web guider

| | | | |
|---|---|---|---|
| ❑ Web guider | Support beam | ❑ Symmetrical adjustment | ❑ Individual adjustment |
| | | ❑ Pedestal bearing mounting | Frame external dimension mm |
| | | ❑ Flange bearing mounting | ❑ Frame internal dimension mm<br>❑ Frame external dimension mm |
| | | ❑ With pneumatic hose for KF 2020 | |

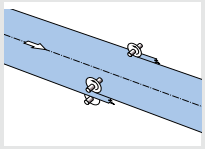
## Comments

| | |
|---|---|
| Date | Issuer |

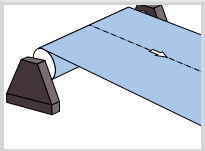
# Other products for the textile industry



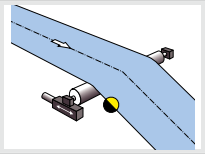
**ELFEED –** Tenter infeed systems



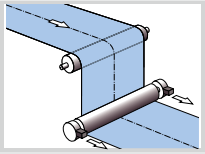
**ELCUT –** Web cutting systems



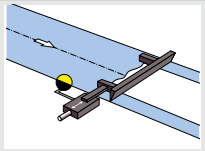
**ELWEBTEX –** Infeed and exit systems for textile production processes



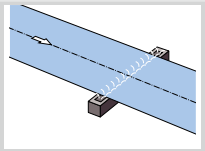
**ELBANDER –** Fabric position control systems



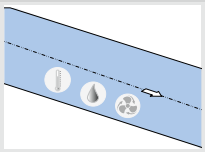
**ELTENS –** Web tension control systems



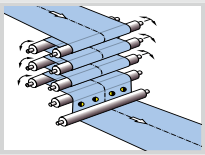
**ELPOSER –** Positioning and follow-up control systems



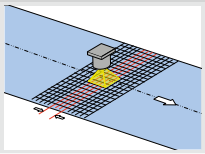
**ELMETA –** Metal detection systems



**ELMAT –** Process control systems for tenters



**ELSTRAIGHT –** Textile straightening systems



**ELCOUNT –** Pick and course counter system

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