Web guiding systems

**Digital Control System**

**ELROLLER SRS 41**

The new digital ELROLLER steering roller system allows users to dramatically improve paper and film web guiding on processing lines using the latest technology. The main implementation area for the ELROLLER system is in the flexographic printing and packaging machine sectors.

**Sensors**
The web is scanned by opto-electronic edge sensors, that are impervious to surrounding light sources. Alternatively, ultrasound sensors scan even the most transparent of film webs reliably.

**Sensor positioning**
Sensors may be positioned automatically via support beams or via push buttons and follow up the web edge. The positioning drive is integrated on the support beam and also contains the microprocessor-controlled digital guider.

Besides the support beam for symmetrical sensor following-up when guiding by the web center, a version is also available for positioning one edge sensor only.

**Guider**
The digital guider is already integrated in the ELROLLER steering roller system. The guiding parameters and thus the optimization of the control loop may be easily performed on the user-friendly operator panel.

**Networking**
The standardised CAN bus assures efficient, fast data transmission and permits easy integration in all machine and control systems with a minimum of wiring.

**Interface**
Besides the benefits of central guider operation, the concept offers a simple connection to PLCs and various bus systems via a parallel interface (digital inputs and outputs).

**Operating unit**
Priority was given to the ergonomy of the new operating unit. The pictorial representation of the web, user-oriented arrangement of the function groups and membrane keyboard with comprehensive symbols and LED displays assure easy, error-free operation. Besides a built-in version for consoles, housings for field-mounting are also available.
Function
With the ELROLLER steering roller system, the web is already corrected at the infeed stage. A pivoting frame, mounted on bearings, supports the guide rollers and rotates around an imaginary pivot on the infeed plane. Crucial to precision correcting is an adequate elasticity expanse. Depending on the precision, a sufficiently long, material-specific infeed path is therefore required.

Implementation area
ELROLLER systems are recommended where long infeed paths, due to technical processing reasons, are already featured.

Application
ELROLLERS may be used for straight web travel or where the web has a wrapping angle of 90°. In both cases, an infeed length of 2 – 3 x operating width is necessary. The exit path should be between 0.5 and 1 x the operating width.

ELROLLER versions

<table>
<thead>
<tr>
<th>Type</th>
<th>NB min (mm)</th>
<th>NB max (mm)</th>
<th>Web travel</th>
</tr>
</thead>
<tbody>
<tr>
<td>SR 4111</td>
<td>400</td>
<td>800</td>
<td>A1/A3</td>
</tr>
<tr>
<td>SR 4121</td>
<td>900</td>
<td>1500</td>
<td>A1/A3</td>
</tr>
<tr>
<td>SR 4131</td>
<td>1100</td>
<td>2000</td>
<td>A1/A3</td>
</tr>
</tbody>
</table>

Guiding geometry and distribution of longitudinal tension

A-A web tension distribution at infeed
B-B web tension distribution at outfeed
K web travel correction
σ₁ web basic tension
σ₂ tension distribution due to roller frame pivoting at infeed
σ₃ tension distribution due to roller frame pivoting at outfeed
AB operational width

Technical data SRS 41

Guiding precision < +/- 0.15 mm
Nominal actuating path max. +/- 25 mm (NW 400-800 mm)
                        max. +/- 50 mm (NW 900-1500 mm)
                        max. +/- 75 mm (NW 1100-2000 mm)
Nominal actuating speed at outfeed 1 – 25 mm/sec, variable
Web tension max. 700 N
Nominal width 400 – 2000 mm
Roller diameter 80 mm (NW 400 – 800 mm)
                         100/120/160 mm (NW 900 – 2000 mm)
Ambient temperature 0 to 50°C
Operating voltage
Nominal value 24 V DC
Nominal range 20 – 30 V DC
Nominal range + power unit 115 – 460 V 50/60 Hz
Current input edge guiding (24 DC) 1.6 A DC (actuator AG 24)
Current input web center guiding (24 DC) 3.2 A DC (actuator AG 24)
Current input edge guiding (24 DC) 3.6 A DC (actuator AG 25)
Current input web center guiding (24 DC) 5.2 A DC (actuator AG 25)
Protection class IP 54
Technical data subject to modification without notice