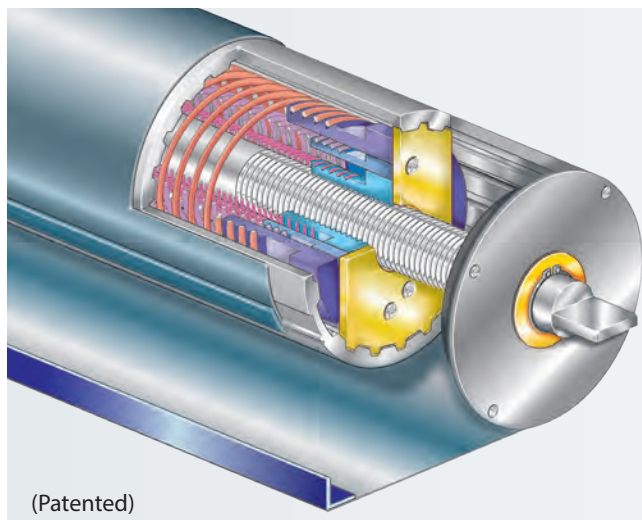


## SURE-SPRING®

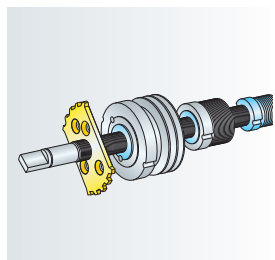
The P.E.I. **Patented design** known as **SURE-SPRING®** represent the most advanced level of technical innovation in the field of roll-up covers.



- Suitable for **HIGH SPEED** operation
- The multiple springs remain **COAXIAL**
- The springs **NEVER INTERSECT**
- **REDUCED** overall diameters
- **EXCELLENT** reliability
- Advancement speeds of up to 150 m/min
- Acceleration of up to 2 g
- 2,000,000 movements guaranteed
- **SECURE** attachment of the band to the tube, because **NO** adhesive products are used
- **PRACTICAL** maintenance, since the band can be replaced quickly and easily
- Also suitable for use in work environments where **STRONGLY AGGRESSIVE** chemicals are used
- **HEALTHY** for the environment

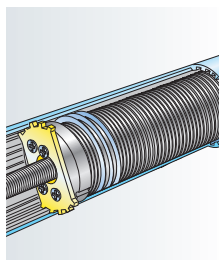
### SURE-SPRING® Technical Specifications

#### Transmission



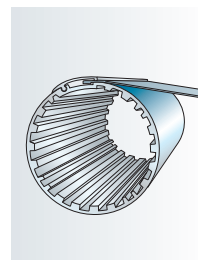
The rotary movement of the tube in relation to the fixed central shaft is transmitted by a sliding spline. This system compensates for the elongation of the multiple springs by moving the spring mounting point axially along a threaded shaft.

#### Innovative features

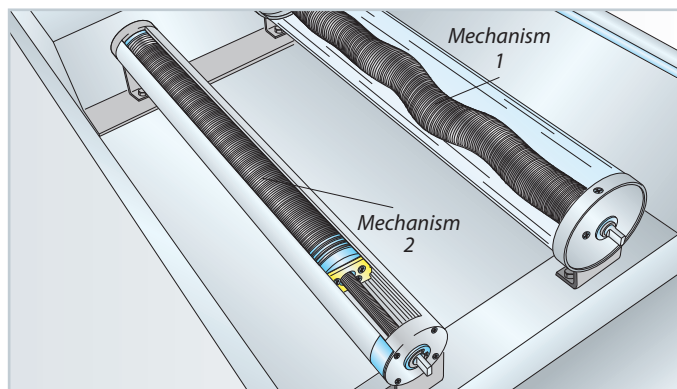


This new system allows the multiple springs to work according to an ideal geometry, keeping their coils properly spaced.

#### Mechanical system attaching the band to the tube

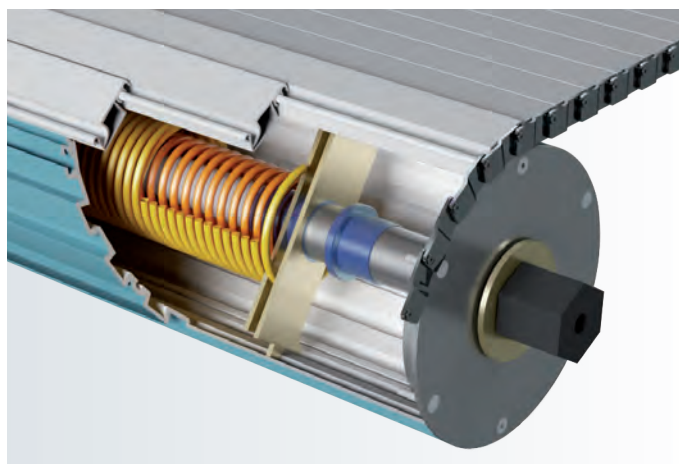


This is the most reliable system for insuring a secure attachment between the band to the tube.



### SURE-SPRING® Operating diagram

- In **Mechanism 1 (traditional system)** the springs are rigidly attached to the fixed caps at the ends of the shaft. In this system the springs helically twist and snake while winding or unwinding, causing obvious problems of friction and wear between the coils as well as between the coils and the central shaft.
- In **Mechanism 2 (SURE-SPRING® system)** the springs are attached to a special moving cap, which slides lengthwise while winding and unwinding, keeping the spring coils packed and concentric at all times. This spring configuration avoids most of the wear mentioned above, allowing better performance and a much longer operating life-span for the spring mechanism. (For recommended dimensions see page 15).



### SURE-SPRING®, HP VERSION

The **SURE-SPRING HP** winding mechanism is the answer to the elevated power required to wind up large size protective covers. An optimal dimensioning of the springs guarantees the tensile force required for moving **"J"-series apron covers**.



## X-Y 4R SHIELD

- The **X-Y 4R SHIELD** is a truly effective solution to the problem that occurs in horizontal machining centers when separating the tool working area from the motor area.
- The **X-Y 4R SHIELD** allows the spindle to move freely in all directions.
- The **X-Y 4R SHIELD** uses four **SURE-SPRING®** roll-up covers.



Application examples



## X-Y SP-2R SHIELD

- It represents the most reliable system for protecting the work area, on the horizontal and vertical machining centers, in an environment where a large quantity of hot shavings is produced.
- We can guarantee this system up to accelerations of 1 g and speeds up 90 m/min. For higher applications, please contact our Engineering Department.
- During the design of this system access and ease of inspection are taken into account. By talking with the client we agree on how to to achieve quick and easy assembly during the design phase of the machinery.

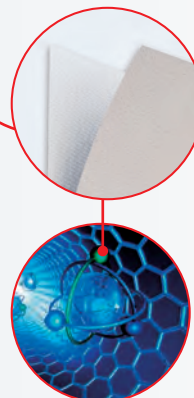
As shown in the picture, this system is mounted on a **SHEET-POCKET™** Steel Cover (patented - see page 8) on the Y-axis and two rollers on X-axis with **Ceramix\*** bands.



\*) The roll-up covers represented here are equipped with a **Ceramix** band. Other types of bands are available depending on requirements.

See Technical Characteristics of **Ceramix** band on pages 56-57 under code TEMAT181.

Application examples



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