

Benefits of a Non-Contact Fabric Guide System

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Many mills over the years have lost palm guides, and in some instances their respective felt as well, as a result of poor cross directional control. The cost of the felt and resultant downtime can easily exceed USD 60,000!

Paper machines requiring felts all need a means of sensing felt edge position and, by using this information, control the guide roll position to maintain tracking. In the past, pneumatic based palm guides were the norm.

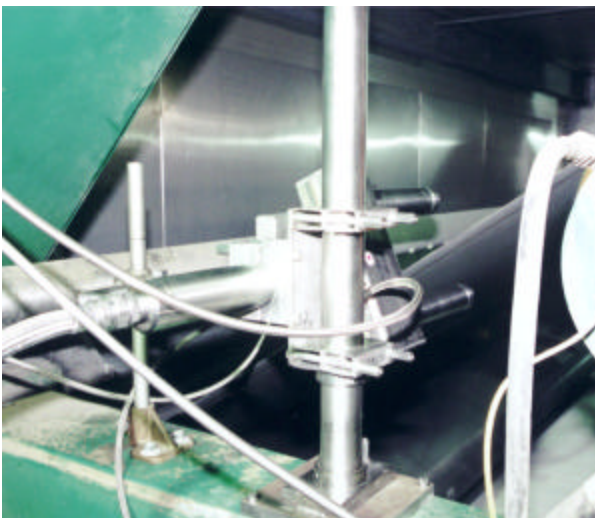
The use of pulsed infrared light technology to sense the fabric edge offers several benefits:

Benefits of the **Es-Trac 2000** Edge Guide Control System

1. Substantial increase in fabric life.
2. Minimal felt wear due to non-contact feature.
3. Several mounting options offer flexibility in installation.
4. Minimal cross direction movement as low as $\pm 3\text{mm}$.
5. Reduced scheduled and unscheduled downtime.
6. Reduced sheet breaks.
7. Improved threading.
8. Minimal maintenance; no moving parts/all electronics outside of dryer hoods.
9. Full trending capability of both fabric position and control output.
10. Full back-up capability should operations so desire.
11. By way of the panel meter or DCS window fabric position is viewable at all times.

Aside from the previously mentioned benefits, **the payback time is relatively short considering a full control system costs less than USD 20,000!**

What Our Customers Say About **Es-Trac 2000** Edge Guide System



As part of an on-going upgrade program, several mills have installed non-contact felt edge measurement and control. A mill in eastern Washington State recently installed three systems in the first three Uni-Run positions in their dryer. This dryer has a series of short dryer sections and control of the felt was a problem. There is no longer a problem.

Another mill in the same vicinity has gone on record stating they have enough history to claim that the **Es-Trac 2000** edge guiding system has tripled the life of their felt. A third system is about to be installed.

In New Brunswick the UPM mill in Miramichi has edge control systems on all eight dryer felts. Felt guiding is no longer an issue at the morning meeting.

The **Es-Trac 2000** Is Adaptable To All Guide Roll Actuators

Each paper machine manufacturer has their own means to guiding fabrics. Whether it is a dryer felt, press felt, or forming fabric, movement of one end of a guide roll is typical of all companies.

A few examples:

- Beloit used a diaphragm spring opposed actuator.
- Metso uses a fixed pressure rubber bellows opposed by a variable pressure bellows to move a slide actuator either horizontally or vertically.
- Voith uses a 12" bore double-ended cylinder with internal centering springs if control air to machine is lost.

Higher speed machines and those with particularly short dryer sections, require systems with fast speed of response. Designed to improve run-time, product quality and substantially increase felt life, the **Es-Trac 2000** system is capable of measuring to 1/100th of a millimeter.

We must always keep in mind that the guiding control system and its actuator are only the final trimmer or control. All of the manual guide settings, felt stretch and seam straighteners must all have good geometry and the guide roll must also be clean.

Poor Cross Directional Control Is Costly

Most guides for sensing cross direction movement are mounted on the front or operating side of the paper machine. This allows the operator to adjust the felt tracking to be within 1" of the threading ropes and their respective sheaves should the machine so be equipped.

Poor cross directional control will cause the felt to run into both the rope and/or the sheaves, leading to a damaged felt edge.

In an attempt to straighten out this battered edge they trim it. They are never very successful in trimming the damaged felt edge. Thus, the existing mechanical palm guide beats itself to death trying to follow the scallops in the felt edge. The constant battering of the edge by the palm guide will of course further damage the felt edge and the beat goes on.

The above scenario provides one reason why a felt edge becomes damaged. Another reason is loss of control during a felt wash causing the felt to hydroplane.

Disadvantages of Traditional Palm Guide Controls

1. Actual wear of felt edge and palm guide.
2. Edge damage due to slow response causes the felt to contact the rope and rope sheaves.
3. High maintenance of the palm guide due to constant pounding of the palm on the felt edge.
4. High maintenance to the guide roll actuator due to excessive cross directional movement.
5. Excessive cross directional travel of the felt in some cases causing a paper break.
6. Shortened felt life partially due to all of the above.

In summary, the long term benefits of non-contact edge measuring far outweigh the initial higher capital cost of the system as opposed to the traditional palm guide.