Web Guiding Fundamentals - Main Components of a Web Guiding System

Blog Post

A web guiding system for converting operations has four main components:

- Guide Structure/Mechanism
- Actuator
- Sensor
- Controller

However, even though we mention four main components, the web has to be considered a component of the web guiding system.

The guide structure is the device that makes contact with the web...

and therefore, needs to be moved to reposition the web to a correct location. There are many different types of guide structures that we will address in our next posting in Web Guiding Fundamentals.

Low Profile OPG mechanism

The actuator takes an electrical signal...

and converts it into physical motion used to move the guide structure lo position the web in the desired position.

Electromechanical Actuators

The sensor provides the feedback.

It tells us where the web is, inferring its position. The signal is then sent to the controller.

Line of Sensors Roll-2-Roll Technologies

The controller is the intelligence of the web guiding system.

It takes the sensor signal and computes the corrective action required so the actuator moves the guide mechanism to a location that would place the web in the desired position.

Controller with sensot

A web guide system schematic

Basic Components of a Web Guide

This particular schematic represents an off-set pivot guide. The web guide mechanism would contain the rollers and table, the actuator and in the case of a compact off-set pivot guide, the controller and operator interface. In the schematic you see the sensor and the web. As mentioned before, the web has to be considered as part of the web guide system.

The sensor gets the position feedback of the web and sends the information to the controller. The controller computes an error and sends the command to the actuator so the mechanism can be moved to place the web in the desired location. This is a closed loop feed back control system.

Web guide structures

There are several types of web guide structures, such as terminal guides (unwind and rewind guide structures), and intermediate web guides. These we will address in future blogs regarding Web Guiding Fundamentals.

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