Circle Machine Registration Control

HB Registration, NO-DIN Registration Control – How it works

The HB Registration NO-DIN is a one-way controller. It generates correction signals that can be used to change web speed to compensate for long or short positioning – one or the other, but not both.

The Circle Machine is designed to over-draw the web and use the registration control to correct by slowing the web feed. The alternate logic (under draw and correct by speeding the web feed is an acceptable option in some cases, depending on the web material). The original Circle machine used a Candy programmable limit switch to define an acceptable position for the scanner mark to arrive within the machine cycle. The limit switch is wired to the registration control reset input and opens at the beginning of the acceptable mark position and closes at the end of an acceptable mark position.

If the scanner mark arrives while the reset switch is opened (acceptable position), it is ignored. The output remains unlatched and the web continues to run at "normal speed".

If the scanner mark arrives while the reset switch is closed (correction required), the scanner signal latches the registration control output. Web speed is changed (slower to compensate for over-draw or faster to compensate for under-draw). The speed remains changed until the reset switch opens. The time of the correction and thus the change in position depends on the deviation from the acceptable position and the relative speeds of the web in the latched and unlatched conditions.

The two web speeds are set independent of the Registration Control. Speeds depend on the web repeat length, cut tolerance and other factors. Care must be taken to prevent over-correction in response to registration error. Fast speed should feed more than one web repeat per machine cycle. Slow speed should feed less than one repeat per machine cycle. Duty cycle of the programmable limit switch (percentage of the cycle ON versus OFF) is also independent of the Registration Control. It depends on the registration tolerance

For more information or assistance with Circle Machine Registration, contact Scanning Devices, Inc.