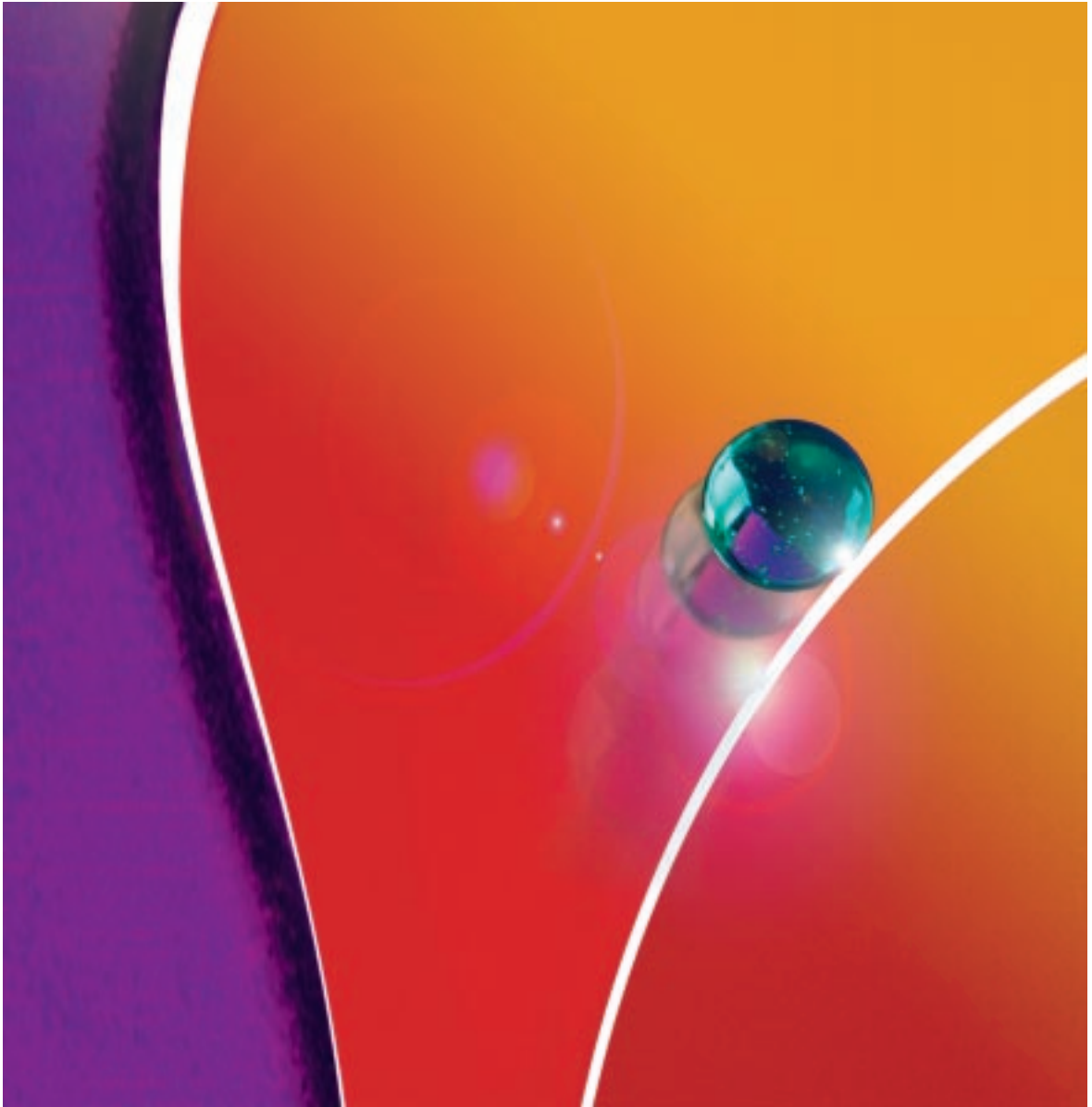


Industrial^{IT} Web Imaging Solutions for the Paper Industry

Automatic Braking for Maximizing Winding



Increasing Profitability Through Web Imaging

For over 30 years, ABB, the pioneer in web inspection, has helped its customers meet their customer's quality demands. ABB's Industrial^{IT} Web Imaging, the industry's leading web inspection solution, provides sophisticated tools for accurately detecting, classifying and locating defects. The newly enhanced Optimize^{IT} Automatic Braking solution (ABS) supplies the advanced tool required for efficiently correcting those defects. Automatic Braking can be effectively utilized in almost any paper type or grade.

Significant Increase in Defect Correction Speed...

Web inspection systems contribute significantly to the improvement of overall product quality. However, locating defects manually in subsequent processing stages can restrict overall production throughput.

With Automatic Braking Solution, papermakers are assured of maximum re-reeler/winder efficiency and related increased production output.

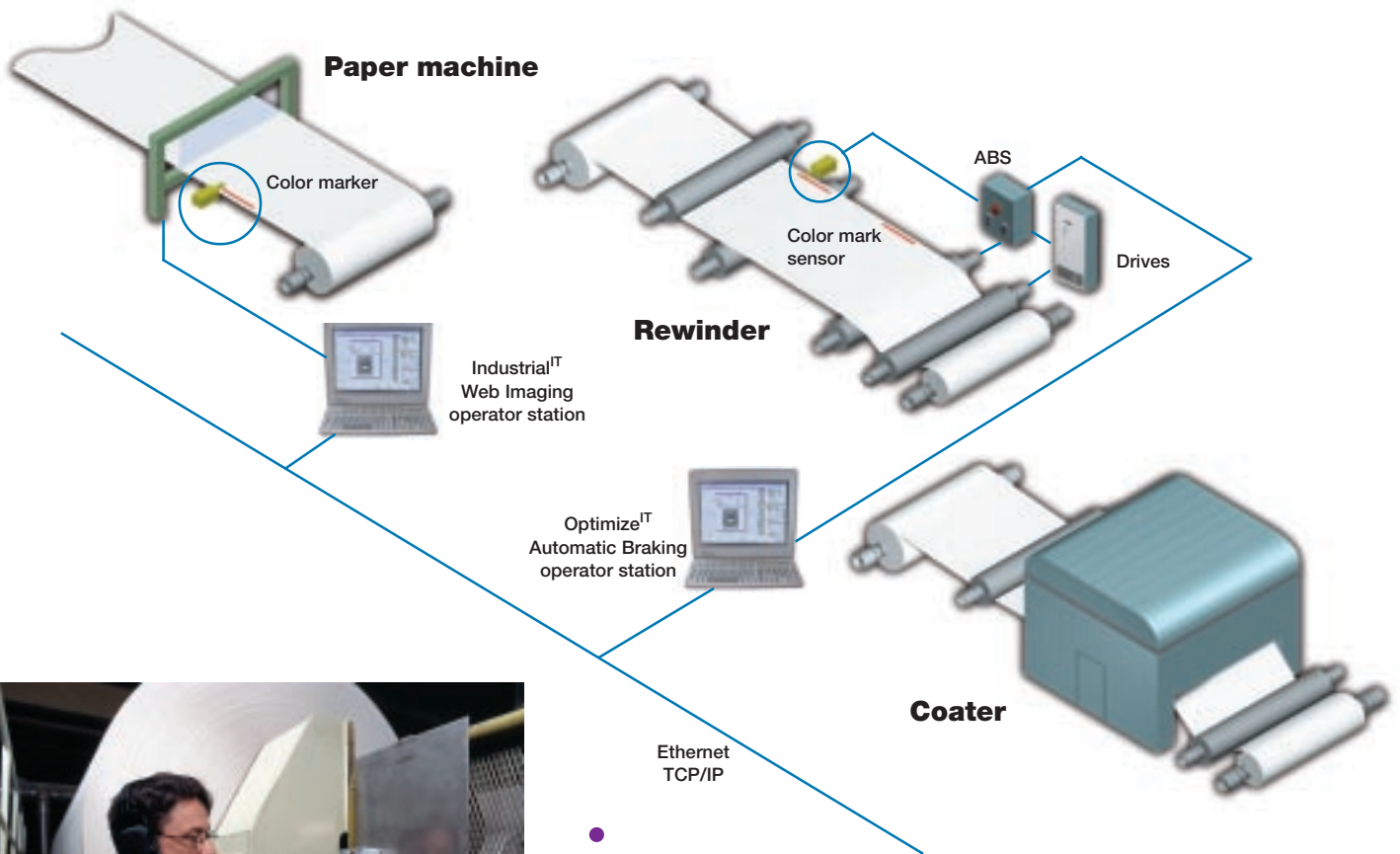
...and in Winder/Re-reeler Efficiency

Automatic Braking increases winder or re-reeler capacity by optimizing the time to locate the defects to be patched or culled. When manual control is used, the unwinding rate must be reduced to crawl speed well in advance of suspected problem areas in order to avoid missing the defect. This often leads to the winder/re-reeler function becoming a bottle-neck in the paper production line.



Rapid Synchronization after Sheet Breaks and Slabbing

Without Automatic Braking, the length counter reading is based on the beginning of a reel, and no compensation is made at the counter in the case of a sheet break or slabbing. These length discrepancies can create problems while locating defects and thus become a major slowdown in the winder/re-reeler efficiency. Automatic Braking automatically compensates for these discrepancies - the target braking works even if the sheet breaks or slabbing occurs. This maintains reel length information accuracy, and defects are located faster and easier.



Calibration Marking

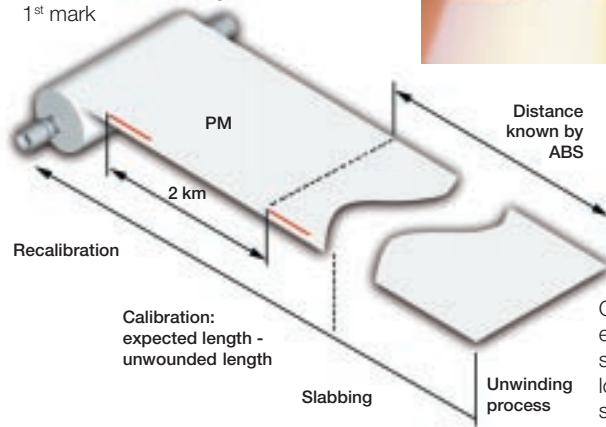
Slabbing, sheet breaks, differences in length counting between the paper machine and the winder resulting in changes in the calculated paper length, make calibration marking necessary. Automatic Braking detects the calibration marks and compares their locations with the expected locations based on the information received from Industrial^{IT} Web Imaging solution. The difference of these two values is used for automatic recalibration of all the machine direction position data.

The calibration marks are made automatically at specific distances, for example, every 2-5 kilometers. This distance is adjustable and once set, no further control intervention is needed.

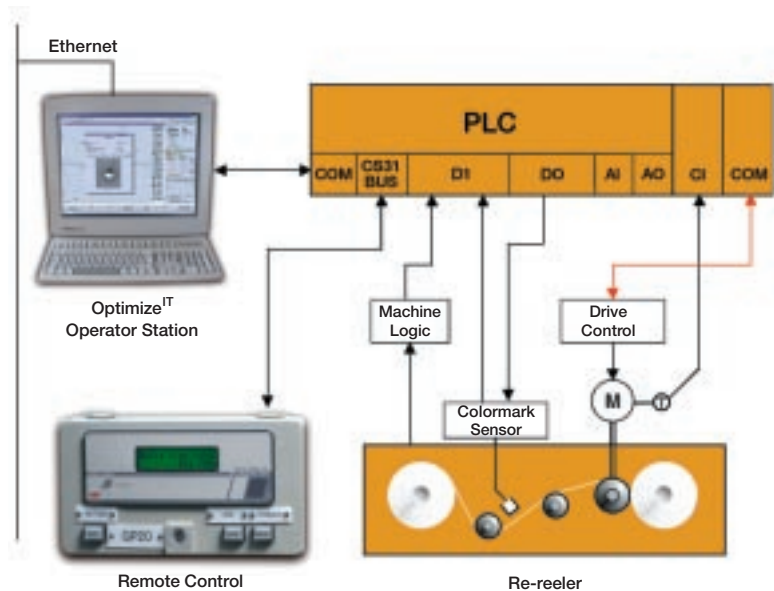
Interface to the Drives

The new Automatic Braking can be integrated with all types of AC and DC drives, and can control the drives by either providing individual control signals (drive, search, crawl and stop) or an information file, which may include all the braking locations or the next defect location. If the whole defect file is sent at once, the drives system must make necessary calibrations and stop controls. If individual defects are sent to the drives system one by one, the calibration and approaching distance of each defect is updated and sent continuously to the drives system by the Automatic Braking in order to make accurate stops.

- Calibration mark every 2 km (adjustable)
- Calibration of slabbing based on the 1st mark



Calibration marking ensures accurate stops at defect locations even if slabbing or sheet breaks occur.



Easy to Use

Automatic Braking is operated through the PC operator station installed at the winder or re-reeler. When a reel is transferred for unwinding the operator selects the specific reel data from the Industrial^{IT} Web Imaging database. The defects for automatic braking can be freely selected individually or globally by defect category. The selected defects are prominently marked on the video display for easy operator recognition.

By taking into consideration both the location of the defect and the limitations of the customer specific winder drive, Automatic Braking calculates the optimal speed curve to the defect. ABS then automatically slows down the drive to crawl speed or alternately stops the winder or re-reeler at the precise selected defect location. The status of the unwinding, e.g. the length to the next stopping position, is continuously updated on the display.

With Automatic Braking, the operators have the additional facility of virtually unwinding the reel in advance. With the help of the defect classification and high resolution images, operators are able to easily determine the severity of the defects and thus minimize unnecessary stops.

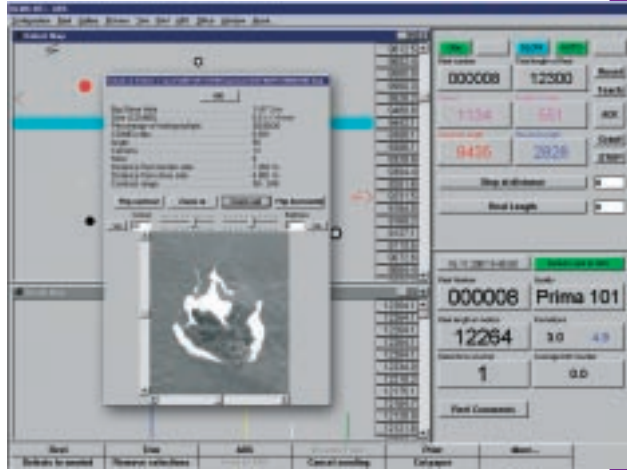




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