Laser Warp Correction AI™

Self-Learning Process Control

SELF-LEARNING

Center-lining a corrugator takes time and effort. The new Laser Warp Correction AI simplifies the process though automatic recipe adjustments. Once the lasers confirm the finished sheets are flat, the new recipe is saved to database.

SELF-CORRECTING

Everyone makes mistakes. The Laser Warp Correction system initiates automatic corrections when the operator entered goals are not achieving the desired results.

QUICK STARTUP

New board grades require starting points. Recipes are automatically created when new grades are run based on individual paper types, even before any corrections from the lasers are made.

INTUITIVE

Employee turnover has become evermore taxing industry wide. Straightforward closed-loop operation helps both new and experienced employees achieve success quickly.

COPAR SOLUTIONS™

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Laser Warp Correction AI™

Laser Warp Correction AI integrates with the Copar CTC Quality Master system for closed loop warp control. The system continually monitors corrugated sheets on the stacker conveyor, and adjusts various parts of the corrugator line until flat board is produced.

- **Self-Learning**: Laser Warp Correction AI automatically saves new paper combinations as a recipe (or updates an existing database recipe) once flat board is measured at the stacker. Specific constraints and machine conditions determine when automatic saves are permitted, ensuring that the automatic save is valid.

- **Self-Correcting**: The system's first correction overrides the operator's goal if the value is unrealistic. Immediate action is taken to resolve unachievable targets that are far too hot or cold.

- **Consistency**: By implementing an additional closed-loop process control layer, consistency can be achieved across all production shifts, regardless of a crew's experience level.

- **Reduced Waste:** Producing a more consistent, flat well bonded sheet will increase usable product that can be fed into high speed converting equipment and will also result in fewer customers rejects.

- **Reduced Overhead:** Production costs can be reduced with efficient steam energy usage and starch application. The Laser Warp Correction system provides a closed-loop temperature control, only using the amount of heat necessary to produce flat board. Used in conjunction with proper starch speed curves, total production overhead costs will be reduced.

- **Increased Production**: By optimizing heat usage and starch application, the corrugator will run more efficiently, lending potential for faster production speeds. Additionally, high speed converting machines run better with fewer jam-ups when they are fed flat, well bonded sheets.

- **Automatic Recipes**: When new paper combinations are run, preliminary recipes are automatically assembled using grade specific lookup tables. This feature reduces the center-lining period for new installations or when saved goal databases must be purged (singlefacer replacements, etc).

- **Straightforward Implementation**: The Laser Warp Correction System automatically makes machine adjustments, then saves (or modifies) the recipes if necessary. Additionally, a simplified one click "Easy Button" has been implemented for use when a manual, password protected, save is warranted.

- **Enhanced Warp Measurements**: New algorithms and logic have been implemented for more challenging warp profiles.

- **Customizable:** Each installation is customized to the plant's requirements. Machine sections that can be controlled include the heating section, doublebacker wrap arms, singlefacer wrap arms (optional), or Bridge Loading with SyncMaster (optional).

- **Maintenance-friendly Hardware:** Two lasers are mounted 80 inches above the stacker belt, far out of the way of operators and the corrugated sheets below. The lasers have no moving parts, and are virtually maintenance free.