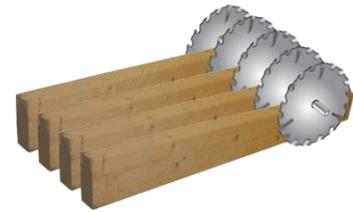# Gocator® | Gang Lumber Size Control

THE APPLICATION

As one of the first steps in lumber manufacturing, a log enters into the sawmill and is processed through a primary breakdown machine, which typically produces side boards and a center cant. The cant is then fed through a gang sawing machine to further break down the cant into boards.
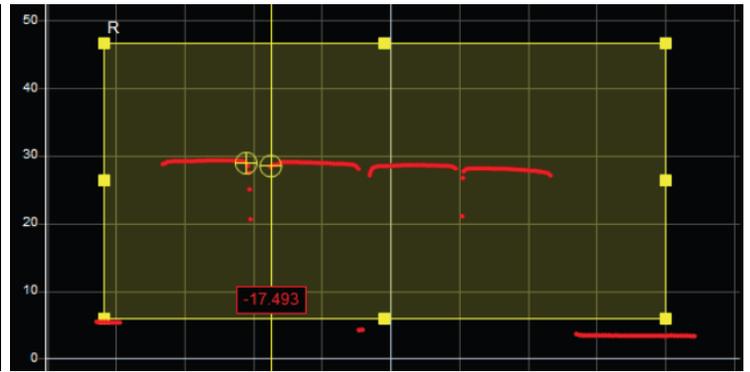
The gang sawing machine is subject to heavy wear and tear over time. Saw guide pads and saw teeth wear over time, and can be damaged by foreign objects in the cant, such as nails and rocks. This wear and damage can cause the saw guides to be misaligned and result in the saws "snaking" or not tracking straight through the cant. Feed and press rolls wear unevenly, and bearings wear in the machine, causing undesirable forces on the saws and saw guides. Any one of these conditions can be the root cause in mis-manufactured lumber.

Boards that are off size have to be remanufactured, typically resulting in a loss in material value and extra cost in production time in the mill. The ideal position for an automatic lumber size monitoring system is at the outfeed of each machine center, to be able to quickly detect a problem and avoid prolonged production of defective boards.

This application is well suited for a laser-line based 3D sensor. With a compact and pre-calibrated smart sensor, using only a single light source, it's possible to monitor board widths with or without a need for a PC.
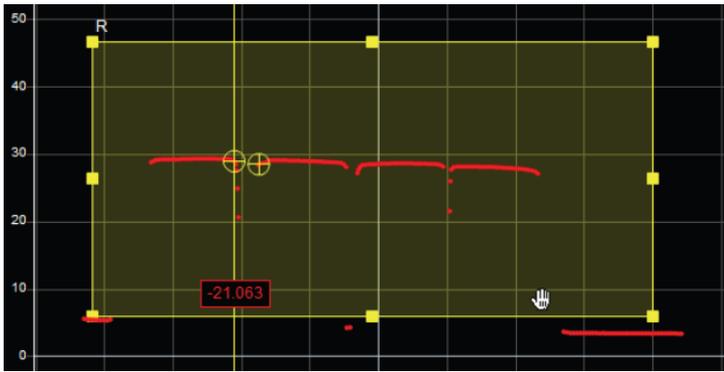
Groove X Tool measuring the edge of one board…   **… and the opposing edge of the neighboring board.**

THE IMPLMENTATION

The Gocator is mounted above (or can be mounted above and below) the cant as it exits out of the gang saw, scanning the sawn surface(s) of the cant after they have been sawn to "edges" of boards. The Gocator's built-in Groove-X measurement tool can solve the application quickly and efficiently without any custom software programming. The built-in tools are configured through a standard web browser and the sensor supports several industrial PLC protocols to deliver the X positions of the edges of all the boards across the block. Based on these measurements, the PLC will then monitor the board widths for unwanted variation.

THE BENEFITS

Lumber quality control measurement advanced from measuring several points along the length of a board with a tape measure to using a mechanical caliper to QC test small samples of boards throughout the mill process. Now, non-contact sensor based measurements are being adapted. The Gocator 3D smart sensor offers a simple, automated solution with capability of producing high resolution measurement along the entire length of every piece of lumber from the Gang Saw (or most any other machine in a Sawmill or Planermill).

This sensing technology based at the machine center delivers maximum accuracy, reliably tracks manufacturing performance, and identifies misbehaving cutting tools and components at the absolute point of occurrence. It eliminates the gap between the occurrence and detection of events of mis-manufacturing.

The Gocator offers a compact and reliable solution to:

- Use measurements together with programmed limits to monitor sawing variation and produce alarms
- Pass the measurements off to a computer to provide detailed SPC analysis to identify sawing variation as "snake", edge-to-edge "wedging" or end-to-end taper to help identify root cause(s) within the machine that could be causing off-size lumber.
- Analyze opportunities to increase feed speed (throughput) or reduce saw kerf and/or target sizes while staying "in control" with lumber sizes