

SAWING TECHNOLOGY UPDATE

No. 3

BROUGHT TO YOU BY CALIFORNIA SAW & KNIFE WORKS



AN EXTRA \$1.3 MILLION — YOURS TO KEEP OR LOSE

That was the opportunity for one mill when its measurements revealed the magnitude of its sawing variation and the cause—and cost—of its grade loss.

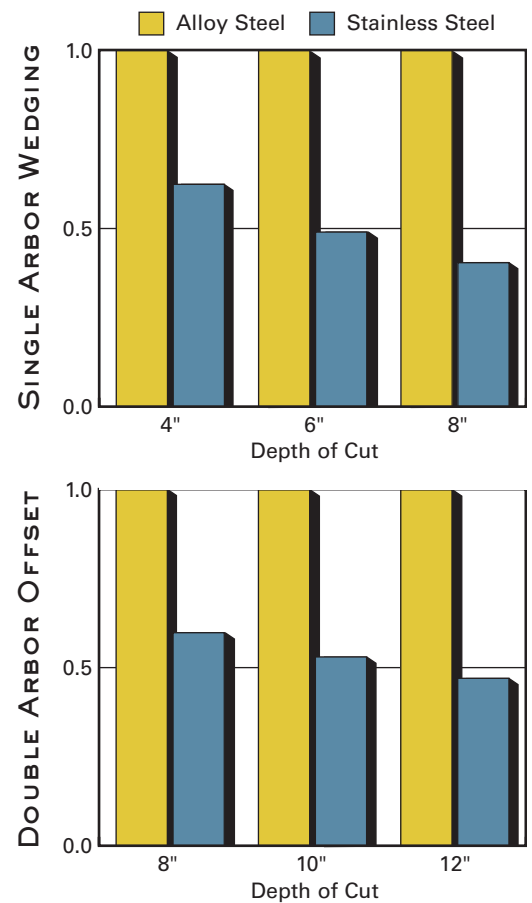
The mill's managers concluded they'd get a surprising revenue boost by using stainless steel saws. They also grasped the extent of the amount that had been lost to downgrade. Money lost just to save a few thousand dollars in operating costs.

Every time you cut logs with alloy steel blades, sawing variation like wedging or offset can rob you of revenue. That's revenue that rightfully should be yours. It can be, when you follow a straightforward method to measure—and then reduce—this serious (and common) problem.

IF YOU'RE RESPONSIBLE FOR MAXIMIZING QUALITY AND REVENUE, READ THIS

You are—literally—cutting value from your lumber and profit from your bottom line when you saw inaccurately. And for guided circular saws in gang edgers, the dominant cause of undersize lumber is deflection of the saw plate. The right stainless steel saws can keep the wood on the board in the places where you need it most. Our mill tests—cutting real wood in real saw mills—prove it.

RELATIVE SAWING VARIATION



THE TESTS ARE INDISPUTABLE

If you make lumber in a saw mill, you've most likely suffered lost grade and the corresponding revenue loss. This third in a series of Sawing Technology Updates continues our discussion on the importance of accurate sawing. In Update No. 1, we described the physical properties that keep stainless steel saws stiffer than alloy steel saws, and, thus, guarantee that they'll cut straighter, longer. In Update No. 2, we discussed the relationship between stainless steel saws, straighter cutting and reduced grade loss.

This Update explains the process that can help you compare the difference in deflection between alloy steel and stainless steel saws and project the added revenue your mill potentially can book.

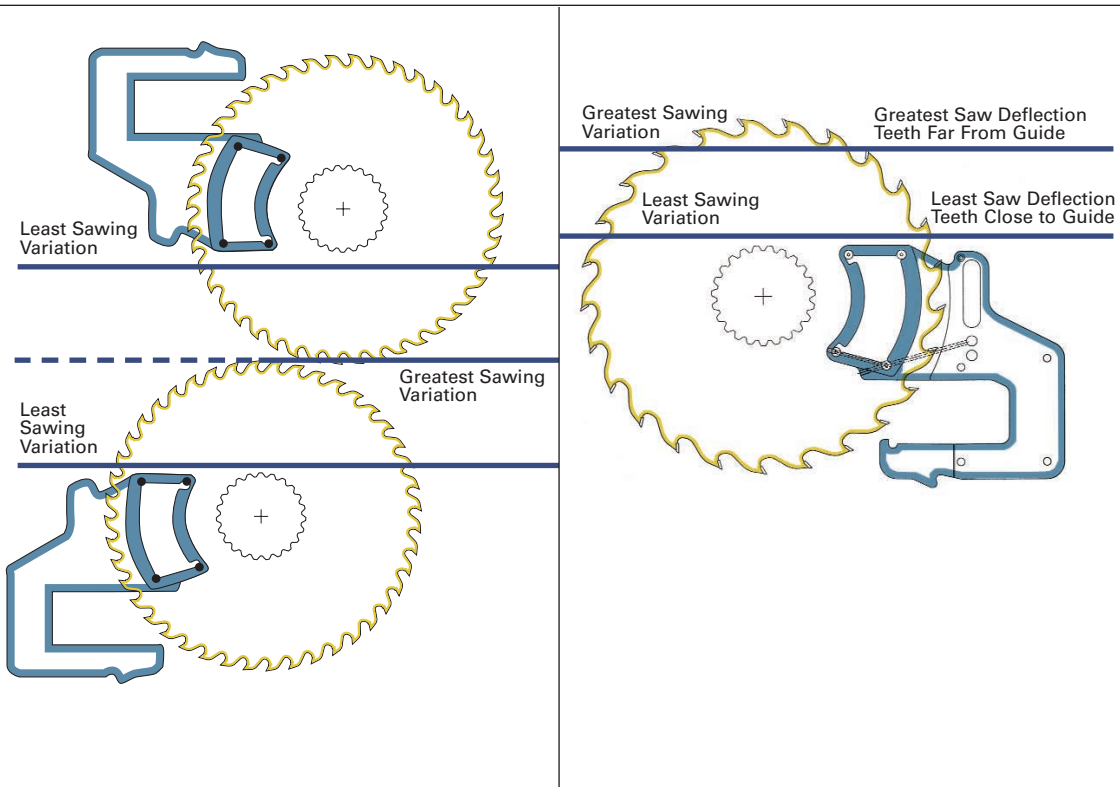
PROPER TESTING GOES BEYOND SIZE CONTROL

Size control programs help you monitor your sawing process. Using a limited number of measurements, they can ensure that your cutting stays within proscribed limits. But it's usually a one-size-fits-all approach, using the same procedures for very different sawing processes. So, unfortunately, board measurements as collected by most mills don't reveal the detail needed to demonstrate the relative benefits of different types of saws.

To determine the cutting accuracy of one saw compared to another, you need to take more measurements, and those measurements have to capture the effect that leads to lumber grade loss. In essence, that effect concerns the increasing flexibility of a guided circular saw, as it extends farther beyond the guide. And the more flexible the saw plate, the more it deflects when subjected to a lateral force during cutting.

DISTANCE FROM GUIDE = LESS PRECISE SAWING = LUMBER GRADE LOSS.

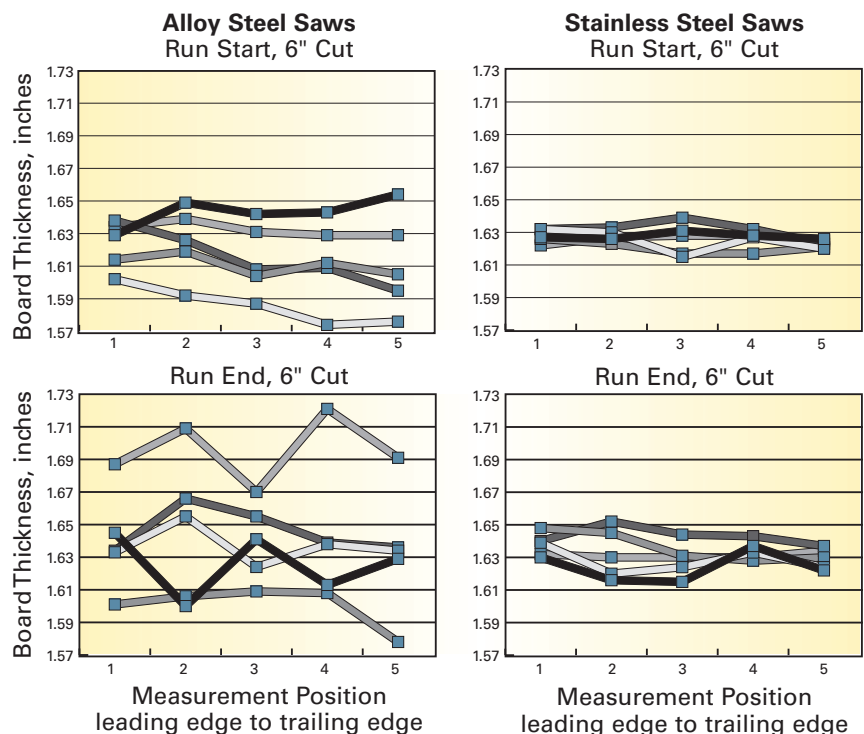
A STIFFER SAW BLADE REDUCES SAWING INACCURACY, PROTECTS GRADE AND LOCKS IN HIGHER PRICES.



HERE'S HOW WE RECOMMEND YOU COMPARE THE SAWING ACCURACY OF ALLOY STEEL AND STAINLESS STEEL SAWS:

- For each type of saw, plan on six to 10 boards and six to eight measurements per board in the zone where saw plate flexibility is at its greatest.
- Mark the front, top edge of the cant—with spray paint, for instance. It's easier than you might think to confuse top and bottom edges after the boards are cut.
- **In single arbor machines:**
 1. Measure the board thicknesses along the edge farthest from the guide (a micrometer is more effective than a vernier caliper).
 2. The saw can bend little in the narrow distance between the edge of the guide pad and the nearest edge being cut. So, the edge close to the guide will reflect only variation in saw position and saw kerf.
- **In double arbor machines:**
 1. Measure the magnitude of the offset using a side clearance gauge or similar tool. Measurement of top and bottom edges won't reveal the effects of saw deflection that lead to planer skip and grade loss.
 2. In horizontal double arbors, you can also consider measuring the top edge of the thickest piece cut only by the bottom arbor saws.
- Take measurements every two to three feet along the board.
- Make two simple line charts that show the results for each saw in each size or depth of cut group. Compare them. The lines representing the stainless steel saws will deviate less than those representing the alloy steel saws. The graphs at right are from an actual test.
- Calculate the **total** standard deviations and compare them. The small variance close to the guide is produced by differences in saw location and kerf. Variance away from the guide includes these factors, but is dominated by saw deflection. Don't use within-board and between-board deviations because away from the guide, both are the effects of saw deflection.
- Make a histogram of the measurements for each type of saw and compare.

BOTTOM ARBOR EDGER TOP EDGE BOARD THICKNESS ALLOY STEEL SAWS VS. STAINLESS STEEL SAWS



THE FINANCIAL REWARDS OF CUTTING STRAIGHTER ARE REAL AND MEASURABLE

Every mill should explore its potential to reduce lumber degrade and decrease target sizes. The challenge for most is to understand and conduct the right testing. That takes some time and isn't easy.

Cal Saw helps mills with the painstaking collection and analysis of board measurements that can show you your revenue opportunity. Talk to the mill managers and filers with whom we've worked or who've undertaken the task themselves. We'll gladly provide their names so you can get their views on their testing process and results.

ORDINARY ALLOY STEEL SAWS CAN COST YOU MORE THAN YOU EVER DREAMED

- Much more than the price of stainless steel saws.
- Stainless steel saws cut the degrade that alloy steel saws produce.
- And automatically increase lumber revenue.
- Measure the difference and see for yourself.

LET CAL SAW HELP YOU KEEP THE MONEY

Not everyone knows how to make a good stainless steel saw. Or how to analyze your lumber measurements correctly, for your greatest benefit. Contact us to discuss how we do both better than anyone else.

PLEASE CONTACT US TO DISCUSS YOUR MILL'S SAWING NEEDS OR
TO REQUEST MORE OF OUR RESEARCH CONCERNING STAINLESS
STEEL SAWS.

CALL 888-729-6533 OR EMAIL STAINLESS@CALSAW.COM.



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