LINEAR SAW - HIDDEN COSTS OR BENEFITS?

When a Frame and Truss plant decide to buy a linear saw they ask common questions. What is the price? Speed? Accuracy? Most potential customers enquire about support and on-going maintenance. Occasionally, the topic of spare parts and availability is broached and sporadically someone may throw in a question about training. These are all important questions and the answers should be given consideration. However there is one question NEVER asked. It is the question that will have the biggest impact on your business in the long-term. The answer will dictate if your linear saw is actually creating hidden costs or providing a cost benefit.

How efficient and flexible are your optimisation algorithms?

Optimising- It seems straight forward enough. The computer program takes a few components, mixes and matches them and works out what length of timber would be best to cut them from. Chippies and pull saw operators have been doing this in their head since the beginning of time. However, the power of computers and intelligence of the software means the potential and associated complexity is staggering. Cut files can have hundreds of components, but without meaningful and efficient ways of sorting the components after cutting, the order of the cutting becomes critical and a significant optimising constraint. Certain components may or may not be flipped, or flipped in only certain ways. The saw's themselves will require certain components to be cut in a certain orientation. Shorter lengths of timber cost less than longer lengths of timber but also tend to yield more waste as a percentage. Saws will produce more per hour when processing longer lengths of timber when compared to shorter lengths. And the complexity continues.

As an example, consider the optimising software of the Vekta Razer Saw. This software has been developed and improved over the past 20 years with the focus being on enhancing optimising for both flexibility and efficiency. In addition, over the past two years, Vekta has engaged and collaborated with Curtin University Mathematics Department to develop ground breaking mathematically guaranteed optimising algorithms – spending several hundreds of thousands of dollars in R&D on this endeavour alone. Optimisation is not a trivial element in today's linear saws and it isn't something that can be developed properly in just a few years. Good, proper and efficient optimisation is an extremely complicated process that can't be rushed.
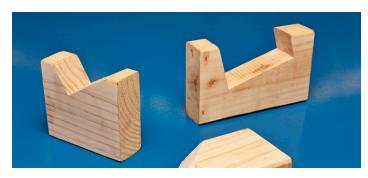
Yes ok, but can't I just assume my saw's optimising is good enough?

If only the answer was an easy yes. Not all optimising is created equal and the difference it can make is HUGE! Consider the amount of money spent on timber every year. Now add in the cost of disposing of timber waste each year and, why not, include a figure to cover the costs involved in managing the timber (ordering, handling, transporting). Now, consider roughly what percentage of that timber is or will be ran through your linear saw. Divide the associated cost by 100. So what do you end up with? A clear and simple figure that represents just how much money you stand to gain, or lose, every year for every 1% difference in your timber optimising! Think about it for a moment… Slight changes in your optimising CAN save or cost you a whole extra person's wages each year!

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Let's talk numbers!

$1,000,000 worth of timber runs through the saw a year, divided by 100 = $10,000.

2% improvement in optimisation= $20,000

5% improvement in optimisation= $50,000. Really, this is easily achievable with only small changes to settings.

Is your linear saw optimising creating a hidden cost or a benefit? Optimising DOES matter!

Ok, I get it- optimisation is important! So, what questions should I ask? What should I be aware of?

1) Is there flexibility in the cutting order? You may want to cut in a certain way now, but a good algorithm will give you efficient options to cut in a variety of manners. A good optimising algorithm must be extremely flexible in how it can be configured if you want to get optimal results.

2) How mature is the algorithm? Optimising algorithms are a far less obvious element of a linear saw but they have one of the single biggest impacts on the financial benefits. Look for long standing, constantly improved and improving algorithms.

3) How much input from the operator is needed? Unfortunately, our brains can only do so much. The more an optimising algorithm relies on human input, the poorer the results will tend to be. Sorry but it's true… A computer is far better at those hard computations!

4) Are there tools to help refine your settings? Every plant will want and need to optimise differently. This means a flexible system must be configured in a custom way to best fit your business. A good software package should have specific tools that will help you work out things like what lengths of timber you should stock and the impact of the cutting order on timber efficiency for example.

5) Are there clever ways to reduce the waste that goes in the bin? Most linear saws will give you options to cut things like noggins and blocks from your waste. But what if you don't build walls or you don't need any more noggins? Look and ask for flexible alternatives.

6) Can I optimise differently for different scenarios? Trusses and frames can and usually should be optimised with slightly different settings to get the very most out of both. Make sure you understand your options for doing this with minimal changes to settings - you don't want to have to constantly change settings back and forth - not to mention having to remember what settings have been changed.

7) Where and how can optimising be performed? Some businesses prefer to optimise at the saw. Others prefer for someone in the office to be responsible for minimising waste. A good optimising solution will provide efficient means of doing both, including the ability to lock files that have been pre-optimised. The software should also make it easy to optimise several files at once and automatically print off and/or save necessary files and documents - such as pick lists for example.

8) What are the skill sets and background of those that offer support? Consider the skill sets of those that provide the primary support for you saw. You want highly trained individuals with strong backgrounds in software. Support engineers should help review your optimising results and improve them when changes are needed. Most truss plants do not have the internal skills or time to keep their optimising systems firing on all cylinders. Get the experts to help you with this!!

9) Is there ongoing development and what future improvements can you expect? Ask your supplier about new features in their software that you might not be aware of. Ask them what's coming up. Consider how likely your suggestions and wish lists will be considered. How often are new versions of your software released? Are you on the latest software?

10) Can I run sample files and see the results? If you are looking at a new saw, it is a great idea to ask the suppliers you're considering to run some sample files for you and analyse the results – the more the better! It's amazing how rarely this happens for such a crucial element of a very expensive piece of equipment.

If you have a linear saw, take the time to evaluate your optimising systems and settings. If you are looking at purchasing a linear saw, ask the questions and take the time to ensure the optimising system stacks up to today's standards and your expectations. In today's highly competitive market, can you really afford not to?

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