Machine Centre Operation

Trouble-shooting Saw Performance
By
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Impact analysis

- Ollie's Top Tip – your mill...and your performance are at stake!
- In the last 30 years more mills have closed than are now open
- Most mills struggle to maintain accuracy.
- This information could typically increase your Return On Investment by 5% or more.

Troubleshooting Saw Performance

Saws...the need for tolerance

- Very Fine Tolerances – For example on a typical band saw wheel bearing there is .003 inches or metric .012mm Internal radial clearance.
- Scheduled maintenance is vital.
- Fitting of new bearings on warn components (shafts etc. a common problem)
- Always wheel grind and complete line up when fitting new bearings
- But a wheel grind when bearings, housing, shaft etc are worn, is disaster.

TOP TIP. All machine centres must be maintained to the same accuracy as the Saws.
Feedstock

- Radiata has a high sap content with special characteristics. Liquid turns to solid reducing motion and exaggerating ware – it's like glass fragments grinding away.
- Machines ought to be designed to cope, but
- Many machines need alteration but can be reconfigured.....BUT
- Regardless of effort some machines never achieve their potential.
- Reduction in log size processing capability is the main problem.
- The solution lies correct machine specs and in lube oil spray routines

TOP TIP – Zap the Sap.

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Lost Motion

- Comes in a variety of forms and is the most relevant performance issue.
- In Headrig/Carriage combos, lost motion can occur from sap grinding in
  - Knees
  - Bunks
  - Dogging
  - Wheels
  - Rails
  - Setworks
  - Pins
  - Connecting points.
  - Sharp Chains
- The following shot illustrates an example where lost motion will be experienced....

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Errors at the Carriage are compounded as the error moves through the re-saws, the edger and other secondary breaking-down machine centres. This applies equally to Quad Saws, Twins and small log lines. A good example of the effect of lost motion is shown in this illustration of Taper....
Lost Motion – Illustration 2

If the Taper illustrated above is fed through an edger it will skew. This is due to un-even pressure on either side.

This is a very frequent problem. BUT.. It is often mistaken for tension in the cant!!

TOP TIP..... Make no assumptions..always trace inaccuracy to the root cause.

Lost Motion - contd.
Cross Line

- A frequent enemy
- Comes in a variety of forms and probably the main cause of gullet cracking in band saws
- Can also be used to describe Edger roll misalignment
- Examples of Band Saw cross line include
  - Wheel to Wheel
  - Top Guide to Bottom Guide
  - Top Guide to Top Wheel
  - Bottom Guide to Bottom Wheel.
- All must be eliminated.
- TOP TIP> Ensure precise line up when bearings are changed.
  - Strain up
  - Press rolls in
  - Press rolls down
- Note this can be dangerous. Specialist knowledge required.

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Cross Line Spider

- Small example as a memento
- Used in close to working conditions as possible. Beware the danger.
- Live demonstration here at TITC.
- Essential to move the top guide up and down
- Cross line between guides....Industry Practice??.......NO.
Cross Line Spider

Set-works

- Come in all shapes and sizes
- Common Goal...to set accurately
- Slack can occur in
  - Pivot points
  - Ball Bushes
  - Mounts
- Most Common set-works is the Hydraulic Linear Positioner. They require filtration to 3 microns absolute.
- TOP TIP> Change the high pressure oil filters regularly.
Summary

- TOP TIP. There is a natural order to trouble shooting
- TOP TIP – Zap the Sap.
- TOP TIP….. Make no assumptions..always trace inaccuracy to the root cause.
- TOP TIP> Ensure precise line up when bearings are changed, or maintenance performed
  - Strain up
  - Press rolls in
  - Press rolls down
- TOP TIP> Monitor the oil and change the high pressure oil filters regularly

Ollie’s Top Tip – It’s your mill and your performance!

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Profile of Pacific Timber Engineering

Engineering - PTEL. www.pacifictimbereng.com
- Founded 1986
- Based in Tauranga NZ in a large specialist sawmill workshop facility
- Well positioned market leader.
- Profitable and Sound
- Highly Qualified Staff,
- Own IP. Original and Sourced Equipment all carries our serial number and identifiers
- Servicing NZ, Australia, Canada and South Africa Markets
- Trading as Pacific Engineering Group PTY Ltd based in Sydney, Australia

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