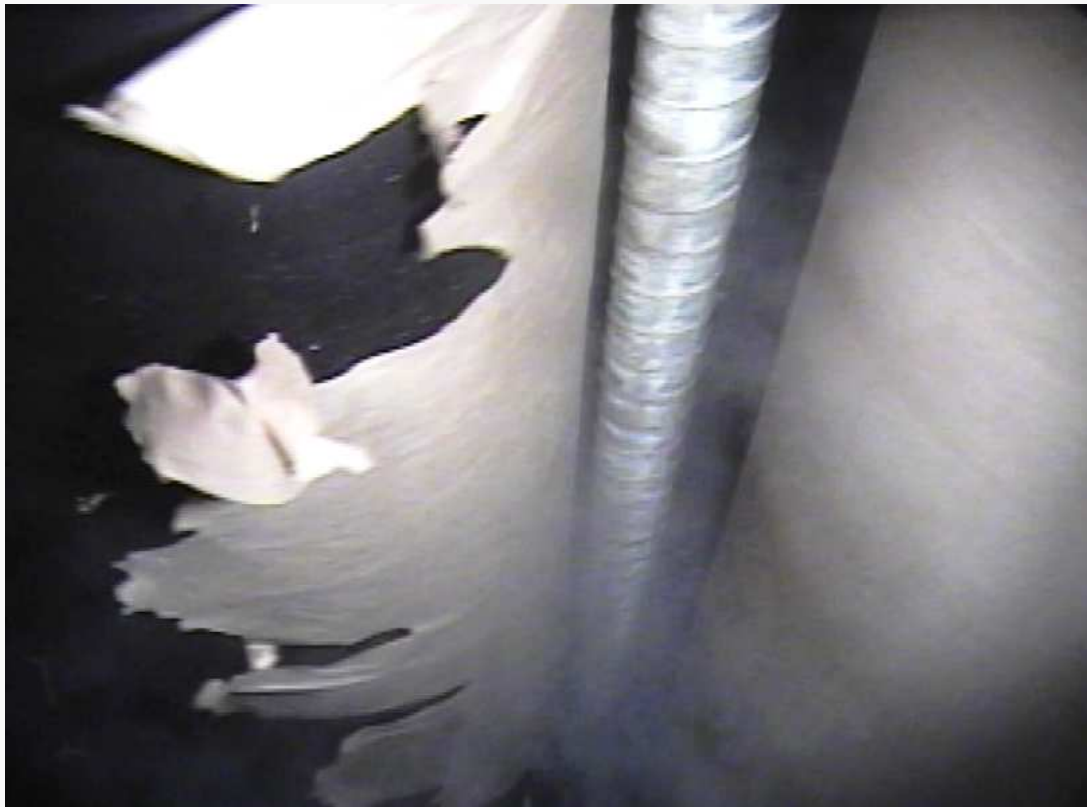


# Roll Alignment

An essential part of preventive maintenance



Thomas Coombes

Pruftechnik Service, Inc.

TAPPI Maintenance Session

Wed 16 Feb 2011

# Roll Alignment

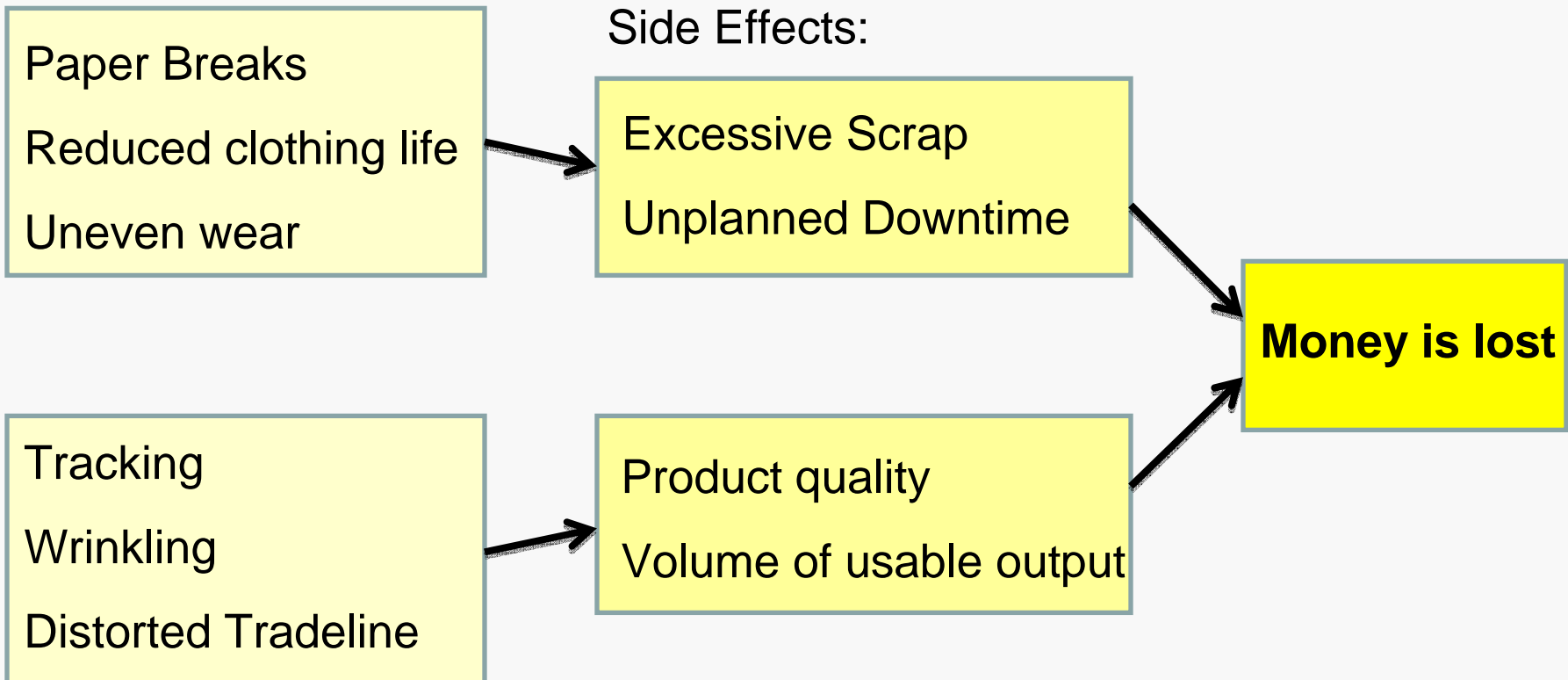
An essential part of preventive maintenance



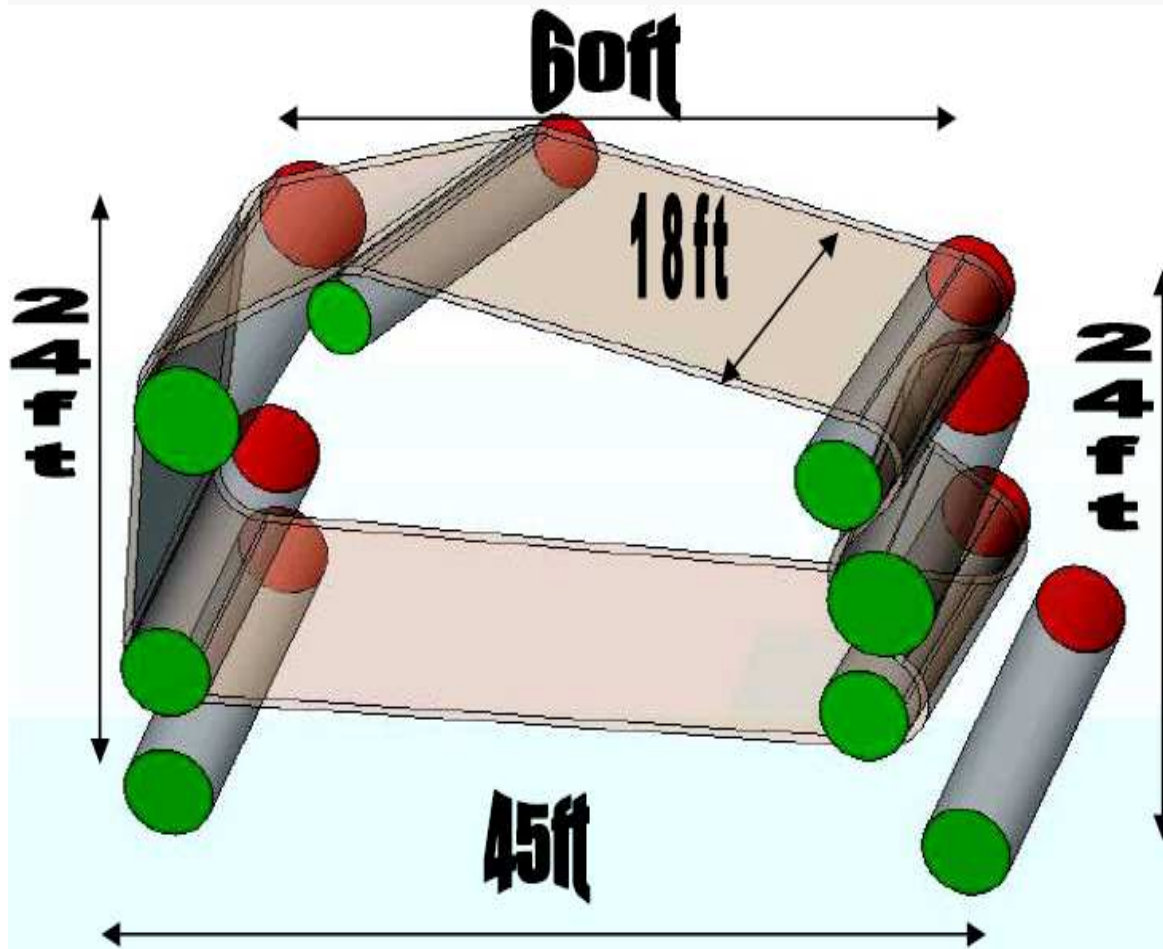
What does misalignment look like?

# Diagnosis: Misalignment

Symptoms Include:



# Press Felt Lifetime



Surface Area = 2754 sq.ft.

Cost of felt at \$11/ sq.ft. =  
\$30,300

Recommended lifetime =  
6 Weeks

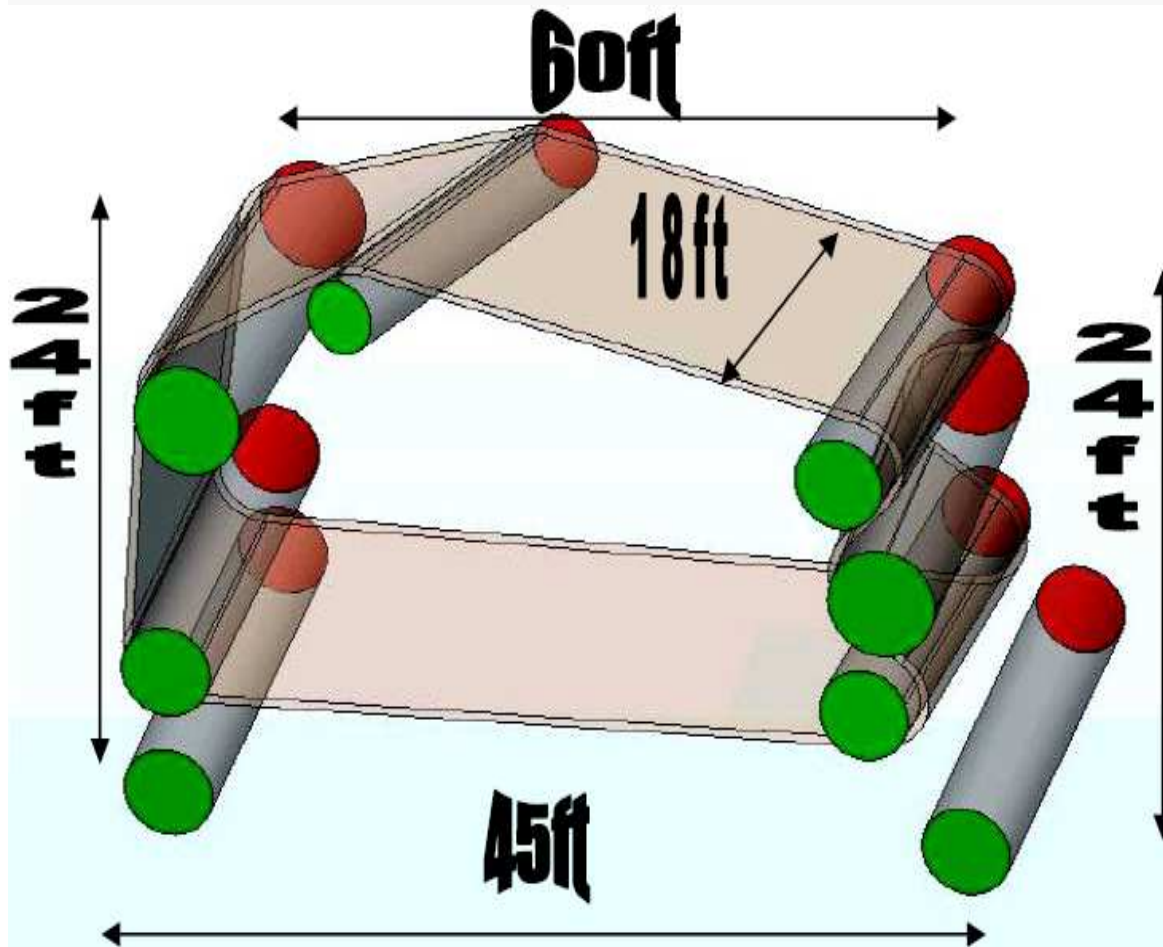
Actual felt life = 4 Weeks

Felt Changes per year = 13

Annual cost of felts =  
\$394,000

# Press Felt Lifetime

How much is an hour of production worth?



Cost of alignment service =  
\$7,500

Felt life increased to 6 weeks  
after alignment service

Felt changes per year = 9

Annual cost of felts is now =  
\$273,000

Money saved = \$121,000/yr

Return on investment =  
%1600

# Roll Alignment

An essential part of preventive maintenance



How do we correct these problems?

# Consider your options

There are many ways to check roll alignment



Conventional methods

Precision Level  
Pi Tape



# Consider your options

There are many ways to check roll alignment



## Optical Systems

Theodolite  
Transit  
Lasers

# Consider your options

There are many ways to check roll alignment



Gyroscope based device

PARALIGN

# Benefits of a Gyro-based System

Efficient during regular outages

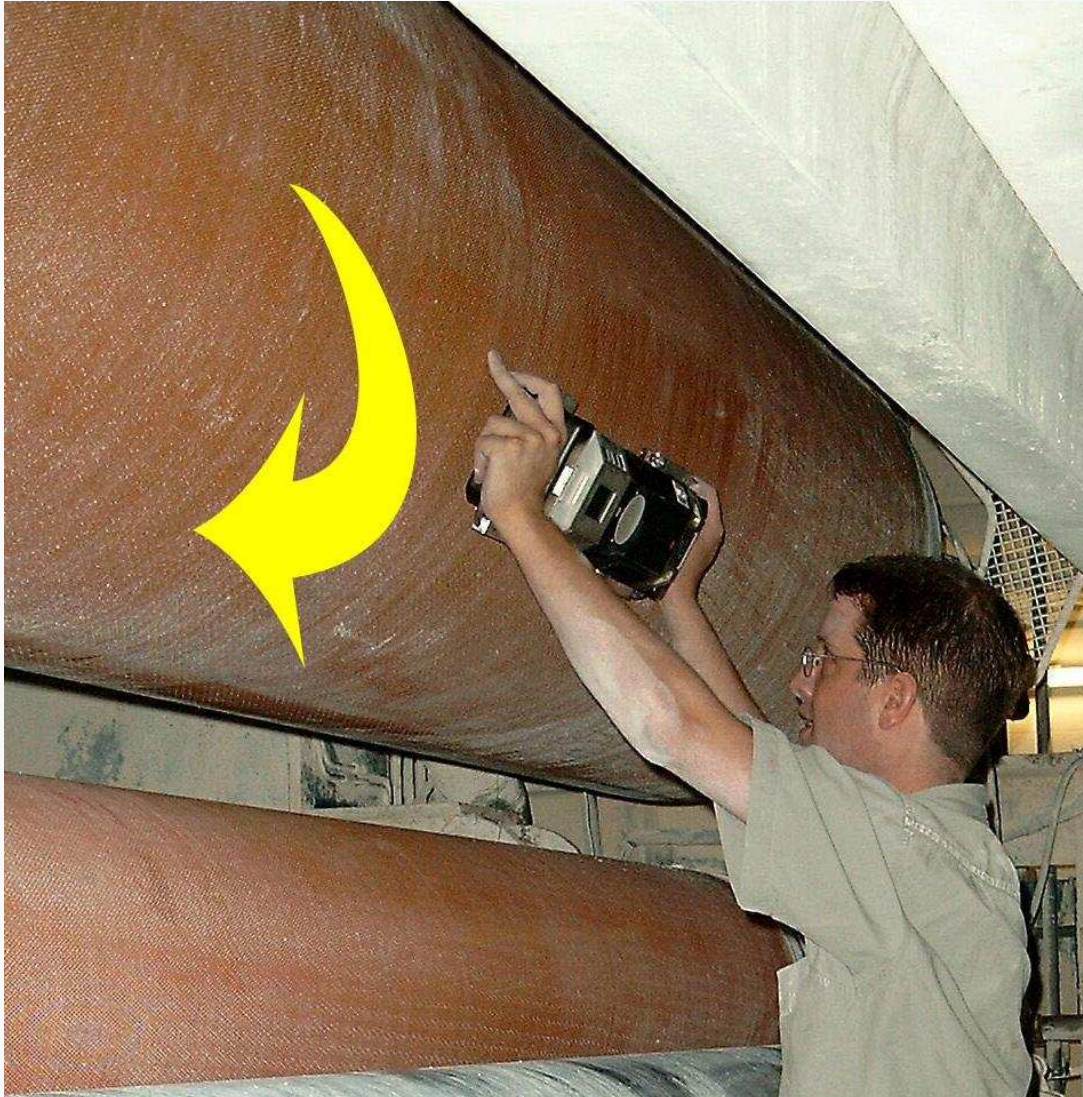
- ▶ 60 rolls in 8 hours
- ▶ Instant results

Not limited by location of rolls

- ▶ No GPS
- ▶ No line of sight
- ▶ Measurement quality maintained

***Check more, Check more often***

# Measuring a Paper Machine

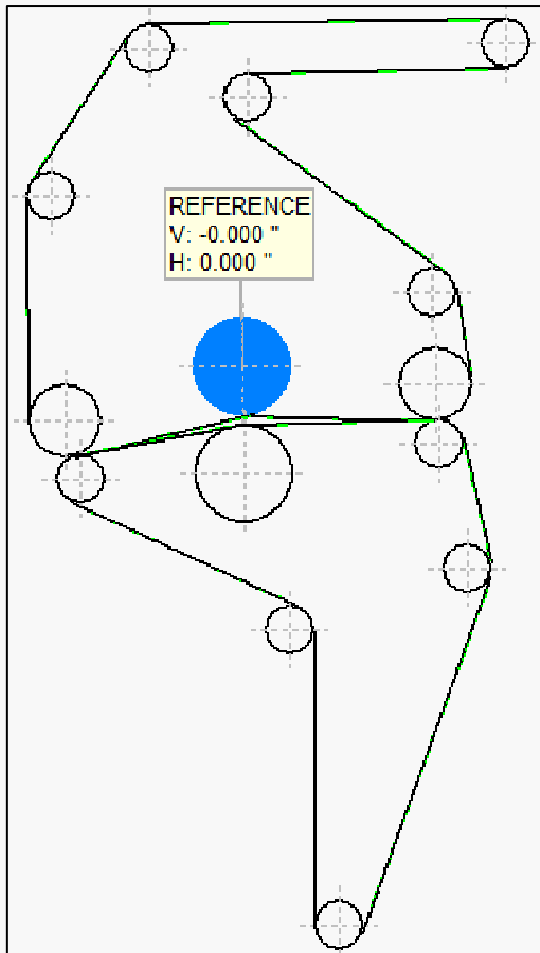


20 degree sweep

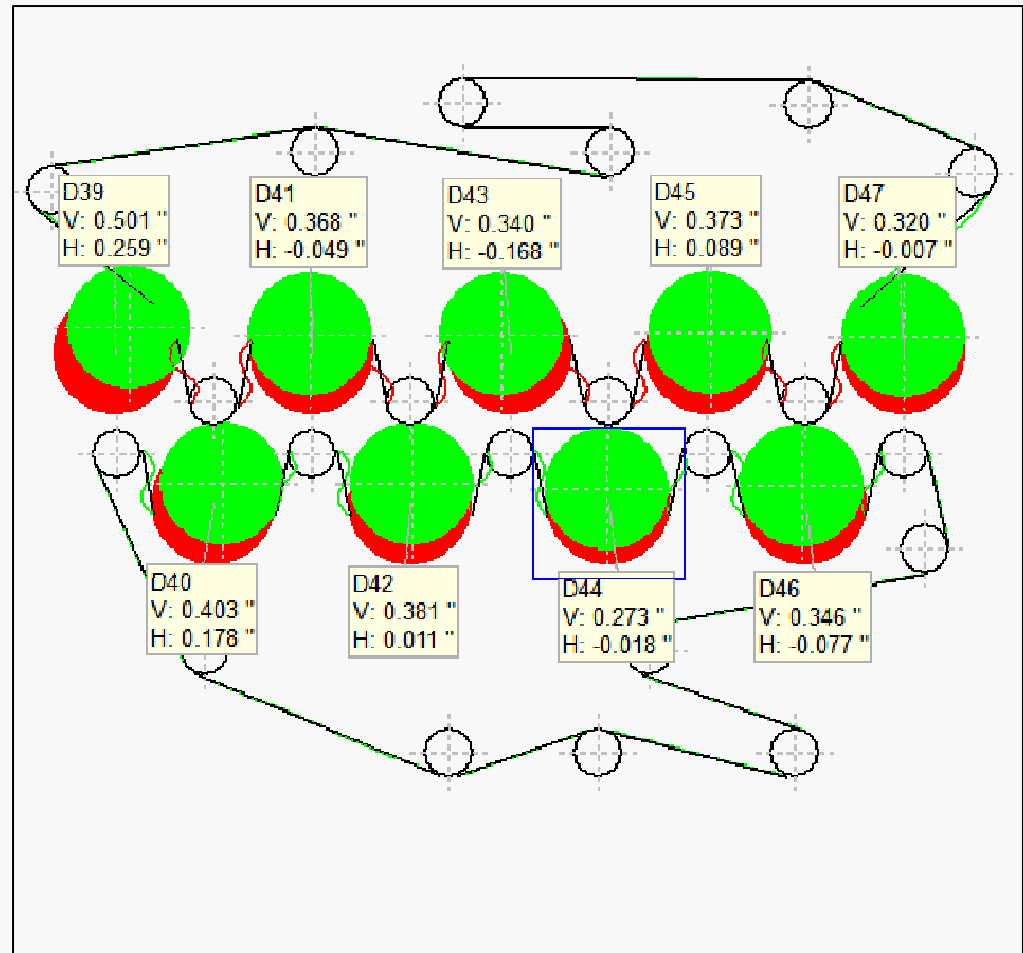
Breast Roll to Windup

Instant graphical report

# Foundation Settling



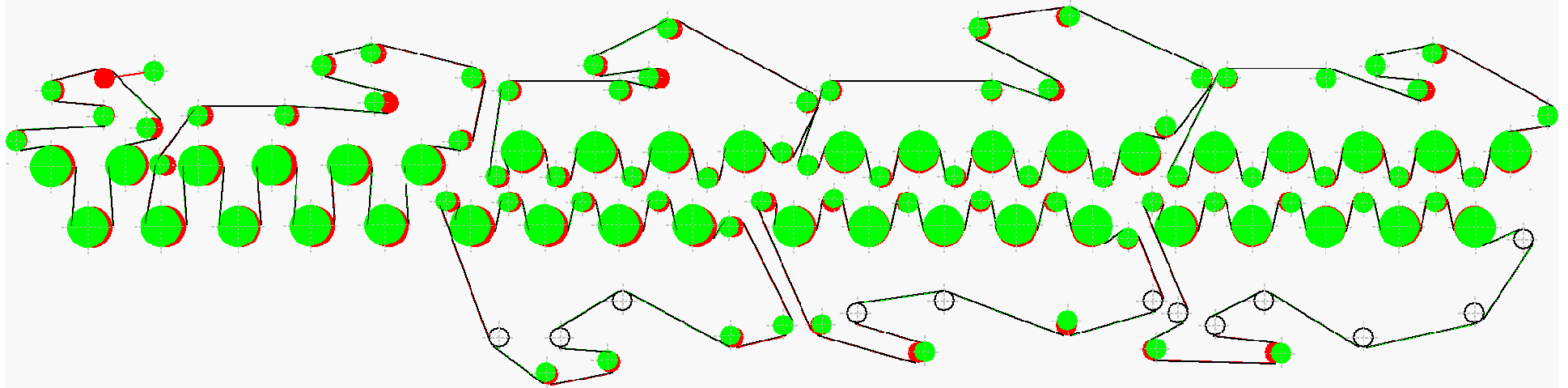
Press Roll as reference roll



4<sup>th</sup> dryer section has settled by a half inch on the drive side

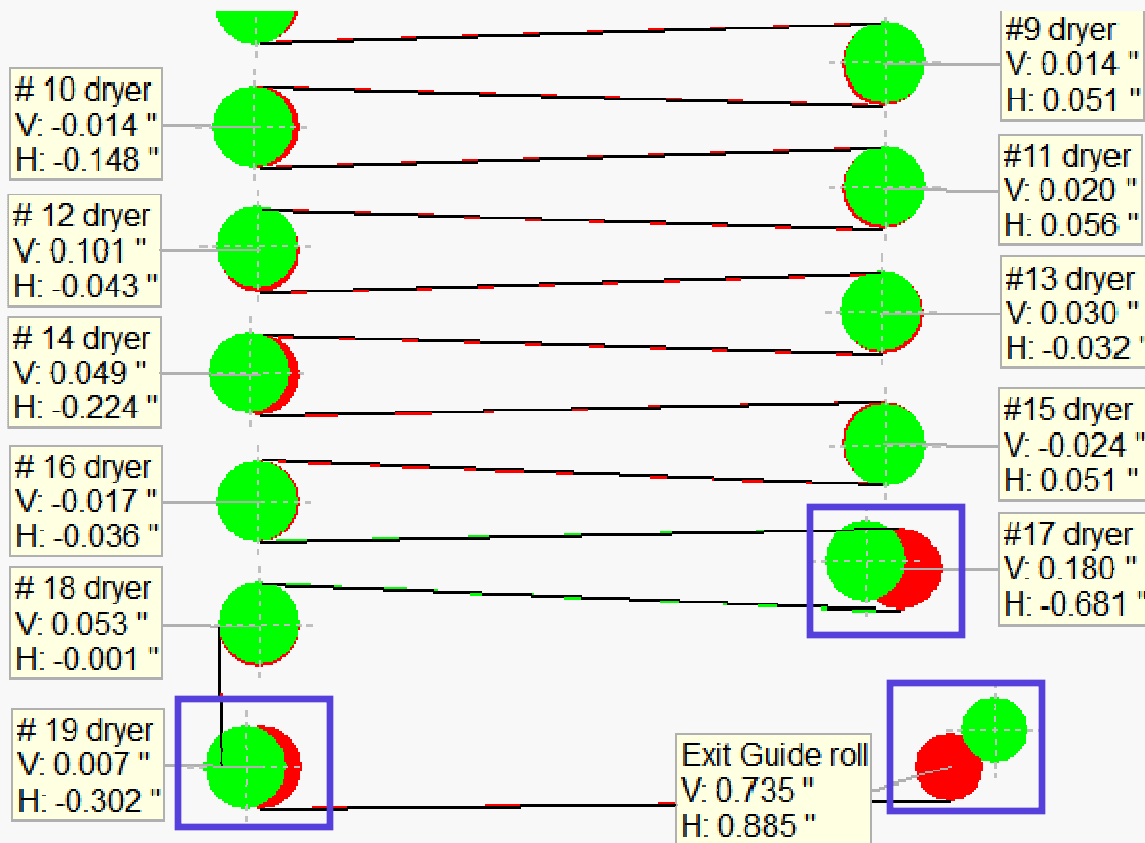
# Large areas covered in a day

12 hours to measure



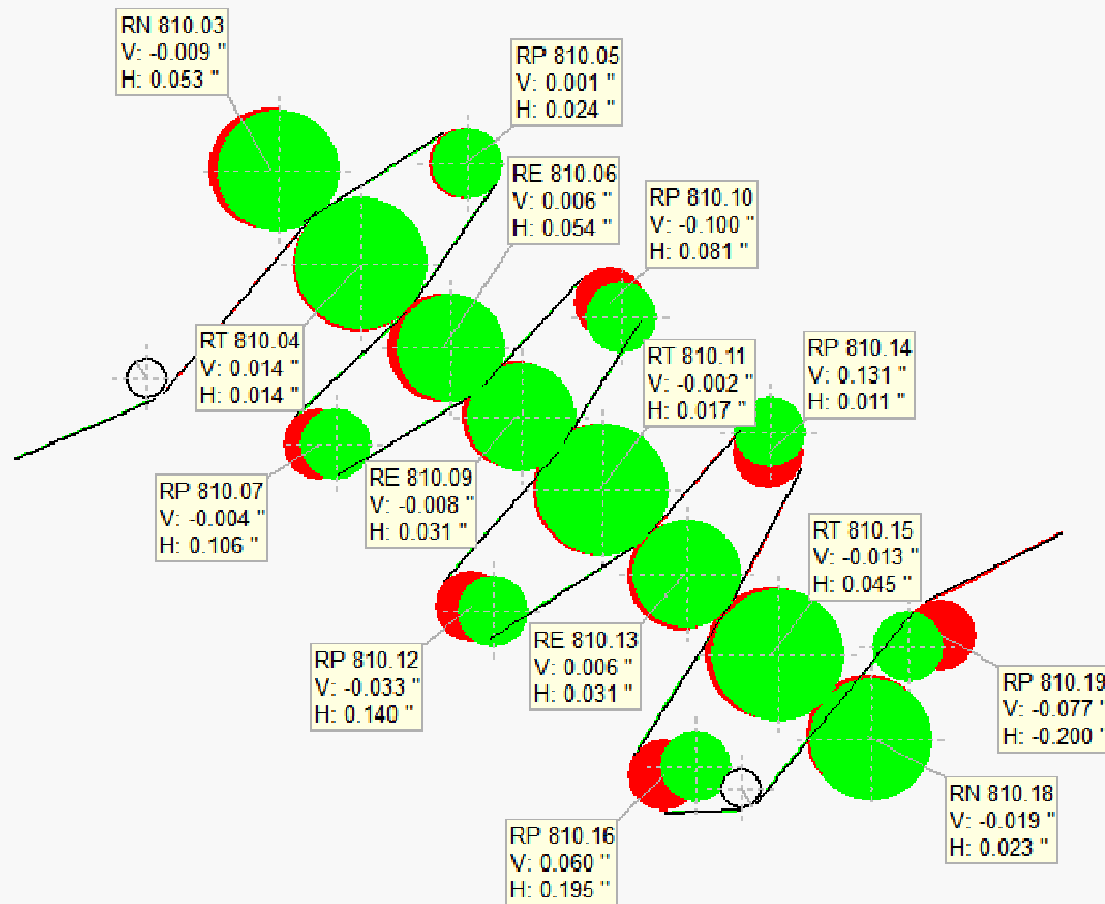
**How much is an hour of production worth?**

# Pulp Dryer



A clear Line of Sight is not always available

# New Installations



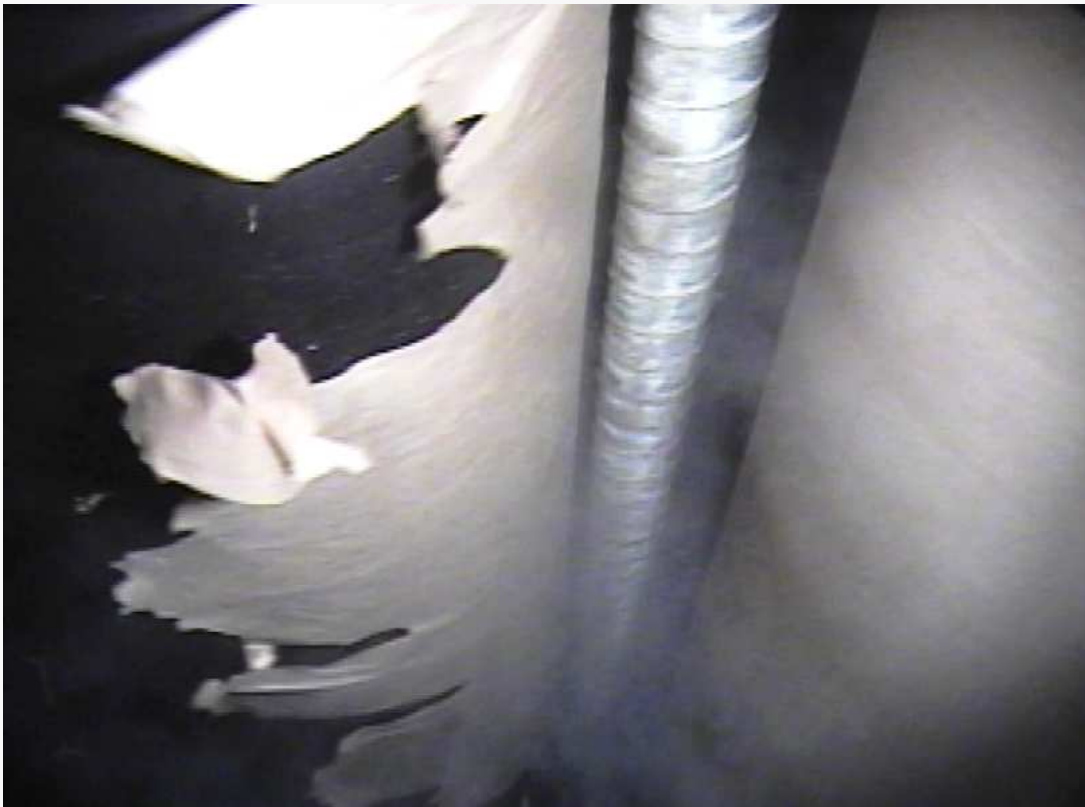
Return rolls are out of place

# Roll Alignment

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*To improve reliability through better maintenance is 90% people and 10% technology*

*– Christer Idhammar*



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## Picture Reference

- Pi Tape (Slide7) <http://www.firstec.co.jp/English/Products/pitape/Pltape.htm>