

This audit is done in a 100 % Viscose spinning mill in South India.

APRONS

- Observation / Findings on Apron breakages.
- Replacement schedules of Aprons followed in the mills.
- Suggestion for achieving better performance and increased life of aprons.

Fluff Accumulation on tension fork



- In this case, the free rotation of apron gets obstructed and tends to get buckled inside the nose bar.

Roving Ends Loaded on Apron Tension fork



- In this case, the free rotation of apron gets obstructed and tends to get buckled inside the nose bar.

Non Reversal of Apron Tension Fork



- Spring tension on apron fork was found insufficient on continuous usage. Hence apron tension fork is getting obstructed and not able to swing to its original position.
- This leads to the buckling of bottom apron inside nose bar and ultimately resulting in apron breakage.

Apron sliding movement



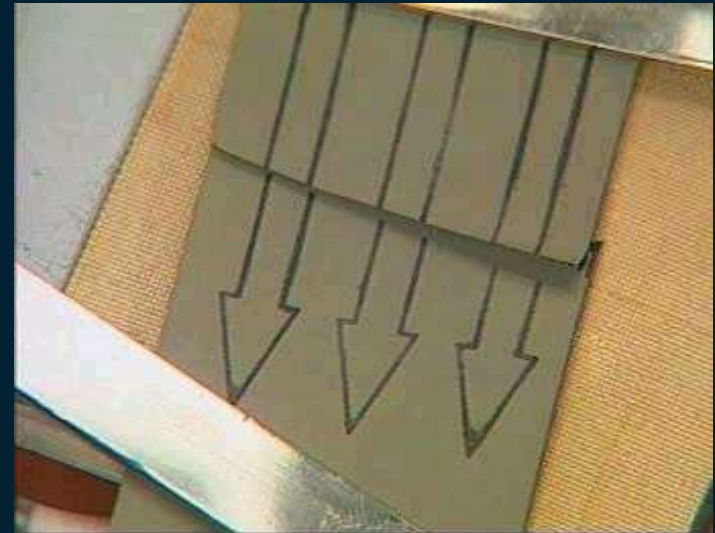
Condition of apron tension fork



- Since the apron tension fork's condition is poor, it should be replaced by new one or a plastic cap is to be used to avoid apron damages.

General Norms – Breaking Strength of Endless & Skived Aprons

- Breaking strength of endless Apron (spinning)
- **60 Kgs Approx**
- Breaking strength of Skived Apron (spinning)
- **20 Kgs Approx**



Suggestion for better working performance and increasing the life of Aprons

- 1.** The tension fork spring is to be cleaned by rust removing solution frequently.
- 2.** Frequency of cleaning to be increased with respect to removal of fluff accumulation on fork, loaded roving ends in both tension fork and bottom clearer rollers.
- 3.** As the breaking strength is very high in Endless aprons, it was suggested to use more spare endless aprons in place of skived aprons.

Spinning Aprons Recommendation

Recommended Aprons to get better performance

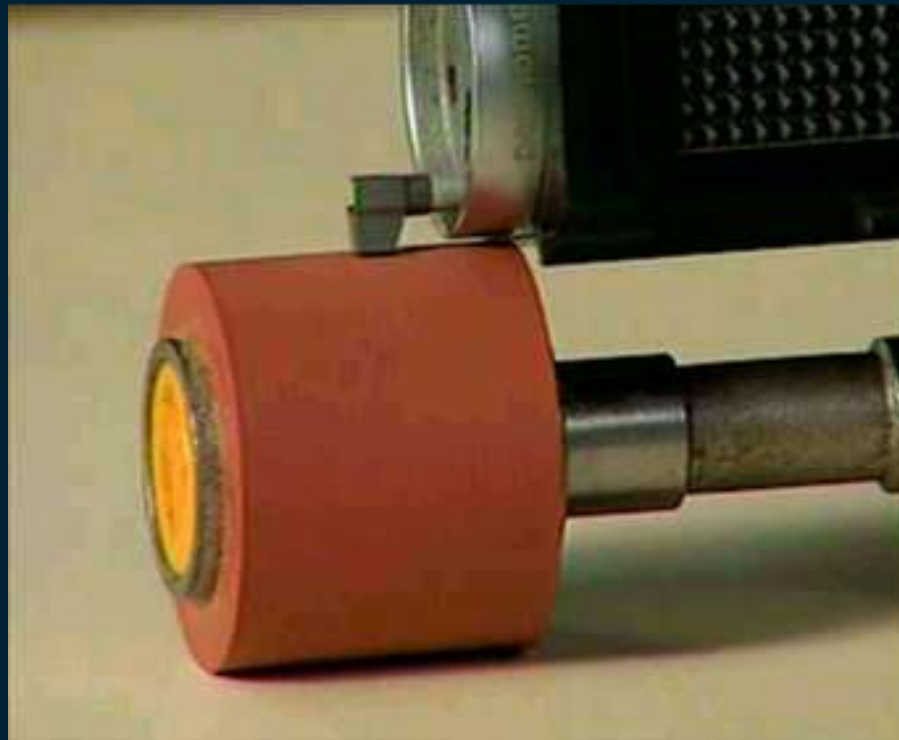
**PRECITEX
SYN 9281 79X30X1.05 and
SYN 9281 76X30X1.05 if apron
cuts still persists.**

Cots

- Findings on Cots performance.
- Life of Cots followed in the mill.
- Recommendation on Cots with respect to Performance, Quality and Life.

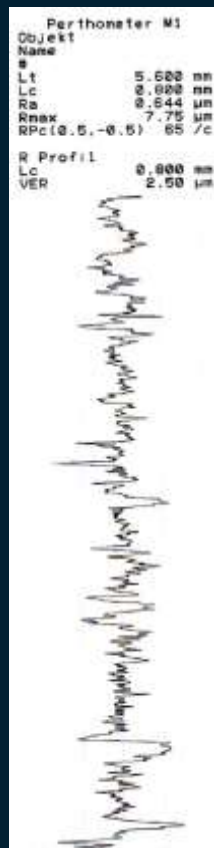
Perthometer

- An instrument to measure roughness of cot surface
- Graphic output indicating value of roughness



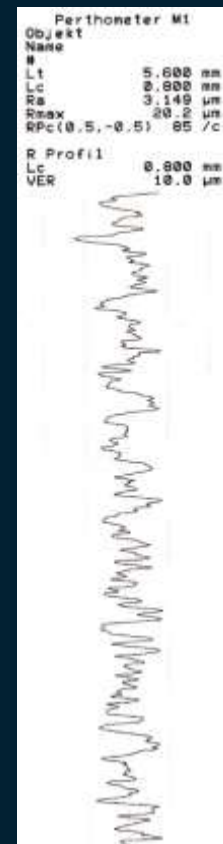
Perthometer Analysis - Norms

Objective: To evaluate performance of grinding machine



RA : 0.64

Good surface finish



RA : 3.14

Poor surface finish

General Norms for Surface Finish



0.5 to 0.7 micron :
Excellent surface finish

0.8 to 1.0 micron :
Good surface finish

> 1.0 micron :
Poor surface finish –
increases lapping

Cots Mounting machine at Mill



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Cots Grinding machine at Mill



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Cots eccentricity tester at Mill



UV treatment machine at Mill



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Ra Value of Cots – 6 seconds grinding time



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Existing Roll Shop Maintenance System

- Grinding stone – 80 grit and Speed is 2800 RPM
- Dressing of stone – Once in 3 R/F s.
- Air cleaning of stone – Once in 1 R/F.
- Spinning Cots Buffing Schedule – 45 days once
- Buffing duration: 6 seconds
- Berkolising duration – 9 minutes
- (Ra value of Spinning cots found 0.71 only)

Suggestion to get uniform Ra value of cots

- 1. Grinding time 6 seconds is enough to get optimum surface finish.**
- 2. Dressing frequency of stone should be reduced to once in one machine.**
- 3. Cleaning frequency of stone should be reduced to once in 50 shells.**

Spinning Cots Recommendation

Material Processed	100% VSF , COTTON
Recommended cots to get better Yarn quality	<u>PRECITEX</u> Front roller - HP LGX 75 ALU COT Back roller - HP PX 83 ALU COT

Spinning Apron change schedule

For Viscose counts (Export)	—	12 Months
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Fluff Accumulation on roving frame tension fork

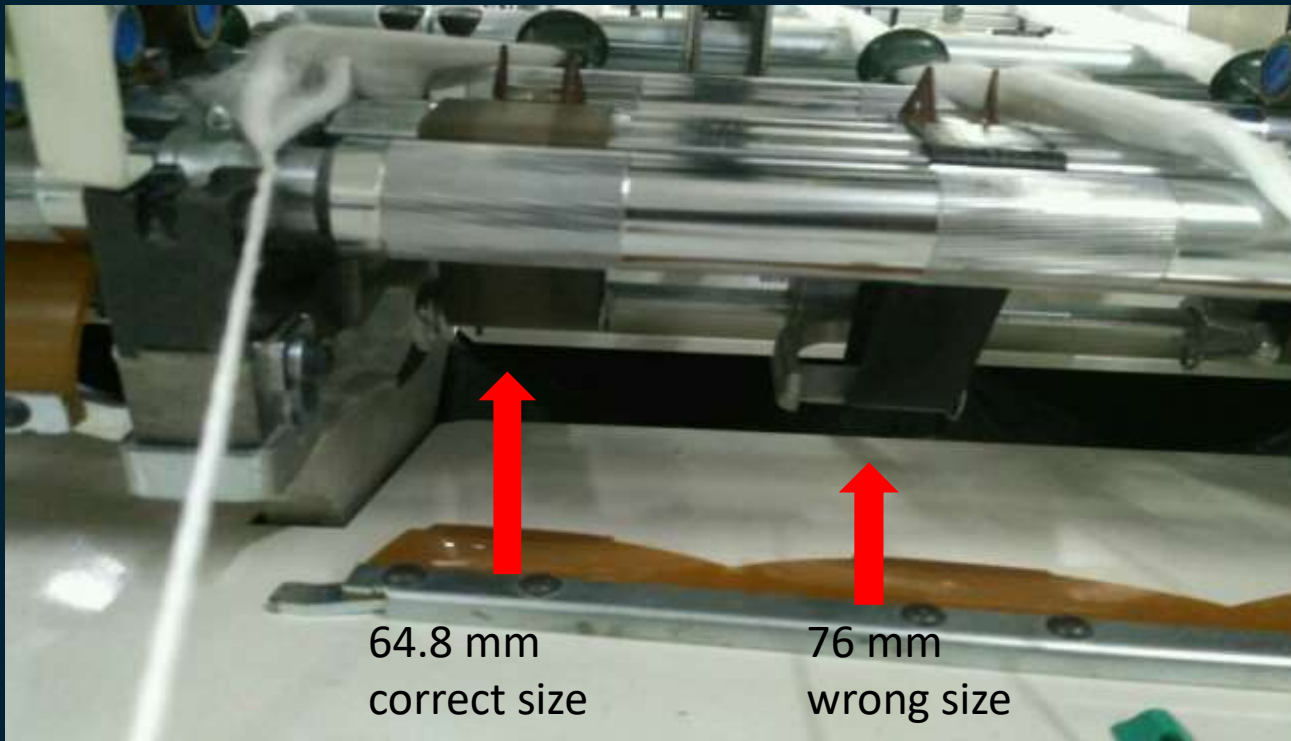


Roving frame Bottom Apron damages



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Different size Bottom Aprons running in Roving frame



64.8 mm
correct size

76 mm
wrong size

Top Apron sliding in roving frame



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Suggestion for better working performance and increasing the life of Simplex Aprons

- 1.** The tension fork spring is to be cleaned by rust removing solution frequently.
- 2.** Frequency of cleaning to be increased with respect to removal of fluff accumulation on fork.
- 3.** In LF 1400 A Simplex, the top aprons getting sliding from its original running position due to diameter reduction in the cradle roller. This will leads to yarn quality related issues.

Suggestion for better working performance and increasing the life of Simplex Aprons

4. Present OD of the cradle roller is 24.5 mm only against its original diameter of 25.0 mm. So this 0.5 mm reduction will reflect nearly 1.6 mm loose in top apron length ($0.5 \times 3.14 = 1.6$ mm).
5. By changing the cradle roller by new one, we can avoid this apron sliding issue.
6. Damaged and wrong size bottom aprons should be replaced by new and correct sizes.

Simplex Aprons Recommendation

Recommended Aprons to get better performance

**For Bottom positions
PRECITEX SYN 9281 aprons**

**For Top positions
PRECITEX HP WB aprons**

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Simplex cot's surface finish



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Simplex cot's surface finish

- Surface finish of Simplex cots is 0.58 – 0.65 microns only which is well within norms. No need to change any buffing parameters related to Simplex.

Drawing machine's cots details

<u>Machine</u>	<u>Cots Shore hardness</u>
L DO/6	83°
LD2	83° and 85°
RSB 851	83° and 78°
LDA2	83°
TD8	83°

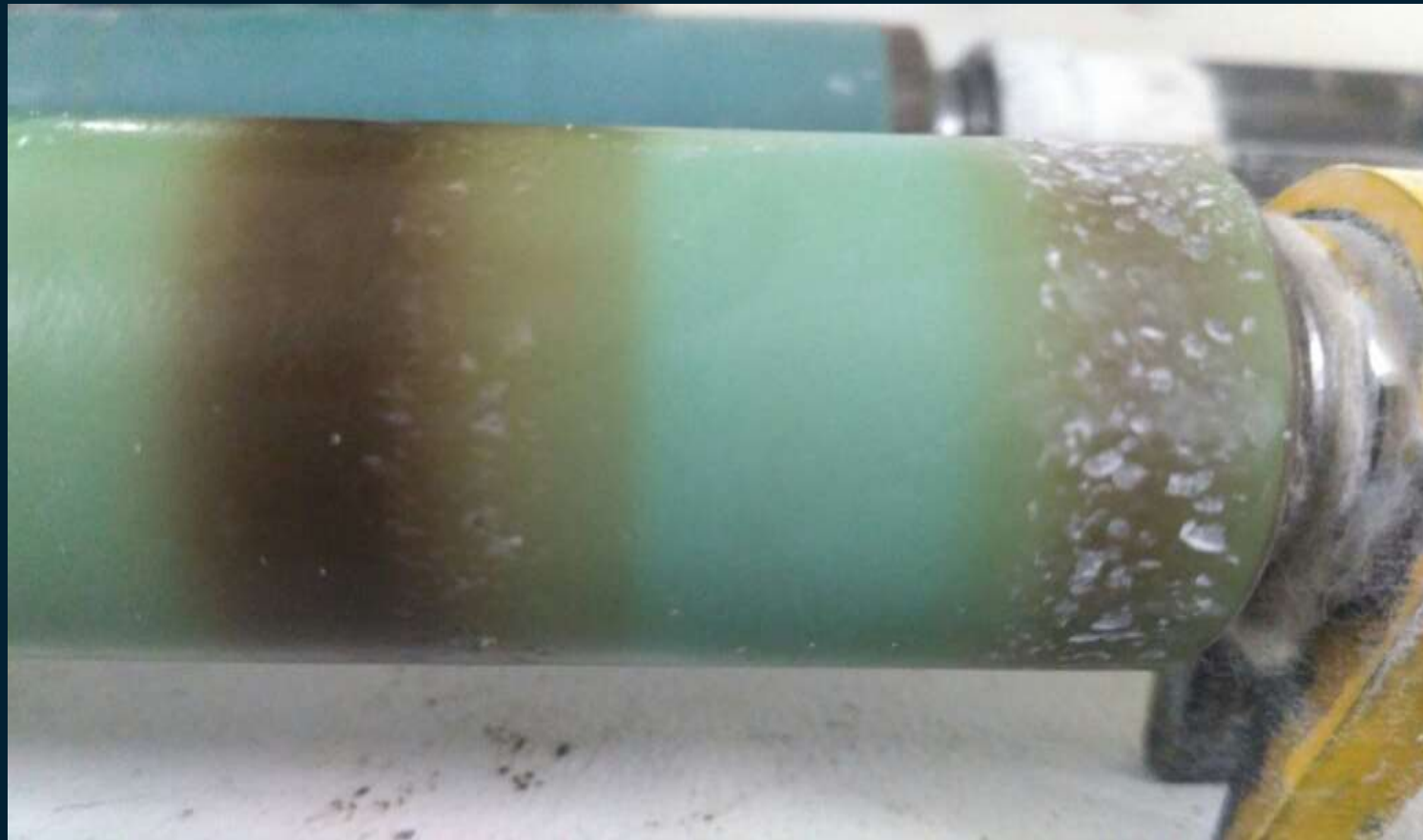
Drawing cot's buffing details

- Buffing frequency – Once in 15 days (0.2 mm).
- Very good practices are followed.
- No need to change any buffing parameters related to drawing.

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Drawing cot's fusion

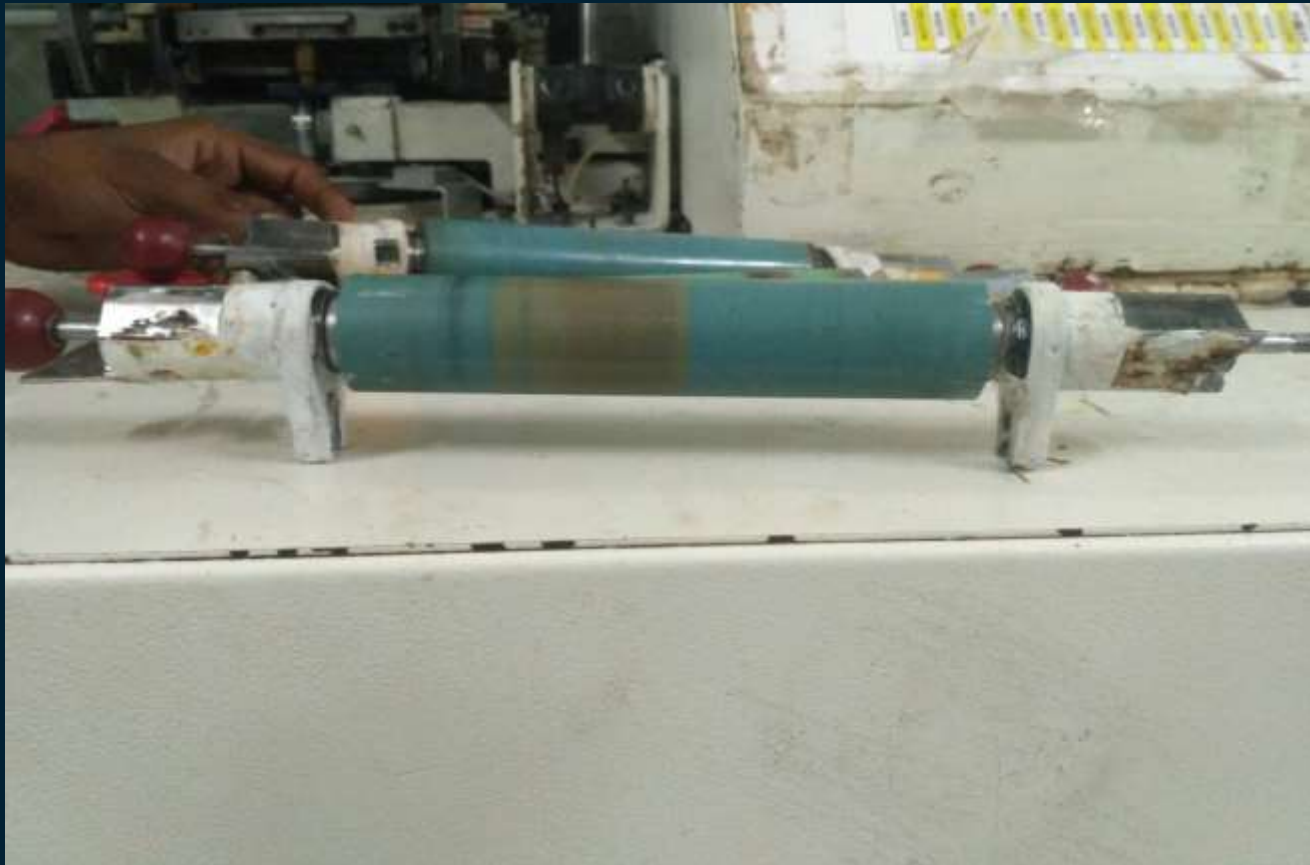


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Drawing cot's fusion



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Drawing cots Recommendation

Recommended Cots to get better performance

PRECITEX
HP SB 85 for 100% VSF process.

**THANK YOU
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