Equipment Performance Improvement In Textile Industry
(via autonomous maintenance)

Case Study
Africa

About Client

Client is one of the leading textile manufacturers based in Africa, with reach across African region and a significant share of the East African market. Major products are Hand Knitting Yarn, Machine Knitting Yarn, Chunki, Sweaters, Blankets, Masai, Baby Shawls, Scarves, Kikoys, knitwear, etc. The client is one of the leading suppliers to HKY yarn in Exports.

The client is also one of the leading suppliers to various schools for sweaters.
Analysis

In discussion with the client and detailed analysis, following significant improvement opportunities were detected:

- Low OEE (Overall Equipment Effectiveness) rate
- Low MTBF (Mean Time Between Failures) rate
- High MTTR (Mean Time To Repair) rate
- Lack of structured maintenance mechanism
- Lack of proper skill evaluation of operator

Approach

- Training on Autonomous Maintenance & Baseline setup
- Manager model machine identification and kickoff
- Team Formation & Initiation of AM (Autonomous Maintenance)
- Identification and Rectification of abnormality
- Improvement on Regularity and involvement
- COTI ((Cleaning, Oiling, Tightening & Inspection) sheet and standards
- Autonomous Maintenance audits
Project Implementation

Training and Baseline setting

1. AM step 1 audit conducted and audit score of 32% was recorded
2. AM training conducted for ~25 team members of different sections and ensured another 66 people got trained by them

Manager model machine identification and Kick-off

1. Identified Gill chain machine as one of the Manager model machines and Kick off started with it

Team formation and Initiation of AM

1. Formed 10 teams for 10 bottleneck machines
2. Initiated AM step 1 on all 10 machines
3. Prepared Look for list and weekly cleaning schedule and started “cleaning with meaning”

Identification and rectification of Abnormalities

1. 279 abnormalities identified while conducting AM
   a. 188 Red tags
   b. 91 Green tags (to be resolved by the operators themselves)
2. Prioritized the abnormality and rectified it

Improvement on Regularity and involvement

1. Involvement and regularity score observed at 50% during the AM audit
2. Prepared weekly calendar and sensitized the team for regularity and involvement
3. Started tracking number of abnormalities identified/person in a team for improvement in involvement

COTI sheet and Standards

1. Prepared COTI (Cleaning, Oiling, Tightening & Inspection) sheet for each sub equipment
2. 27 One Point Lessons (OPLs) prepared and administered
3. CLI standards established rolled out

Results Delivered

OEE increased from 54% to 82%

Autonomous Maintenance time reduced from 90 Min to 30 min

MTBF increased from 98 hrs. to 412 hrs.

Skill index of operators increased from 34% to 78%

Improved ownership of machine by the operator

Sustenance

Implemented results shall be sustained over a period of time using Systematic Audit & Improvement Loop (SAIL) & Daily Work Management (DWM). Leader standard work helps sustenance of AM

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