Case Study

MAG SPinFO boosts ring frame productivity

Background

A well-known textile mill in Coimbatore manufactures high-quality products made primarily of synthetics and blends. They have been steadily growing over the past few decades, and today have a team of more than 3000 people. The group owns some of the most celebrated brands. Their emphasis on growth is matched with a single minded focus on efficiency. Therefore, the mill identified that there is scope for improving their ring frame productivity. They approached A.T.E. to find solutions for:

- Improving ring frame productivity
- Improving sider allocation
- Reducing waste

Solution

A.T.E. recommended SPinFO – a technology-enabled spindle monitoring system – for monitoring various critical parameters of the ring frames. SPinFO has a special inbuilt programme which monitors all the parameters related to ring frames as well as the mill workforce and provides reliable, real time data. With this data, the mills can take appropriate actions to improve the ring frame performance.

SPinFO is manufactured by MAG Solvics, Coimbatore, and represented by A.T.E.

SPinFO – features

- EMF sensors to monitor individual spindle performance by measuring travellers' speeds
- Proximity sensors for production
- Drafts and doffs are to monitor the output of each machine in real time
- Data is collected through a wireless transmission system from the ring frames and captured in a centralised server
- Each ring frame's data is displayed on a large LED screen in the ring frame department

Sample data by SPinFO

Count: 60s PSF **Manual Doffing Ring Frame** **1008 Spindles**

Parameters	Before SPinFO	After SPinFO	Improvement	Improvement%	Current Status
GPS*	68.3	73.1	4.0		-
Production/Shift/Machine (kg)	69	74	4.9	7.0	-
Production efficiency %	96.2	102.9	6.7		-
Doff time	6.7	3.6	3.1	46.3	-
Utilisation %	97.7	98.1	0.4	0.4	-
Waste %	1.0	0.8	-0.2	20.0	-
Rogue/day	-	1	-	-	-
Standard slip %	5%	3%	-	-	2%
BPSHS**	2.8	1.8	1.0	35.7	-
Start up end breaks	5.2%	1.6%	3.6	69	-
Number of sides/ operator	3.0	4.0	1.0	33	-

**GPS – Gram Per Spindle, **BPHSH – Break Per Hundred Spindle Hours*

Conclusion

Based on the recommendation by A.T.E. – MAG, the mill installed MAG SPinFO's individual spindle monitoring system. Aided by the real time accurate machine performance data, the mill was able to take quick actions, resulting in significant improvements in the ring frame performance, such as:

- Production increased due to improved utilisation, reduced end breaks/doff time
- Waste % reduced due to continuous monitoring of end breaks and end mending time
- Slip spindle standard revised from 5% to 2%
- Number of ring frame sides per operator is increased from 3 to 4 as the regular walking pattern of the operators is optimised based on the alerts from SPinFO
- Deviations like rogue spindles and idle spindles are reduced by continuous monitoring and immediate rectification

With MAG SPinFO, the mills found the perfect solution that it was looking for to improve their ring frame's performance.

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