

Case Study:

Natstan Wire



Automotive Industry Development Centre
Your partner in becoming globally competitive



Introduction

Situated in Uitenhage in the Eastern Cape, Natstan Wire has a 48-year history of manufacturing and supplying tyre reinforcing wires (beadwire) for all local tyre manufacturers. Formerly part of the National Standard Group of Niles (USA), the company employs 115 people and has a developed export market, supplying customers in Africa and Europe.

Natstan began its ongoing journey towards becoming a world-class manufacturer three years ago when it began identifying and reducing waste in all its manufacturing processes.

The Challenge

Surviving in a tough international market was the primary challenge for Natstan. Profit margins were continually under pressure due to the ongoing demands by tyre manufacturers to reduce selling prices as low-cost imported product entered the local market. Natstan Wire had to address several manufacturing challenges in order to retain its market position. These included:

- Improving process control;
- Reducing changeover and set-up times;
- Reducing high levels of reworks - particularly on the plating line;
- Improving wire drawing efficiency; and
- Reducing the high percentage of late deliveries.

The AIDC's Tirisano Cluster Programme was identified as an opportunity to continue the "world-class manufacturing" drive and, by entrenching these principles, reduce waste. The interaction with other companies within the cluster, and the mutual benefits derived, were regarded as being of particular value to Natstan.

All employees received training in the first six months of the programme. The initial focus was on 5C - Housekeeping, the Red Tag system and identifying and eliminating the 7 Wastes. Subsequent training covered issues such as reducing set-up times, problem solving techniques and autonomous maintenance. Initially, there was some employee resistance to participation and the prospects of change. An "Imbizo" (conference) was held to brief all employees on the need for the programme and its role in ensuring the company's future. The majority of employees soon realised the advantages of the training and the benefits to be gained. Training sessions were therefore all well attended.

Programme Roll Out

Employees operated in teams. Each team was tasked on measuring its performance on agreed criteria. The teams met every day for 15 minutes before starting their shifts to discuss and record the previous day's performance. Team leaders gave feedback on the various measurements and their team's performance at weekly production meetings.

Operational parameters measured were:

- Not right first time;
- Attendance and housekeeping;
- Operator efficiencies;
- Machine downtime;
- Set-up / changeover times;
- Chemical bath control; and
- On-time deliveries.

Measure	Before	After	Benefit
Not right first time (BWP)	21,1%	11,3%	46% improvement
Process Scrap (Combined)	2,48%	1,67%	33% reduction
Machine breakdown time	8,0%	4,6%	43% reduction
Operator Efficiency (Drawing)	59,2%	70,2%	19% improvement
Absenteeism (Average)	7,3%	4,7%	36% reduction
Set-up Time (Furnace)	3,25 Hrs	1,8 Hrs	45 % improvement
Avg No. Wire Breaks (Per area / Week)	45	17	62% reduction



Factory after two changes (After)

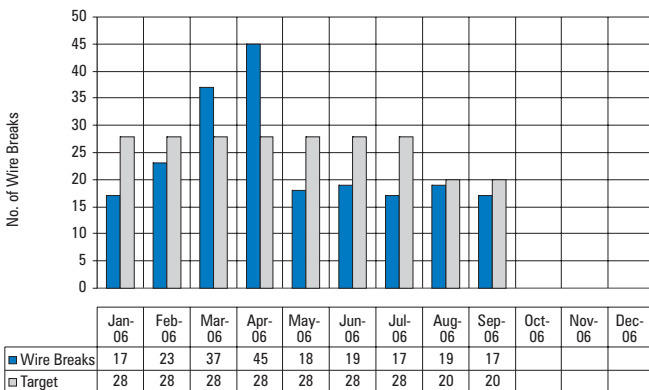
Way Forward

The current "lean manufacturing" system and principles are well-entrenched. Continuous improvements and cost-reduction awareness is now part of the Natstan Wire culture.

Currently, a computerised operations management system is being introduced to capture process information on a shift basis. This will help alert employees on deviations from set standards and targets. The information will also be used to conduct longer-term evaluations, identify particular problem areas, perform statistical process control and analyse process costs.

The Tirisano Cluster Programme has introduced a practical approach to continuous improvement for Natstan Wire resulting in substantial savings through employee participation.

Average No. of Wire Breaks Per Month



Best Improvement



Factory at start of Tirisano (Before)

Natstan Wire

Peet Claassen

Uitenhage

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