

Case Study



Automotive Industry Development Centre

Lumotech TPM Cluster Programme



"The project is important to get real time stock and pull information into each manufacturing area to enable the stock to be minimised as the production efficiency is increased"

Overview

Company: Lumotech (PTY) LTD

Location: Fizpatrick Street

Uitenhage 6230

Number of employees: 517

Core products & processes: Headlight and Taillight for passenger vehicles.

Programme period: January 2013 to December 2014

Company Background

The company was founded in Johannesburg as the Derek Riley & Company (Pty) Ltd. Since then, the company has gone through several changes in both name and ownership. In 1961, the name was changed to Automotive Lamps and Warning Signals (Pty) Ltd and shortly after Hella Germany's Holding Company "Reinhold Poersch GMBH" invested in the company. Its name was subsequently changed to Hella (South Africa) (Pty) Ltd. In 1967 the company moved its facility to Uitenhage. In 1985 Hella Germany took a majority share in the company and METAIR became a 40% owner of Hella (South Africa) (Pty) Ltd in 1989, with full ownership in 1993. Valeo Systems started operating within Hella South Africa's premises as rental and took 51% ownership of the company. METAIR hold 49%. In 2009 Hella changed its name to Lumotech (Pty) Ltd. In 1983 Hella (South Africa) (Pty) Ltd signed a TA agreement with Koito Manufacturing CO. Ltd. In 2004 Hella (South Africa) (Pty) Ltd signs TA agreement with Automotive Lighting Rear Lamps Italia SPA

Key Challenges Faced

Lumotech's production process requires delicate value added activities in order to make a good quality parts. Anything from a single scratch to a fingerprint on a specific part could result in defective units. The current methods used in the facility require the processes to remain dust and lint-free at all times. The company joined the AIDC TPM Cluster programme in order to streamline their processes to world class standards with the use of the TPM standards.

Goals

The main objective for the programme was to focus on four major pillars; Autonomous Maintenance, Focused Improvement, Planned Maintenance and Quality Maintenance in order to achieve the company targets.



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Figure 1: Shop floor practical training session on the BMC operators facilitated by Neill Erickson.



Figure 2: Operator workstation before and after 1S and 2S practical exercise.



Figure 3: Operators cleaning their machines as part of step 1 Autonomous Maintenance with reference to their cleaning standards developed through the programme.

Programme Journey

The AIDC initiated the Lumotech TPM Cluster programme in January 2013. The Tirisano Champion was Neill Erickson who at the time was the TIE Manager of Lumotech. The company has realigned their department objectives to focus on Re-Engineering which includes the management and rollout of the TPM programme.

The first step taken by the team was to identify the need for TPM and the model area for implementation. The VW 250 line was selected as the TPM model area which had to change six months into the programme due to product design changes. Thereafter Lumotech had selected their Moulding Machine in the BMC area of the plant.

The following step was to conduct Autonomous Maintenance Training on Step 0 and Step 1 focusing on initial cleaning for the model area. The operators, supervisors and managers received training on 1S and 2S of the Autonomous Maintenance. Based on the training a number of Kaizen improvements were discussed and implemented which resulted in a performance improvement of the line. An important step in TPM was to allow the operators to 'clean with meaning'. This ensured that the operators not only conducted daily cleaning but to also include an important role in early error identification which is to check for possible machine component failures that could occur due unknown lifespan of the machine.

Currently Lumotech is in Step 2 on the Autonomous Maintenance Pillar and has also initiated the design and development of the data capturing system for Planned Maintenance.

Key learning points identified in this journey include the understanding of operator involvement. Operator involvement is important for project implementation and continuous improvement because the operators are the ones that work with the process and experience the day to day difficulties that middle and high level management would not be familiar with.

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Before



After



Figure 4: Before – Material waste and wood flakes fall into the hopper as material is inserted. After - a chute installed to eliminate contamination of material.

Programme Master Plan

Item	Objective Description	Timeline												
		J	F	M	A	M	J	J	A	S	O	N	D	
1	Inception reports and business case.	█												
2	SWOT Analysis and feedback workshops	█												
3	Subproject 1: Autonomous Maintenance Step 1 - 3		█	█	█	█								
4	Subproject 2: Focused Improvement Kaizens				█	█	█	█	█					
5	Subproject 3: Planned Maintenance Step 1 - 3									█	█	█		
6	Project close out and handover													█

The AIDC has transferred knowledge to Lumotech employees in terms of how to be more efficient through Autonomous Maintenance and Kaizen projects implemented. Operator moral has been improved on the shop floor as the understanding and appreciation of TPM was practiced by the operators.

Benefits (KPI's)

Area	Before	After	Target	Impact
Performance KM1	24 pph	37 pph	39 pph	13 pph
Performance KM2	35 pph	44 pph	39 pph	9 pph
Kaizen Suggestions	1	1	4	-
Scrap	2.46%	2.09%	2%	0.37%

Before



After



Figure 5: Tool cupboards cluttered with unneeded items. After, shadow board developed with all required tools and consumables.



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Figure 6: BMC mould area enclosed in order to eliminate contamination to the rest of the area.

Sustainability (What can be done from AIDC viewpoint?)

On completion of the programme, the Pillar heads of the TPM team will continue to conduct regular audits in terms of Autonomous Maintenance and Planned Maintenance to ensure that the TPM standards are kept in place. This will ensure that the operators still keep on practicing the TPM principles that were introduced.

Way Forward

The company is planning to horizontally deploy TPM to the entire factory based on the 7 year TPM timing plan. The company will be launching TPM into the rest of the factory during the month of June 2014.

CONTACT DETAILS

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