

Rockman Industries Limited

Improving OEE



Rockman Industries Limited is a part of the Hero Group, the world's largest motorcycle manufacturer. Founded in 1960, today Rockman is a leading supplier to Hero and other renowned automobile OEMs for aluminium die cast components, machined assemblies and painted assemblies. Its five manufacturing plants have the capacity to process 65,000 tons of aluminium annually.

“Renoir’s unique approach not only ensured improvements in KPIs but also developed a positive change in the mindset of our people.”

PROJECT GENESIS

Although Rockman already had a strong reputation for being an efficient manufacturer, senior management recognised that there was always scope for improvement. Renoir was engaged in firstly quantifying the improvements and secondly in implementing change at the shop floor level with the objective of increasing overall plant efficiency:

ANALYSIS

A two-week analysis was carried out by Renoir across all of the five manufacturing units located in Ludhiana, Mangli, Haridwar, Bawal and Chennai. The primary objective of the analysis was to understand how plant productivity could be improved which in turn would lead to a higher return on investment in installed capacity.

Key conclusions of the Analysis were:

- There was a significant gap between the observed equipment utilisation vs. capacity.
- There was low compliance with existing management control systems which resulted in process deviations and higher rejection rates.
- There was scope to reduce the non-productive time of the plants through an improved Short Interval Control System.
- Whilst management control systems did exist on the shop-floor, their effectiveness was low.

A set of opportunities to improve manpower productivity was defined, which in turn would improve overall equipment effectiveness.

Upon the completion of the Analysis, Renoir was asked to undertake an implementation program in two of the five units: 1) the High Pressure Die Casting (HPDC) Plant in Ludhiana for 24 weeks and 2) the Chains Plant in Mangli for 18 weeks.

PROJECT APPROACH

The project team consisted of Rockman’s Task Force and Renoir Consultants. A Management Action Team (MAT) was formed for each of the plants led by the respective Plant Head and consisting of functional heads from all areas of the plants. The MATs were assigned the responsibility to drive change and achieve the desired results through process improvement, management control system implementation and stakeholder involvement at all levels of the organisation.

Key Results For the two plants within the scope

Improvement of 15% (Ludhiana) and 6% (Mangli) in production efficiency of bottleneck sections

Throughput improvement of 32% for Ludhiana and 9% for the Assembly Section in Mangli

30% improvement in changeover times and 27% increase in die efficiency for Mangli

3% reduction in quality rejections for Ludhiana

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FOCUS PROCESS®

The project went through 5 weeks of the Renoir Focus Process® in order to analyse the As-Is processes and management control systems and to determine the To-Be processes and systems. The project team undertook multiple observations and data studies to quantify the scope of opportunities in almost all the areas in both plants.

The Focus Process® began by comparing the installed capacity with actual output in order to establish where the production line constraints ('bottleneck sections') lay. Detailed root-cause analyses were completed for each of the bottleneck sections to quantify the potential improvement. Subsequently, identification and definition of the leading and lagging indicators were undertaken in order to implement effective review mechanisms.

Based on the initial analysis and studies from the Focus Process®, it was established that a great deal depended on the reliability and efficiency of dies to achieve substantial improvements. Therefore, the project team focused on these areas during the design and development phase to improve the systems which would drive increased die efficiency.

IMPLEMENTATION

A total of 45 system elements were designed for implementation in the Ludhiana Plant and 30 system elements for the Mangli Plant. Implementation started with classroom training for all system users and stakeholders to ensure objectives and system changes were clearly understood.

Some of the key systems and processes that were implemented included:

- Hourly monitoring at the shop floor to raise equipment utilisation and manpower productivity.
- Improved mechanisms for daily and weekly production planning based on standard cycle time, along with follow up reviews to ensure timely action on deviations.
- Improved quality parameters for early identification of defects.
- Installation of a Maintenance Management System for both machines and dies.
- SMED implementation for die change-over in the Press Department.
- Improved reporting and review mechanism at all levels to ensure effectiveness for both new and existing systems.
- Mechanisms to foster increased involvement from supervisors and managers to ensure effectiveness of the installed systems.

Implementation of the above management control systems ensured not only a systemic approach on the shop floor but also a change in the behaviour of staff involved in the process.

RESULTS

In addition to the operational evaluations, Renoir conducted behavioural audits to determine how well the new systems were being internalised by Rockman. Within the relatively short project timeframes, these audits showed the Mangli Plant achieved an effectiveness score of 88% with respect to the installed management control system elements and the Ludhiana Plant scored 60%.

The project delivered a return-on-investment of 4:1, but perhaps the most important result was the visible change in culture. Whereas before there was a reluctance to address day-to-day issues, the installed systems now allow key staff to address these issues much more proactively.

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THE RENOIR GROUP

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