

# Case Study on Improving Productivity of Refrigerator Assembly line

How India's leading home appliances company doubled production of a key product with the process and productivity improvement.

## The Client

The client is one of the largest home appliances companies with a significant market share in the Indian market. The company's product portfolio includes a wide range of washing machines, refrigerators, microwave ovens, and air conditioners. The company operates through three of its state-of-the-art manufacturing facilities in India.

The company is known for its commitment to provide its consumers with forward-looking solutions.

## The Scenario

The top management was concerned about the potential loss of market opportunity. Further analysis suggested that this was because of the inability to keep up with market demands because of low production volumes.

## TQMI Approach

To understand the root cause of the problem, the TQMI team created a detailed As-is Value Stream Map with data on timing, manpower involved, changeover time and rework levels.

Based on that, the team identified the following as key waste areas

- Assembly line downtime
- Rework
- Changeover times

The TQMI team concluded that there is a potential to double the production volume and increase worker productivity to 150%.

## The Solution

The TQMI team implemented a comprehensive action plan including the following steps

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- **Getting better with Kaizen**

TQMI organised a Kaizen workshop with all the stakeholders to identify and implement significant improvements in the assembly line. At the end of the workshop, several improvement ideas were generated.

- **Identifying specific improvements**

The TQMI team initiated two specific green belt projects. The objective of the first project was to reduce downtime due to changeover. The second project focused on reducing the rework levels in the brazing operation.

- **Implementing far-reaching changes**

The TQMI team identified 36 action points for implementation, including –

- Introducing of product barcode (Poka Yoke)
- Standardization of wiring and screws for four different models to reduce the mix of errors
- Start of preparatory work 15 minutes before the actual start of the shift
- System to move finished products from the line immediately to avoid line choking

- **Accommodating demand variations**

The TQMI team streamlined the manpower and other resource planning keeping in view the seasonal variations in demand of the product to eliminate impediments in production.

## **Impact**

- Improvement in the production volumes: 1.9 times
- Manpower productivity improvement: to 152% without any CAPEX.
- Annualised financial savings: Rs. 10 million (recurring).