

# Increasing productivity & competitiveness through practical workplace solutions

The Turbo Guy & Heriot Watt University

*A Scottish Institute for Remanufacture Case Study*

## Project Summary

By analyzing the time and cost associated with the remanufacturing process The Turbo Guy was able to immediately boost productivity by over 20% across their remanufacturing operations.

This has directly led to an increase in the workforce and the ability to hold larger stock, thus ensuring the company can position itself competitively in the market.

The process improvements for “work in progress” turbos will result in reduced waste and reduced raw material consumption by providing an accurate reflection of available resources.

## Remanufacturing Operation

The remanufacturing of turbos is a labour intensive and skilled manual process of disassembly, inspection, cleaning, reconditioning or repair of individual components, re-inspection and testing.

The time spent and parts required at each stage of the process can vary greatly for each turbo making it hard to pinpoint the cost of remanufacturing individual turbos and predict profits.

The Scottish Institute for Remanufacture (SIR) co-funded a research project bringing together The Turbo Guy’s sector expertise and academic experts from the Department of Business Management at Heriot Watt University to develop a tool designed to analyse production costs.

## Operational Improvements

The Turbo Guy is a micro enterprise, based in Pollokshaws, Glasgow. The team of nine employees supply and refurbish Turbochargers to trade customers across the UK offering a same day delivery service handling 10,000 different turbos.

The results of the project were:

- A database of over 2,000 items was created with the costs of parts and materials added.
- New methodology was implemented to accurately record actual costs of remanufacturing each turbo.
- Individual average production cost of each turbo was calculated resulting in more accurate job quotations.
- Production flow layout was vastly improved including changes to the location of equipment, benches, and storage areas and set up of these areas.
- An inventory control mechanism was developed for WIPs (Work-in-Progress) allowing quick and accurate analysis of stock levels whilst refurbishing turbos.
- 5S practice was implemented and working place of each individual employee was redesigned.

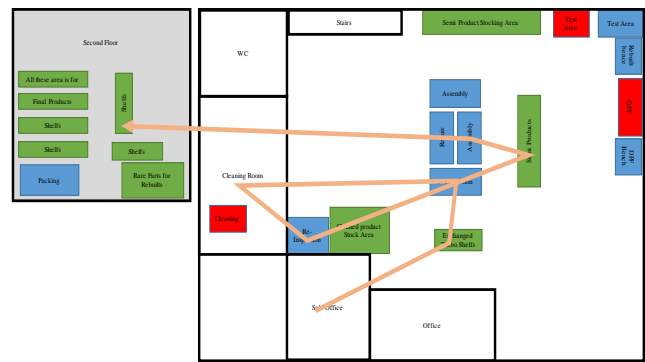
All of this resulted in a 20% increase in productivity and 15% reduction in costs.



## Production Flow Improvements



*Production Flow Before Process Improvements*



*Production Flow After Process Improvements*

## Future Business Opportunities

Going forward, the successful implementation of the improvements has led to further recommendations to streamline operations including redesign of the re-inspection phase of remanufacturing which could lead to a 50% reduction in reassembly times.

With a more efficient production flow requiring less supervision time there is scope for operational restructuring to allow senior staff to focus on the strategic goals of the business and expand product lines.

There is significant potential for The Turbo Guy to increase their visibility and market share through focused marketing plans.

## Future Benefits

Environmental – access to more competitively priced turbo chargers with better performance will allow car owners to have their turbos remanufactured more often, positively impacting on fuel efficiency and the environmental friendliness of the engine.

Economy – continued improvements in productivity will increase the capacity of the workshop to remanufacture turbos and will allow the company to further increase their market share and in turn their requirement for engineers, creating job opportunities in Scotland.

Remanufacturing Community – the lessons learnt through the research of The Turbo Guy's operational processes can be generalised and shared with the wider remanufacturing community to positively impact productivity and growth of remanufacturing across Scotland.

