



“Protecting and Optimizing
your Robotic Investment”

Case Study: Steering Assembly Manufacturer in the United States

Abstract:

A Medium size Automotive sub-assembly manufacturing plant in the United States needed a full review of its existing Robotic cells

The Challenge:

Once on site it was clear that no formal system for the Maintenance, Program Updating and ongoing improvements of the three arc-welding cells was in place. All cells were in a run down condition and a number of sub-systems had been bypassed to allow continuing production. The company was a 24 hour operation on all three cells.

Moving forward we needed to assess the full requirements of the systems and to establish a support philosophy that would ensure continued production, improved quality and increased flexibility for the Robotic cells

Methodology:

After meetings with the site engineer and with the firms customer with regards to quality issues a number of tasks were highlighted:

- Full review of all product programs and their variations
- Understand current utilization of the three Robotic cells
- Assessment of current tooling and a ‘Fit for Purpose’ Analysis
- Overview of current consumables stock and consumables suppliers

Because of production constraints it was necessary to formulate an action timing plan along side the clients production schedule.

How we succeeded:

After a full program review alongside a full tooling overview, new fixing methods were created to allow each tooling variant to be fixed to anyone of the Robotic cells, alongside the new programs. This gave us production flexibility and the ability to move all production onto two Robotic cells for a short period of time. With this in place we were given the time to reduce cycle time and overhaul each Robot cell in turn. Following on from this success we implemented a TPM (Total Preventative Maintenance) system including program assessment on a monthly basis to alleviate cycle time drift.

A full training schedule was drawn up and each operator received ‘one on one’ training to ensure the systems were maintained at their optimal level.

Consumable suppliers were contacted and this lead to a reduction of costs and the move to a single source supplier responsible for weekly KANBAN stocks.

Statistics:

- Shifts reduced from three to two on all Robotic cells
- Cycle Time’s reduced by up to 40%
- Further Cycle Time reductions achieved with introduction of new shielding gas
- Stoppage time reduced by up to 80% due to Preventative Maintenance system
- Visual Quality improvement and reject quantities reduced by 90%
- Greater flexibility achieved through SMED for all fixtures

“delivering quality Robotic Solutions to the
manufacturing industry”