Reduce WIP And In-Process Defects For A Manufacturing Plant In China

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THE PROBLEM:

High rejections and WIP

BACKGROUND INFORMATION:

In this case the manufacturing line consisted of operators sitting in a row on either side of a long table with welding components viewed under a microscope. The welded parts were placed on the table and moved to an inspector at the farther end of the long table. At the outset, the process itself was a challenge as the operation was strenuous and needed high levels of skill. From a Lean point of view, the process not only led to high rejections but also excess work in process (WIP), as several parts were waiting to be cleared by the inspector sitting at the end of the row. The delay in inspection and the inability to identify the operator who produced defective parts was the major issue. We had to reduce the waiting window for inspection (window of waste) in order to reduce WIP and provide adequate feedback to operators. The issue at hand and what solution we needed were clear, but the difficulty lay in getting there. At first look, automation of the entire process may have seemed like the obvious solution but under the then current business scenario there were no funds allocated for any major change.

THE SOLUTION:

Brainstorming on the issue and out of the box thinking was the key to find a solution in this case. We changed the straight line to a square, where we moved the inspector to the center of the square and each operator directly handed over the finished parts to the inspector, thereby almost eliminating the window of waste.

THE RESULT:

The total inventory of all cells put together reduced from 40,000 pieces to 10,000 pieces, as the parts waiting for inspection became negligible. Since the feedback from the quality inspector to the operators was immediate, it helped the operators correct and improve output, thereby obtaining a 70% improvement in quality (the defect ppm reduced from 12,000 to 3500). The annualized savings from this project was $200 K.