Brake Pad Photo

Issue

Gaskets applied to the rear of an automotive brake component were lifting after application, and being rejected on inspection, with an initial defect rate of 1.89 percent.

Breakthrough Strategy

Measure — Data was collected by work centre and product code, with a Three Level Pareto Chart developed to identify the key opportunity areas within the process. Gasket Lift in one of the Work Centres was identified as contributing to 50% of the total scrap for any reason. The measuring system used for assessing gasket faults overall was also identified as having questionable reliability and repeatability, with operators only able to identify a good or bad gasket 63% of the time.

Analyze — Process Maps and several FMEA's were completed over a period of weeks to establish a range of probable factors contributing to the scrap.

Improve — Hypothesis tests and Designed Factorial Experiments were planned and conducted to establish the major factors driving the scrap rate. As a result of this, changes were made to the Work Centre in terms of Part Location, Temperature and Pressure Control.

Control — Standard Operating Procedures and an Ergonomics study were conducted to lock in the necessary changes. A Preventative Maintenance Programme was introduced for those major factors identified by the Hypothesis Tests and Designed Experiments

Results — A greater than five fold reduction in the defect rate to less than 0.3 %

Savings — $34,000 USD on an annualised basis on reduced materials and labour.