



Issue

A relatively new elastomer moulding process has consistently produced a high reject rate for certain types of defects that have been seen to be “unsolvable”

Breakthrough Strategy

Measure

A comprehensive system was established to measure the defects by type at the end of the moulding process. While the measurement alone did produce some improvement (attention was now being paid to the process), the defect rate was no better than 2.8 Sigma, or 16 out of every hundred units produced exhibiting some type of defect. Not all defects resulted in scrapping of the item concerned

Analyse

A complete flow chart of the entire manufacturing process was completed, and all key points in the process were assessed against specification requirements. The following were noted:

- The specifications were incorrect in that the nominal dimensions of the sub-components did not add up to the overall nominal;
- Newly trained people tried to meet the specification limits, and in doing so, over-tightened a key fastener to achieve this dimension;
- Over-tightening caused the assembly to bow during the moulding process, leading to a scrapped item, but this could not be seen;
- Experienced operators had a fix that was only known to them;
- A key aspect that was driving the main defect type was unknown to all concerned.

Improve

The specifications were changed by the design department, and revised assembly instructions agreed upon. A new training course and video was published, and all employees, new and experienced completed the course.

Control

A more comprehensive Defect Data Collection system established

Results

The Sigma Value went from 2.8 to 4.2 (16 units defective per hundred to 1 per 300) after two weeks.

Savings

\$96,000 USD per annum at production levels achieved during the project in this plant